Presented to
The Library
of the
University of Toronto
by

James F. Ballard.

Digitized by the Internet Archive
in 2010 with funding from
University of Toronto

http://www.archive.org/details/newenglandjourna130mass

THE BOSTON

MEDICAL AND SURGICAL JOURNAL

GEORGE B. SHATTUCK, M.D., Editor
CARROLL EVERETT EDSON, M.D., Assistant Editor

VOLUME CXXX

JANUARY—JUNE, 1894

285395/4.33
6.

BOSTON
DAMRELL AND UPHAM
283 Washington Street
1894

R
11
N57
v. 130-131
cop. 2

PRESS OF S. J. PARKHILL & COMPANY,
226 FRANKLIN STREET,
BOSTON.

CONTRIBUTORS TO VOLUME CXXX.

ABBOTT, SAMUEL W., M.D.
ACHORN, J. WARREN, M.D.
ALLEN, GARDNER W., M.D.
AUGUST, ALBERT, M.D.
BATES, EVERETT A., M.D.
BELL, ROBERT E., M.D.
BILLINGS, JOHN S., M.D., U. S. A.
BLAKE, JOHN G., M.D.
BOARDMAN, WILLIAM S., M.D.
BOWEN, JOHN T., M.D.
BRACKETT, E. G., M.D.
BRADFORD, E. H., M.D.
BURRELL, HERBERT L., M.D.
CABOT, RICHARD C., M.D.
CALL, ANNIE PAYSON, M.D.
CHADBOURNE, ARTHUR P., M.D.
CHANDLER, N. F., M.D.
CHEEVER, DAVID W., M.D.
CLENDENIN, PAUL, M.D., U. S. A.
CODMAN, CHARLES R., M.D.
COOLIDGE, ALGERNON, Jr., M.D.
COUNCILMAN, W. T., M.D.
COURTNEY, J. W., M.D.
COWLES, W. N., M.D.
CROWELL, SAMUEL, M.D.
CUSHING, E. W., M.D.
CUSHING, H. W., M.D.
DAVENPORT, F. H., M.D.
DAWBARN, ROBERT H. M., M.D.
DAY, FRANK L., M.D.
DELAVAN, D. BRYSON, M.D.
DRAPER, PROF. F. W., M.D.
DULLES, CHARLES W., M.D.
DUNBAR, F. A., M.D.
DURELL, THOMAS M., M.D.
DWIGHT, THOMAS, M.D., LL.D.
EASTMAN, JOSEPH, M.D., LL.D.
EDES, ROBERT T., M.D.
EDSON, CARROLL E., M.D.
EGAN, P. RALPH, M.D., U. S. A.
ELLIOTT, J. W., M.D.
EVERETT, OLIVER H., M.D.,
EWING, CHARLES B., M.D., U. S. A.
FARLOW, JOHN W., M.D.
FAY, WILLIAM E., M.D.
FITZ, REGINALD H., M.D.
FOLSOM, CHARLES F., M.D.
FRANCIS, GEORGE E., M.D.
GAGE, HOMER, A.M., M.D.
GAVIN, M. F., M.D.
GAY, GEORGE W., M.D.
GILBERT, D. D., M.D.
GOSS, FRANCIS W., M.D.
GRANT, JOHN H., M.D.
GREEN, CHARLES M., M.D.
GREENE, EDWARD M., A.M., M.D.
GREENE, J. S., M.D.
GREENLEAF, R. W., M.D.
HALL, J. N., M.D.
HALL, R. M., M.D.
HARRINGTON, F. B., M.D.
HAVEN, GEORGE, M.D.
HAYES, MARGARET C., M.D.
HILLS, WILLIAM B., M.D.
HOGNER, RICHARD, M.D.
HOUSTON, J. A., M.D.
HURD, E. P., M.D.
INGALS, E. FLETCHER, M.D.
JACK, EDWIN E., M.D.
JACKSON, HENRY, M.D.
JACKSON, HENRY M., M.D.
JOHNSON, F. W., M.D.
JOSLIN, ELLIOTT P., A.B., PH.B.
KEEFE, JOHN W., M.D.
KENYON, C. G., M.D.
KNAPP, PHILIP COOMBS, A.M., M.D.
LOOMIS, ALFRED L., M.D.
MALLORY, F. B., M.D.
MANLEY, THOMAS H., M.D.
MARCY, H. O., M.D.
MARTIN, F. C., M.D.
MASON, A. LAWRENCE, M.D.
McCOLLOM, J. H., M.D.
MILLARD, PERRY H., M.D.
MINOT, FRANCIS, M.D.
MORRILL, F. GORDON, M.D.
MORRIS, ROBERT I., M.D.
MORSE, JOHN LOVETT, M.D.
MUMFORD, J. G., M.D.
MUNRO, JOHN C., M.D.
PARKER, W. THORTON, M.D.
PECKHAM, FRANK E., M.D.
PERKINS, JOHN W., M.D.
PLATT, WALTER B., F.S.C.S. (ENG.)
PLUMMER, R. H., M.D.
POST, ABNER, M.D.
PRESCOTT, WILLIAM H., M.D.
PRICE, JOSEPH, M.D.
PUTNAM, J. J., M.D.
REYNOLDS, EDWARD, M.D.
RICHARDSON, MAURICE H., M.D.
SCUDDER, CHARLES L., M.D.
SEARS, GEORGE G., M.D.
SHATTUCK, F. C., M.D.
SHATTUCK, GEORGE B., M.D.
SINCLAIR, ALEXANDER D., M.D.
STANDISH, MYLES, M.D.
STEDMAN, HENRY R., M.D.
THORNDIKE, PAUL, M.D.
TOWNSEND, CHARLES W., M.D.
TRACY, EDWARD A., M.D.
TUTTLE, ALBERT H., M.D.
VICKERY, H. F., M.D.
WALCOTT, H. P., M.D.
WANGHOP, P. R., M.D.
WASHBURN, G. H., M.D.
WEBBER, S. G., M.D.
WHEELER, LEONARD, M.D.
WHITE, H. WARREN, M.D.
WHITNEY, W. F., M.D.
WHITTIER, E. N., M.D.
WILLIAMS, FRANCIS H., M.D.
WILLIAMS, JACOB L., M.D.
WITHINGTON, C. F., M.D.
WOOD, EDWARD S., M.D.
WORCESTER, A., A.M., M.D.

INDEX TO VOLUME CXXX.

Abbott, A. C. Chemical, physical and bacteriological studies of air over decomposing surfaces, with especial reference to their application to the air of sewers, 569.

Abbott, S. W. National registration a necessity, 137; recent progress in public hygiene and preventive medicine, 337.

Abdominal Surgery. Cases of abdominal surgery occurring in the practice of Dr. J. Collins Warren at the Massachusetts General Hospital during the winter of 1893, Scudder, C. L., 1, 29.

Absinthe. The poisonous properties of absinthe and its congeners, 452.

Achorn, J. W. The effect of climate and environment on the New England girl, 58.

Acting Assistant-Surgeons, 226.

Alcohol. The rôle of alcohol in the causation of cirrhosis of the liver, 324.

Allen, G. W. Two cases of litholapaxy, 383, 388.

Allen, H. Morphology as a factor in the study of disease, 567.

American Gout, 273.

American Medical Association. Revision in the, 655; San Francisco meetings, 635, 657.

Anæsthesia. Mr. Lawson Tait's use of anæsthesia, 250.

Anarchist. Autopsy on the Greenwich anarchist, 326.

Anatomy. Recent progress in anatomy, Dwight, T., 7, 468; morphology as a factor in the study of disease, Allen, H., 567; Association of American Anatomists, 622; the range and the significance of variations in the human skeleton, Dwight, T., 625.

Aneurism. A new and distinguishing sign of latent aneurism of the aorta, Glasgow, W. C., 651.

Animal Experimentation, its influence on medical science, Loomis, A. L., 585; resolution before Congress of American Physicians and Surgeons, 590.

Appendicitis, with apparent resolution of abscess, relapse, death, autopsy, Peckham, F. E., 61; specimen of gangrenous and perforated appendix, Richardson, M. H., 67; infectious appendicitis, Morris, R. T., 133; recurrent appendicitis, August, A., 186; an appendix obliterated in the greater part of its length, Richardson, M. H., 192; cases of appendicitis presenting unusual features, Richardson, M. H., 232; twelve consecutive and successful operations for appendicitis, Keefe, J. W., 282, 306; a case of appendicitis, Folsom, C. F., 342; the after-treatment of operations for appendicitis, Burrell, H. L., 433, 444; specimen of appendix, Elliot, J. W., 444; some impressions derived from an experience of forty-four cases, Gage, H., 508.

Arm. Amputation of the entire upper extremity (including the scapula and clavicle) and of the arm at the shoulder-joint, Keen, W. W., 565.

Army. The duties of army medical officers, 49; the Army Medical School at Washington, 100; proposed reduction of the Army Medical Department, 294; proposed reduction of the Army Medical Corps, 351; the proposed reduction in the Army Medical Service, Parker, W. T., Dawbarn, R. H. M., 430; scaling the appropriation for the Library of the Surgeon-General's Office, 475; infantry footwear, 478; reduction of medical officers in the army, 590.

Arsenic. Chronic arsenical poisoning from wall-papers and fabrics, 246.

Asepsis. Obstetrical asepsis, Price, J., 32, 40.

Ashhurst, J., Jr. The surgical treatment of empyema, 564.

Asthma. Hypnotic suggestion in the cure of asthma, 350.

Athletic Sports, Eliot, C. W., 197.

August, A. Recurrent appendicitis, 186.

Babcock, R. H. A report of cases of chronic heart disease treated by the Schott method of baths and gymnastics, 651.

Bacteriology. The microbe of scarlatina, 73; bacteriological cultures from a case of puerperal septicæmia, Morse, J. L., 140, 142; a bacteriological study of four hundred cases of inflammation of the throat occurring in diphtheria and scarlet fever, with special reference to pathogenesis, Morse, J. L., 162, 182; the bacteria of peritonitis, 271; the bacteriology of nephritis, Sternberg, G. M., 573; sunshine and microbes, 603; Dr. S. C. Martin's researches on the bacteria of vaccinia, Ernst, H. C., 622; modification, temporary and permanent, of the physiological character of bacteria in mixed cultures, Smith, T., 647; the effect of various metals on the growth of pathogenic bacteria, Bolton, M., 647.

Bagdad. A sanitary sermon in diagram, Sundberg, J. C., 77.

Bates, E. A. A case of tuberculous pericarditis with enormous effusion; general tuberculosis; autopsy, 7.

Beck, C. Laminectomy for tubercular disease of the spine, 220.

Bell, R. E. A case of myxœdema, 364.

Beri-Beri, Daland, J., 652.

Bibliography. Adams, W., on contraction of the fingers and on "hammer toe," 122; Ashhurst, J., Jr., the principles and practice of surgery, 395; Baldy, J. M., an American text-book of gynecology, medical and surgical, 653; Bartholow, R., a practical treatise on materia medica and therapeutics, 194; Beard, G. M., a practical treatise on nervous exhaustion (neurasthenia), its symptoms, nature, sequence, treatment, 221; Berry, G. A., disease of the eye, 396; Boston Board of Health, twenty-second annual report, 602; Boxall, R., the use of antiseptics in midwifery, their value and practical application, 317; Bramwell, B., atlas of clinical medicine, 246; Brodie, C. G., dissections illustrated, a graphic hand-book for students of human anatomy, 345; Buck, A. H., supplement to the reference hand-book of the medical sciences, 293; Buxton, D. W., anæsthetics, their uses and administration, 221; Carmichael, J., disease in children, 169; Cathcart, C. W., descriptive catalogue of the anatomical and pathological specimens in the museum of the Royal College of Surgeons of Edinburgh, 71; Coplin, W. M. L., and Bevan, D., a manual of practical hygiene, 169; Corning, J. L., treatise on headache and neuralgia, including spinal irritation and a disquisition on normal and morbid sleep, 631; Crocker, H. R., diseases of the skin, 45; Donkin, H. B., diseases of childhood, 293; Dunglison, R., a dictionary of medical science, 71; Eccles, A. S., sciatica, a record of clinical observations on the causes, nature and treatment of sixty-eight cases, 71; Firebaugh, E. M., the physician's wife, and the things that pertain to her life, 369; Galton, D., healthy hospitals, observations on some points connected with hospital construction, 369; Gray, H., anatomy, descriptive and surgical, 19; Hart, E., hypnotism, mesmerism and the new witchcraft, 19; Hewitt, F. W., anæsthetics and their administration, 546; Hilton, John, rest and pain, 317; Holden's manual of the dissection of the human body, 369; hospitals, dispensaries and nursing, 394; Hyde, J. N., practical treatise on diseases of the skin, 631; Jackson, G. T., a practical treatise on diseases of the hair and scalp, 522; Jacobson, W. H. A., the diseases of the male organs of generation, 19; Jenner, W., lectures and essays on fevers and diphtheria, 1849 to 1879, 122; Johns Hopkins Hospital reports, report in gynecology, ii, 546; Jules, H. E., a hand-book of ophthalmic sciences and practice, 522; Keen, W. W., operation blanks, 346; Kirchhoff, T., hand-book of insanity, 293; Landis, H. G., how to use the forceps, 346; Macready, J. F. C. H., treatise on ruptures, 575; Madden, T. M., clinical gynecology, 71; Massachusetts State Board of Lunacy and Charity, report for 1893, 72; Manley, T. H., hernia, its palliative and radical treatment in adults, children and infants, 473; Marinesanitätsordnung, 473; Martin, E., essentials of minor surgery, bandaging and venereal diseases, 122; Mathews, J. M., a treatise on diseases of the rectum, anus and sigmoid flexures, 321; Musser, J. H., a practical treatise on medical diagnosis, 396; Norris, R. C., syllabus of the obstetrical lectures in the medical department of the University of Pennsylvania, 420; Parkes, L. C., infectious diseases, notification and prevention, 396; Pepper, W., a text-book of the theory and practice of medicine, 369; physician's visiting list for 1894, 71; Pye-Smith, P. H., an introduction to the study of diseases of the skin, 20; Schenk, S. L., manual of bacteriology, 44; Senn, A., a syllabus of lectures on the practice of surgery, 71; Surgeon-General's Office, U. S. A., index catalogue, vol. xiv, 223; Stearns, H. P., lectures on mental diseases, 317; Stillé, A., and Maisch, J. M., the national dispensatory, 345; Tebb, W., the recrudescence of leprosy and its causation, 20; Thompson, H., introduction to the catalogue of the collection of calculi of the bladder, 194; Tuke, D. H., reform in the treatment of the insane; early history of the Retreat, York; its object and influence, with a report of the celebration of its centenary, 19; Von Krafft-Ebing, R., psycopathia-sexualis, with especial reference to contrary sexual instinct, a medico-legal study, 19; Webster, D., eye-strain a cause of headache, 631; Wharton, H. R., minor surgery and bandaging, 653; Whittaker, J. V., the theory and practice of medicine, 293; Wimmer, S. J., Wimmer's table and notes on human osteology, 420; Witthaus, R. A., the medical student's manual of chemistry, 20; a laboratory guide in urinalysis and toxicology, 473; Witthaus, R. A., and Becker, T. C., medical jurisprudence, forensic medicine and toxicology, 395; year-book of treatment for 1894, 473; Zola, Lourdes, 654.

Bicycle. The pathology of bicycling, 197.

Billings, J. S. Methods of teaching surgery, 535.

Biography. Arnold, J., 480; Billings, L. F., 52; Billroth, T., 176; Briggs, C. E., 660; Brown-Sequard, 352, 370; Chenow, 23; Codman, B. S., 278; Conway, W. A., 424; Crary, D., 432; Cresson, C. M., 28;

Cunningham, W. F., 636; Dagna, G., 300; Day, A., 456; Donovan, 200, 226, 251; Elder, E. S., 636; Fogg, W. J. G., 251, 252; Ford, C. C., 404; Forsaith, F. F., 276; Garcia, V. A., 276; Grierson, G. T., 128; Guttmann, S., 28; Hartnett, M. K., 528; Hassall, A. H., 456; Hill, H. E., 52; Hilson, A. H., 300; Hirsch, A., 200; Holmes, H., 149; Hutchinson, William F., 198; Jacob, Ernest H., 328; James, Charles, 549; Keating, W. V., 432; Kundt, A., 636; Lheritier, S. D., 404; Lucke, A., 276; Marston, D. E., 404; Metcalf, T., 455, 456; Michel, M., 636; Nava, J. G., 104; Ollivier, A., 328; Parrish, J., 252; Patterson, J. H., 456; Pike, C. C., 128, 527; Radsiminski, 23; Rauch, J. H., 328; Romanes, G. J., 552; Rubio, F. A., 200; Scheuthauer, G., 228; Seaverns, J., 252, 327; Smith, C. G., 80; Stanard, A. C., 502; Sperk, 636; Van Beneden, P. J., 52; Walker, J. E., 636; Weld, F. M., 52; Willard, O. A., 52; Workman, J. H., 404.

Blake, J. G. Review of a summer's work in gynæcology at the Boston City Hospital, 89, 97.

Blank for obstetric cases, Green, C. M., 98.

Blood. The therapeutic action of blood-serum, 45; on the value of the examination of the blood in the insane, Houston, J. A., 53.

Boardman, W. S. The treatment of pulmonary tuberculosis by the subcutaneous use of the chloride of gold and sodium with the iodide of manganese, 492.

Bolton, M. The effect of various metals on the growth of pathogenic bacteria, 647.

Bone. A case of myositis ossificans with multiple exostoses, Gibney, V. P., 43.

Booth, J. A. A case of exophthalmic goitre; thyroidectomy, 391; a case of hysteria with peculiar epileptoid attacks, 393.

Bosworth, F. H. Diseased conditions of the ethmoidal sinuses, 590.

Bowen, J. T. The prevalence and recognition of scabies, 127; report on dermatology, 241, 263.

Brackett, E. G. Exercise in the treatment of lateral curvature, 329, 343.

Bradford, E. H. Flat-foot, 377, 388.

Bradford, E. H., and Brackett, E. G. Recent progress in orthopedic surgery, 9, 38.

Brain. Venous tumor of the diploë, Pilcher, L. S., 599.

Brandt Method of pelvic massage, 474.

Breast. Large, diffuse fibroma of the breast, with spot of medullary carcinoma, Richardson, M. H., 143; fibroma of the breast, with large cyst simulating carcinoma, Richardson, M. H., 193; the change of a malignant tumor into a scirrhous cancer in the breast, Cabot, A. T., 442; tumors of the breast, Warren, J. C., 643.

Brown, C. H. A case of amyotrophic lateral sclerosis, 496.

Brown-Sequard's teachings, 370.

Bryan, J. H. Surgery of the maxillary sinus, 590.

Bryant, T. The necessity of a well-paid medical profession, 374.

Burrage, W. L. Three years' experience with electrical treatment of fibroid tumors of the uterus, with a report of forty-four cases, 289.

Burrell, H. L. The after-treatment of operations for appendicitis, 435, 444.

Burrell, H. L., and Cushing, H. W. Recent progress in surgery, 384, 415.

Butler, G. R. The methods and value of supervised exercise in the prophylaxis of pulmonary phthisis, 630.

Cabot, A. T. The change of a malignant tumor into a scirrhous cancer in the breast, 442.

Cabot, Richard C. The diagnostic and prognostic importance of leucocytosis, 277, 292.

Call, A. P. Relaxation as a curative agent, 334.

Cancer. The discussion on the parasitism of cancer at the Eleventh International Congress of Medical Sciences, 398; the change of a malignant tumor into a scirrhous cancer of the breast, Cabot, A. T., 442.

Capital Punishment. Proposed legislation concerning capital punishment in Ohio, 146.

Carmalt, W. H. Extirpation of the larynx, 600.

Carriages. The conveyance of scarlet fever and diphtheria by public carriages, 576.

Carshaw, J. The use of antipyretic methods in the treatment of scarlet fever, 373.

Cash. Pharmacy, Therapeutics and Credulity, 50.

Chadbourne, A. P. The gastric and respiratory symptoms caused by the dust of curled hair, 439, 450.

Chandler, N. F. Report of two pregnancies following a laparotomy, 93, 98.

Chaplin, W. S. St. Louis and its medical schools, 634.

Charles River in its relation to the etiology of intermittent fever, Greenleaf, R. W., 353, 357.

Charteris. The treatment of sea-sickness, 454.

Cheever, D. W. Lectures on surgery, 81, 129.

Chiene, J. The teaching of surgery, 595.

Children. The study of pediatrics, Christopher, W. S., 174; feeble-minded children, 222; cases of acute pneumonia in children, Morrill, F. G., 541.

China. Self-mutilation in China, 76; the plague in China, 631.

Chloroform. Sir James Simpson's early experiments with chloroform, 103.

Cholecystotomy. Five cases of cholecystotomy, Perkins, J. W., 87.

Cholera, 102; anti-choleraic inoculation, 198; Haffkine's method of inoculation against cholera, 523.

Christopher, W. S. The study of pediatrics, 174.

Circulatory System. A case of tuberculous pericarditis with enormous effusion, general tuberculosis, autopsy, Bates, E. A., 7; a review of ninety-two cases of disease of the heart observed in the out-patient department of the Boston City Hospital, Jackson, H., 111; a case of malignant endocarditis, Fay, W. E., 189; cases of fatal hæmorrhage from the left lateral sinus caused by a blow on the jaw, 201; ligation of both common carotid arteries, Gay, G. W., 244; the treatment of pregnancy complicated by heart disease. Sears, G. G., 253, 268; the diagnostic and prognostic importance of leucocytosis, Cabot, R. C., 277, 292; recent progress in thoracic disease, Sears, G. G., 285; perforation of the heart, with continuance of life for thirteen hours, Thompson, 350; three cases of occlusion of the superior mesenteric artery, Councilman, W. T., 410; idiopathic hypertrophy of the heart, 421; perforating wound of the heart, Hall, R. M., 431; peritonitis due to embolism of the mesenteric artery, Councilman, W. T., 443; arterio-sclerosis and arteritis, modern views as to etiology, 547; the obscure origin and indeterminate course of acute infection, as illustrated by a case of malignant endocarditis, Greene, J. S., 557, 563; a new and distinguishing sign of latent aneurism of the aorta, Glasgow, W. C., 651; some pathological conditions of the heart and their relation to diabetic coma, Weber, L., 650; a report of cases of chronic heart disease treated by the Schott method of baths and gymnastics, Babcock, R. H., 651.

Clark, A. Work as a therapeutic agent, 50; occupation, 175; Mr. Gladstone's tribute to Sir Andrew Clark and the medical profession, 579.

Clendenin, P. The open incision in uncomplicated cases of hydrocele, 440.

Codman, C. R. The Massachusetts Homœopathic Medical Society luncheon, 403.

Coley, W. B. The treatment of inoperative malignant tumors by the toxines of erysipelas and prodigiosus, 598.

Colorado. Some meteorological data of Colorado, Fisk, S. A., 652.

Contagious diseases in the public schools, 23.

Corning, J. L. Deafness due to a foot-ball injury, 120.

Coroner. To abolish the office of coroner in New York, 102.

Councilman, W. T. A case of multiple rupture of internal organs produced by a fall, 109; three cases of occlusion of the superior mesenteric artery, 410; peritonitis due to embolism of the mesenteric artery, 443; specimen of intestinal obstruction, 470.

Courtney, J. W. Modern realism and Zolaism in Spanish literature, 79.

Cowles, W. N. A case of myxœdema treated by thyroid extract, 167, 168.

Cremation in Paris, 148.

Crime. Surgical treatment of crime, 171.

Crompton, D. Operative surgery under difficulties, 605.

Crotalus horridus, 375.

Crowell, S. A case of acute affection simulating acute yellow atrophy of the liver in a pregnant woman, autopsy, 166, 169.

Curtin, R. G. Creasote, guaiacol and benzoyl in phthisis, 630.

Cushing, E. W. A case of uterine tumor, 37, 42; the operative treatment of uterine fibroids, 301, 315.

Cutaneous System. The prevalence and recognition of scabies, Bowen, J. T., 127; report on dermatology, Bowen, J. T., 241; the treatment of chronic ringworm of the scalp, Fox, C., 373.

Daland, J. Beri-beri, 652.

Dana, C. L. Syringo myelia, central glioma of the spinal cord with spontaneous central hæmorrhage, 119.

Dandridge, N. P. Surgical treatment of pulmonary cavities, 402.

Davenport, F. H. Report of progress in gynæcology, 364; the non-surgical treatment of chronic pelvic inflammations and their sequelæ, 407, 420.

Davis, S. H. The first epidemic of measles in Samoa, 605.

Dawbarn, R. H. M. The proposed reduction in the Army Medical Service, 431.

Day, F. L. Twenty-six cases of intubation of the larynx, 356.

Delavan, D. B. Address before American Laryngological Society, 556.

Dercum, F. X. The therapeutics of infectious processes of the nervous system, 594.

Dermatology. Report on dermatology, Bowen, J. T., 241, 263; the dermatology of to-day, Morris, M., 298.

Diabetes. Pathology of diabetes mellitus, Joslin, E. P., 309, 330; some pathological conditions of the heart and their relation to diabetic coma, Weber, L., 650.

Digestive System. A bloodless operation for hæmorrhoids, Manley, T. H., 114; infectious appendicitis, Morris, R. T., 133; malignant disease of the rectum, Gay, G. W., 204, 214; the bacteria of peritonitis, 271; intestinal anastomosis (with Senn's plates) for cancerous obstruction, Elliot, J. W., 285; the gastric and respiratory symptoms caused by the dust of curled hair, Chadbourne, A. P., 439, 450; digestive paresis, Whittier, E. N., 460, 470; specimen of intestinal obstruction, Councilman, W. T., 470; a case of amœbic dysentery, Withington, C. F., 516, 522; strangulation of Meckel's diverticulum caused by volvulus of the ileum, Elliot, J. W., 586; suicidal gunshot wound of the abdomen, fæcal fistula, complete recovery without operation, Egan, P. R., 587.

Diphtheria. Blood-pressure in diphtheria, Friedemann, 26; remarks on diphtheria, 107, 115; diphtheritic paralysis, 123; treatment of diphtheria by frequent small doses of biniodide of mercury, 474; primary nasal diphtheria, Townsend, C. W., 513, 520; the conveyance of scarlet fever and diphtheria by public carriages, 576.

Dispensary, the first, 656.

Dissection in the public schools, 172.

Draper, F. W. A rare form of the hymen, 142; recent progress in legal medicine, 313.

Drunkenness in wasps, 49.

Dunbar, F. A. Impure ice, 261.

Durell, T. M. The Leach case, 382, 390.

Dwight, T. Recent progress in anatomy, 468; the range and the significance of variations in the human skeleton, 625.

Ear. Deafness due to a foot-ball injury, Corning, J. L., 120.

Eastman, J. Suprapubic hysterectomy, 553.

Edes, R. T. Ovariotomy for nervous disease, 105.

Editorials. Vaccination and re-vaccination, 21; nail-biting, 22; contagious diseases in public schools, 23; the therapeutic action of blood-serum, 45; report of the Massachusetts State Board of Lunacy and Charity, 72; the microbe of scarlatina, 73; avoidable results and essential precautions in vaccination, 99; the Army Medical School at Washington, 100; diphtheritic paralysis, 123; the action of permanganate of potash in rendering morphia inert, 124; the contagium vivum of vaccine and of small-pox, 145; proposed legislation concerning capital punishment in Ohio, 146; sanitary insurance, a scheme, 170; surgical treatment of crime, 171; dissection in the public schools, 172; diseases due to "hard times," 194; the supervision of the insane in New York, 195; feeble-minded children, 222; the Index Catalogue of the Library of the Surgeon-General's Office, U. S. A., vol. xiv, 223; chronic arsenical poisoning from wall-papers and fabrics, 246; a new bill for the establishment of a national bureau of health, 247; ectopic gestation, 270; the bacteria of peritonitis, 270; proposed reduction of the Army

Medical Department, 294; recent investigations of the British Government upon the influence of certain trades or occupations upon health, 294; the registration of and preventive measures against tuberculosis, 322; the rôle of alcohol in the causation of cirrhosis of the liver, 324; anti-vaccination, 346; the unfavorable sequelæ of certain radical operations on the gall-bladder, 347; Brown-Sequard's teachings, 370; the International Medical Congress, 371; the doctor in fiction, 397; the discussion on the parasitism of cancer at the Eleventh International Congress of Medical Sciences, 398; vital statistics of England for 1893, 399; idiopathic hypertrophy of the heart, 421; the Eleventh International Medical Congress, 422; unemployed medical men, 451; the poisonous properties of absinthe and its congeners, 452; the Brandt method of pelvic massage, 474; treatment of diphtheria by frequent small doses of biniodide of mercury, 474; scaling the appropriation for the library of the Surgeon-General's Office, 475; heart-failure, 499; the rôle of the nose in Zola, 500; Haffkine's method of inoculation against cholera, 523; railway spines and surgeons, 523; compulsory vaccination, 524; arterio-sclerosis and arteritis, modern views as to etiology, 547; annual report of the Massachusetts General Hospital, 548; Third Triennial Congress of American Physicians and Surgeons, 575; the conveyance of scarlet fever and diphtheria by public carriages, 576; recent sanitary improvements in Hamburg, 577; the Twenty-second Annual Report of the Boston Board of Health, 602; sunshine and microbes, 603; the plague in China, 631; Zola and Lourdes, 654; revision in the American Medical Association, 655.

Education. Another four years' course, 27; "Higher medical education," Ingalls, E. F., 51; the Army Medical School at Washington, 100; four years' course at Rush Medical College, Ingalls, E. F., 103; methods of teaching surgery, Billings, J. S., 535; St. Louis and its medical schools, Chaplin, W. S., 634.

Egan, P. R. Suicidal gunshot wound of the abdomen, fæcal fistula, complete recovery without operation, 587.

Elbow. Excision of the elbow-joint, Richardson, M. H., 143.

Electricity. Electrical reactions and their value in diagnosis and prognosis, Starr, M. A., 317, 393.

Eliot, C. N. On the regulation of athletic sports, 197.

Elliott, J. W. Cases of extra-uterine pregnancy with operations, 260; intestinal anastomoses (with Senn's plates) for cancerous destruction, 285; specimen of appendix, 444; strangulation of Meckel's diverticulum caused by volvulus of the ileum, 586.

Empyema. The surgical treatment of empyema, Ashhurst, J., Jr., 564.

Endocarditis. A case of malignant endocarditis, Fay, W. E., 189.

Ernst, H. C. Dr. S. C. Martin's researches on the bacteria of vaccinia, 622.

Ethmoidal Sinuses, diseased conditions of, Bosworth, F. H., 590.

Everett, O. H. A case of pulmonary stenosis in an adult, 207.

Ewing, C. The action of rattlesnake venom upon the bactericidal power of the blood-serum, 487.

Ewing, J. Address before American Surgical Association, 564.

Exercise in the treatment of lateral curvature, Brackett, E. G., 329, 343.

Extra-uterine pregnancy, right-sided, followed at an interval of two years by left-sided Fallopian pregnancy, with repeated operation, Harrington, F. B., 6; six cases of extra-uterine pregnancy, Johnson, F. W., 256, 265; cases of extra-uterine pregnancy, Elliot, J. W., 260; ectopic gestation, 270.

Eye. Removal of foreign body from the anterior chamber of the eye, 142; two cases of chancre of the eyelid, with an account of the manner of infection, Standish, M., 237, 244; thrombosis of the central artery of the retina with unusual features, Jack, E. E., 312.

Farlow, J. W. Hypertrophy in the post-nasal space, especially after childhood, 56, 65.

Fay, W. E. A case of malignant endocarditis, 189.

Feeble-minded children, 222.

Fenger, C. Surgery of the ureters, 596.

Fischer, W. The new rational way to sleep, 126.

Fisher, E. D. Anomalous cases of general paresis, 15.

Fisk, S. A. A treatment of typhoid fever, 620; some meteorological data of Colorado, 652.

Fitchburg. The sewerage system in Fitchburg, 425.

Fitz, R. H. The rise and fall of the licensed physician in Massachusetts, 1781–1860, 529; the legislative control of medical practice, 581, 609, 637.

Flat-Foot, Bradford, E. H., 377.

Folsom, C. F. A case of appendicitis, 342; cases of traumatic headache, 621, 641.

Foot. A case of club-hand and club-foot, Sayre, R. H., 42; the treatment of club-foot by Wolff's method, Shands, A. B., 43.

Foot-ball *vs.* insurance, Wells, G. W. 76; deafness due to a foot-ball injury, Corning, J. L., 120.

Forbes, W. S. The removal of stone in the bladder, with the presentation of a new lithotrite, 600.

Fox, C. The treatment of chronic ringworm of the scalp, 373.

Fractures. Compound fractures, Mumford, J. G., 463, 471; mooted points as to fracture of the arm, with notice of an improved splint, Gaston, J. McF., 599.

Francis, G. E. Three uterine pregnancies during an extra-uterine pregnancy, 199.

Frank. Tapping of the lateral ventricles, 401.

Friedemann. Blood-pressure in diphtheria, 26.

Gage, H. Appendicitis; some impressions derived from an experience of forty-four cases, 508.

Gall-bladder. The unfavorable sequelæ of certain radical operations on the gall-bladder, 347.

Gaston, J. McF. Mooted points as to fractures of the arm, with notice of an improved splint, 599.

Gavin, M. F. The radical cure of hydrocele, 210, 213.

Gay, G. W. Malignant disease of the rectum, 204, 214; ligation of both common carotid arteries, 244; letter from Rome, 428; the Medical Registration Bill, 551.

Generative System. A case of uterine tumor, Cushing, E. W., 37, 42; the immediate causation of the diseases peculiar to women, Thomas, T. G., 68; review of a summer's work in gynæcology at the Boston City Hospital, Blake, J. G., 89, 97; ovariotomy for nervous disease, Edes, R. T., 105; a rare form of the hymen, Draper, F. W. 142; three cases of salpingitis of unusual extent, Richardson, M. H., 159, 169; the radical cure of hydrocele, Gavin, M. F., 40, 213; three years' experience with electrical treatment of fibroid tumors of the uterus, with a report of forty-four cases, Burrage, W. L., 289; the operative treatment of uterine fibroids, Cushing, E. W., 301, 315; imperforate hymen with hæmatocolpos, Green, C. M., 358, 367; mucous cysts of the vagina, Green, C. M., 358; recto-vulvar fistula, Green, C. M., 358; report of progress in gynæcology, Davenport, F. H., 364; observations in cases of fibroid tumor of the womb, Minot, F., 405, 419; the non-surgical treatment of chronic pelvic inflammations and their sequelæ, Davenport, F. H., 407, 420; the open incision in uncomplicated cases of hydrocele, Clendenin, P., 440; stricture of the urethra, with specimen, Richardson, M. H., 443; the Brandt method of pelvic massage, 474; suprapubic hysterectomy, Eastman, J., 553; the conservative surgery of the female pelvic organs, Polk, W. M., 573; the conservative treatment of the female pelvic organs, 574; pelvic inflammations, Wheeler, L., 615.

Gibney, V. P. A case of myositis ossificans, with multiple exostoses, 43; the Lorenz treatment of hip disease, 219; excision of the hip, 219.

Gilbert, D. D. The production of vaccine virus, 434, 444.

Girl. The effect of climate and environment on the New England girl, Achorn, J. W., 58.

Gladstone. Mr. Gladstone's tribute to Sir Andrew Clark and the medical profession, 579.

Glasgow, W. C. A new and distinguishing sign of latent aneurism of the aorta, 651.

Goodell, W. The conservative treatment of the female pelvic organs, 574.

Goss, F. W. Two cases of pulmonary congestion and œdema occurring during pregnancy, 336, 341.

Gout. American gout, 273.

Grant, J. H. Toxic effects after use of oil male fern (ethereal) for tapeworm, 337.

Green, C. M. Obstetric case-blank, 98; four unusual cases; imperforate hymen with hæmatocolpos, mucous cysts of the vagina, recto-vulvar fistula, salivation of pregnancy, 358, 367.

Greene, E. W. Crystalline deposits in the urine, their causation and relation to renal diseases, 538, 560, 564.

Greene, J. S. The obscure origin and indeterminate course of acute infection, as illustrated by a case of malignant endocarditis, 557, 563.

Greenhalge. Inaugural address, 49.

Greenleaf, R. W. The Charles River in its relation to the etiology of intermittent fever, 353, 367.

Gynæcology. Report of progress in gynæcology, Davenport, F. H., 364.

Haffkine's method of inoculation against cholera, 523.

Hair. The gastric and respiratory symptoms caused by the dust of curled hair, Chadbourne, A. P., 439, 450.

Hall, J. N. "Sending patients away from home," 27; weight as a symptom in phthisis, 607.

Hall, R. M. Perforating wound of the heart, 431.

Hamburg. Recent sanitary improvements in Hamburg, 577.

Hand. A case of club-hand and club-foot, Sayre, R. H., 42.

Hard Times. Diseases due to hard times, 194.

Harrington, F. B. Right-sided, followed at an interval of two years by left-sided Fallopian pregnancy, with repeated operation, 6.

Harrington, M. W. Sensible temperatures, 652.

Haven, G. A case of puerperal septicæmia, 140, 142.

Hay, G. Removal of foreign body from the anterior chamber of the eye, 142.

Hayes, M. C. The vermiform appendix, 175.

Heart-failure, 499.

Henry, F. P. A clinical report of two cases of Raynaud's disease, 621.

Herter, C. A. A critical review of the various theories of uræmia, based upon original experimental observations, 497.

Hibberd, J. F. Annual address before the American Medical Association, 623.

"Higher medical education," Ingalls, E. F., 51.

Hinsdale, G. The comparative rarity of phthisis in the highlands of Pennsylvania and the adjacent counties of New York, 651.

Hindu system of medicine and the secret of success in practice, 427.

Hip. The Lorenz treatment of hip disease, Gibney, V. P., 219; excision of the hip, Gibney, V. P., 219.

Hogner, R. Treatment of small-pox by non-admittance of the chemical rays of light, 35; on spermatorrhœa and incipient hypertrophy of the prostate and a proposed method for its treatment, 239.

Houston, J. A. On the value of examination of the blood of the insane, 53.

Hughes, C. H. The nervous system in disease and the practice of medicine from a neurological standpoint, 624.

Hyde, J. N. The distribution of leprosy in North America, 571.

Hydramnion. Two cases of hydramnion associated with abdominal distention in the fœtus, Townsend, C. W., 139, 142.

Hydrocele. The radical cure of hydrocele, Gavin, M. F., 210, 213; the open incision in uncomplicated cases of hydrocele, Clendenin, P., 440.

Hygiene, Health and Boards of Health. Report of the Massachusetts State Board of Lunacy and Charity, 72; a sanitary sermon in diagram, Sundberg, J. C., 77; sanitary hygiene, a scheme, 170; a new bill for the establishment of a national bureau of health, 247; recent investigations of the British Government upon the influence of certain trades or occupations upon health, 294; recent progress in public hygiene and preventive medicine, Abbott, S. W., 337; the Charles River in its relation to the etiology of intermittent fever, Greenleaf, R. W., 353, 367; the sewage system in Fitchburg, 425; chemical, physical and bacteriological studies of air over decomposing surfaces, with especial reference to their application to the air of sewers, Abbott, A. C., 569; the effect of sewer-gas in the production of disease, Jacobi, A., 570; sewer-gas as a cause of throat disease, or the effect of bad drainage on the throat, Robinson, B., 570; recent sanitary improvements in Hamburg, 577; retrogressive legislation in regard to Massachusetts boards of health, 578; annual report of the Boston Board of Health, 602.

Hymen. A rare form of the hymen, Draper, F. W., 142.
Hypnotism. Hypnotic suggestion in the cure of asthma, 350.
Ichthyol. A note on the use of ichthyol, Sinclair, 140, 141.
Immigrants. The foreign quarantine of immigrants, 327.
Infectious Diseases. A classification for infectious diseases, Thomson, W. H., 551.
Ingalls, E. F. "Higher medical education," 51; four years' course at Rush Medical College, 103.
Insane. The supervision of the insane in New York, 195.
Insurance. Foot-ball *vs.* insurance, Wells, G. W., 76; sanitary insurance, a scheme, 170.
Intermittent Fever. The Charles River in its relation to the etiology of intermittent fever, Greenleaf, R. W., 353, 367.
Jack, E. E. Thrombosis of the central artery of the retina with unusual features, 312.
Jackson, H. A review of ninety-two cases of diseases of the heart observed in the out-patient department of the Boston City Hospital, 111.
Jacobi, A. The effect of sewer-gas in the production of disease, 570.
Jacoby, G. W. A case of progressive muscular atrophy of the perineal type, 392.
Japanese girls in boxes, 656.
Johnson, A. B. A case of neuralgia of the great occipital nerve, with symptoms of a destructive lesion of the cervical sympathetic, 392.
Johnson, F. W. Six cases of extra-uterine pregnancy, 256, 265.
Joslin, E. P. Pathology of diabetes mellitus, 309, 330; clinical note-taking, with a list of four hundred and ninety-nine medical cases shown to the third class of the Harvard Medical School, 415.
Keefe, J. W. Twelve consecutive and successful operations for appendicitis, 282, 306.
Keen, W. W. The pleasures and pains of a physician's life, 126; amputation of the entire upper extremity (including the scapula and clavicle) and of the arm at the shoulder-joint, 565.
Kenyon, C. G. Annual address before the Medical Society of the State of California, 481.
Keyes, E. L. Nephritis in its surgical aspects, 572.
Knapp, P. C. Report on diseases of the nervous system, 62, 94.
Knight, F. G. Shall anything be done by legal authority to prevent the spread of tuberculosis? 630.
Lane, L. C. A reminiscence of the Nicaraguan filibusters, 50.
Larynx. Twenty-six cases of intubation of the larynx, Day, F. L., 356; address before American Laryngological Society, Delavan, D. B., 556; extirpation of the larynx, Carmalt, W. H., 600.
Leach case, 382, 390.
Legal Medicine. Recent progress in legal medicine, Draper, F. W., 313.
Legislation. Proposed legislation for the better protection of the community against quackery, 478; "The Medical Registration Bill in the Massachusetts Legislature," 527; the rise and fall of the licensed physician in Massachusetts, Fitz, R. H., 529; the Medical Registration Bill, Gay, G. W., 551; retrogressive legislation in regard to Massachusetts boards of health, 578; the legislative control of medical practice, Fitz, R. H., 581, 609, 637.
Leprosy, The distribution of leprosy in North America, Hyde, J. N., 571; the contagiousness, prophylaxis and control of leprosy, White, J. C., 571; resolution before the Congress of American Physicians and Surgeons, 589.
Leucocytosis. The diagnostic and prognostic importance of leucocytosis, Cabot, R. C., 277, 292.
Litholapaxy. Two cases of litholapaxy, Allen, G. W., 383, 388.
Litholiptrist, 59.
Liver. The rôle of alcohol in the causation of cirrhosis of the liver, 324.
Longevity. External indications of inherited longevity, 126.
Loomis, A. L. The influence of animal experimentation on medical science, 585.
Lorenz treatment of hip-disease, Gibney, V. P., 219.
Male Fern. Toxic effects after use of oil male fern (ethereal) for tapeworm, Grant, J. H., 337.
Malignant Tumors. The treatment of inoperative malignant tumors by the toxines of erysipelas and prodigiosus, Coley, W. B., 598.
Mallory, F. B. Letter from Prague, 77.
Manley, T. H. A bloodless operation for hæmorrhoids, 114.
Martin, F. C. The production of vaccine virus, 479.
Mason, A. L. Second attacks of typhoid fever in adults, two cases, 180.
Massachusetts. A bill to provide for the registration of physicians and surgeons in the State of Massachusetts, 426.
Materia Medica and Therapeutics. Changes in the Pharmacopœia, 25; pharmacy, therapeutics and credulity, Cash, 50; the action of permanganate of potash in rendering morphia inert, 124; a note on the use of ichthyol, Sinclair, A. D., 140, 141; remarks on the therapeutic use of sheep's thyroids and of other organic extracts, Putnam, J. J., 153, 168; relaxation as a curative agent, Call, A. P., 334; toxic effects after use of oil male fern (ethereal) for tapeworm, Grant, J. H., 337; saturated solution of potassium permanganate in the treatment of chronic ulcer, Waughop, P. R., 467; treatment of diphtheria by frequent small doses of biniodide of mercury, 474; the effect of ether and chloroform on the kidneys, Wunderlich, 477; the treatment of tuberculosis by the subcutaneous use of the chloride of gold and sodium with the iodide of manganese, Boardman, W. S., 492; the over-zealous therapeutician, Stokvis, 526; report on therapeutics, Williams, F. H., 543.
Maxillary Sinus, surgery of the, Bryan, J. H., 590.
McCollom, J. H. Remarks on diphtheria, 107, 115.
Measles. Measles and theology, 427; the first epidemic in Samoa, Davis, S. H., 605.
"Mental Cure." What "mental cure" is, Whipple, L. K., 148.
Millard, P. H. Another four years' course, 27.
Mills, C. K. Relation of infectious processes to mental disease, 592.
Mind. On the value of examination of the blood in the insane, Houston, J. A., 53; report of the Massachusetts State Board of Lunacy and Charity, 72; what "mental cure" is, Whipple, L. K., 148; the supervision of the insane in New York, 195; report on mental diseases, Stedman, H. R., 494, 517; relation of infectious processes to mental disease, Mills, C. K., 592.
Minot, F. Observations on cases of fibroid tumor of the womb, 405, 419.
Morphia. The action of permanganate of potash in rendering morphia inert, 124.
Morphology as a factor in the study of disease, Allen, H., 567.
Morrill, F. G. Cases of acute pneumonia in children, 541.
Morris, M. The dermatology of to-day, 298.
Morris, R. T. Infectious appendicitis, 133.
Morse, J. L. Bacteriological cultures from a case of puerperal septicæmia, 140, 142; a bacteriological study of four hundred cases of inflammation of the throat occurring in diphtheria and scarlet fever, with especial reference to pathogenesis, 162, 182.
Mumford, J. G. Compound fractures, 463, 471.
Muniz collection of skulls, 402.
Myxœdema. A case of myxœdema treated by thyroid extract, Cowles, W. N., 167; four cases of myxœdema treated by thyroid extract, Shattuck, F. C., 177, 191; a case of myxœdema, Putnam, J. J., 190; a case of myxœdema, Bell, R. E., 364.
Nails. Nail-biting, 22.
Negro. The solution of the negro rape problem, 126.
Nephritis in its surgical aspects, Keyes, E. L., 572; the bacteriology of nephritis, Sternberg, G. M., 573.
Nervous System. Anomalous cases of general paresis, Fisher, E. D., 15; discussion on the relation of syphilis to general paresis, Peterson, F., and others, 15; report on diseases of the nervous system, Knapp, P. C., 62, 94; ovariotomy for nervous disease, Edes, R. T., 105; glio-sarcoma of the basal ganglia, 117; sub-acute unilateral bulbar palsy, with autopsy, Wiener, A., 118; the pons-medulla flocculus triangle as a tumor site, with pathological findings, Newton, R. S., 418; syringo-myelia, central glioma of the spinal cord, with spontaneous central hæmorrhage, Dana, C. L., 119; a case of infantile cerebral spastic diplegia, Peterson, F., 120; deafness due to a foot-ball injury, Corning, J. L., 120; a case of acromegaly, Parsons, R. L., 120; ergot in the treatment of periodic neuralgias, Thomson, W. H., 121; diphtheritic paralysis, 123; recent observations on the functions of the thyroid gland and the relations of the enlargement to Graves's disease, also remarks on the therapeutic use of sheep's thyroids and of other organic extracts, Putnam, J. J., 153, 168; case of fatal hæmorrhage from the left lateral sinus caused by a blow on the jaw, 201; Pott's paraplegia, Whitman, R., 218; electrical reactions and their value in diagnosis and prognosis, Starr, M. A., 317; a case of progressive muscular atrophy of the perineal type, Jacoby, G. W., 392; a case of neuralgia of the great occipital nerve, with symptoms of a destructive lesion of the cervical sympathetic, Johnson, A. B., 392; a case of hysteria with peculiar epileptoid attacks, Booth, J. A., 393; electrical reactions and their value in diagnosis and prognosis, 393; tapping of the lateral ventricles, Frank, 401; a case of amyotrophic lateral sclerosis, Brown, C. H., 496; a case of progressive muscular dystrophy, Wiener, A., 496; a critical review of the various theories of uræmia, based upon original experimental observations, Herter, C. A., 497; railway spines and surgeons, 523; the influence of infectious processes on the nervous system, pathology and etiology, Putnam, J. J., 591; the therapeutics of infectious processes of the nervous system, Dercum, F. X., 594; cases of traumatic headache, Folsom, C. F., 621, 641; the nervous system in disease and the practice of medicine from a neurological standpoint, Hughes, C. H., 624.
Newell, O. K. The intermittent rapid dilatation of urethral stricture, 389.
Newton, R. S. The pons-medulla flocculus triangle as a tumor-site, with pathological findings, 118; a case of exophthalmic goitre, thyroidectomy, 392.
New York. To abolish the office of coroner in New York, 162.
Nicaragua. A reminiscence of the Nicaraguan filibusters, Lane, L. C., 50.
Nose. The rôle of the nose in Zola, 500.
Note-taking. Clinical note-taking, with a list of four hundred and ninety-one medical cases shown to the third class of the Harvard Medical School, Joslin, E. P., 415.
Nurses. What might be done by the Obstetrical Society to advance the training of nurses, Worcester, A., 436, 450.
Obstetrician. A famous country obstetrician two centuries ago, 374.
Obstetrics. Recent progress in obstetrics, Reynolds, E., 210.
Occupation, Clark, A., 175.
Odors. The influence of odors on the voice, 634.
Opium. Permanganate of potash in opium-poisoning, Pyle, W. L., 502.
Orthopaxy. Recent progress in orthopedic surgery, Bradford, E. H., and Brackett, E. G., 9, 38; a case of club-hand and club-foot, Sayre, R. H., 42; a case of myositis-ossificans with multiple exostoses, Gibney, V. P., 43; the treatment of club-foot by Wolff's method, Shands, A. B., 43; congenital torticollis, Whitman, R., 218; Pott's paraplegia, Whitman, R., 218; persistent psoas contraction, Whitman, R., 219; the Lorenz treatment of hip-disease, Gibney, V. P., 219; excision of the hip, Gibney, V. P., 219; a new operation for the relief or cure of rotary lateral curvature of the spine, Schaffer, 221; exercise in the treatment of lateral curvature, Brackett, E. G., 329, 343; flat-foot, Bradford, E. H., 377.
Out-Patient hospital abuse, 502.
Pancreas. A case of acute hæmorrhagic pancreatitis, Paul, W. E., 8; hæmorrhage into the pancreas as a cause of sudden death, Whitney, W. F., 379, 390.
Parker, W. T. The proposed reduction in the Army Medical Service, 430.
Parsons, R. L. A case of acromegaly, 120.
Paul, W. E. A case of acute hæmorrhagic pancreatitis, 8.
Peckham, F. E. Appendicitis, with apparent resolution of abscess, relapse, death, autopsy, 61; scarlatina with persistent high temperature associated with wild delirium, finally controlled by guaiacol, 517.
Pediatrics. The study of pediatrics, Christopher, W. S., 174.
Pepper, W. Dr. William Pepper's resignation as Provost of the University of Pennsylvania, 424.
Peritonitis. The bacteria of peritonitis, 271; peritonitis due to embolism of the mesenteric artery, Councilman, W. T., 443.

Perkins, J. W. Five cases of cholecystotomy, 87.

Peterson, F. Glio-sarcoma of the basal ganglia, 117; a case of infantile, cerebral, spastic diplegia, 120.

Peterson, F., and others. Discussion on the relation of syphilis to general paresis, 15.

Pezzer. The pathology of bicycling, 197.

Pharmacopœia Changes in the Pharmacopœia, 25.

Phelps, A. M. Excision of the tarsus for caries, 220.

Phosphaturia. Notes on phosphaturia, Thorndike, P., 134, 144.

Phthisis. Weight as a symptom in phthisis, Hall, J. N., 607; the comparative rarity of phthisis in the highlands of Pennsylvania and the adjacent counties of New York, Hinsdale, G., 651.

Pilcher, L. S. Venous tumor of the diploë, 599.

Platt, W. B. Laminectomy eleven months after injury to the spine, 412.

Pneumonia. Observations on pneumonia, Prescott, W. H., 229.

Polk, W. M. Conservative surgery of the female pelvic organs, 573.

Prague. Letter from Prague, Mallory, F. B., 77.

Pregnancy, affections connected with. Right-sided, followed at an interval of two years by left-sided Fallopian pregnancy, with repeated operation, Harrington, F. B., 6; obstetrical asepsis, Price. J., 32, 40; report of two pregnancies following a laparotomy, Chandler, N. F., 93, 98; two cases of pregnancy associated with abdominal distention in the fœtus, Townsend, C. W., 139, 142; a case of puerperal septicæmia, Haven, G., 140, 142; bacteriological cultures from a case of puerperal septicæmia, Morse, J. L., 140, 142; a case of acute infection simulating acute yellow atrophy of the liver in a pregnant woman, autopsy, Crowell, N., 166, 169; three uterine pregnancies during an extra-uterine pregnancy, Francis, G. E., 199; the treatment of pregnancy complicated by heart disease, Sears, G. G., 253, 268; six cases of extra-uterine pregnancy, Johnson, F. W., 256, 265; cases of extra-uterine pregnancy, Elliot, J. W., 260; ectopic gestation, 270; a case of concealed accidental hæmorrhage during the first stage of labor, with recovery of mother under conservative treatment, Reynolds, E., 284; two cases of pulmonary congestion and œdema occurring during pregnancy, Goss, F. W., 336, 341; salivation of pregnancy, Green, C. M., 358; the Leach case, Durell, T. M., 382, 390.

Prescott, W. H. Observations on pneumonia, 229.

Present Generation, 198.

Price, J. Obstetrical asepsis, 32, 40.

Putnam, J. J. Recent observations on the functions of the thyroid gland and the relation of the enlargement to Graves's disease, also remarks on the therapeutic use of sheep's thyroids and of other organic extracts, 153, 168; a case of myxœdema, 190; the influence of infectious processes on the nervous system, pathology and etiology, 591.

Pyle, W. L. Permanganate of potash in opium-poisoning, 502.

Railway Spines and surgeons, 573.

Rattlesnake. The action of rattlesnake venom upon the bactericidal power of the blood-serum, Ewing, C. B., 487.

Raynaud's Disease. A clinical report of two cases of Raynaud's disease, Henry, F. P., 621.

Recent Progress. Orthopedic surgery, Bradford, E. H., and Brackett, E. G., 938; nervous system, Knapp, P. C., 62, 94; obstetrics, Reynolds, E., 210; dermatology, Bowen, J. T., 241, 263; thoracic disease, Sears, G. G., 285; legal medicine, Draper, F. W., 313; public hygiene and preventive medicine, Abbott, S. W., 337; gynæcology, Davenport, F. H., 364; surgery, Burrell, H. L., and Cushing, H. W., 384, 415; anatomy, Dwight, T., 468; mental diseases, Stedman, H. R., 494, 517; therapeutics, Williams, F. H., 543.

Rectum. Malignant disease of the rectum, Gay, G. W., 204, 214.

Reed, B. The relation which alimentation should bear to oxygenation in lung diseases, 629.

Registration. National registration a necessity, Abbott, S. W., 137; a bill to provide for the registration of physicians and surgeons in the State of Massachusetts, 426; "reserving the claim of exemption from registration," 579; a qualified signature to the Registration Law, 635; the Medical Registration Law, 635.

Relaxation as a curative agent, Call, A. P., 334.

Respiratory System. Hypertrophy in the post-nasal space, especially after childhood, Farlow, J. W., 56, 65; a case of pulmonary stenosis in an adult, Everett, O. H., 207; observations on pneumonia, Prescott, W. H., 229; recent progress in thoracic disease, Sears, G. G., 285; two cases of pulmonary congestion and œdema occurring during pregnancy, Goss, F. W., 336, 341; twenty-six cases of intubation of the larynx, Day, F. L., 356; surgical treatment of pulmonary cavities, Dandridge, N. P., 402; the gastric and respiratory symptoms caused by the dust of curled hair, Chadbourne, A. P., 439, 450; the surgical treatment of empyema, Ashhurst, J., Jr., 564; cases of acute pneumonia in children, Morrill, F. G., 541; weight as a symptom in phthisis, Hall, J. N., 607; the treatment of certain symptoms of croupous pneumonia, particularly in adults, Robinson, B., 618; alimentation in pulmonary disease, Smith, A. H., 629; the relation which alimentation should bear to oxygenation in lung diseases, Reed, B., 629; the methods and value of supervised exercise in the prophylaxis of pulmonary phthisis, Butler, G. R., 630; creasote, guaiacol and benzoyl in phthisis, Curtin, R. G., 630; shall anything be done by legal authority to prevent the spread of tuberculosis? Knight, F. G., 630; the comparative rarity of phthisis in the highlands of Pennsylvania and the adjacent counties of New York, Hinsdale, G., 651; some meteorological data of Colorado, Fisk, S. A., 652.

Reynolds, E. A case of concealed accidental hæmorrhage during the first stage of labor, with recovery of mother under conservative treatment, 284.

Richardson, M. H. Specimen of gangrenous and perforated appendix, 67; large diffuse fibroma of the breast, with spot of medullary carcinoma, 143; excision of the elbow-joint, 143; three cases of salpingitis of unusual extent, 159, 169; an appendix obliterated in the greater part of its length, 192; fibroma of breast with large cyst simulating carcinoma, 193; cases of appendicitis presenting unusual features, 232; stricture of the urethra, with specimen, 443.

Robinson, B. Sewer-gas a cause of throat disease, or the effect of bad drainage on the throat, 570; the treatment of certain symptoms of croupous pneumonia, particularly in adults, 618.

Rome. Letters from Rome, Gay, G. W., 428; a few notes on Rome and the late International Medical Congress, 429.

Rush Medical College. "Higher medical education," Ingalls, E. F., 51; four years' course at Rush Medical College, Ingalls, E. F., 103.

Russell, W. Pathology and the scientific mind, 77.

Salpingitis. Three cases of salpingitis of unusual extent, Richardson, M. H., 159, 169.

Samoa. The first epidemic of measles in Samoa, Davis, S. H., 605.

San Francisco. Letters from San Francisco, 635, 657.

Sanitary Insurance, a scheme, 170.

Sayre, R. H. A case of club-hand and club-foot, 42.

Scabies. The prevalence and recognition of scabies, Bowen, J. T., 127.

Scarlatina. The microbe of scarlatina, 73; scarlatina with persistent high temperature associated with wild delirium, finally controlled by guaiacol, Peckham, F. E., 517.

Scarlet Fever. The use of antipyretic methods in the treatment of scarlet fever, Carslaw, John, 373; the conveyance of scarlet fever and diphtheria by public carriages, 576.

Schools. Contagious diseases in the public schools, 23.

Schott Method. A report of cases of chronic heart disease treated by the Schott method of baths and gymnastics, Babcock, R. H., 651.

Scudder, C. L. Cases of abdominal surgery occurring in the practice of Dr. J. Collins Warren at the Massachusetts General Hospital during the winter of 1893, 1, 29; surgical cases, 645.

Sears, G. G. The treatment of pregnancy complicated by heart disease, 253, 268; recent progress in thoracic disease, 285.

Sea-Sickness. The treatment of sea-sickness, Charteris, 454.

Self-mutilation in China, 76.

"Sending patients away from home," Hall, J. N., 27.

Sewage system in Fitchburg, 425.

Sewers. Chemical, physical and bacteriological studies of air over decomposing surfaces, with especial reference to their application to the air of sewers, Abbott, A. C., 569; the effect of sewer gas in the production of disease, Jacobi, A., 570; sewer-gas as a cause of throat disease, or the effect of bad drainage on the throat, Robinson, B., 570.

Shaffer. A new operation for the relief or cure of rotary lateral curvature of the spine, 221.

Shands, A. B. The treatment of club-foot by Wolff's method, 43.

Shattuck, F. C. Four cases of myxœdema treated by thyroid extract, 177, 191; the frequency of renal albuminuria, as shown by albumin and casts, apart from Bright's disease, fever or obvious cause of renal irritation, 613.

Shoes. Infantry footwear, 478.

Simpson. Sir James Simpson's early experiments with chloroform, 103.

Sinclair, A. D. A note on the use of ichthyol, 141, 142.

Skulls. Muñiz collection of skulls, 402.

Sleep. The new rational way to sleep, Fischer, W., 126.

Small-Pox. The treatment of small-pox by non-admittance of the chemical rays of light, Hogner, R., 35; a personal experience with small-pox, White, H. W., 91; the contagium vivum of vaccine and of small-pox, 145; the experience of two women physicians with small-pox, 148; the diagnosis of small-pox, 275; variola, Webber, S. G., 457, 490.

Smith, A. H. Alimentation in pulmonary disease, 629.

Smith, T. Modification, temporary and permanent, of the physiological character of bacteria in mixed cultures, 647.

Societies. American Climatological Association, 629, 650; American Medical Association, 275, 327, 503, 553, 623, 635, 657; American Surgical Association, 564, 595; American Laryngological Society, 556; Association of American Anatomists, 622; Association of American Physicians, 618, 647; Boston Society for Medical Improvement, 142, 190, 244, 341, 442, 470, 520; California State Medical Society, 481; Cambridge Society for Medical Improvement, 367; Congress of American Physicians and Surgeons, 567, 575, 589; International Medical Congress, 76, 371, 422, 428, 429; International Sanitary Conference, 274; Massachusetts Medical Society, 217, 625, 628; Massachusetts Medico Legal Society, 390; New York Academy of Medicine, 42, 218; New York County Medical Association, 68, New York Neurological Society, 15, 117, 317, 391, 496; Obstetrical Society of Boston, 97, 142, 169, 265, 289, 419, 436, 450; Pennsylvania, the Medical Society of the State of, 227, 600; Suffolk District Medical Society, 11, 40, 168, 268, 292, 315, 388, 447

Spermatorrhœa. On spermatorrhœa and incipient hypertrophy of the prostate and a proposed method for its treatment, Hogner, R , 239.

Spine. Laminectomy for tuberculous disease of the spine, Beck, C., 220; a new operation for the relief or cure of rotary lateral curvature of the spine, Shaffer, 221; laminectomy eleven months after injury to the spine, Platt, W. B., 412.

Splints. Remarks on surgical splinting, Tracy, E. A., 561.

Standish, M. Two cases of chancre of the eyelid, with an account of the manner of infection, 237, 244.

Starr, M. A. Electrical reactions and their value in diagnosis and prognosis, 317.

Stedman, H. R. Report on mental diseases, 494, 517.

Sternberg, G. M. The bacteriology of nephritis, 573.

St. Louis and its medical schools, Chaplin, W. S., 634.

Stokvis. The over-zealous therapeutician, 526.

Stricture. The intermittent rapid dilatation of urethral stricture, Newell, O. K., 389.

Suicide in New York, 224.

Sundberg, J. C. A sanitary sermon in diagram (Bagdad), 77.

Sunshine and microbes, 603.

Surgeons. Acting assistant surgeons, 226.

Surgery. Lectures on surgery, Cheever, D. W., 81, 129; recent progress in surgery, Burrell, H. L., and Cushing, H. W., 384, 415; methods of teaching surgery, Billings, J. S., [illegible]; the teaching of surgery, Chiene, J., 595; surgical cases, Scudder, C. L., 645.

Swift. Cancer of the cervix, 367.

Symptomatic treatment of disease, West, S., 551.

Syphilis. Discussion on the relation of syphilis to general paresis, Peterson, F., and others, 15.

Tait, L. Mr. Lawson Tait's use of anæsthetics, 250.

Tarsus. Excision of the tarsus for caries, Phelps, A. M., 220.

Temperature. Sensible temperatures, Harrington, M. W., [illegible]

Thomas, T. G. The immediate causation of the diseases peculiar to women, 68.

Thompson. Perforation of the heart, with continuance of life for thirteen hours, 350.

Thompson, W. G. Notes on the observation of malarial organisms in connection with enteric fever, Thompson, W. G., 648.

Thomson, W. H. Ergot in the treatment of periodic neuralgias, 121; a classification for infectious diseases, 551.

Thorndike, C. W. Two cases of hydramnion associated with abdominal distention in the fœtus, 139, 142.

Thorndike, P. Notes on phosphaturia, 134, 144.

Thyroid. Recent observations on the functions of the thyroid gland and the relation of the enlargement to Graves's disease, also remarks on the therapeutic use of sheep's thyroids and of other organic extracts, Putnam, J. J., 153, 168; a case of myxœdema treated by thyroid extract, Cowles, W. N., 167, 168; four cases of myxœdema treated by thyroid extract, Shattuck, F. C., 177, 191; a case of exophthalmic goitre, thyroidectomy, Booth, J. A., 391; a case of exophthalmic goitre, thyroidectomy, Newton, R. S., 392.

Tiffany, J. McL. The surgery of the kidney, 595.

Townsend, C. W. Primary nasal diphtheria, 513, 520.

Tracy, G. A. Remarks on surgical splinting, 361.

Tuberculosis. The prevention of tuberculosis, Vickery, H. F., 5, 11; a case of tuberculous pericarditis with enormous effusion, general tuberculosis, autopsy, Bates, E. A., 7; the registration and preventive measures against tuberculosis, 322; the treatment of pulmonary tuberculosis by the subcutaneous use of the chloride of gold and sodium with the iodide of manganese, Boardman, W. S., 492.

Tyndall, J. Professor Tyndall and Boston resources, 250.

Tyndall, Professor, 427.

Typhoid Fever. Second attacks of typhoid fever in adults, two cases, Mason, A. L., 180; two attacks of typhoid fever in the same person, 402; a treatment of typhoid fever, Fisk, S. A., 620; notes on the observation of malarial organisms in connection with enteric fever, Thompson, W. G., 648.

Unemployed medical men, 451.

Urinary System. Notes on phosphaturia, Thorndike, P., 134, 144; two cases of litholapaxy, Allen, G. W., 383, 388; the intermittent rapid dilatation of urethral stricture, Newell, O. K., 389; stricture of the urethra, with specimen, Richardson, M. H., 443; the effect of ether and chloroform on the kidneys, Wunderlich, 477; urinary diagnosis, Wood, E. S., 484, 505; crystalline deposits in the urine, their causation and relation to renal diseases, Greene, E. M., 538, 560, 564; nephritis in its surgical aspects, Keyes, E. L., 572; the bacteriology of nephritis, Sternberg, G. M., 573; the surgery of the kidney, Tiffany, J. McL., 595; the surgical treatment of surgical kidney, Weir, R. F., 596; surgery of the ureters, Fenger, C., 596; discussion on renal and ureteral surgery, 597; the removal of stone in the bladder, with the presentation of a new lithotrite, Forbes, W. S., 600; the frequency of renal albuminuria, as shown by albumin and casts, apart from Bright's disease, fever or obvious cause of renal irritation, Shattuck, F. C., 613.

Vaccination. Vaccination and re-vaccination, 21; some vaccination statistics, 26; vaccination in ancient times, 50; avoidable results and essential precautions in vaccination, 99; the contagium vivum of vaccine and of small-pox, 145; a bill relative to vaccination, 226; anti-vaccination, 346; vaccination in the Japanese navy, 401; compulsory vaccination, 524.

Vaccine Virus. The production of vaccine virus, Gilbert, D. D., 434, 447; Martin, F. C., 479.

Vaccinia. Dr. S. C. Martin's researches on the bacteria of vaccinia, Ernst, H. C., 622.

Variola, Webber, S. G., 457, 490.

Vermiform Appendix, Hayes, M. C., 175.

Vickery, H. F. The prevention of tuberculosis, 5, 11.

Virus. The production of vaccine virus, Gilbert, D. D., 434, 447; Martin, F. C., 479.

Vital Statistics of England for 1893, 399.

Warren, J. C. Cases of abdominal surgery occurring in the practice of Dr. J. Collins Warren at the Massachusetts General Hospital during the winter of 1893, Scudder, C. L., 1, 29; tumors of the breast, 643.

Wasps. Drunkenness in wasps, 49.

Waughop, P. R. Saturated solution of potassium permanganate in the treatment of chronic ulcer, 467.

Webber, S. G. Variola, 457, 490.

Weber, L. Some pathological conditions of the heart and their relation to diabetic coma, 650.

Weight as a symptom in phthisis, Hall, J. N., 607.

Weir, R. F. The surgical treatment of surgical kidney, 596.

Wells, G. W. Foot-ball *vs.* insurance, 76.

West, S. The symptomatic treatment of disease, 551.

Wheeler, L. Pelvic inflammations, 615.

Whipple, L. K. What "mental cure" is, 148.

White, H. W. A personal experience with small-pox, 91.

White, J. C. The contagiousness, prophylaxis and control of leprosy, 571.

Whitman, R. Congenital torticollis, 218; Pott's paraplegia, 218; persistent psoas contraction, 219.

Whitney, W. F. Hæmorrhage into the pancreas as a cause of sudden death, 379, 390.

Whittier, E. N. Digestive paresis, 460, 470.

Wiener, A. Subacute unilateral bulbar palsy, with autopsy, 118; a case of progressive muscular dystrophy, 496.

Williams, F. H. Report on therapeutics, 543.

Withington, C. F A case of amœbic dysentery, 516, 522.

Wolff's Method of treating club-foot, Shands, A. B., 43.

Women. The immediate causation of the diseases peculiar to women, Thomas, T. G., 68.

Wood, E. S. Urinary diagnosis, 484, 505.

Worcester, A. What might be done by the Obstetrical Society to advance the training of nurses, 436, 450.

Work as a therapeutic agent, Clark, A., 50.

Wunderlich. The effect of ether and chloroform on the kidneys, 477.

Zakharin. An eccentric Russian physician, 299.

Zola. The rôle of the nose in Zola, 500, Lourdes, 654.

Original Articles.

CASES OF ABDOMINAL SURGERY OCCURRING IN THE PRACTICE OF DR. J. COLLINS WARREN AT THE MASSACHUSETTS GENERAL HOSPITAL DURING THE WINTER OF 1893.

REPORTED BY CHARLES L. SCUDDER, M.D.

The following cases are reported in order to show the miscellaneous character of abdominal cases which come to a general hospital for treatment, and in order to illustrate the general method of dealing with cases of this class.

Case I. Solid tumor of the ovary; laparotomy; recovery.

A domestic, single, forty-three years of age, entered the hospital November 2, 1892. For the last twelve years she has suffered from epileptic seizures, which she describes as "giving warning," and affecting the right side mainly. Her general health has otherwise been good. The catamenia have been regular, but ceased two months ago. She noticed some soreness of the abdomen upon bending over about two months ago, and not until that time did she notice any enlargement. She has had no pain, but has experienced a feeling of weight and dragging when walking about. The patient is poorly nourished, and there is a slight suggestion of cancerous cachexia. On examination, the abdomen was found to be somewhat distended with ascitic fluid, and a large, very hard and nodular tumor was felt, extending three inches above the umbilicus and down to the pubes. It was quite movable, and could be easily pushed from side to side of the abdomen. On vaginal examination, the uterus was found small, movable and not connected with the growth. The lungs and kidneys were normal. The tumor was regarded as probably malignant, and attached to the omentum. It was thought advisable to perform an exploratory operation.

An incision, four inches in length, was made below the umbilicus, which disclosed a hard, nodular mass of a whitish color floating in ascitic fluid. The incision was enlarged to two inches above the umbilicus, and the tumor was delivered, and found to be attached to the left broad ligament. The pedicle was long and thin, and easily tied with a Staffordshire knot. The tumor, on removal, was found to be about the size of a child's head, and to weigh eight and one-half pounds.

Examination of the other ovary showed it to be about twice its normal size, hard and nodular, resembling somewhat in this respect the diseased ovary.

Patient made a good recovery, temperature not rising above 100° F., although the evening of the operation she sat up in bed, and had several epileptic seizures during her convalescence. The stitches were removed on the thirteenth day, union being perfect. The catamenia appeared on November 28th, immediately after one of the seizures.

She was discharged from the hospital four weeks and four days after the operation.

The following is the report of the microscopical examination of the tumor by Dr. W. F. Whitney: "A large globular growth, the size of the head, firm, not covered by peritoneum, and united to a fragment of the Fallopian tube. Microscopic examination showed it to be made up of fibrous tissue, with here and there a few bundles of unstriped muscular fibre. Fibro-myoma. There were no cysts in any part of the tumor."

Case II. Cyst of the ovary; laparotomy; recovery.

Age forty, unmarried. Catamenia regular, painless. For four years the abdomen has been enlarging. There has been constant pain in the right side. Upon examination, a symmetrical abdominal tumor was found, which was dull on percussion and not tender. Vaginal examination found the uterus drawn well up.

Operation, by a median abdominal incision, disclosed a cyst of the right ovary. There were no adhesions present, and the cyst was easily delivered, and its pedicle clamped and tied with a Staffordshire knot. A small cyst was found upon the left ovary about the size of a small cherry, which was touched with the actual cautery; the left ovary, however, was not removed. The abdominal wound was closed without drainage.

The patient made a good recovery.

Dr. W. F. Whitney's microscopical diagnosis was a multilocular cysto-adenoma.

Case III. Salpingitis, circumscribed serous peritonitis; laparotomy; recovery.

A woman thirty-two years old, married. Fairly well developed and nourished. Rather anæmic, with a feeble pulse. Catamenia irregular and excessive. Miscarriage five years previous to the operation. Patient has had pain in the left iliac region for a year and a half, which has been continuous, and during the past two months accompanied by vomiting and fever.

Examination discovers a marked fulness in the left iliac region. Dulness and tenderness exist over this area of fulness. Vaginal examination finds the cervix drawn up and fixed under the symphisis pubis, the vaginal vault hard and firm everywhere, the uterus not differentiated; no fluctuation made out.

Operation by a median abdominal incision in the Trendelenberg position.

The tumor was found adherent to the anterior abdominal wall for about six inches. Upon freeing the tumor, the left iliac fossa was found to contain a thin-walled cyst, which was easily ruptured, giving escape to one pint of thin, serous fluid. Below and behind this cyst was a tumor the size of the fist, adherent to the uterus and posteriorly to the sacrum. Several large glands were felt at the sacral promontory. This deeper tumor was aspirated, and eight ounces of creamy pus evacuated. The sac of the tumor was opened; its interior thoroughly cleansed and drained by glass drainage surrounded by gauze. Incision partially closed. Recovery uneventful.

Case IV. Congenital hernia of the liver; reduction of the hernia; recovery.

The paternal grandparents, as well as the father of the little patient, are living and in good health. The mother is well, but not robust. Her mother is living, but her father died of consumption. The mother of the patient was married five years ago. Her first child was born three years ago, but died at the age of four months of cholera infantum. It had no deformity, and was in previous good health.

The second child was born November 14, 1892. Labor began at 6 p. m. of the 13th, and was completed at 10 a. m., and was normal in every respect. Dr. G. W. Nickerson, of Stoneham, Mass., who was her physician, states that he was surprised to see, after birth of the head and shoulders, a tense, bladder-like tumor come popping out, after which followed the lower extremities. He states: "I was puzzled at first to make out what it was, but, seeing that it was covered by an expansion of the umbilical cord, concluded that it must be a hernia." The child was sent that afternoon to the hospital, and was operated upon by me the next morning, when it was about twenty-four hours old. On inspection, the child was otherwise well formed, but thin and with a somewhat wrinkled face. It did not look strong. At the umbilicus was seen the cord, which was greatly distended at its point of insertion into the abdomen, forming a tumor about six and one-half centimetres in diameter. The coverings of the cord were inserted into a raised rim of skin, and were opaque, so that the contents of the hernia could not be determined (Fig. 1).

There was also a moderate-sized right inguinal hernia.

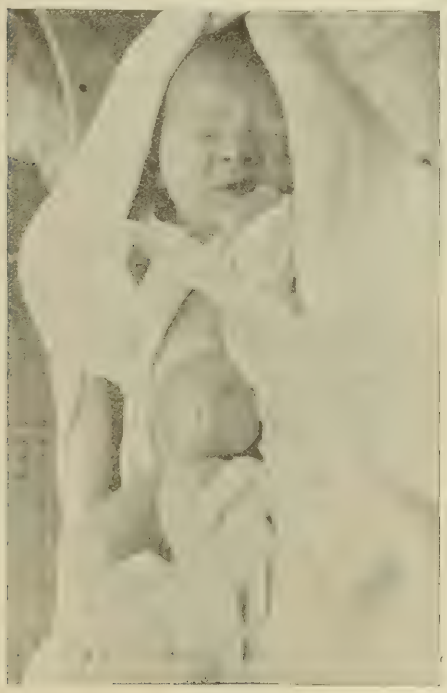


FIG. 1.

The child was etherized, and a hasty attempt having been made to render the field of operation aseptic, the sac was opened, and was found to contain the liver, which seemed to be situated wholly external to the abdominal cavity. It was with some difficulty that the myxomatous tissue of the cord was separated from the surface of the liver, as it appeared to be adherent in several places. The umbilical vein and the two hypogastric arteries having been tied and cut, the cord was removed. The umbilical ring was slightly enlarged by an incision, and, with some manipulation, the liver was finally pushed through the opening into the abdominal cavity. A small amount of ascitic fluid escaped when the sac was first opened. The separation of adhesions from the liver caused a slight hæmorrhage, which was checked by pressure. The wound was brought together by four or five strong silk stitches. The infant suffered somewhat from shock. There was, however, no sign of peritonitis after the operation, and it took its nourishment well during convalescence. The food consisted of a mixture of cream and water.

The stitches ulcerated somewhat, and were removed during the first week, in consequence of which the edges of the wound separated at one point, and the liver could be seen. The edges were, however, approximated by *crêpe d'lisse* and collodion, and the wound had healed at the end of two weeks, when the baby was taken home to be nursed by its mother.

The child has done well since, and at the time the second photograph was taken it was about four months old (Fig. 2).

There is no umbilical hernia at present — one yea

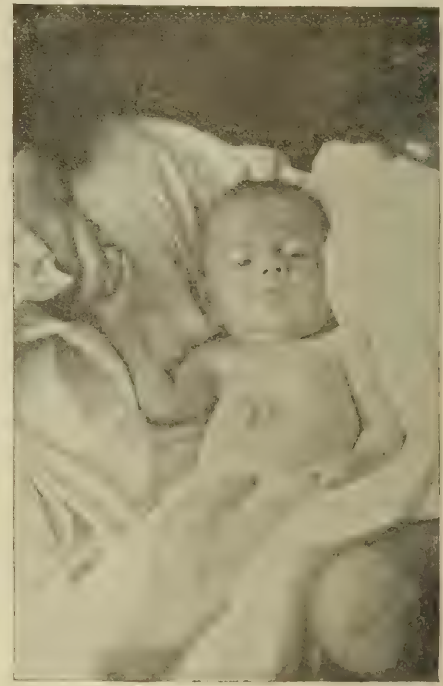


FIG. 2.

after the operation. The child was a sufferer from eczema, but now enjoys excellent health, and has developed rapidly.

CASE V. Ruptured cyst of the broad ligament; contents evacuated; treated openly; recovery.

A woman was admitted to the medical side of the hospital in 1889 with tubercular peritonitis. Her general health had improved since her former visit to the hospital, and ten days ago she complained of pain in the left side of the abdomen. At no time has there been any vomiting, and a normal movement of the bowels resulted after the use of salts. The abdomen was slightly distended; and in the left lumbar and iliac regions was a tumor the size of two fists, over which there was dulness and slight sensitiveness. The uterus by vaginal examination was low down, the posterior and left lateral cul-de-sacs being filled by a soft mass which seemed to surround the cervix which moved with the tumor. The urine was normal.

Operation.— The Trendelenburg position. A median abdominal incision. Some ascites present. The intestine and omentum were found adherent to a ruptured, thin-walled cyst having its origin in the left broad ligament. The cyst was further opened and its interior rendered dry. It being impossible to enucleate the cyst, it was left *in situ*, being sutured to the abdominal wall. In the left lateral cul-de-sac was found a second smaller cyst, which was likewise ruptured and drained by means of a glass drainage-tube.

The patient made a good recovery and was discharged from the hospital about three weeks after the operation, a small sinus remaining.

Case VI. Abscess following appendicitis; operation on the fourth day; recovery.

A man who had always been well was attacked suddenly after breakfast by pain in the right iliac fossa. Through that day there was some nausea. Two days later there was a slight rise of temperature, and vomiting was present. Four days later the temperature rose to 101.4°, the pulse to 140. A tumor presented in the right iliac fossa, a half inch below McBurney's point, about the size of a lemon, dull on percussion and sensitive.

Operation. — An incision parallel to Poupart's ligament opened a circumscribed abscess cavity, in which was found the appendix twisted under the cæcum. This was removed, the abscess cavity thoroughly cleansed with boiled water, a rubber drainage-tube surrounded by iodoform gauze placed in the abscess cavity, and the wound partly closed.

The patient made a good recovery. Two months after the operation there was a slight tendency to hernia at the seat of the operation. The patient had gained ten pounds in weight and complained of no pain or any other trouble.

Case VII. Abscess following appendicitis; operation on the seventh day; removal of appendix; recovery.

A man who had had each year for several years two or three attacks of vomiting attended by slight constipation, and who had never had with any of these attacks pain, was suddenly seized with pain in the right iliac fossa. The temperature rose to 99.5°. There was some vomiting. There was a movement of the bowels after calomel and a rectal enema. The temperature rose to 103.2°, the pulse to 120 upon the fifth day. Upon entering the hospital on the seventh day of the disease, it was stated that from the sixth day vomiting was constant. The abdomen was not distended, but the abdominal muscles were rigid. The most tender point upon the abdomen was one and a half inches above the anterior superior spine, but there was general tenderness through the whole right loin. A slight bulging was detected upon rectal examination upon the right side.

Operation. — An incision parallel to Poupart's ligament found the subperitoneal tissues not œdematous. A circumscribed abscess cavity was opened, the appendix found and removed, the cavity irrigated with boiled water, and two tubes for drainage (surrounded by iodoform gauze) were inserted.

The patient made a good recovery. Six weeks after the operation he was reported as in excellent condition.

Case VIII. Appendicitis; operation; recovery.

This patient was a boy who was sent to the hospital with a history of several days' illness, all the symptoms of which pointed to an appendicitis. Although the patient presented slight dulness on percussion in the region of the right iliac fossa, there was no well-marked cake. He was seen repeatedly by the surgeons of the hospital in consultation. All the symptoms present led to a delay of the operation, and it was supposed up to the fourth day of his presence in the hospital that he would recover without operation, but upon this day there was a sudden rise of temperature and operation was decided upon. The usual incision parallel to Poupart's ligament was made. Œdematous tissue was seen before opening the peritoneum. The appendix was found under the inferior edge of the cæcum, perforated at its middle and lying in a very small abscess cavity, which contained beside purulent and fæcal material, a concretion. The omentum and mesentery near by were gangrenous. The appendix was ligated one-third of an inch from the cæcum and removed. The abscess cavity, being circumscribed, was thoroughly irrigated with boiled water. It was found that the pus lay between coils of intestine some distance from what appeared to be the only abscess cavity. A large tube was placed in the bottom of the abscess cavity and two smaller tubes extending in opposite directions, all the tubes being surrounded by iodoform gauze.

Six weeks from the operation the boy was discharged well.

These three cases were the only cases of appendicitis occurring during a winter service. It is perhaps worth mentioning that in the spring service of a similar length, Dr. Beach had under his immediate care a large number of cases of appendicitis. This fact raises the question of the possibility of the period of the year being a factor in the etiology of this disease.

Case IX. Double tubercular salpingitis and peritonitis; laparotomy; relieved.

A woman who had had pleurisy one year previous to her entrance into the hospital gave a history of profuse flowing for two months. She presented upon examination a resistant mass in the region of the right tube. The uterus was in fairly good position and movable. The cervix was slightly lacerated and hyperplastic. Posteriorly to the uterus was a mass the size of the closed fist. This corresponded with the mass felt upon external examination. The urine was 1,013, acid, high in color, contained a trace of albumen, some red blood cells and a few epithelial cells.

Operation. — Trendelenburg position. An incision four inches long in the median line. Some ascites present. The uterus was very large. The broad ligaments and tubes were found studded with miliary tubercles. The tubes themselves were enlarged and thickened. Upon the left side there were no adhesions and the tube was removed without difficulty. Upon the right side the tube was the size of a fist, and was adherent to the bowel above. Upon separating these adhesions both tube and ovary were removed. A small amount of puriform fluid escaped into the abdominal cavity upon the removal of the tube. The abdomen was thoroughly flushed with boiled water, dried and drained by a glass drainage-tube in the posterior cul-de-sac. The abdominal wound was closed, leaving the glass tube projecting at the lower end of the incision. This patient made a long and slow recovery, having a hectic temperature and some stomatitis. By careful nursing, and upon warm days by being taken into the open air, she eventually recovered so as to leave the hospital in a fairly good condition, feeling that she had been improved by the operation, her stay in the hospital having been some three months.

It seems that in a great many cases the careful nursing and the out-of-door exposure contributes much to the recovery of these cases.

Case X. Probable carcinoma uteri; rupture into the abdominal cavity; laparotomy; drainage; death from shock.

A woman, married, having three children, had passed the climacteric three years ago. She had a foul leucorrhœa, and at times a bloody serous discharge from the vagina. She suffered from pain over the pubes and difficult micturition. Upon examination, the uterine canal measured five inches. A small greenish-brown mass was found projecting from the cervix. This was removed some six months previous to the present entry into the hospital, since which removal she has grown weak, has lost flesh, and has occasional chills accompanied by nausea. Her feet and hands were cold, and she presented a general cachectic appearance. The pulse was 112. The temperature at night ranged from 100° to 101°. The uterus was curetted and thoroughly cleansed with corrosive sublimate.

Finding the patient was losing ground, it was decided to do a median abdominal section in order to determine the extent of the disease, and if possible to remove it. Accordingly, in the Trendelenberg position, the operation was done. The omentum was found adherent to the bladder, and the intestines adherent to the fundus of the uterus. On breaking up these adhesions, a cavity containing six ounces of pus was opened a little to the left of the fundus which communicated directly with the cavity of the uterus. The bottom of this cavity was filled with greenish sloughing tissue. The cavity was irrigated and packed with iodoform gauze. A suprapubic glass drainage-tube was placed in position. A strip of gauze was passed through the cervix to secure more thorough drainage.

The patient died of shock some hours after the operation.

Case XI. Double ovarian cyst; laparotomy; recovery.

A woman thirty-six years old, always well, had been married for fourteen years. She has had no children. The catamenia have always been regular and painless. An enlargement of the abdomen was first noticed seven years ago. Never at any time has there been pain. Her general health has been good.

Physical examination showed general abdominal enlargement. No enlarged veins were seen upon the abdominal wall. Circumference of abdomen at the umbilicus was forty-five inches. Vaginal examination found the cervix high and crowded forward. A hard and resistant mass was felt in the posterior cul-de-sac.

Operation. — A median abdominal incision. The omentum was found adherent to the anterior abdominal wall. A pearly-white cyst wall presented, was aspirated, discharging a coffee-colored fluid. The weight of the fluid was twenty-eight pounds. The cyst, after the evacuation of the fluid, was found to originate from the right ovary. The tumor was removed by Staffordshire knot and cautery. No drainage.

Eight days after the operation phlegmasia alba dolens of the left leg appeared. One month later the swelling had entirely disappeared from the left leg and she was discharged from the hospital, seven weeks after the operation.

Pathological report by Dr. W. F. Whitney: "Multilocular cystoma, to which a small piece of the ovary was attached."

Remarks. — The phlebitis which occurred in this case did not have any apparent septic origin. The patient was kept still in bed for the time mentioned above, in order to avoid the danger of embolism, which occasionally occurs with such inflammatory disturbances.

Case XII. Intra-ligamentous ovarian cyst; laparotomy; recovery.

Two months ago a woman first noticed an enlargement in the lower abdomen, extending over to the left side. This tumor gradually and painlessly increased in size. The tumor was dull upon percussion, and fluctuating. The vaginal examination found the uterus pushed backward and to the right.

Operation by median abdominal incision discovered a cyst in the broad ligament containing about a quart of brown fluid. The intestines were adherent posteriorly. After freeing these adhesions, an attempt was made to enucleate the sac of the cyst, which proved futile on account of the dense adhesions to the sacrum posteriorly. The right ovary was removed. The cyst sac was stitched to the anterior abdominal wall, drained by glass drainage and gauze. A sinus formed, and was packed with iodoform gauze, gradually closing without untoward symptoms. The patient was discharged from the hospital with a very small sinus properly healing.

Case XIII. Ovarian cysto-adenoma; laparotomy; recovery.

A woman of good family history and good previous personal history one year ago noticed an enlargement of the abdomen, which during the past two months had rapidly but painlessly increased. During the past six weeks there had been considerable flowing. The patient was well developed and well nourished, and the examination disclosed a swelling of the abdomen extending above the umbilicus, dull upon percussion, fluctuating and not tender. Vaginal examination found the uterus immovable and small. The posterior cul-de-sac was distended with an obscurely fluctuating mass, which was not tender. The os was rather soft and patulous.

Operation by median incision found a glistening cyst wall, which contained a chocolate-colored fluid, nine quarts by measure. Small cysts were found anteriorly attached to the anterior wall of the larger cyst. The tumor rose from the right ovary, which, with the cyst wall, was removed by clamp and cautery. The left ovary was found enlarged and moderately cystic, and was not disturbed. The uterus was heavy and anteflexed. The wound was closed in the usual fashion by interrupted sutures without drainage.

Pathological report by Dr. W. F. Whitney: "A large cyst, smooth-walled, with but few adhesions, to which a very much elongated Fallopian tube was attached. The fluid was ropy, dark reddish in color, specific gravity 1,026, and contained abundant blood-corpuscles, and also enlarged epithelial cells (many with numerous granules). Diagnosis, cysto-adenoma of the ovary."

(To be continued.)

The Richmond City Hospital has been purchased by the College of Physicians and Surgeons of that city for $18,489.39.

THE PREVENTION OF TUBERCULOSIS.[1]

BY HERMAN F. VICKERY, M.D.,
Physician to Out-Patients, Massachusetts General Hospital; Instructor in Clinical Medicine, Harvard University.

The official statistics of the State of Massachusetts for the five years, 1886–1890, set the total number of deaths from typhoid fever for that period at 4,391; from diphtheria and croup, at 8,855; from pneumonia, at 17,378; and from phthisis, at 28,868. With regard to relative fatality, diphtheria held the sixth rank in 1881, but in 1890 the eleventh. Likewise typhoid fever, which was fourth in bad pre-eminence twenty years before, was surpassed in 1890 by no less than fifteen rivals. The encouraging results which have thus attended efforts at purification and isolation in these two infectious diseases reflect credit upon the medical profession, and they stimulate the expectation that similar efforts with regard to another infectious and contagious disease will prove equally advantageous. As yet no advance seems to have been made. Phthisis remains the most deadly of all diseases. In the number of victims it claims, it was the first in 1881; and in 1890 it remained still the first. There had, indeed, been some improvement, taking the State as a whole; for in 1890, the ratio of deaths from phthisis to the total mortality was 13.30 per cent., the least of any year recorded up to that time, while in 1881, the ratio was 16.14 per cent. But Suffolk County showed no such change, its ratios being 16.39 per cent. in 1881, and 15.59 per cent. in 1890.

Lawrence F. Flick[2] finds that Philadelphia has been more fortunate. From 1881 to 1891 the percentage of the whole mortality in the city due to phthisis sank from 14 down to 11. Hence it will hardly be proper for us to try wholly to explain the slow improvement in Boston by a reference to the overcrowding and foreign immigration which are presumably common to both cities.

"Theoretically, with our present knowledge," says Dr. Baker, Secretary of the Michigan State Board of Health, "consumption, which still is the most important cause of mortality, is now, next to small-pox, one of the most easily preventable diseases. The next quarter of a century should see it lessen in importance as a cause of deaths, until it takes its place alongside small-pox."[3]

In the five years 1886–1890, while the above-mentioned 28,868 persons died of phthisis in Massachusetts, small-pox killed 19.

It is the object of this paper briefly to review the etiology of phthisis, and to contribute in some degree to a more general and united effort on the part of our Society in the prevention of the disease.

With regard to its causation, it is not improbable that Koch's demonstration in 1882 of the power of pure cultures of tubercle bacilli to cause tuberculosis diverted the attention of the profession for a time too far from the important factor of hereditary and acquired predisposition to the disease. Even weeds must have soil to grow in. This constitutional side of the question has been newly asserted by Aviragnet,[4] Koster,[5] and Wolff;[6] while Gärtner[7] believes that the results of his experiments justify him in asserting that the disease itself is hereditary, that human mothers may directly give a fœtus tubercle bacilli.

We cannot forget the influence of climate on the development of the disease, powerful for good or ill. Solly's experience is impressive.

"In Colorado,"[8] he says, "to which my personal observations upon the influence of the altitude have been mostly confined, the native population is too small and youthful to gather any statistics; but living as I have done for the past sixteen years among a people of whom perhaps thirty per cent. came to the country with tuberculosis, and not a few of whom live under unhygienic conditions in crowded lodgings, and where free expectoration is carelessly practised, I know of only four cases of phthisis which could be fairly assumed to have originated in Colorado."

Granting, however, the influence of both climate and personal constitution upon the production of the disease, the bacillus tuberculosis is an essential factor; and probably no one doubts that its complete destruction would exterminate tuberculosis.

The ways in which the bacillus enters the human body are fairly well agreed upon. The raw[9] milk of tuberculous cows may occasionally convey it into the stomach,[10] but not very often.[11] The flesh of tuberculous animals if inspected (Jeffries, Nocard) is not very dangerous.[12] The tuberculous discharges of animals or human beings may infect others by direct inoculation into wounds or by contact with mucous membranes (dissection-wounds, coitus).[13]

The main source of danger, however, lies in tuberculous sputa or in the pus of scrofulous sores. The latter might conceivably be indirectly conveyed into the system because of lack of cleanliness. Sputum likewise may be deposited on the lips, hands, clothing and utensils of patients and thence carried to some healthy person; or the act of coughing may directly spray it into the mouth of a bystander. Any tuberculous material if thoroughly dried may be inhaled in the form of dust. This last is probably by far the most frequent way in which the infection is distributed. The number of bacilli in the sputa is enormous,[14] and as Cornet and others have shown, even the walls of the room where a consumptive lives may become sources of infection.

The way, therefore, to prevent the spread of tuberculosis is evident enough; and it has been repeatedly enunciated by medical men.[15] Behrens, for example, sums the matter up as follows: (1) the public should be enlightened; (2) sputum in public places should be minimized or rendered inocuous; (3) the streets should not be allowed to be dusty; (4) clothing, etc., and houses should be disinfected; (5) there should be public hospitals for the tuberculous; (6) tuberculous patients should not pursue vocations in which they might endanger others; (7) tuberculosis in cattle should be under governmental inspection and control. A corollary to these regulations is the compulsory report of cases of tuberculosis to the boards of health, just as in diphtheria or small-pox. Flick adds that interstate and international migration of consumptives should be restricted and regulated.

---

[1] Read before the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, November 15, 1893.
[2] Philadelphia Medical News, May 14, 1892.
[3] Hare's System of Therapeutics, i, 572, 1891.
[4] Gaz. Hebd., xxxix, 35, 1892.
[5] Inaug. Thesis., Leyden, 1893.
[6] Münch. Med. Woch., xxxix, 39.
[7] Zeitschr. f. Hygien. u. Infectiouskr, xiii, 3, 1893.
[8] Hare's Therapeutics, i, 424.
[9] Nocard: Ann. d' Hygiene, xxviii, 5, 1892.
[10] Ernst: Œuvre sur la Tuberco, 1890.
[11] Jeffries: Boston Medical and Surgical Journal, cxxv, 10, 1891.
[12] Philadelphia Medical News, April 1, 1893.
[13] Gärtner: supra cit.
[14] Nuttall: Ztschr. f. klin. Med., xxi, 3 and 4, 1892.
[15] Behrens: Hilderheim, 1891.
Flick: Philadelphia Medical News, lxiii, 17, 1893.
Porteous: Boston Medical and Surgical Journal, cxxix, 19, 1893.
Rochester: Philadelphia Medical News, September 2, 1893.
Baker: Hare's System of Therapeutics, i, 570.

If all, or even the most important of these suggestions were persistently carried out, there can be no doubt that tuberculosis would be vastly less frequent than it now is. The benefit would be an increasing one, for many individuals who to-day are apparently well really carry in their bodies the seeds of tuberculosis, ready to germinate whenever the constitution becomes from any cause undermined. Pizzini[16] and Spengler[17] have recently shown how often the lymphatic glands — particularly the bronchial — contain tubercular bacilli in persons who have shown no symptoms of tuberculosis. This is in accord with the opinion expressed by Volland of Davos (Hamburg, 1891) that for adults the chief means of avoiding tuberculosis lies in care of the constitution.

In the long run, however, general, persevering, hygienic efforts must overcome this deadliest of diseases.

In concluding, I seek justification for rehearsing facts which are already so familiar to the members of this Society, in the apparent lack among us of systematic and united effort along the lines indicated. With few if any exceptions, we have doubtless all of us for years given advice to the victims of tuberculosis and their friends with a view to lessen the dangers of contagion; but why should not we as a Society engage more earnestly in this good work? Pennsylvania has a Society for the Prevention of Tuberculosis. "The society is formed for the purpose of preventing tuberculosis (consumption): (1) by promulgating the doctrine of the contagiousness of the disease; (2) by instructing the public in practical methods of avoidance and prevention; (3) by visiting the consumptive poor and supplying them with the necessary materials with which to protect themselves against the disease, and instructing them in their use; (4) by furnishing the consumptive poor with hospital treatment; (5) by co-operating with boards of health in such measures as they may adopt for the prevention of the disease; (6) by advocating the enactment of appropriate laws for the prevention of the disease; (7) by such other methods as the society may from time to time adopt."

This society is a noble one and I am proud to be a member of it. Yet with us here, it seems as if any increase in the number of societies were to be deprecated, and that our present society by exercising its proper functions might do beneficent work in this very line. Matters that suggest themselves as needing first to be done are:

(1) The drawing up, by a committee, of a tract suitable to leave in families where tuberculosis has entered. Properly worded, such a leaflet would add nothing to the sufferings of the sick, while it might be beneficial to them (hygiene, re-infection) and of priceless value to their friends.

(2) Co-operation with the Board of Health in appropriate measures.

(3) Agitation for the establishment of a public hospital for the consumptive poor.

LANDOUZY has been made Professor of Clinical Medicine and Therapeutics at Paris in succession to Hayem.

Clinical Department.

RIGHT-SIDED FOLLOWED AT AN INTERVAL OF TWO YEARS, BY LEFT-SIDED FALLOPIAN PREGNANCY, WITH REPEATED OPERATION.

BY FRANCIS B. HARRINGTON, M.D.,

Surgeon to Out-Patients at the Massachusetts General Hospital; Assistant in Surgery in the Medical Department of Harvard University.

MRS. M. J., thirty-two years of age, had been married for three years. Until two years ago had been well. She then became somewhat debilitated, and suffered from pelvic pains. Menstruation was slightly painful, and occurred every three weeks. She had never been pregnant.

In January, 1891, the menstrual period was delayed two weeks, when flowing came on with severe pain. The loss of blood was slight, but continuous.

This condition had existed, with increasing pelvic pain, for three weeks, when I first saw the patient. The abdomen was slightly distended and painful to the touch. Vaginal examination disclosed a mass on the right side of the pelvis as large as a lemon. This mass felt like a dilated Fallopian tube. The patient went to bed, was given opiates and vaginal douches. The flow of blood and pain gradually diminished, but returned on slight exertion. In six weeks' time from its first appearance the bleeding ceased. The pain, however, continued, and the tumor increased slightly in size. The continued abdominal tenderness and pain seemed to demand surgical treatment.

Laparotomy was performed May 15, 1891. The dilated right Fallopian tube was removed, together with a considerable amount of bloody fluid. The patient made a quick recovery.

Dr. Whitney makes the following report as a result of his examination of the specimen:

"The specimen consisted of about twelve centimetres of a Fallopian tube with an ovary close to the uterine end. The tube at the point of removal was increased in size, chiefly from thickening of the walls, which were very vascular. Close to this point a sudden dilatation began, forming an ovoid mass about eight centimetres in the direction of the tube, and nine centimetres in circumference, and beyond this it contracted somewhat to the fimbriated end, which was closed by adhesions and contained a few small cysts. The outer surface of the tube was rough and shaggy from adhesions.

"On opening the dilated portion it was found to contain a thin membranous-looking sac, loosely attached to the villous-looking inner surface of the tube, beneath which on one side were extensive infiltrations of blood separated by narrow fibrous portions. Within the sac lay a small reddish mass the size of a cherry-stone, on which was a curved differentiated portion recalling a very early embryo, the whole attached by a sort of string to the sac.

"Microscopic examination of this showed an amorphous granular mass, at one end of which was an accumulation of black pigment.

"The ovary was small, contained a few retention cysts, no evident corpus luteum.

"The diagnosis is a tubal pregnancy with early death of the fœtus (three to six weeks), hæmorrhage into the walls of the tube, but without rupture."

The process probably remained at a standstill from the death of the fœtus until the time of the removal, and the pain is to be referred to the peritonitis.

---

[16] Zeitschr. f. klin. Med., xxi, 3 and 4, 1892.

[17] Zeitschr. f. Hygien. u. Infectiouskr, xiii, 3, 1893.

Two years later the patient had removed to the country, where she came under the care of Dr. E. S. Jack, of Melrose, who has kindly sent me the following notes:

"On March 24, 1893, the patient consulted me at my office, complaining of uncomfortable sensations over the lower abdomen. She was flowing.

"She feared that she had same trouble on the left side, which had been found on the right side two years before, as she felt very much as she did then.

"The examination was negative as far as determining the existence of extra-uterine pregnancy on the left side, although some tenderness was found.

"I next saw the patient on March 30, 1893. She was lying upon the sofa and complained of colicky pains, and a feeling of discomfort. There was considerable tenderness over the lower portion of the abdomen. The pulse was 80 and the temperature 99.4.°

"The patient was ordered to bed, and was given hot applications, hot douches and salines.

"Friday, the pulse was 76 and the temperature was 99°. More comfortable.

"Saturday, the pulse was 76 and the temperature was 99.6°. More comfortable, though flowing some.

"On Monday, April 3, 1893, there was more pain and tenderness, particularly on the left side. Vaginal examination showed considerable resistance on the left side.

"On Tuesday, the condition was the same. I demanded a consultation and advised operation.

"On Wednesday morning the patient felt decidedly better, but about 11 A. M. I was suddenly called. The patient had more colicky pain, and was faint, and suffered from blurring of vision. I advised immediate operation, to which the patient consented."

I saw Mrs. M. J. in consultation with Dr. Jack on April 5, 1893. There was a tumor in the posterior cul-de-sac toward the left side. The patient's condition was not bad, there was pain and some flowing.

I agreed with Dr. Jack in the diagnosis of probable extra-uterine pregnancy. As the immediate condition was not threatening, it was decided that we should delay operation until the first reappearance of severe pain or other urgent symptoms. On the following day there were signs of internal hæmorrhage.

It seemed unsafe to defer operation longer. An opening was made through the old line of incision. The abdominal cavity was reached with some difficulty, owing to the adhesions of the omentum. It was found to be full of dark blood and blood-clots. The dilated tube and the ovary on that side were excised. The blood and clots which lay among the intestines as high up as the diaphragm, were removed. The abdomen was closed without drainage. The patient made a good recovery, and now is quite well.

The patient's condition before the last operation did not seem especially bad. There had been some quite severe pain accompanied by giddiness. Neither the countenance nor the pulse gave a true indication of the large amount of the concealed hæmorrhage.

This case affords strong argument against delay. Waiting for extreme symptoms in extra-uterine pregnancy should be discouraged as it should be in case of appendicitis.

The question must arise whether the manipulation of the preceding day did not assist in producing the hæmorrhage. Such a result is, of course, quite possible.

The liability to rupture of the mass by handling should always be borne in mind. An examination must try the strength of the tissue much more than any movements or acts of the patient.

Dr. Whitney makes the following report of the specimen removed at the second operation:

"The specimen was a pear-shaped dilatation of the Fallopian tube, which measured about eight centimetres in length, and about four centimetres at its greatest diameter at the fimbriated end, which was widely opened when received. The inner surface of this dilatation was quite smooth except in one or two places where there was a little roughness and a hæmorrhagic mass. The walls were thin and fibrous.

"With this was a rounded mass of blood-clot (which had come from the interior of the sac, probably), rough on its surface and containing in its centre a very thin, fibrous sac. There was also an embryo about four and one-half centimetres long (about the eighth week). The ovary was small, and contained a corpus luteum one and one-half centimetres in diameter.

"The diagnosis is a tubal pregnancy, with rupture through the fimbriated end of the tube at about the eighth week."

◆

A CASE OF TUBERCULOUS PERICARDITIS WITH ENORMOUS EFFUSION; GENERAL TUBERCULOSIS; AUTOPSY.[1]

BY EVERETT A. BATES, M.D., SPRINGFIELD, MASS.

W. J. J. P. was a marble-carver, fifty-eight years of age. His father had died at thirty years of "dropsy"; the mother at forty years of "consumption of the bowels," with cough as a persistent symptom in her illness; and a sister at twenty-eight years of the same trouble as the mother.

Mr. P.'s army experience resulted in a bullet-wound through right flank, followed by necrosis of the crest of ilium, with complete recovery in fourteen months.

Four years later than this, when thirty-three years of age, and coming on after exposure, he had an illness characterized by fever, loss of strength and flesh, cough and expectoration, lasting ten weeks, called "quick consumption," and terminating in a rapid convalescence and recovery.

There is a history of intermittent fever for four consecutive springs some twelve years since; but apart from the above, and a tendency to "lung colds" and temporary cough, the subject of this report had considered himself well and robust until three years ago the past spring, when he had a sickness, called by himself "grippe," associated with fever, debility, and cough without expectoration. He considered himself well in a month, after taking tonics, including cod-liver oil.

Again, eight months later, and a year before his last illness, similar attacks, all termed "grippe." But during these three years — noticeably the past year — there has been slight but gradual loss of flesh and physical vigor; and during the last five months there again developed cough, slight at first, but later hard and useless. He began to feel conscious of an afternoon temperature, and finally, from increasing weakness, gave up work February 8, 1893. During the next ten days, slight dyspnœa and palpitation on exertion developed, with vague præcardial uneasiness, leading him to consult Dr. C. P. Hooker, with whom I saw the case March 18th, and by whose courtesy I am enabled to make this report.

---

[1] Read at the meeting of the Hampden District Medical Society, September 19, 1893.

The patient was a large, well-developed man, at this time fairly nourished. Skin sallow and dry; lips and nails a little dusky; very slight œdema of legs and ankles and of trunk, especially noticeable in the præcardial area; slight puffiness of eyelids. The jugulars pulsated and the veins of forehead were distended. Right semi-ventral decubitus was invariably assumed. The temperature varied from 100.5° to 102° in the afternoon, with a morning remission to normal. Pulse was 120, irregular and of fair strength. Respiration 26.

Inspection of chest showed præcardial fulness, with obliteration of intercostal spaces in this area. There was absence of cardiac pulsation or apex-beat. The præcardial dulness had for its upper boundary a line extending from the lower margin of the fifth rib, eight and one-half centimetres to the right of median line, to the junction of the right third rib with sternum, and thence in a gradual curve across sternum to second left interspace, downward through left nipple to fifth rib at a point thirteen and one-half centimetres from median line. With the patient sitting, this curve flattened perceptibly.

The heart-sounds — not abnormal in character — could be heard only, and faintly, in the second interspaces and the fifth and sixth interspaces left axillary line.

Dulness in the back was found below the eighth interspace scapular line on right, and eighth rib correspondingly on left. A few medium, moist râles above; lungs negative elsewhere. The liver was palpable below the costal border, with its lower line of flatness extending directly across abdomen.

The abdomen was full, not distended, with moderate dulness in flanks.

The urine was high-colored, loaded with urates, specific gravity 1026, no albumen, and no casts detected. No sputum could be obtained. The etiology of this affection was considered as, probably, tuberculous.

During the remaining six weeks of life the patient was comfortable; there was gradual loss of strength and moderate increase of plural and abdominal effusions, without apparent increase in pericardial.

Aspiration of the pericardium was considered, but not done, owing to the remarkable absence of distressing symptoms in spite of the enormity of the effusion.

During the last week delirium and anginal attacks at night developed; and the patient died suddenly on the morning of May 1st, while attempting to get out of bed.

The autopsy was performed eight hours after death. Rigor mortis present. Sternum prominent, slight general œdema, and subcutaneous tissues of trunk very watery. Head not opened. A considerable amount of clear serum escaped on opening the abdominal cavity. On removing the sternum, the pericardium presented as a large, distended bag, tense and nowhere adherent. The lungs were collapsed, and both pleural cavities contained a considerable amount of clear serum.

The outer surface of the pericardium showed numerous whitish elevations, some confluent and others discrete. On incising the sac this pericardial layer was found to be greatly thickened, in portions as much as six or seven millimetres; the sac contained two litres of turbid, bloody serum. The cardiac layer of pericardium was everywhere thickened, and resembled so-called honey-comb tripe, and on section presented numerous opaque and yellowish points, and some yellowish masses scattered here and there. The heart itself, apart from a moderate degree of hypertrophy, was normal; its cavities were empty.

The pleuræ were nowhere adherent; the pulmonary layer was everywhere studded with grayish, opaque points up to a pin-head in size; the costal and diaphragmatic layers were free of these. The lungs, at the apices of the upper and lower lobes, showed old fibrous scars, and in other portions — as a rule, just beneath the pleura — many scattered and conglomerate tubercles. The air-passages contained reddish, frothy fluid. The bronchial glands and those in the anterior mediastrium were enlarged, caseous, and several perceptibly softened. The kidneys and spleen contained a few scattered tubercles. The pericardial fluid was not examined.

◆

A CASE OF ACUTE HÆMORRHAGIC PANCREATITIS.

BY W. E. PAUL, M.D., BOSTON.

THE following case is reported as having some bearing on the subject of appendicitis. At the same time it illustrates the difficulty not infrequently presenting itself in making an ante-mortem diagnosis in abdominal affections. Moreover, cases of acute hæmorrhage into the pancreas are sufficiently unusual to warrant the report of an undoubted case however incomplete the data.

E. C., a robust farmer, aged sixty-two, suffered thirty years ago from severe intestinal symptoms. For five days death was expected, when something seemed suddenly to turn over in his stomach, and an intense epigastric distress, with vomiting, was relieved. The vomitus was black, but did not suggest blood.

Nine years later he suffered from symptoms similar in character but of less severity. A sense of discomfort was described as centering in the lower chest front and epigastrium. Every few days during the more recent years the distress has recurred, and during the past year its intensity has increased. For the past six years the patient has been confined to the house six weeks at a time. In the last summer of his life the attacks recurred daily, and required the patient to lie down.

Tuesday, October 3d, the patient felt more miserable, and at 11 A. M., Wednesday, had a decided pain in his epigastrium and under the lower half of the sternum, extending to each side perhaps as far as the nipples. He was looking forward eagerly to his dinner, feeling that the meal of pork and onions would relieve the distress and pain. He eat heartily, but immediately after finishing his meat was forced to leave the table and vomit the meal. Considerable retching followed, and the pain increased.

After about four hours the patient was visited, and was found pale, with a cold perspiration on the temples and hands; and suffering severely from most acute pain referred to the epigastrium and substernal region. The pulse was 70, of good strength, and the temperature was normal. Sulphate of morphia (gr. $\frac{1}{2}$), with sulphate of atropia (gr. $\frac{1}{75}$), was given subcutaneously, and a few whiffs of chloroform added before the pain was at all relieved. The abdomen was moderately distended and tympanitic, but there was no tumor or special tenderness in the cœliac region. The bowels had moved daily, and operated twice freely on Wednesday morning. No gas had been passed since the pain set in. An enema was given, but nothing came away. Four hours later another enema was given without effect, though Epsom salts were added. The pain continued; and sulphate of morphia (gr. $\frac{1}{4}$), with sulphate of atropia (gr. $\frac{1}{150}$), was administered.

At 11 A. M., of Thursday, the pain was most severe. The pulse was 120, and the temparature subnormal. The feet were cold. Some dark fæcal matter had been passed without gas. Occasional vomiting through the night had ceased about fourteen hours before death. The abdomen was now considerably distended and tympanitic. A diagnosis of appendicitis with perforation, was made. The question of ulceration from gall-stone. duodenal ulcer, internal obscure strangulated hernia, volvulus, and invagination was considered.

Dr. W. G. Reed, of Southbridge, was called in consultation, and the possible help of an operation caused a summons to be sent to Dr. Homer Gage, of Worcester. In the mean time, the patient failed rapidly, and at six o'clock Dr. Gage decided an operation was not warranted. The diagnosis he considered obscure, but inclined to the belief that there was an obstruction of the bowel, with perforation. The patient failed steadily, the abdomen swelled more and more, the breath becoming shorter and shorter, but he remained perfectly conscious. The death, thirty hours after the beginning of the attack, was apparently typical of acute peritonitis.

A partial post-mortem examination was granted. The abdomen was opened, and the omentum was found adherent from old peritonitis. The appendix was normal. The intestines were everywhere free, and showed no sign of peritonitis. Several stones were present in the gall-bladder. A soggy, heavy, enlarged pancreas was discovered, of a dark-red color: the organ was apparently loaded with blood.

◆

Medical Progress.

RECENT PROGRESS IN ORTHOPEDIC SURGERY.

BY E. H. BRADFORD, M.D., AND E. G. BRACKETT, M.D.

ARTHRODISIS OF THE TIBIO-TARSAL JOINT FOR PARALYTIC CLUB-FOOT.

Drs. Edward Schwartz and H. Rieffel report three cases of this operation with successful results.

The three cases were of adults, twenty-two, twenty-five and eighteen years of age, of paralytic equinovarus, all of whom had had previous operation or had worn apparatus, and in whom one lower extremity alone was paralyzed. The operation was by section of a tendo-Achillis, and in one case incision over the internal, and in the other two over the external surface of the ankle-joint, with section of the ligaments, erasion of the cartilages, and the bony parts being brought into apposition. In all the cases there was a firm bony anchylosis, and in all there was much improvement in walking.

The three methods of procedure are described by the authors, and consist of (1) by the anterior incision, as advocated by Albert, and later by his pupil Zinsmeister; (2) by incision above the internal malleolus, as recommended by Kirmisson; and (3) by the external incision, which is used by most surgeons. The relative value of these different procedures are carefully considered, as is also the method of the bone suture and the indications and contraindications for the operation. He gives the following conclusions:

(1) The operation is best done by external incision, as it is easier and does less injury to the important structures, without the necessity for osteotomy of the fibular; and also, if the bones of the tarsus are found to be the seat of extensive change, it gives the chance of changing the procedure at any part of the operation.

(2) It should be done in individuals having a flail foot, with whom walking is painful, and in whom apparatus has been found for any reason to be impracticable.

(3) It is also indicated in those irreducible paralytic club-feet which have resisted the use of tenotomy or of apparatus.

TREATMENT OF JOINT TUBERCULOSIS.[1]

König calls attention to the three methods of treatment of this condition: (1) local treatment without the apparatus or an operation, (2) local treatment with medication by subcutaneous injection, (3) treatment by mechanical means. He inclines strongly to the mechanical and conservative methods, referring to a number of cases of spontaneous cure, and considers it wiser in a way to return to the old method of treatment, rather than to advocate too strongly active and early operative interference. He advises the use of continued extension and compression during the whole period of sensitiveness, the deformity to be overcome by extension, and later immobilization to be employed. When this is not sufficient he advises the use of injection of iodoform.

He reports 410 cases, 150 of which were treated by extension, and later by plaster for immobilization. In 50 there was an injection of glycerine and iodoform. Of 250 resections there was a mortality of 19 per cent. In 100 cases of resection of the knee in adults ranging in age from twenty to sixty-six, six died from the results of the operation and six soon after, four of these from septicæmia and two from tuberculosis. In 64 there was a complete cure; in 16 there was a sinus remaining; in eight amputation was performed.

He recommends a complete extirpation of the capsule in this joint, but does not advocate the resection of the hip-joint for coxitis, as recommended by Bardenheuer and Schmid, on account of the greater difficulty of removing all of these tubercular products. In suitable cases, when seen early, he recommends the removal of interosseous tubercular focus, but unfortunately it is not often possible, as they have usually broken into the joint when they first came under observation. In these cases he recommends, besides the erasion of this focus, the distension of the capsule with the mixture of glycerine and iodoform.

DIFFERENTIAL DIAGNOSIS OF NEW GROWTHS AND INFLAMMATORY ENLAGREMENTS OF BONE.[2]

Mr. Howard Marsh gives several examples of cases presenting enlargement of bone with the appearance of new growths, particularly malignant disease, all of which were found to be of an inflammatory character and contained pus. He cautions against the hasty diagnosis of malignant disease in these cases, and advises exploratory incision in all, and, if necessary, the microscopic examination with staining. As an aid to the diagnosis, he gives the following points to be observed: (1) age (all under twenty are usually inflammatory), (2) distinct history of injury, (3) the shape of the swelling, (4) the persistency of the swelling, (5) the rate of growth, (6) the condition of the skin and deeper soft parts over the swelling, (7) pain, (8) body temperature.

---

[1] Archiv. für Klin. Chirur., Band 41, Heft 3, p. 592.

[2] St. Bartholomew's Hospital Reports, 1892, vol. xxviii, p. 7.

OSTEOMALACIA DURING PREGNANCY.[3]

Seligman reports a case of this condition occurring in a woman of thirty-seven, beginning during the seventh pregnancy. At the time the condition was very bad, and there was considerable complaint of pain in the pelvis. In the following seven years there were four pregnancies; and in the last the delivery was by version. At this time the patient was going about with the aid of crutches. Between the tenth and eleventh the patient fell, fracturing the thigh. When seen in the thirty-fourth week of the twelfth, the general condition was extremely bad. The right leg was two inches shorter than the left; the abdomen unusually prominent; there was a right kypho-scoliosis in the dorsal region, and left in the lumbar. The child was delivered by Cæsarean section, the pelvis showing osteomalatic changes. After delivery the general condition was bad, and the patient was put to bed with the whole trunk placed on extension; and after eight weeks the condition was very much improved. The length of the body had increased seven inches. The right leg was nearly the same length as the left, and the patient soon was able to get about and attend to her household duties.

SUTURE OF TENDONS.

In the *Revue d' Orthopedie*, Dr. A. Dupureil reports a case of injury of the hand in which the deep and superficial tendons were cut, and in which operation was done later in the attempt at reunion. There was possible flexion of the phalanx on the metacarpus, probably due to the interossei, but none of one phalanx on the other. The operation was decided upon to attempt to rejoin the cut ends of the tendon. The incision was made over the site of the tendon of the index-finger; and in this, the distal end was found, but a long search failed to reveal the other end of the divided tendon. Therefore, the portion which was found was sutured to the tendon of the middle finger, and the wound closed. For a time there was no power of flexion over the finger, but this soon begun to appear, and later the use of the finger became almost as perfect as before the injury.

MALLET FINGER.[4]

Dr. Robert T. Mann reports two cases of this condition, which is described as being found after a blow on the end of the finger while extended, and in which some of the fibres of the extensor tendon are ruptured, resulting in a flexion of the terminal phalanx on the first and second. As a rule, the deformity is permanent, the tendon having little or no power over this phalanx. The treatment is by long incision over the site of the injury, separating the tendon into the two natural fasiculi, and dividing the tendon transversely, advancing each point along its own side, and securing it to the skin at the base of the nail by a suture, tying on the outside. This is done rather than suturing through the periosteum, as it affords better hold. The nail is often lost temporarily; and after operation there is sometimes an over-extension, which disappears in time.

LAMINECTOMY FOR POTT'S PARAPLEGIA.[5]

Dr. Samuel Lloyd gives a comprehensive view of the condition of this subject at present, and the following deductions:

The operation is contra-indicated (1) in cases where there are other complicating tubercular lesions; (2) in cases where mechanical treatment has not been applied.

It is indicated (1) in cases where the posterior spinal disease is made out as the cause of the paraplegia; (2) in cases where the lesion seems to indicate the failure of mechanical treatment, that is, where dislocation has occurred or where a sequestrum is causing compression; (3) in cases where during the employment of intelligently applied apparatus the symptoms continue to increase in severity; (4) in cases where after a period of careful mechanical treatment, say eighteen months, the condition has remained stationary; (5) in cases where pressure myelitis threatens the integrity of the cord.

LATER RESULTS OF LAMINECTOMY FOR PARAPLEGIA DUE TO ANGULAR CURVATURE OF THE SPINE.[6]

Mr. W. Arbuthnot Lane gives the ultimate results of eleven cases previously reported by him. In two of the cases death occurred, but only one could be attributed to the operation; and of the other nine, two derived but temporary benefit. In the other seven the relief was permanent, both as regards the paraplegia and the local condition. He considers the operation one of not great severity, and one that should be attempted in all cases presenting these symptoms.

LATERAL DEFORMITY OF THE SPINE IN POTT'S DISEASE.[7]

Kirmisson reviews the literature of the past few years on this subject, and takes a neutral ground in reference to the etiology of this deformity. He describes the two forms which are met with: the one, in which the lateral deviation accompanies the angular deformity; and the other, in which the lateral deformity exists alone. The question of differential diagnosis is considered, but little new light is thrown on the subject. The presence of tenderness over the spinous or transverse processes is regarded as of value, existing only in the cases of caries. He calls attention to the fact that where the lateral deviation accompanies the kyphosis it may be either postural purely, or due to the bone change; but when existing alone, that it is due to muscular contraction. In the former, although under recumbency, the deformity may nearly or quite disappear, under suspension it is more marked by the increased muscular contraction. He considers the existence of the lateral deformity in Pott's disease as an indication for prolonged rest in bed.

Marlier[8] adds a contribution to this subject, and reports a case in which there was a typical scoliotic curve in which there was pain in the side and leg, but the back showed no rigidity or muscular spasms, and also the child was able to walk about freely. A treatment of gymnastic exercises was given, but in the course of a few months a knuckle appeared and later an abscess. In this case there was not present the tenderness of pressure over the transverse process which is mentioned by Phocas, who reports a case with this symptom in a boy of fourteen.[9] This case showed a slight projection at the point of deviation at the first lumbar vertebra. There were no subjective symptoms, and the motions of the back were entirely free. The case developed later with a kyphosis and abscess.

---

[3] Centralblatt für Gynecologie, 1893, No. 28, p. 649.

[4] Medical News, September 9, 1893, p. 287.

[5] Annals of Surgery, 1892, vol. xvi, p. 289.

[6] British Medical Journal, December 31, 1892, p. 142.

[7] Revue d'Orthopedie, 1892, No. 6, p. 440.

[8] Loc. cit., 1893, No. 3, p. 178.

Dr. Ridlon[10] gives cases in which this deformity is present, but in which the diagnosis was doubtful, and in which the lateral deformity was marked while the symptoms were light. He thinks the diagnosis should be based rather from the absence of muscular spasm than that of pain or of the character of the deformity, and that when the deformity is high when spasm is doubtful, the degree of rigidity should determine the diagnosis.

FORCIBLE CORRECTION OF ANGULAR DEFORMITY OF THE KNEE.

Dr. J. E. Goldthwait[11] reports altogether eleven cases which have been operated on within a period of from five years to one year ago. The contractions were from various causes, chiefly from tumor albus; a few from rheumatism, and one from gonorrhœa. In one the trouble appeared at the age of thirteen months and had existed until the time of operation, which was at the age of sixteen, at which time the leg was flexed at a right angle and markedly subluxated. At present the patient has a useful joint with free motion in an arc of ninety degrees.

In all of the cases the results were good, giving useful joints, crutches having been discarded. It is interesting to note that in all of the cases, the operation was followed by very little reaction or pain, and each case was up in two weeks.

For the employment of force in those operations the author had modified the apparatus devised several years ago by Dr. Bradford for the correction of the angular contractions of the knee, in which the deformity is maintained by fibrous adhesions. As modified, the apparatus is adjustable, and can be used upon any patient regardless of size. The arch on which the power is applied is movable on the uprights, and can be secured at any distance from the fulcrum. The counter-pressure comes upon a single leather pad, and is so placed that the force is always directed against the strongest part of the femur, no pressure coming along the epiphyseal line.

OPEN INCISION IN CONTRACTED KNEE.

Wahncan[12] reports from Schede's Clinic eight cases of open incision in contraction of the knee and hip, with healing by blood-clot. The same method is used successfully by Lorenz and Hoffa.

ETIOLOGY OF PES CALCANEUS.

Bayer[18] refers to the grouping by Nicholodani, in which all the cases of these were divided into two groups, the congenital and the paralytic acquired, and reports two cases which he considers show that there should be added another classification to these two. In one there was a phlegmonous inflammation of the plantar region, and in the other an injury to the sole of the foot by a piece of broken glass. In both of these there was contraction resulting in this deformity of the foot. He considers that the condition is due to the position of the foot during walking, and that by the permanency of this the contraction occurs. In both of these cases the muscles of the calf were atrophied, and there was a secondary retraction of the muscles which resulted in the pathological condition of the foot.

(To be continued.)

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

HENRY M. JACKSON, M.D., SECRETARY.

REGULAR meeting, Wednesday, November 15, 1893, the President, DR. F. C. SHATTUCK in the chair.

DR. H. F. VICKERY read a paper on

THE PREVENTION OF TUBERCULOSIS.[1]

DR. V. Y. BOWDITCH: I am very glad to have the privilege of listening to Dr. Vickery's paper. I am sure it will bear good fruit. I think that no experiments that I have seen recorded thus far can compare in beauty of result with those of Dr. Trudeau made in 1886 or 1887,[2] in which he speaks of environment for the cure or prevention of tuberculosis. He made experiments upon rabbits and I should like briefly to review them. He took fifteen rabbits and divided them into three sets, five of which he inoculated with tubercular virus, and placed them in the best possible hygienic position, that is, putting them on an island in the middle of a lake and feeding them with vegetables every day. Another set he inoculated keeping them in a damp, dark place. The other five were not inoculated, but lived in a damp, dark place. After two or three months those on the island were caught and killed. In only one was there any symptoms of tubercular infection having been carried through the body, the others all being fat and remarkably healthy. In the five inoculated and put in the damp, dark place, four died in a few weeks and all were filled more or less with tubercular disease. The remaining one was tuberculous also. The others were simply kept in a damp, dark place without being injected with tubercular virus, and they were simply thin and miserable, but no tubercular disease was found upon examination after killing them a few months later. From this I think we can argue that among human beings environment can act in the same way. I hope very much that the Society will take some action upon this question. It seems to me that by combined effort we can accomplish very much more than by one man single-handed. I hope that some day we can see in Boston, as well as elsewhere, laws made by which no such buildings should be erected like certain apartment houses which I have seen upon the Back Bay and in other places, where the only means of ventilation from the bed-room was by a door leading to the parlor or dining-room and one window opening into the well, three feet square, into which all the water-closets were ventilated. I wish also that we could do in Boston what they are doing in some places where in the public schools boys and girls are taught to avoid the disgusting habit of spitting in houses and in the streets. I wish also that the effort to stop smoking on the rear of the open cars had been successful, not for the smoking itself, but because of the filthy conditions of the back seats when ladies and others are obliged to get in them, for no one knows what sort of tubercular material may be there to be carried on their skirts. In regard to the action of boards of health in declaring tuberculosis an infectious disease in the same rank with diphtheria and small-pox and scarlet fever, I feel that we must be cautious. It is an infectious disease according to our present knowledge but not in the same degree as the others and the conditions are very different. It seems to me that with patients who are just beginning to show signs of pulmonary disease it would have a most depressing and deleterious effect to have such action taken as is now done for the acute infectious diseases. The greatest care, however, should be taken among the friends. They should be informed of the state of the patient and steps taken to prevent the spread of that disease as far as possible and within reasonable limits. I always direct my patients never to use handkerchiefs or any article of clothing, simply to have cloths or paper cups that can be burned immediately, or china sputa cups, the contents of which can be destroyed.

---

[9] Revue d'Orthopedie, 1893, No. 1, p. 14.

[10] New York Medical Record, September 17, 1893.

[11] Boston Medical and Surgical Journal, September 7, 1893.

[12] Hamburg Hospital Reports, 1890.

[13] Prager med. Woch., 1893, No. 16.

[1] See page 5 of the Journal.

[2] Transactions of the American Climatological Association, May, 1887.

I think Dr. Vickery deserves the thanks of the Society for his paper.

Dr. J. C. White: From the title of this paper I hoped that some allusion might be made to tuberculosis of other parts of the body as well as of the lungs, because the communication of other forms from person to person as shown in skin clinics is no small evil. For example, I treated last year at the Massachusetts General Hospital thirty-five new cases of tuberculosis of the integument, in a condition to have extended the disease again in more serious forms possibly to other persons. For a long time, you know, the identity of lupus and other forms of tuberculosis was not recognized. Now it is known that a large proportion of patients with lupus eventually die of consumption. Such patients are generally members of families, and no means are taken to prevent contagion. We see many cases where, from the sputum undoubtedly, tuberculosis of the hands and lungs occurs in the same person. We observe the former especially in attendants upon consumptive patients and in those who have charge of children with scrofulous sores in the neck: scrofuloderma. Again, it is possible that a person with tuberculosis of the hands, or other forms of tuberculosis of the skin, may introduce the bacilli through the mouth to more dangerous tissues and thus produce more serious and rapidly fatal forms of the disease. I want to say also that I think it is a mistake to consider tuberculosis in any way on the same level of danger as scarlet fever and small-pox, so far as any attempt to control it by boards of health is concerned. It should be considered rather like leprosy, as it is communicated in the same way. Leprosy occurs still in some communities as frequently as consumption does in others, and if consumption were accompanied by such frightful external appearances and disfigurement as leprosy, no doubt the same methods of restraint might long ago have been used against it, and it might have been crushed out from civilized communities exactly as leprosy has been crushed out by exclusion, and although it would seem a cruel thing that we should treat patients with phthisis as lepers were formerly treated, there can be no doubt that if those measures were exercised, that we should exterminate tuberculosis from our midst. The lazarettoes in Europe several centuries ago were numbered by hundreds and it was only because such active means were taken that that disease was crushed out. I hope that this subject may be made the subject of more serious consideration on the part of this Society.

Dr. E. O. Otis: With very great interest in the general subject of pulmonary tuberculosis, Dr. Vickery's paper upon its prevention has especially appealed to me and I feel indebted to him for its presentation. I am, as he is, a member of the Pennsylvania Society for the Prevention of Tuberculosis, and I wish we had some similar society in this community. It seems well nigh an hopeless undertaking to prevent contagion when you consider the innumerable ways and avenues by which the disease may be disseminated. Consider how constantly we are exposed to the contagion almost everywhere we go — in the various vehicles which transport us — steam and street cars, carriages; in the various buildings we enter, halls, hotels, theatres. How many thousand people are constantly expectorating bacilli in-doors and out. The physician himself — so familiar is he with the disease I suppose — in so many instances does not seem to realize the danger of contagion or the importance of guarding against it in every possible way. Consider the waiting-rooms in our out-patient departments where there is generally a not inconsiderable number of tuberculous patients, waiting anywhere from a half-hour to an hour and a half and who expectorate about to their own and the risk of others. Then consider the matter of vocation: poor people are obliged to keep at their work so long as they are possibly able to do so, and so we have many tubercular cases working with others and exposing them constantly to the dangers of the disease; for example, I had last winter at the dispensary a *baker* with quite advanced pulmonary tuberculosis; often he was unable to work, being without means he slept every night in a bake-house through the kindness of one of his friends; what an opportunity for the dissemination of the contagion. It seems to me one of the great needs of the present day are hospitals, State, City or National for the care and seclusion of poor tuberculous patients. As it is now, no adequate provision is made for them in any of the charitable institutions and they wander about often ending their lives in the poorhouse.

One other point I wish to refer to, and that is the matter of proper respiration. I have had the opportunity of examining a good many so-called well people in regard to this and it seems to me that we do not give sufficient consideration to it. We must *teach* people to breathe properly. We must remember that the city life is for the most part a sedentary one, and unless we give especial attention to it we rarely fully inflate our lungs. It has got to be a matter of conscious exertion. Each day, and several times a day, I believe, full lung inflation should be practised. It is one of my standing rules, in advising men as to exercise in the gymnasium, that they should take deep full breaths several times a day. After this is practised a while they establish a custom of breathing more deeply and fully all the time.

Dr. Greenleaf: I regret that I was unable to hear Dr. Vickery's paper. The subject is one in which we are all especially interested. While we may no doubt accomplish much towards the prevention of tuberculosis through the efforts of boards of health and by other general measures, there is a way of preventing its spread, which we may carry out as individuals. The idea for this was suggested to me largely through the investigations of Dr. Stone, who found that the dried sputa of consumptives contained living bacilli after a considerable length of time. I think his observations showed that the bacilli were alive and capable of causing tuberculosis in animals after at least three years. Such facts show the very great necessity for having some means of disinfecting the sputa as soon as passed. In hospitals we have the sputa cups, but they do not meet the difficulty we find with patients when outside, whether in the streets, the cars, the hotels or in their own homes. It occurred to me that if we could have something in a convenient shape and of such material that patients would use it whenever they expectorate that we should accomplish a good part of the battle, and these samples which I take pleasure in presenting to the Society this evening demonstrate one way of meeting the problem. My first thought was to have a small bit of thin paper of paraffine or other impervious material and place on it a small wad of absorbent cotton, then to have the patient use one every time he expectorated, roll it up and put it in his pocket or a convenient receptacle and then burn all the wads immediately on reaching home. I advised such for a while. An improvement on this plan appeared to be to have the bit on which each sputum was to be passed made of absorbent material only, and then to wad these up and store them in a bag of impervious material, and then burn bag and all on reaching home. I am endeavoring to have a manufacturer make up such napkins for me by the wholesale, so that they will be as inexpensive as possible and yet sufficiently neat in appearance so that patients of every condition may be induced to use them. In the meantime I am advising my patients to buy the form of absorbent cotton, known as lintine, which comes in a convenient thickness, or sometimes thick enough for two or three napkins. I have them cut the rolls into small squares, say three by three inches as in these samples, then I have them use simple brown paper bags to put them in.

I have used these especially in the Boston Dispensary and have found no difficulty in getting the patients to adopt them on explaining to them the possibility that they may have taken their disease by having inhaled particles of dried sputa carelessly or ignorantly expectorated by other consumptives in places where they have slept or have otherwise been exposed; moreover I carefully explain to them that unless they adopt some such device they are likely to similarly infect their relatives and friends.

I would add that I do not confine the use of these napkins to consumptives. I endeavor to encourage their use in every disease accompanied by expectoration, partly with the idea of making it a little easier for the consumptives, so that they may be relieved of the possible odium of being the only users of such napkins, and partly to be especially on the safe side regarding all forms of the offensive and dangerous habit of expectoration.

Dr. O. K. Newell: I am very glad to have heard this interesting paper. I think that I have sent fully a half-dozen cases to Professor White's clinic recently where there has not been any doubt at all that there was a direct auto-infection producing tuberculous disease in children who were living in families where there was consumption. Dr. Otis says there are a great many sources of infection, but I think the two real sources of evil are in the first place the sputa, especially in this country where we are reputed to be a nation of expectorators, and in the next place the overcrowding. I think that Dr. Vickery's statement that as far as overcrowding is concerned the same conditions were to be found in Philadelphia as here is incorrect. In Philadelphia the question of overcrowding is practically eliminated because it does not exist. There are square miles of small houses and it is a well-known fact that in that city there are more single homes than in any other city in the world; there being 60,000 to 70,000 more buildings in Philadelphia than in New York City. Although they may not have perfect drainage in Philadelphia, there is not overcrowding. In reference to the advisability of boards of health taking the same attitude towards tuberculosis as towards scarlet fever, etc., I think that the fairest way to consider that subject is to remember that scarlet fever and diphtheria and such diseases are rare diseases comparatively. They are acute and rapid in their course and rapidly dangerous, whereas tuberculosis is an extremely common disease, one that is only inoculable with difficulty. The seriousness of the disease depends upon where the inoculation is made. If dried sputum is inhaled into the lungs it is in a place where it is impossible to get at it. If the eye is inoculated of course it is easy to reach it. I think that tuberculosis of the skin is not very dangerous; it is only when it involves the lungs that it is such a serious danger.

Dr. E. O. Otis: I neglected to mention a case which came to my attention a few days ago, and was of interest to me on account of the possible source of infection. It was this: A young man apparently well had been shooting, and while returning fell with his gun, wounding his thumb; he had on a pair of woollen gloves at the time, which he continued to wear after the wound was received. He went directly from Norfolk, where the wound was inflicted, to Washington and there visited the Army Medical Museum. The wound did not heal kindly, the finger was amputated, but still healing did not ensue and local tuberculosis was discovered at the seat of the wound. Later he developed pulmonary tuberculosis for which he is now at a health resort. Was it from the woollen gloves or at the Medical Museum that the bacilli gained entrance into the wound? It is an interesting conjecture.

Dr. White: I should like to mention the fact that I once counted the number of sputa in crossing the Common from Park Square to the West Street gate. It was early in the morning after two or three trains had come in on the Providence railroad. The temperature was below freezing. I was attracted by the great number of fresh sputa on the sidewalk and counted many hundreds before I got to the West Street gate. Very likely many of them came from persons with consumption. They were safe at the moment because frozen, but the same number of sputa on that path in the summer would rapidly dry and be taken up by the wind and pass into the atmosphere. So, I think, we are in the constant presence of bacilli in the air from sources which are not apparent. I was going to the hospital a few days ago and passed a house in which a woman was engaged in shaking rugs out of the window. A few weeks previously the red card of scarlet fever was on that house. Very likely those rugs had been in the chamber with the patient. Children passing might readily have taken the disease.

DR. F. C. SHATTUCK: I was very glad to hear Dr. Vickery speak of the soil. I think that in the ardor of our enthusiasm at having discovered the cause of tuberculosis, as is very natural, we have at first been inclined to attribute too little importance to the question of soil; and those experiments of Dr. Trudeau, which Dr. Bowditch quoted, are certainly very important and should not be lost sight of for a moment. It is not a very easy matter to determine the relative importance of contagion and susceptibility. Within a fortnight I have seen two ladies with pulmonary tuberculosis following the death of sisters from pulmonary consumption, — ladies who had nothing to do with each other whatever, in two entirely different families. There you may say there was family predisposition. The sisters who survive were about those who were ill a good deal of the time, and it has been noted before that cases of contagion from husband to wife are more frequent than from wife to husband, the women naturally staying in the house a great deal more. But I recall a case of another kind. Some years ago I was asked to take charge of a kept woman who had pulmonary consumption and afterwards developed tubercular disease of the bladder. The young man who kept her behaved in a way different from some men, and stuck to her through thick and thin, and as far as his means would allow provided her with everything which would contribute to her comfort. He continued to go to see her. She died; and not long afterwards he came to my office feverish and with a sharp stitch in the side. I found that he had pleurisy, and sent him home to another city in the State. He pretty rapidly developed consumption, and some years later died at Saranac. He probably got his trouble from his mistress, and not through coitus. Then we have on the other side the statistics of the Brompton Hospital for Consumptives in London; the very small number of cases which have developed among attendants or physicians. And the physicians to out-patients sit three or four hours in small consulting-rooms in the most intimate contact with consumptive patients. So very common, so omnipresent we may say, is the contagion of tuberculosis that it seems almost a wonder that any of us survive. I am perfectly convinced, although it is very difficult to prove that many people are tuberculous and never know it; have pulmonary tuberculosis and get well of it. If one-seventh of all deaths from all causes at all ages are due to consumption of the lungs, I should like to know how large a contingent of the population is tuberculous somewhere or other and does not die of it. I do not dwell upon this with a view of discouraging any attempt to limit the spread of the disease which undoubtedly occurs through the sputum. It is only that I think we are apt to look too strongly on one side, and the side which presents itself to us now is the side of contagion naturally springing from the discovery of that in which the contagion resides.

DR. VICKERY: I should like to express my satisfaction in having the opportunity of hearing the opinions of other members of the Society and to say that that was one of the objects which I had in mind in writing the paper. What Dr. Otis said about respiration is confirmed by such writers on climate as Solly. As to the effect of notification in shocking early cases: I have thought of that too, and it is a valid objection, but still I find that after a while it seems wiser to me for my patients to know what they have, although perhaps if they were told the first day it might do them a great deal of harm. I have in mind some to whom the knowledge has come very gradually, but still while they have been in the early stages, and without any apparent detriment; and I have been told by a patient lately that at Saranac Lake they know what they have got and it is intended they should, so that they will take the best care of themselves. There are two sides to the matter. I think there is no doubt that the disease is contagious. I remember one case that struck me very much; a perfectly healthy mother of middle age had a married daughter come home to die of consumption. She nursed her with great assiduity and buried her. In about a year after I was called to her to see her die in the same way. It seemed to me a very plain case. Of course, we have all met similar ones. If I am going to be poisoned and killed by a disease it is not much comfort to me to know that it may not happen next week, that it is going to hang over me and kill me gradually. About cases of unconscious tuberculosis, there have been interesting pathological reports in that regard, and a good many cases are found in adults who present healed scars and who die of other diseases.

DR. BOWDITCH: I wish to emphasize one thing I said. It is in reference to cases of tuberculosis being reported to boards of health. Now while I agree with Dr. Vickery that sooner or later it is usually best that a patient should know that he has tuberculosis (I refer now to the pulmonary form) yet I maintain that for many reasons in some cases it may be wisest not to let him know at the outset, although the family or friends should know the true facts. If then, we were to follow the same rules as apply to scarlet fever, diphtheria, etc., and under the penalty of a fine for neglect, were compelled to notify the board of health the instant we detect the disease what would be the result? I need not picture the disastrous results to the patient were such active steps taken. I do not yet know the exact course the Michigan State Board of Health takes in this matter, but I must confess to having been startled by their announcement that they class tuberculosis with the acute infectious diseases, a position which I think now unjustifiable. With caution and with rational methods I believe an immense deal of good can be done by boards of health in this matter, but let us keep within bounds.

DR. NEWELL: It seems to me the boards of health can cover these two points and they do to-day practically in what relates to overcrowding. They could educate the people in regard to spitting and regulate the overcrowding without taking the same action that they do towards cases of acute contagion.

DR. VICKERY: I remember that Flick suggests that cases should be reported when the tissue begins to break down. I think that would be very difficult to carry out. I am sure many cases would not be reported. Perhaps if we started by enlightening the public, after a time they would thank us to know it. I would thank any man, if I had beginning tuberculosis, to let me know it right away. That is from my point of view, and I think that the public may be brought to the same position.

Dr. J. J. Minot: I move that such a committee be appointed by the Chair as Dr. Vickery suggests in his paper, the committee to make a report on the best means of preventing the development of tuberculosis. Seconded. Carried.

The President: I will announce the committee at the next meeting.

◆

THE NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, held at the New York Academy of Medicine Tuesday evening, November 7, 1893, Dr. B. Sachs in the chair.

Dr. Edward D. Fisher read a paper on

ANOMALOUS CASES OF GENERAL PARESIS.

He stated that a general definition of general paresis may be given as a disease of the nervous system, especially of the brain, in which, pathologically, we find a diffuse inflammation of the membranes and cortex of the brain, and also of the membrane and systemic tracts of the cord. Typical cases follow a more or less well-defined course, the somatic and psychical symptoms going on hand-in-hand, and finally terminating in two or three years in death. Of late years many cases have been reported which differ largely from the ordinary clinical picture. Savage refers to a type of case in which all the physical signs of the disease are present, but none of the mental or psychical, or, again, when only dementia of a simple character is present. He found that the course of the disease may often in these cases be protracted, extending over many years. Dr. Fisher said it is not an infrequent experience to have our diagnosis disputed, both by the friends and by the physician in attendance, in this form of the disease, especially as under proper care improvement takes place, and because the disease is so long protracted. There may in the future be subdivisions made of the general disease as the symptomatology and pathology are better understood. It has suggested itself to him that when either alcohol or syphilis seems to be a prominent exciting or etiological factor the so-called somatic symptoms are usually the most marked. Another explanation of these cases may be that the prodromal stage is protracted. In fact, the disease, as a rule, long antedates its first recognition by friends and physician. In mental diseases, the emotions are probably the first to show evidence of change. This may express itself by undue exhilaration over a slight thing in itself, by depression, by outbursts of irritability, by a disregard for the feelings of others, etc.; or the patient may become careless, or show a lack of proper concern in regard to his health or business. On the somatic side we may have evidence of slight motor disturbance, perhaps slight tremor, slowness or clumsiness in speech, or a slightly ataxic or spastic gait. In other cases, again, the early symptoms may indicate hypochondriasis, only later on to develop with rapid strides into a well-defined case of general paresis.

Dr. Fisher then gave the histories of a few cases of general paresis coming under his observation which pursued an anomalous course. In the first case the disease extended over a period of at least nine years, and in all probability much longer. The second case was that of a man aged thirty-eight years; excepting that he is rather forgetful and has lost interest in his personal affairs to a large extent, no mental symptoms are present. The man has the peculiar fatuous expression common to the disease; there is some tremor of the tongue and slight tremor of the face; speech clumsy; he has had two or three attacks of aphasia of short duration, lasting from several hours to a day. At times there appears to be great improvement in his condition. This will probably prove to be one of the prolonged type of cases. The man is still under observation.

Dr. Fisher said that considering these cases and many others to which he could refer, in which the course of the disease seems to be almost arrested, or even does not commence in the usual manner, it must be seen that general paresis, at least in some cases, may be much altered in its course — to such an extent, indeed, as to make the diagnosis a question of doubt. Some dementia, however, he thought always exists in these cases. Even in the early stages of a classical case, with exaggerated ideas of wealth and ability, we recognize the inconsequence of ideas and responsibility so essentially characteristic of dementia. This latter condition becomes more apparent if these cases are allowed to engage in their ordinary avocations. It will often be seen that when they are removed from hospital care, and permitted to resume their business when improvement takes place physically and mentally, that the course of the disease becomes a rapid one towards physical exhaustion and dementia.

DISCUSSION ON THE RELATION OF SYPHILIS TO GENERAL PARESIS.

Dr. Frederick Peterson opened the discussion by reading a paper on this subject. He stated that the question of the position taken by syphilis in the etiology of dementia paralytica is one that has been attracting great attention among syphilologists and alienists of late years. No fewer than seventy authors have contributed to the elucidation of this problem. The majority of these contributions treat of the subject from a statistical standpoint, and it would seem that sufficient data have been collected to fully satisfy all inquiries regarding that particular. Naturally, the first point upon which precise information was needed was as to the percentage of cases of general paralysis with a history of syphilis, and we are now in a position to supply it fully. Although these statistics differ very materially at times, yet the results in the main agree. The figures range from as low as 13 per cent. to as high as 88 per cent. Kjellberg has taken the stand that all cases of general paralysis are of syphilitic origin; that the cases are affected either congenitally or through acquisition. This author stands quite alone in his assertion, which is not justified by observation or facts.

Dr. Peterson said his own statistics on this point are rather questionable, as are all obtained from large public asylums to which patients are taken in stages of the disease too far advanced for them to give trustworthy information regarding themselves, and whither they are generally brought by relatives or officers unacquainted with such an etiological factor in their histories. There were admitted to the Hudson River State Hospital for the Insane 287 cases of general paresis. In 55 of these syphilis was definitely ascertained to have preceded the disorder. In the remaining 232 it was either absent or unascertainable. Actually, then, only 19 per cent. were found to be syphilitic; but, assuming that one-half the others were affected, the total ratio would be in the neighborhood of 60 per cent. of the cases. At public dispensaries we see these cases in the earliest stages, when histories may be more exactly obtained. At the Vanderbilt Clinic, 40 cases of general paresis were observed; definitely syphilitic, 10; definitely not syphilitic, 12; unascertained, 18; taking the 22 cases in which the exact facts were obtained, we have 45.4 per cent. certainly syphilitic, and 54.5 certainly not syphilitic. From an examination of all the figures collected above from various sources, it would, perhaps, be fair to assume that about 60 to 70 per cent. of all cases of general paralysis have a syphilitic history. The fact is thus established that syphilis is a striking etiological factor in general paresis, but that 30 to 40 per cent. of the cases are not syphilitic. A much more difficult problem is to determine the exact relationship between syphilis and general paresis. Is it a direct cause, or merely a contributing agent? Is it in syphilitic cases a post-syphilitic affection, or is foregone syphilis merely a predisposing factor? This problem may be examined from several standpoints. In the first place, we have the rather remarkable statistics of Lewin, of 20,000 cases of syphilis, one per cent. of which became insane, and in which not a single case of general paresis developed. Then we have the further fact that among the native Egyptians, where syphilis is one of the most widespread of disorders, no case of general paresis has as yet been reported. It is significant, by the way, that alcoholism is seldom or never observed among them. Again, from the pathological standpoint, it is well known that the direct invasion of the brain by syphilis is characterized by changes in the blood-vessels, by the formation of gummata, or by diffuse meningeal infiltration. The first and third of these processes is most frequent in and about the base of the brain; the second is more common in cortical regions. On the other hand, in general paresis we have a chronic meningitis of the convexity, with atrophy of the cortex, and the processes in this disease and in syphilis are quite distinct, although there are cases in which a syphilitic meningo-encephalitis may closely simulate, symptomatically, dementia paralytica.

There are some who argue that tabes and general paresis are frequently associated, and that tabes being a form of syphilitic disease, general paresis in consequence must owe its origin to syphilis. If the two diseases have the same etiological imprint, there ought to be a close correspondence in the percentages of syphilis in relation to each; but the consensus of opinion seems to be that a history of syphilis is found in only 60 to 70 per cent. of general paresis, whereas in tabes the percentage ranges, according to different authorities, from 80 to 98 per cent. At the Vanderbilt Clinic, in 83 cases of locomotor ataxia, 51 were syphilitic, 20 not syphilitic and 12 unascertained. Of the 71 cases of tabes of whose specific history we have exact data, over 71 per cent. were syphilitic and over 28 per cent. not syphilitic. That is, then, among cases equally well studied and from the same sources, 45.4 per cent. of general paralytics were syphilitic, and 71 per cent. of tabetics. Dr. Peterson said he did not agree with the statement made by Dr. Sachs in a recent article, that there is a very frequent development of tabes after dementia paralytica, and of dementia paralytica after tabes. In cases of paralytic dementia with tabetic symptoms the nerve fibres of the posterior columns are often little if at all implicated. One of the facts which has been employed against the opinion that general paresis is a late form of specific disease is the absolute futility of anti-syphilitic treatment. In every form of cerebral syphilis proper we are often enabled to accomplish a great deal of good by vigorous and systematic treatment, whereas in general paresis, even if the history of syphilis is clear, no appreciable effect is produced by anti-syphilitic remedies.

In concluding his paper, Dr. Peterson said that in his opinion dementia paralytica has no immediate or late relations to syphilis as a direct cause. Syphilis is a common etiological factor, but only in the sense of its being a predisposing cause. It prepares the soil in more than half of the cases for the development of dementia paralytica, this disorder having its direct causes in alcoholism, sexual excesses and over-strain of the mental functions. The higher nervous elements are rendered prone to degeneration by the fore-running specific disease, which, as is well-known, gives rise to a cachexia with changes in the constitution of the blood.

Dr. Granger said that the question of a change in the character of the mental symptoms of paresis from the standard type of the disease is one that has been very much debated and studied; and it looks as though the outcome of it might be that the disease known as general paralysis of the insane would be found to embrace more than one disease — possibly more than two — the distinction being based upon the clinical aspect and the pathological conditions present. The variations from the ordinary type of the disease, as he has observed them, have not been so marked in this country as abroad. Two or three per cent. would probably cover the melancholic form of paresis in this country; while in England, in some of the largest asylums, the number has risen as high as 15 or 20 per cent. of the cases admitted. He has seen two forms of the melancholic type of paresis: in one of these the delusions of the patient, although they were those of depression in one sense, were of grand depression. For instance, a patient was very much depressed with the idea that he was the devil; he would constantly cover his face and head in order to hide his horns, and carry a newspaper behind him in order to prevent his tail from growing. But he was the biggest devil, the greatest and the wickedest devil that could be imagined. On the other hand, there are cases of general paresis in which there is simply melancholia with no grand delusions. Another anomalous type of paresis is that in which no special symptoms are present, excepting that of progressive dementia and a feeling of satisfaction; this type is becoming more and more common. The question whether the disease is lengthening or shortening in its course is very much discussed; many think that its course is being shortened, while on the other hand, according to some of the English asylum reports, it is being lengthened. In this country we still commonly see the typical form of general paresis, and death takes place about thirty months after the full development of the disease.

In regard to the relation of syphilis to general paresis, Dr. Granger said he agreed very closely with the views expressed by Dr. Peterson. Syphilis itself does not cause the disease, and it is very difficult to tell what does cause it. That syphilis is very common in Egypt, and that venereal excess is also very common there is acknowledged by all, and that general paresis is very uncommon there is also true, but other conditions exist there which the world over are favorable to the non-development of paresis. These natives possess neither energy nor ambition, and spend most of their time basking in the sun. In the coal regions in England, general paresis is quite common, the percentage in the asylums being from 30 to 40 per cent.; in the adjoining agricultural districts the percentage falls as low as two or three per cent., and yet probably syphilis and intemperance are very common in both of these communities. In this country, general paresis rises as high as 15 to 20 per cent. in the Eastern States, while in the Western and Southwestern States the percentage is very low indeed. Yet syphilis is undoubtedly very common in the latter localities; so is drunkenness; still, general paresis is very infrequent there. It takes something besides syphilis or intemperance to produce the disease. In the cities we call it the strain due to high civilization. In the coaling regions we call it their laborious and peculiar life. Syphilis, while it does not cause paresis, is undoubtedly a strong factor in its production. As regards the value of statistics in this connection, the speaker thought it extremely difficult to get accurate statements from the patients who are sent to asylums, and upon these we are usually dependent for our statistics. The history of syphilis often dates back many years and is extremely untrustworthy.

Dr. Lyon said he has often been struck by the fact that when a history of syphilis is obtained in a case of general paresis, the former disease usually existed a long time ago. Most of the patients state that they were treated for the disease and cured, and that they have had no manifestation of it for many years. During the current year seventeen cases of general paresis were admitted into the Bloomingdale Asylum; of these, twelve have a pretty clear history of syphilis. In only one of these was the syphilis as recent as four years previous to the development of the general paresis. In almost all the cases the patients had probably received the modern treatment for syphilis, that is, mercury and the iodides.

Dr. Lyon said he agreed with the previous speakers, that while syphilis is not the immediate cause of general paresis, it is one of its provoking causes; it produces instability of the brain, which then yields to other more immediate causes. These same patients who give a history of syphilis have for many years led liberal lives. The course of the paresis in these cases seems to be more rapid than in those uncomplicated by syphilis. The speaker said that cases of paresis of long duration are not unknown — indeed, not very infrequent. He has met with one case in which the disease lasted over ten years. Its duration depends on the patient's constitution.

Dr. Field referred to the unreliability of statistics obtained from patients affected with general paresis. He has never seen a paretic in whom active syphilitic symptoms existed. The history of syphilis obtained is usually an old one. It is generally combined with a history of alcoholic and venereal excesses. He has made inquiries among those engaged in the treatment of venereal diseases, and who have followed up their syphilitic patients for many years; and they have informed him that general paresis is not common among such patients, although it does occur. Dr. Field said he regarded syphilis as a predisposing rather than a precipitating cause of general paresis. This is also true of alcohol. Magnin says that chronic alcoholism always terminates in dementia or general paresis. The Chinese are well known to be syphilitic — at least, those in this country; still, he has only observed one case of paresis among them. That case was a typical one: the patient imagined he had thousands of acres of land, thousands of dollars and thousands of wives — all white. The reports of the asylums in California show many cases of insanity among the Chinamen, but no form of paresis. In conclusion, Dr. Field referred to the change of type that seems to be occurring in dementia paralytica.

Dr. Joseph Collins inquired on what grounds Dr. Fisher based the statement that in general paresis due to alcoholism or syphilis the somatic symptoms were supposed to be in the ascendency over the mental? If such a statement be well founded, it is in contradiction to the other diseases due to these poisons, wherein mental symptoms are well marked. At the Medical Congress in Washington some years ago, Dr. Savage referred to a variety of paresis wherein the motor and somatic symptoms were apparently the only symptoms of the disease for quite a long time. Such a case, Dr. Collins said, is now under his observation. As regards the statement made by Dr. Peterson that cases of paresis are unknown in Egypt, Otto has recently reported fifteen cases of the disease in that country. So far as the relationship between syphilis and general paresis is concerned, Dr. Collins said he was very much in accord with the statements made by Dr. Peterson. His statistics correspond very closely with those of Jacobson, taken from the St. Hans Asylum in Denmark; and it appeared to him that such statistics could be relied upon. The patients in that institution came from within the narrow confines of the State; and Jacobson, in making up the statistics, ferreted out every possible etiological factor by inquiry regarding the patient's antecedents, friends, etc. The statement made by the French syphilographers, and also by Sternberg, of St. Hans Asylum, that there can be no general paresis without a history of syphilis is no longer worthy of credence. We have statistics galore at our command, and it is now time to draw such conclusions as can be drawn from figures. Dr. Peterson's statistics, taken from the Vanderbilt Clinic, are very valuable. The cases were seen early; they were apparently carefully studied, and are sufficient in number to draw conclusions from. We all admit that in about 60 per cent. of all cases of general paresis a history of syphilis, dating back from one to twenty years can be obtained. What we want to know is the way in which syphilis causes general paresis. In one of the specimens presented by Dr. Van Giesen this evening, a section taken from the brain of a general paretic, the microscope shows a large number of cells collected around a blood-vessel, with some of their protoplasmic prolongations destroyed or atrophied. In the early stages of general paresis there is vaso-motor disturbance, not only in the cortex of the brain, but throughout the whole body. Syphilis may act through its sinister manifestations on the blood-vessels. It causes a pathological condition that is favorable to the development of general paresis. If there are other attributing factors — and in nearly all cases there are — they act as the torch to the pile that has already been prepared.

Dr. Parsons, in referring to the possible relationship between syphilis and general paresis, stated that so far as his observation and reading went, the tissue changes that occur in general paresis do not correspond with those that are produced by syphilis. Furthermore, we know that general paresis occurs in a certain number of cases in which there is no history of syphilis. His own studies of dementia paralytica have led him to think that the more immediate causes of the disease depend upon emotional conditions, or one might say congestion of the capillaries of the cortex due to over-exertion or over-stimulation of the nerve cells of the cortex. Syphilis sometimes causes a degeneration of the nerve tissue, but in opposition to this we observe that general paresis occurs usually during the most vigorous period of life. Dr. Parsons said that while he felt unwilling to make the statement that there is no possible relationship between syphilis and paresis, as cause and effect, such causative relation has not yet been proven.

Dr. William M. Leszynsky said that in those patients who have died from general paresis, it seemed to him that the pathological changes found in the brain were very much the same in those who gave a history of syphilis, and those in whom a specific history could be positively excluded. Dr. Hinckley, of the Essex County Asylum, at Newark, N. J., recently sent him some statistics in connection with this subject. The asylum has about 500 inmates. During the past eight or ten years, 15 cases of general paresis were received there. Of these, 13 were males, two females. In only two of these cases was a history of syphilis obtained, and in those there were no somatic manifestations of the disease. The causes given in the remaining 13 cases were alcoholism, overwork, anxiety, etc. In conclusion, Dr. Leszynsky said he agreed with Dr. Peterson in considering syphilis only as a predisposing factor in the production of general paresis.

Dr. A. D. Rockwell referred to certain cases of general paresis that have come under his observation, in which the patients for temporary periods were extremely wretched, utterly disregarding all rules of tidiness and decency; these manifestations, after a number of weeks, passed away, and the patients became quite reasonable again.

Dr. C. H. Brown said he regarded general paresis as a disease of evolution; syphilis, alcoholism, sexual excesses, etc., were merely complications or predisposing factors. He also referred to the difficulty of getting a reliable history of syphilis in these cases.

Dr. E. D. Fisher, in reply to Dr. Collins's question as to the ascendency of the somatic over the mental symptoms in certain cases of general paresis, said he referred to those cases where we have extreme alcoholism or a recent history of syphilis. In such cases, too, we frequently have a more rapid response to treatment; however, they do not, as a rule, go on to complete recovery. While the old typical cases of general paresis are still the ones usually met with, yet anomalous cases are not infrequent. These, perhaps, in the past would not have been classed as general paresis. He agreed with Dr. Peterson in regarding syphilis simply as a predisposing factor. In cerebral syphilis we may have many symptoms similar to those of general paresis, but the disease does not run a similar course. Asylum reports on this subject must always be regarded with more or less suspicion. In conclusion, Dr. Fisher referred to the futility of specific treatment in dementia paralytica.

Dr. J. F. Terriberry referred to the difficulty of properly classifying certain cases in which there is dementia and other symptoms of cortical degeneration.

Dr. Sachs said that too much reliance should not be placed upon the value of statistics in connection with this subject. A few years ago the number of cases of tabes with a syphilitic history was placed at 87 per cent., and much lower than this by some authorities; now every one is agreed that the figures should have been as high as 92 per cent. We all admit the frequency of syphilis in general paresis, but the majority of the speakers have laid too little stress upon it as a predisposing cause; they refer to it as the lesser cause. The speaker said he did not agree with them in this. In other mental diseases in which heredity plays an important part, that factor is regarded as a predisposing cause, while an emotional element is regarded as the exciting cause, but the hereditary taint is certainly one hundred fold more important than the latter element. He is of the opinion that syphilis plays a more important rôle in general paresis than any other etiological factor. Other facts go to prove that syphilis plays a very important part in dementia paralytica. In probably every case of general paresis that has occurred in early life, that is, between the ages of fifteen and twenty-five years, there is a history of syphilis. The general impression seems to be that the specific history is one of long standing. While this is true in the majority of cases, it is not so always. A striking instance of this recently came under his observation. A young man of 22, while a student at Heidelberg, contracted syphilis: six months after infection he developed a typical general paresis, from which he is still suffering.

As regards the possible relationship between tabes and general paresis, Dr. Sachs said he has seen a number of cases in which the development of the two diseases rapidly followed each other. In one case the tabes developed nine months previous to the general paresis; in that case there was an undoubted history of syphilis. In one class of paretic patients the knee-jerks are much exaggerated, while in another they are below the normal or entirely absent. In these latter cases the probability is that changes in the posterior columns have occurred closely related to the changes that are found there in posterior spinal sclerosis.

Dr. Peterson then closed the discussion. As regards the statement made by Dr. Collins about the cases of general paresis found in Egypt, Dr. Peterson said he has not seen the article by Otto referred to. Dr. Sandworth, the physician in charge of the asylum at Cairo, informed him that he had never seen a case of general paresis in a native Egyptian, nor had his predecessor, who was there for many years. The disease does occur among the Turkish officials in Egypt, but not among the natives.

With regard to Dr. Sachs's statement as to the relationship between tabes and general paresis, it is of course true that there are often tabetic symptoms in general paresis, and that the knee-jerks may be absent. In the majority of cases, however, in which the knee-jerks are absent in the early stage of the disease, they subsequently return and become exaggerated. Furthermore, no changes are found in the posterior columns after death from general paresis.

Recent Literature.

Reform in the Treatment of the Insane — Early History of the Retreat, York: Its Object and Influence, With a Report of the Celebrations of its Centenary. By D. Hack Tuke, M.D., LL.D. Pp. 96. London: J. and A. Churchill.

The volume before us contains an interesting but short account of the rise and growth of the now famous York Retreat and the work done there by several generations of the Tukes, from the pen of one of their number, himself an eminent alienist and writer on insanity and kindred subjects. The achievements of Samuel Tuke in England and Pinel in France form an epoch in history; and the reforms in the care and treatment of the insane by them instituted will rank with the highest efforts for the alleviation of human suffering. This small volume commemorative of the centennial of the York Retreat, may therefore properly stand as a fitting memorial of the inception of a great work for the amelioration of the insane, and thereby the good of mankind.

Psychopathia Sexualis, with especial reference to Contrary Sexual Instinct: A Medico-Legal Study. By Dr. R. von Krafft-Ebing. Authorized Translation by Charles G. Craddock, M.D. Pp. 436. Philadelphia and London. 1893.

The alienist is often in much doubt regarding the status of certain distasteful cases which come to his notice in whom the sexual element is the chief, perhaps the only, feature. It is here that this work will be a decided help, for in it not only are the unmistakable cases of contrary sexual instinct given a practical classification, based upon an apparently sound pathology, but other less pronounced manifestations and syndromes of similar nature, generally held to be simply the expression of vice in its most revolting form, are here taken from their criminal setting and placed in the proper category of mental degeneration. At the same time the boundary line between sexual depravity and disease is kept well defined.

In the matter of treatment there is little advice given that is of practical value. The cases in which the author tried hypnotism do not seem to have been particularly successful, and his encouragement of marriage for such patients strikes us as reckless in the extreme and not warranted by the results.

It is unfortunate that such a book should be needed, albeit it is a masterly production and one that is thoroughly scientific in tone and method; for its circulation cannot, of course, be confined to medical readers. On the contrary, by translation the seven editions of the original are likely to be speedily duplicated and given a greater notoriety, owing to the pornographic interest on the part of the public.

Hypnotism, Mesmerism and the New Witchcraft. By Ernest Hart, formerly Surgeon to West London Hospital, etc. Pp. 182. New York: D. Appleton & Co. 1893.

The publication in book form of the papers on this subject by Mr. Hart which have appeared recently in the *British Medical Journal* and the *Nineteenth Century* is most welcome. They will do a good service in making easy of access a remarkably clear, concise and forcible exposition of much of the folly and humbug connected with hypnotism, mesmerism, "animal magnetism," objects of psychical research, and "the occult" generally; although the author, in his impatience with credulity and imposture, is often unnecessarily severe in his strictures, and at times far too sweeping in his statements. It is refreshing to read such a fearless attack upon the hypnotic craze of to-day — we had almost said, yesterday. The subjection of research into psychical phenomena of all sorts to rigid control tests is not only here insisted upon, but has been practised also by the author to some purpose, notably in his exposure at great pains of the theatrical "hypnotic" performances in the wards of Dr. Luys at the Hôpital de la Charité. The "psychological researchers" are also not spared, and telepathy is shown to have "no more substantial foundation than mesmeric trance or clairvoyance, although the name sounds better to modern ears." The abuse and evil effects of hypnotism are graphically and convincingly set forth, and his estimate of its therapeutic value placed none too high. In fact, the limit he puts to its use is somewhat too restricted, but the author's experience and the extent of the folly will explain and excuse all.

Anatomy, Descriptive and Surgical. By Henry Gray, F.R.S. A new American, from the thirteenth English edition. Edited by T. Pickering Pick, Surgeon to St. George Hospital, etc. Philadelphia: Lea Brothers & Co. 1893.

This new edition is a decided improvement over all preceding ones. Gray's Anatomy has always been a favorite with students, and deservedly so, though precise anatomists have at times found a good deal to criticise. It has held itself rather aloof from modern methods of instruction of Continental origin. It has been very English. A change has been manifest in recent editions. The present one shows it more than ever. The book has become more comprehensive, but without the sacrifice of its characteristic merits. Of late American editions have had as an appendix Holden's "Landmarks," edited by Dr. Keen. This is now done away with. Its place is more than taken by the sections on surface form and on surgical anatomy scattered throughout the book. Many new and excellent illustrations have been added. T. D.

The Diseases of the Male Organs of Generation. By W. H. A. Jacobson, M.Ch., Oxon., F.R.C.S. Philadelphia: P. Blakiston, Son & Co. 1893.

In this work the author maintains the deservedly high place which he has won in medical literature.

The volume covers satisfactorily and thoroughly the ground indicated by its title — with the exception of some conditions of the prostate — to which shortcoming the writer himself draws attention in his preface.

The subject is divided into five parts, which treat respectively of the diseases of the testicle, of the cord, of the scrotum, of the vesicular seminales and of the penis.

In the first division, that part which relates to misplacements of the testis and the complications in connection therewith, presents in a concise and interesting manner, much useful knowledge of a kind hitherto not readily accessible.

Chapter VI (of Part I), which relates to tubercular disease of the testis and its appendages, is perhaps the most important contribution this volume contains. In it the author discusses the theories regarding the channels by which infection of the epididymis and testis occurs; also the vexed question as to whether the disease is primary in these organs or secondary to tuberculosis in some other portion of the genito-urinary tract — his conclusion, with which we are in accord, being, that the epididymis is the most frequent primary seat of the disease. He also considers that the bacilli are carried principally by the blood-vessels, and in a less degree through the lymph-channels.

A short *résumé* is given of the evidence with respect to the occurrence of tuberculous infection by means of sexual contact.

The rare manifestation of the disease in the form of "galloping testicular tuberculosis" is well described.

In regard to the surgical treatment of the disease in these organs, the author strongly advocates incision — thorough curetting and antiseptic cleansing of all tubercular swellings of epididymis and testis — at any rate, and leans toward the side of the more radical operations by early excision of the affected parts, while recognizing that this is still an open question.

While writing of "Atonic Impotence," the author indorses the view of Professor Gross, to the effect that urethral stricture is a frequent result of masturbation. In this conclusion we do not concur, never having been able to satisfy ourselves of its truth during a long period of careful investigation with reference to this point.

We are unable to give a more extended account of the many excellent and valuable matters to be found in this book, but must be content to add, in concluding this notice, a word of praise for the admirable manner in which the work is illustrated as well as written, and to the fair-minded way in which the author has set forth the various theories bearing upon the more important parts of the subjects presented, while at the same time he has avoided that error into which the judicial mind sometimes falls, namely, that of lack of perspection, or of proportion with relation to their importance, of the matters presented.

The publishers have produced the book in a convenient size. The type is excellent, as are the other details for which they are responsible.

The work has the useful quality of not being beyond the reach of under-graduate students, while, at the same time, it meets the needs of the practising physician, and we take pleasure in cordially recommending it to the attention of both.

The Recrudescence of Leprosy, and its Causation. A popular treatise. By Wm. Tebb. London, 1893.

In this book of 412 pages, the writer, a well-known lay opponent of the practice of vaccination, attempts to show that the spread of leprosy is owing, to a great and unrecognized degree, to compulsory arm-to-arm vaccination as a preventive of small-pox. It is simply an amplification, after much travel and considerable study, of a previous brochure on the same subject that has already been noticed in these columns. Mr. Tebb has visited the West Indies, British Guiana, Venezuela, Norway, California, the Sandwich Islands, Ceylon, Egypt, New Zealand, Cape Colony and Natal, together with most of the colonies in Australia; and his book is mainly composed of quotations from journals and medical writings, together with an account of some conversations with superintendents of asylums and other people whom he met in his travels. The mass of evidence and cases collected is very large, and, if carefully sifted, may prove of value to the student of this disease; but it cannot be said that the writer has gone very far towards proving his case. It is not for an instant to be doubted that both syphilis and leprosy have been inoculated by vaccination, and that the greatest care should always be taken to avoid impurity of lymph; but that this procedure is in great measure responsible for the existence of leprosy no sufficient proof is given. Many of the cases cited in favor of this view are loosely reported, and are utterly inadmissible as evidence on either side. Some few of the cases point to vaccination as a probable cause. The mass of statistics and material is introduced without order or critical comment, and little attempt is made to discriminate between skilled and ignorant observers. The book bears the mark of one little versed in scientific research, and is colored throughout by the writer's obstinate antagonism to one of the greatest boons ever conferred upon humanity. The writer's honesty and zeal, however, are certainly to be respected, and the amount of time spent in travelling in search of information must have been very great. The book will not have been written in vain if it causes a greater degree of caution to be taken in communities (as the Sandwich Islands, for instance) where it seems probable that careless and improper vaccination has been the source of disseminating disease; but the attainment of the writer's aim, namely, the utter suppression of vaccination and the abolition of all attempts at experimental therapeutics in leprosy, can only be regarded in the light of a great calamity.

An Introduction to the Study of Diseases of the Skin. By P. H. Pye-Smith, M.D., F.R.S. Philadelphia: Lea Brothers. 1893.

This book has been compiled from the chapters on diseases of the skin which were written in 1886 to complete the late Dr. Hilton Fagge's work on medicine, together with several papers that have appeared in "Guy's Hospital Reports" and the "Pathological or Clinical Transactions." The author has had abundant opportunities for observing skin diseases, having been in charge of the department for cutaneous diseases in Guy's Hospital for a series of years, and has "tried to make his description an epitome of what he has himself observed." The book is interesting, as setting forth the views and experience of a leading London practitioner who has devoted considerable time to the study of dermatology.

The Medical Student's Manual of Chemistry. By R. A. Witthaus, A.M., M.D., Professor of Chemistry and Physics in the University of the City of New York, etc. Fourth edition. New York: William Wood & Co. 1893.

A book which is so favorably known as this one is does not need extended comment. In the present edition no important changes have been made in that part of the work which is devoted to inorganic chemistry. The part treating of the chemistry of the carbon compounds has been extended by about twenty pages, and the text in great part rewritten. The organic compounds are classified, as in previous editions, according to their constitution so far as is known, and those alkaloids whose molecular structure has been completely or partially determined, occupy in the present edition their proper places in the classification. We consider the book one of the best text-books on chemistry for students of medicine.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, JANUARY 4, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

VACCINATION AND REVACCINATION.

The rarity of small-pox in Massachusetts during the past dozen years or more has been such that scarcely one in ten of the physicians now in active practice has ever seen a case of the disease. Hence the difficulty of diagnosis which very frequently happens when cases do occur, or when other diseases simulating small-pox are met with in the practice of young physicians who have entered upon the duties of their profession since the epidemic of 1872–73. There is no reason to suppose that the remarkable immunity which our population has had the good fortune to enjoy for several years will be indefinitely prolonged, since an unvaccinated population, consisting both of immigrants and of unvaccinated infants born since the last epidemic, is likely to furnish the combustible material for a future epidemic, whenever the disease gains a foothold among us.

Fortunately, we have a sure preventive, in vaccination and revaccination, when thoroughly and properly performed under the supervision of an intelligent physician or sanitary officer. With abundant resources in the shape of plentiful supplies of lymph, obtained by calf-vaccination, there can be no excuse on the part of local sanitary authorities for neglecting this important preventive measure.

The present outbreak is by no means confined to Boston. Emigrant ships arriving at United States sea-ports have brought small-pox to this country many times during 1893, from crowded cities where this disease is almost constantly occurring in Europe. Outbreaks have occurred in many Western cities during the year; and with the present facilities of intercourse by rail and by steamer, the spread of small-pox is rendered much more certain than it was in earlier times. A recent summary of the deaths from small-pox in Massachusetts during the past twenty years, shows that, out of the 161 towns in which these deaths occurred (mostly in 1872–73) only eight were not directly on some line of railway communication at the time when the death occurred.

During the year just closed, there have been 678 cases of small-pox in the city of Reading, Pa., a city having scarcely one-eighth as many inhabitants as Boston.

While it is true that single cases are liable to occur anywhere, as in the case of unvaccinated immigrants, it is also true that extensive and widespread outbreaks following such first cases, can only occur in places where the preventive measures of vaccination, notification, isolation and disinfection are neglected.

The importance of revaccination is also apt to be underestimated; but the history of those countries where revaccination has been thoroughly enforced places the value of this measure beyond a doubt. An illustration of the value of revaccination is shown in the case of Germany since the law of 1874 went into operation. By the provisions of this law every infant must be vaccinated, and in addition every scholar in public and in private schools must be revaccinated at the age of twelve years. The provisions of this law have been so thoroughly carried out that, as a consequence, Germany has enjoyed an immunity from small-pox far exceeding that of any of the contiguous countries, particularly Austria, Russia and France.

In support of this statement the following figures are presented from Dr. Sykes's "Public Health Problems," London:

Mortality from Small-Pox per 100,000 Living.

	Pruss'n Army.	Austri'n Army.	Austria.	Prussia.	Berlin.	London.	Vienna.
1870	33.32	17.28	35.18	17.52	22.37	30.20	46.71
1871	27.67	40.1	30.30	243.21	632.56	242.16	74.90
1872	5.65	101.4	189.99	262.37	132.61	53.80	536.98
1873	2.68	108.0	823.36	35.65	11.21	3.55	228.50
1874	0.33	67.0	178.18	9.52	2.47	1.66	135.26
				Revaccination compulsory.			
1875	0.0	21.5	57.73	3.60	5.19	1.32	113.50
1876	0.0	10.4	39.28	3.44	1.81	20.80	167.80
1877	0 0	25.5	16.94	0.34	0.40	70.98	84.01
1878	0.0	15.4	5.57	0.71	0.78	38.81	75.91
1879	0.0	22.7	50.88	1.26	0.75	12.13	46.91
1880	0.0		64.27	2.60	0.81	12.50	73.52
1881	0.0		78.80	3.62	4.74	61.91	123.95
1882	0.0			3.64	0.43	11.07	108.29
1883	0.0			4.00	0.33	3.00	9.6

These figures show that Prussia, although exposed to constant danger from small-pox, upon its Russian and Austrian borders, has been enabled to reduce its small-pox mortality to exceedingly low terms by means of vaccination and revaccination; and the Prussian army, which constitutes a very large portion of the population, has, with the exception of a single death in 1885, been absolutely exempt from deaths from small-pox.

The effects of vaccination and revaccination upon the attack-rate, and the death-rate from small-pox, during an epidemic in a large city, are well illustrated by the admirable report of Dr. Barry upon the epidemic of 1887–88 in the city of Sheffield, England. The following were the attack- and death rates per 1,000 of the population at each of the two age periods, children under ten years and persons over ten years of age:

	Unvaccinated.	Once Vaccinated.	Twice Vaccinated.	
Under ten,	101	5.	0	Attack-Rate.
Over ten,	94	19.	3.	
Under ten,	44	0.09	0	Death-Rate.
Over ten	51	1.	0.08	

These figures may be summarized as follows: "The children vaccinated had, as compared with the unvaccinated, a 20-fold immunity from attack, and a 480-fold security against death from small-pox; the persons over ten years of age, once vaccinated, had a 5-fold immunity against attack, and a 51-fold security against death; and the twice vaccinated, a 31-fold immunity from attack, and a 640-fold security against death."

In commenting further upon the significance of these figures, which are the result of a most careful house-to-house canvass in a city of about 200,000 inhabitants, Dr. Sykes says:

"We may conclude, therefore, that natural insusceptibility to small-pox practically does not exist, that the contagion is so far-reaching, so readily attacks indiscriminately the unprotected, and is so fatal, that in a community, *entirely* unprotected, either by previous small-pox, inoculation or vaccination, an epidemic causes an enormous mortality; that the disease leaves the survivors disfigured, maimed or weakly, but protected more or less against future attacks, so that the disease continues to fall only upon the unprotected, namely, the newly born and infant population, the few survivors of which remain protected for a number of years.

"Vaccination protects the infant and the young population in proportion to the number vaccinated, and the quality and quantity of the vaccination marks; but the protective influence of vaccination fades sooner than that of an attack of the disease, so that in later years susceptibility to small-pox returns. Revaccination compensates for the less duration of immunity, and practically brings artificial immunity to a protective level equal to a previous attack of the disease, so that periodical revaccination almost entirely averts small-pox."

The first law in Massachusetts in regard to small-pox was enacted in 1809, and provided for the inoculation of the inhabitants with the cow-pox, under the direction of the town boards of health, or of a committee chosen for the purpose. The present law provides that parents and guardians shall cause their children and wards to be vaccinated before they attain the age of two years, and revaccinated whenever the town authorities shall, after five years from the last vaccination, require it. The town authorities shall also require and enforce the vaccination and revaccination of all inhabitants when the public health requires it. The penalty for neglecting to comply with these provisions is five dollars. Towns shall furnish means for vaccination to those who cannot pay for it. Incorporated manufacturing companies, and superintendents of public institutions, are required to see that the inmates of such institutions are vaccinated. Towns may make further provisions for vaccination, under the direction of the board of health or of a committee chosen for the purpose. School committees are required to exclude unvaccinated children from the public schools.

Practically much of this law is a dead letter. The last clause is the most efficient part of the law. As a matter of fact, there is to-day a large unprotected population in Massachusetts, made up partly of unvaccinated immigrants and partly of unvaccinated native-born Americans. The same conditions obtain probably to a greater extent in other States.

The degree of protection afforded by a primary and secondary vaccination may be estimated in some measure by the size and character of the scars. It is impossible to formulate a positive rule as to the period of protection acquired by any given individual. Revaccination, if properly done upon a subject neither very old nor very feeble, is a small penalty to pay for immunity. If it does not take, the individual has the assurance of probable immunity and no harm is done; if it does take, there is at once the evidence of its necessity and the assurance of reacquired safety. Although there is now no epidemic of small-pox in any part of New England, the present conditions are such and so widespread as to indicate to thoughtful and intelligent people the desirability of vaccination and revaccination.

◆

NAIL BITING.

A French scientist and surgeon, Berillon, has just issued a brochure on "Finger-Nail Biting" (*onycophagie*), containing the results of a series of observations in the public and private schools of France and extending through a period of more than seven years.

His observations lead him to pronounce the habit far more widespread and pernicious than would be imagined, and force him to conclude that, if not a disease itself, it is an unfailing mark of incipient degeneration of the nervous system, which, if unrecognized, may be productive of the most evil results.

In a mixed school of the Department of l'Yonne, the report showed the following results:

	Number Examined.	Nail Biters.
Twelve to fourteen years, . . .	13	7
Thirteen to fifteen years, . . .	16	6
Fifteen to seventeen years, . . .	18	3

From twelve to fourteen seems from this to be the age most susceptible to the habit. A like experiment with girls shows them to be even more susceptible at this age.

	Number Examined.	Nail Biters.
Ten to thirteen years, ...	80	27
Twelve to fifteen years, ...	75	21
Fifteen to sixteen years, ...	52	13
Sixteen to seventeen years, . . .	10	2

In all the schools where the children have been the objects of careful and attentive observation, the reports have agreed in pronouncing that pupils observed to have the habit are universally the poorest students; that if boys, they are inclined to effeminacy, and if girls, to slackness. In many, there are marked defects of character and less sustained attention.

Berillon's careful inquiries elicit the fact that nail biting is not to be looked at merely as a child's habit, unpleasant and punishable, but as a direct and positive indication of hereditary physical degeneration. So marked is this, that he has found no families in which nail biting has been observed to be general whose head has not been either an alcoholic, an unbridled gambler, a convulsive, a feeble-minded person, a lunatic, a criminal or a consumptive.

In such families the hereditary degeneration is to be observed, unhappily, in more than nail biting. Often the heads of such children present species of deformation, such as microcephalus, bony crests and protuberances on different parts of the head, while the face reveals crossed eyes, near-sightedness, irregular teeth or displacement of the features. At this point, reversing the inquiry, Berillon gave his attention to a large class of nervous patients in the Paris hospitals and found that a considerable proportion of the children of these show the habit of nail biting, with other signs of physical degeneration.

Berillon thinks his experiments prove that nail biting as a habit in children has its source deeper than mere imitation or childish idiosyncrasy. He regards it as no wilful habit to be cured by ordinary petty punishment, but an indication of an incipient degeneration of the nervous system, which, once observed, may be treated understandingly at its very beginning. The outward habit, if it does not disappear when the cause is removed, will yield to ordinary treatment.

While M. Berillon's statistics are interesting, we do not feel that such unhappy conclusions are wholly warranted from his cases. School-children, especially girls, eat chalk and slate-pencils, and pass at a certain age through a condition which might be called "philo-pickle-lime-phagia"; and we think that a child may bite its nails without danger of passing to a state of idiocy. On the other hand, we can recall some nail biters who had been blessed with very intelligent and estimable progenitors.

CONTAGIOUS DISEASES IN PUBLIC SCHOOLS.

Dr. Moreau Morris has made a report to the Board of Health of the City of New York in regard to the spread of diphtheria and other contagious diseases among the children in the public schools. He found that it was the custom in all the schools that he visited for the scholars to use slates and pencils in common, these articles being kept in baskets from which they help themselves indiscriminately. The habit children have of putting their pencils in their mouths and of cleaning their slates with saliva is well-known, and the reporter suggests, as has been before suggested, that disease is frequently conveyed by this agency. It is therefore recommended that the use of slates be discontinued altogether, that all books which have been used by sick children should be destroyed, and that school-books should be covered with hard paper instead of muslin, as is now done, on account of the liability of the latter to retain disease germs.

MEDICAL NOTES.

A Physician in the Italian Cabinet. — Dr. Baccelli, Professor of Clinical Medicine at the University in Rome, and President of the Royal Academy of Medicine, has been made Minister of Public Instruction in the new Italian Cabinet.

Death at an Advanced Age. — James Morris, a negro, died at Lyons, N. Y., last week at the age of one hundred and twenty-one years. He was born in slavery in Delaware, and his age was authenticated by the family records. It is not stated whether he ever saw George Washington.

A Vindication of Darwinism. — A man was recently arrested in Central Park, New York, for assaulting a monkey in one of the cages because it made up faces at him.

An Opportunity for a Physician. — The *Medical News* prints the following advertisement, which appeared in the Philadelphia *Press* of December 11, 1893, "as another illustration of the mercantile demands for and uses of physicians":

> Wanted. — A Physician to travel with medicine company to lecture; experience not necessary: prefer one who can play organ; a steady, pleasant and lucrative position offered. Address, etc.

The Iowa Board of Medical Examiners. — This board has ordered that on and after July 4, 1898, no medical school shall be considered as of "good standing," for the purposes of registration of its alumni within the State, unless it has a four-course curriculum. Each course of attendance upon medical lectures must be not less than six months long, but two courses in the same year will not be counted for two full courses.

A Peasant's Idea of the Cholera. — Two Russian peasants in Tomsk were recently sentenced to imprisonment for the murder of a woman whom they had "taken for the cholera." A quarantine had been established in their town against the cholera in the neighborhood. On the morning of the murder the peasant woman had come to town, but was turned back at the outpost. Soon afterwards the two men left the village; and in a short time gunshots were heard near by. One of the men on trial said later in the day to his neighbors: "Pray to God. We have killed the cholera: It is dressed like a woman above the waist and like a man below." The men were convicted, and sent to jail for three years.

Medical Martyrs. — Commenting on the deaths of medical men from diphtheria recently recorded in the *British Medical Journal*, the *St. Petersburger medicinische Wochenschrift* says such occurrences are by no means rare in Russia. Within the last few weeks two practitioners of Sengilei in the Simbirsk Government, MM. Radsiminski and Chrenow, have died of diphtheria contracted from patients under their care. Two young Parisian physicians have died this autumn from diphtheria taken from a patient.

Looking after Barbers and Hairdressers. — The Government of the Republic of Colombia in view of the possibility of contagious diseases, such as ringworm, favus and syphilis, being transmitted by combs, brushes, etc., has passed an enactment making it compulsory for all barbers and hairdressers to keep the instruments of their art clean, and to disinfect them every time they have been used.

BOSTON AND NEW ENGLAND.

Small-Pox in Boston. — Only one new case of small-pox has occurred the last week. The patient is a man living in the same tenement-house in which the first group of cases occurred at the South End. There are now fifteen patients in the hospital.

A New Emergency Hospital in Boston. — A new Emergency Hospital, to cost about a hundred thousand dollars, is to be built by the friends and trustees of Tufts College; and the clinical advantages are to be given wholly and exclusively to the students of the Tufts Medical School.

Illegal Use of Pharmacy Certificates. — The first cases under the new law of last June by which the State Board of Registration has power to suspend any person's registration as a pharmacist, and his certificate, for such term as may be deemed fitting, and in flagrant cases to revoke the certificate, occurred last week. All three holders were charged with letting out their certificates to unqualified persons. The charges were proven, and one certificate was revoked and the other two suspended.

Report of the Children's Hospital. — The report of the managers of the Children's Hospital in Boston for the year 1893 says: "The year, just closed, has been an unusually busy one in all the departments and the results have been most successful and satisfactory. At the beginning of the year there were in the wards 41 patients; treated during the year, 295 boys and 237 girls. In addition, 2,071 new cases have been cared for in the out-patient department. Most of the patients admitted to the wards have been free patients." The Board of Officers elected is the same as last year with the exception of Mr. Oliver Ames 2d, who succeeds to his father's place.

The School for the Blind. — The sixty-second annual report of the trustees of the Perkins Institute and Massachusetts School for the Blind shows that there are now 237 blind persons connected with the establishment. The financial record shows a balance of $3,248.

Free Vaccination in Boston. — The appropriation of $5,000 for free vaccination has been exhausted; but the Mayor, in view of the satisfactory working of the public inoculation, has authorized the continuance of the work, and has told the Board of Health that the money expended will be granted when the work is completed. The number of persons vaccinated increased each day last week from 1,000 on the first Monday to over 4,000 on Saturday, a total of over 20,000 for the week.

Small-Pox Precautions in Cambridge. — The Board of Health of Cambridge has opened public stations for free vaccination, and has secured from the City Council the sum of $5,000 with which to build a hospital for contagious diseases. During the cholera scare a year ago the Board petitioned the City Council for $4,500 for this purpose, but the appropriation was not given.

Influenza at Sea. — One of the steamers from Boston to New York reports that on her last voyage she was signalled from the Vineyard Sound Lightship, that most of the crew were sick with the grip, and in need of medical attendance. A steamer was sent from New Bedford with a physician.

NEW YORK.

Influenza. — On December 18th it was reported that there were more than five hundred cases of grip at Dunkirk, N. Y., and three deaths had occurred.

Soft Coal. — For some time past complaints have been made of the increasing use of soft coal by various manufacturing establishments in the city, by reason of which the atmosphere is contaminated by bituminous smoke; and the Board of Health has now issued peremptory orders that the nuisance shall be abated.

A Bullet in the Skull for Sixteen Months. — A case of unusual interest has recently occurred at St. Luke's Hospital. On November 21st a male patient, thirty-one years of age, was admitted suffering from severe spinal trouble, who stated that fifteen months before he had shot himself in the back of the neck with a pistol. On December 20th he died, and the bullet was found imbedded in the base of the skull. The cause of death was found to be pressure on the spinal-cord from vertebral dislocation, together with spinal meningitis, which were produced by the ball, which had remained in the body for sixteen months.

A Lion on an Operating-Table. — At the New York College of Veterinary Surgeons, on December 29th, the operation of setting and dressing the fractured femur of a lion from one of the down-town museums was successfully accomplished. The lion was kept quiet by a hypodermic injection of morphine.

Death from a Spider's Bite. — While engaged in helping to put up the Christmas decorations in the Episcopal Church at Sparkhill, on the Hudson, a young woman was bitten on the cheek by a spider which had been brought in on the greens, and in a few days death resulted from septicæmia.

Appointments to the State Board of Health. — Governor Flower has appointed as members of the State Board of Health Dr. John Edwards, of Gloversville, to succeed Dr. Dawes, of Saugerties, and Dr. Murray M. Adams, of Watertown, in the place of Professor Perkins.

Mortality. — During the week ending December 23d, the number of deaths reported in the city was 818, which is an increase of 43 over the mortality of the previous week, and 11 above the average for the corresponding weeks of the past five years, and which represents an annual death-rate of 22.19 per thousand of the estimated population. During the week there were 166 deaths from pneumonia, an increase of 33, and six deaths from influenza, against three during the week ending December 16th. During the week ending December 30th the number of deaths from influenza increased to 14, but the deaths from pneumonia showed a decrease of 22. The total number of deaths for the week was 824, which is 21 less than the average of the corresponding weeks during the past five years. This represents an annual death-rate of 22.34, against 22.91 for the same week since 1886. There were 637 cases and 88 deaths reported from contagious diseases, against 599 cases and 78 deaths in the week ending December 23d.

The Vital Statistics for 1893. — During the year 1883 there were reported 51,516 births, 16,144 marriages and 44,370 deaths in the city. In 1892 the figures were, respectively, 49,447, 16,001 and 44,329. The death-rate for 1893, estimated on a population of 1,827,396, was 23.46, which is the smallest ever recorded; the lowest previous death-rate having been 23.65, in the year 1877. The number of deaths from some of the principal diseases in 1893 were as follows: influenza, 220 (495 in 1892); small-pox, 100; measles, 387; scarlet fever, 531; diphtheria, 1,962; whooping-cough, 340; typhoid fever, 380; typhus fever, 201; diarrhœal diseases, 3,314; cardiac disease, 2,376; bronchitis, 1,569; pneumonia, 6,476 (635 more than in 1892); consumption, 5,101 (5,033 in 1892); sun-stroke, 43 (against 320 in 1892).

Appropriation for Charities and Correction. — For the year 1894, the Board of Estimate and Apportionment has allowed $2,295,675 and $425,080 for the expenses of the Departments of Charities and Correction. For 1893, the appropriations were, respectively, $2,223,425 and $470,230.

Hospital Saturday and Sunday Association. — As December 30th and 31st were both snowy days, it is to be feared that the annual collection of the Hospital Saturday and Sunday Association will prove smaller than usual this year. In its appeal to the public for liberal contributions for the hospitals the Association states that it has been found that, through the obliteration of old methods of individual competition by the establishment of large corporations and trusts in modern times, the income of rich charitable institutions as are supported by the individual gifts of the benevolent has been seriously affected.

Report of the State Board of Health. — The bulletin of the State Board of Health for the month of November, issued December 30th, shows that the reported mortality has further decreased from the low daily average of 290 in October to one of 281, which is the same as that of November, 1892. This is uniformly the healthiest month in the State of New York, the number of deaths per day being less during November by 25 than the daily average for the past eight years. Compared with November, 1892, the zymotic mortality, and also the infant mortality, is lower; both are also lower than during the month of October. Typhoid fever caused the same number of deaths as in November, 1892, and 75 fewer deaths than in October. Scarlet fever continues, with little change, to be less prevalent than last year. There is an increase in measles since October, chiefly in New York City. Diphtheria caused about the same number of deaths as in last November. The death-rate for the month from all causes is 15.35, against 15.83 in October.

◆

Miscellany.

THE CHANGES IN THE PHARMACOPŒIA.

The new pharmacopœia of 1890 became official this week. For the convenience of our readers we give a list of the new remedies which are now official as well as of those which are no longer recognized. Certain changes in official nomenclature are important for correct usage in the future. There are eighty-eight new articles, and ninety have been omitted.

The *newly-adopted* articles are the following:

Acetanilidum, acidum hypophosphorosum dilutum, acidum stearicum, adeps lanæ hydrosus, alcohol absolutum, alcohol deodoratum, aloe barbadensis, aloinum, aqua aurantii florum (diluted), aqua chloroformi, aqua hydrogenii dioxidi, aqua rosæ (diluted), aspidosperma, barii dioxidum, caffeina citrata, caffeina citrata effervescens, calcii sulphas exsiccatus, cinnamomum saigonicum, cocainæ hydrochloras, convallaria, elastica, elixir aromaticum, elixir phosphori, eriodictyon, eucalyptol, extractum apocyni fluidum, extractum asclepiadis fluidum, extractum aspidospermatis fluidum, extractum cimicifugæ, extractum convallariæ fluidum, extractum eriodictyi fluidum, extractum jalapæ, extractum lappæ fluidum, extractum menispermi fluidum, extractum phytolaccæ fluidum, extractum rhamni purshianæ fluidum, extractum scoparii fluidum, extractum uvæ ursi, extractum viburni opuli fluidum, ferri et quininæ citras solubilis, glyceritum acidi carbolici, glyceritum acidi tannici, glyceritum boroglycerini, glyceritum hydrastis, hydrastininæ hydrochloras, hyoscinæ hydrobromas, hyoscyaminæ hydrobromas, lithii citras effervescens, menthol, methyl salicylas, naphtalinum, naphthol, oleatum zinci, oleum betulæ volatile, oleum cadinum, oleum terebinthinæ rectificatum, pancreatinum, paraldehydum, pepsinum, petrolatum liquidum, petrolatum spissum, physostigminæ sulphas, pilulæ catharticæ vegetabiles, pilulæ ferri carbonatis, potassii citras effervescens, pryogallol, resorcinum, rhamnus purshiana, salol, sodii nitris, sparteinæ sulphas, spiritus amygdalæ amaræ, spiritus aurantii compositus, spiritus glonoini, spiritus phosphori, strontii bromidum, strontii iodidum, strontii lactas, strophanthus, suppositoria glycerini, terebenum, terpini hydras, tinctura lactucarii, tinctura quillajæ, tinctura strophanthi, trochisci santonini, viburnum opulus, zea.

The articles dismissed are:

Abstractum aconiti, abstractum belladonnæ, abstractum conii, abstractum digitalis, abstractum hyoscyami, abstractum ignatiæ, abstractum jalapæ, abstractum nucis vomicæ, abstractum podophylli, abstractum senegæ, abstractum valerianæ, acetum lobeliæ, acetum sanguinariæ, æther, ammonii phosphas, ammonii sulphas, amylum iodatum, aurantii flores, azedarach, cannabis Americana, ceratum extracti cantharidis, ceratum sabinæ, charta cantharidis, chinoidinum, chloroformum venale, chinchona flava, cornus, cupri acetas, cydonium, elixir aurantii, emplastrum ammoniaci, emplastrum asafœtidæ, emplastrum galbani, emplastrum picis canadensis, extractum cornus fluidum, extractum lactucarii fluidum, extractum mali, extractum mezerei, fel bovis inspissatum, ferri oxalas, galbanum, gaultheria, gutta-percha, hydrargyri sulphidum rubrum, ignatia, infusum brayeræ, juniperus, lavandula, linimentum cantharidis, linimentum plumbi subacetatis, liquor ferri et quininæ citratis, liquor gutta-perchæ, liquor pepsini, magnesii sulphis, magnolia, maltum, mistura magnesiæ et asafœtidæ, mistura potassii citratis, mucilago cydonii, oleum lavandulæ, oleum rutæ, oleum succini, oleum valerianæ, origanum, pillulæ ferri compositæ, pillulæ galbani compositæ, pix canadensis, potassii sulphis, potassii tartras, prinos, rosmarinus, salix, sodii bicarbonas venalis, sodii santoninas, spiritus odoratus, syrupus ferri bromidi, syrupus limonis, thuja, tinctura conii, tinctura ferri acetatis, tinctura ignatiæ, trochisci magnesiæ, trochisci sodii santoninatis, unguentum acidi gallici, unguentum mezerei, unguentum sulphuris alkalinum, ustilago, vinum album fortras, vinum aloes, vinum aromaticum, vinum rhei, viola tricolor.

CHANGES IN OFFICIAL LATIN TITLES.

Pharmacopœia, 1880.	Pharmacopœia, 1890.
Acidum arseniosum	Acidum arsenosum
Æther fortior	Æther
Aloe	Aloe socotrina
Aluminii hydras	Alumini hydras
Aluminii sulphas	Alumini sulphas
Aqua aurantii florum	Aquæ aurantii florum fortior
Aqua creasoti	Aqua creosoti
Aqua rosæ	Aqua rosæ fortior
Arsenii iodidum	Arseni iodidum
Brayera	Cusso
Chloroformum purificatum	Chloroformum
Cinnamomum	Cinnamomum cassia Cinnamomum zeylanicum
Collodium cum cantharide	Collodium cantharidatum
Creasotum	Creosotum
Erythroxylon	Coca
Emplastrum picis cum cantharide	Emplastrum picis cantharidatum
Extractum aloes aquosum	Extractum aloes
Extractum belladonnæ alcoholicum	Extractum belladonnæ foliorum alcoholicum
Extractum belladonnæ fluidum	Extractum belladonnæ radicis fluidum
Extractum brayeræ fluidum	Extractum cusso fluidum
Extractum conii alcoholicum	Extractum conii
Extractum hyoscyami alcoholicum	Extractum hyoscyami
Extractum sarsaparillæ compositum fluidum	Extractum sarsaparillæ fluidum compositum
Extractum stramonii	Extractum stramonii seminis
Extractum stramonii fluidum	Extractum stramonii seminis fluidum
Extractum viburni fluidum	Extractum viburni prunifolii fluidum
Ferri phosphas	Ferri phosphas solubilis
Ferri pyrophosphas	Ferri pyrophosphas solubilis
Ferri suphas præcipitatus	Ferri sulphus granulatus
Gossypium	Gossypium purificatum
Hydrargyri iodidum viride	Hydrargyri iodidum flavum
Liquor acidi arseniosi	Liquor acidi arsenosi
Liquor arsenii et hydrargyri iodidi	Liquor arseni et hydrargyri
Liquor sodii arseniatis	Liquor sodii arsenatis iodidi
Magnesii citras granulatus	Magnesii citras effervescens
Mangani oxidum nigrum	Mangani dioxidum
Mistura ammoniaci	Emulsum ammoniaci
Mistura amygdalæ	Emulsum amygdalæ
Mistura asafœtidæ	Emulsum asafœtidæ
Mistura chloroformi	Emulsum chloroformi
Mistura ferri et ammonii acetatis	Liquor ferri et ammonii acetatis
Oleum bergamii	Oleum bergamottæ
Oleum theobromæ	Oleum theobromatis
Opium denarcotisatum	Opium deodoratum
Petrolatum	Petrolatum molle Petrolatum spissum
Phytolaccæ bacca	Phytolaccæ fructus
Piperina	Piperinum
Quillaia	Quillaja
Sapo viridis	Sapo mollis
Sodii arsenias	Sodii arsenas
Tinctura belladonnæ	Tinctura belladonnæ foliorum
Tincthra colchici	Tinctura colchici seminis
Tinctura opii deodorata	Tinctura opii deodorati
Tinctura saponis viridis	Tinctura saponis mollis
Tinctura stramonii	Tinctura stramonii seminis
Viburnum	Viburnum prunifolium

◆

SOME VACCINATION STATISTICS.

The present outbreak of small-pox in Boston would undoubtedly cause but little alarm were it not for the fact that the complete freedom from the disease for the last twenty years has resulted in a widespread carelessness regarding vaccination. Nearly a whole generation has grown up since the last epidemic, and a surprisingly large number of these young people have not been vaccinated. The increase in foreign immigration has been large, and comparatively few of this class of people seek vaccination under less stimulus than fear.

Some statistics of vaccination of 5,866 cases recently published by Mr. Francis Cadell in the Edinburgh *Medical Journal* are of especial interest at this time. The figures are taken from the records of the Edinburgh Dispensary from July, 1886, to December, 1891.

"*Insusceptibility.* — No case occurred in which an infant was found insusceptible to vaccination by the arm-to-arm method. *Repetitions.* — Sixty-one cases required the vaccination to be repeated, owing to want of success on the first occasion. *Erysipelas.* — Seven cases of this dangerous accident occurred, and in almost every case the dwelling-house of the family was found to be damp or otherwise unhealthy. *Suppuration of Lymphatic Glands.* — This complication of vaccination also occurred seven times out of 5,866 cases. *Syphilis.* — There was no case of syphilitic infection. *Deaths.* — Two deaths resulted from the complications of vaccination — one from erysipelas, the other from blood poisoning following the suppuration of a lymphatic gland in the axilla. Both deaths took place about three weeks after the operation. *Revaccinations.* — Only 45 revaccinations were performed. The large proportion of these were on boys between the ages of twelve and fourteen, employed at the General Post-office. Among the laboring classes few came to the dispensary to be revaccinated, and these only when compelled by their employers. It would be much to the advantage of the community were revaccination made compulsory."

◆

BLOOD PRESSURE IN DIPHTHERIA.

The appalling rapidity with which death may follow the first clinical evidence of heart paralysis in diphtheria has led Friedemann[1] to experiment upon a series of cases to determine whether sphygmomanometric measuring of the blood pressure could give the physician an earlier warning of the cardiac poisoning, especially in children. Sixty-three cases were studied, in all the measurements were taken upon the radial artery and when the child was in a recumbent position and, if possible, during sleep. His results were as follows: The most favorable prognosis was for such cases as showed at no time any variation in the pressure, more than the slight rise and fall which was noted in nearly every case, and which, when not over five or ten millimetres of mercury, was of no moment. The second class of cases, which, though they ended in recovery after a longer or shorter time, gave the physician much anxiety, were those in which there was a continued fall of pressure. So long as the manometer did not fall below seventy-five to ninety millimetres of mercury (according to the age and size of the child), the prognosis was still fair. A lower pressure than seventy-five millimetres was considered serious and a pressure of less than sixty-five was almost invariably cause for a fatal prognosis. Twenty-six cases at one time or another showed an abnormally low pressure, seventy millimetres or less, Hg. Fifteen of these showed a sudden dangerous fall within the first week, and of these fifteen only two recovered, death in the other cases occurring within seven days. In the remaining twelve cases which first showed a fall of blood pressure after the first week of illness, five recovered and seven died within eight days afterwards. The general result of the observations was that a regularly-recorded measure of the blood pressure gave the earliest warning of approaching danger, which often was not shown by clinical signs until later.

---

[1] Jahrbuch. f. Kinderheilkunde, xxxvi, p. 50; Centralblatt f. med. Wissenschaften, 1893, p. 48.

Correspondence.

"SENDING PATIENTS AWAY FROM HOME."

1517 Stout St., Denver, Col.,
December 27, 1893.

Mr. Editor: — In connection with Dr. Knight's paper in a recent issue (December 21, 1893), I wish to call attention once more to a matter which needs to be mentioned frequently. I refer to a habit that some physicians, no doubt actuated by a mistaken kindness to the patient, have of stating to the patient about starting for Colorado, that he had "a little trouble in his bronchial tubes," or "a little chronic bronchitis," or merely "that he is a little run down." Many such patients come here, and we all see them occasionally, with the idea that other persons who come are consumptive, but that in their own cases there is nothing of serious import. Hence they are likely to rebel at suggestions that they conform to such rules as are commonly given to phthisical patients. Some even refuse to believe that they have any serious disease, because they say, if such were the case, "my own physician at home would have told me so, and he said nothing of the kind." Thus I have under my care at this time a young lady with all the usual signs of phthisis at the right apex, who utterly refuses to believe that there is anything of sufficient import in her case to make it necessary for her to stay more than a few months in Colorado, because her physician in the East told her that she had only "a little bronchial difficulty," and a visit there for a few months would be all that was necessary. She has been here for five months, and is making preparations to return to the Atlantic coast in April, as she has gained thirteen pounds and her cough has nearly ceased. The great probability is that she will be compelled to return here within a short time after her return.

I have seen many illustrations of this same error during the past eleven years. Most of the cases from the larger medical centres, and nearly all from the hospitals and clinics, which we see in dispensary and hospital work here are quite aware of the gravity of the disease for which they have left home, and are prepared to stay here permanently if necessary. Certainly private patients should not be deceived in a matter of so serious import through any motives of false delicacy or desire to avoid telling an unpleasant truth upon the part of the family physician. It is almost needless to state that it is much easier to treat those patients who have a full knowledge of the gravity of the situation than others. I think the physician, in sending a patient here, should speak plainly of the necessity of remaining for some time, or even, possibly, permanently. I have known several consumptives to regain health to such a degree as to lead them to believe that they could safely reside in the East, who, breaking down again, have returned to Colorado too late to again check the tuberculous process, so that the outcome has been a fatal one. With proper advice from the family physician in the East, many such patients would see the desirability of remaining here permanently rather than incur such risks by a return home.

A wider dissemination of the points so well treated in the paper of Dr. Knight would certainly be of inestimable value to the profession, and, through them, to the public.

I am yours very truly,
J. N. Hall, M.D.

ANOTHER FOUR-YEARS' COURSE.

University of Minnesota,
Minneapolis, December 30, 1893.

Mr. Editor: — The Board of Regents of the University of Minnesota have extended the course of study in the College of Medicine and Surgery from three to four years, of eight and one-half months' duration for each course. The new schedule of requirements becomes operative in 1895.

Perry H. Millard, M.D.,
Dean of the College of Medicine and Surgery.

METEOROLOGICAL RECORD,

For the week ending December 23, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..17	29.67	36	41	30	77	84	80	S.W.	W.	12	9	O	C.	.08
M..18	29.96	22	28	15	74	68	71	N.W.	S.W.	6	8	C.	F.	
T..19	29.76	34	45	24	97	82	90	S W.	W.	4	16	N.	O.	
W.20	30.24	24	29	18	51	54	52	W.	W.	24	15	C.	C.	.07
T..21	30.16	30	44	17	54	52	53	S.W.	S.W.	13	22	F.	O.	
F..22	30 38	38	42	33	71	90	80	W.	E.	10	13	F.	N.	
S..23	30.14	44	55	32	90	79	84	S.W.	W.	10	9	O.	C.	.03
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, December 23, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Typhoid fever.	Diphtheria and croup.	Scarlet fever.
New York	1,891,306	818	294	12.60	24.60	.72	3.24	.96
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,115,562	—	—	—	—	—	—	—
Brooklyn	978,394	368	108	10.53	24.57	.81	4.32	1.08
St. Louis	560,000	—	—	—	—	—	—	—
Boston	487,397	264	63	14.06	27.74	.38	7.22	2.66
Baltimore	500,000	—	—	—	—	—	—	—
Washington	308,431	131	24	6.84	16.72	4.56	3.80	—
Cincinnati	305,000	130	36	14.63	10.78	3.85	3.85	—
Cleveland	290,000	140	46	13.49	22.01	3.55	4.26	1.42
Pittsburg	263,709	108	37	11.96	24.84	1.84	1.84	6.44
Milwaukee	250,000	96	50	13.52	20.80	1.04	6.24	1.04
Nashville	87,754	31	7	3.23	16.15	—	—	—
Charleston	65,165	44	15	—	4.54	—	—	—
Portland	40,000	18	1	5.55	33.33	—	—	5.55
Worcester	96,217	26	10	19.25	15.40	3.86	3.86	—
Fall River	87,411	33	13	12.12	39.39	3.03	3.03	3.03
Lowell	87,191	36	12	8.34	8.34	2.78	—	2.78
Cambridge	77,100	35	15	17.16	20.00	—	8.58	2.86
Lynn	62,656	20	—	10.00	10.00	—	5.00	—
Springfield	48,684	21	5	4.76	33.22	—	—	—
Lawrence	48,355	—	—	—	—	—	—	—
New Bedford	45,886	36	14	8.34	27.80	—	2.78	—
Holyoke	41,278	—	—	—	—	—	—	—
Salem	32,233	13	2	7.69	7.69	7.69	—	—
Brockton	32,140	7	—	14.28	14.28	14.28	—	—
Haverhill	31,396	5	0	—	40.00	—	—	—
Chelsea	30,264	15	2	13.33	13.33	6.66	6.66	—
Malden	29,394	10	2	—	20.00	—	—	—
Newton	27,556	—	—	—	—	—	—	—
Fitchburg	27,146	8	3	12.50	37.50	—	—	—
Taunton	26,972	13	1	—	30.76	—	—	—
Gloucester	26,688	5	3	—	—	—	—	—
Waltham	22,058	9	2	—	22.22	—	—	—
Quincy	19,642	11	4	9.09	36.36	9.09	—	—
Pittsfield	18,802	10	3	10.00	30.00	—	10.00	—
Everett	16,585	4	1	25.00	50.00	—	25.00	—
Northampton	16,331	13	0	7.69	15.38	7.69	—	—
Newburyport	14,073	4	2	25.00	—	25.00	—	—
Amesbury	10,920	5	3	60.00	20.00	—	—	60.00

Deaths reported 2,550: under five years of age 785; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 297, acute lung diseases 575, consumption 273, diphtheria and croup 121, typhoid fever 37, scarlet fever 37, diarrhœal diseases 32, measles 20, whooping-cough 17, cerebro-spinal meningitis 15, erysipelas and malarial fever 6 each, small-pox 4.

From diarrhœal diseases New York 12, Cincinnati 6, Cleveland 5, Brooklyn, Boston and Cambridge 2 each. From measles New York 9, Brooklyn and Milwaukee 4 each, Worcester 2, Boston 1. From whooping-cough New York 6, Brooklyn 4, Cincinnati 3, Boston 2, Cleveland and Pittsburg 1 each. From cerebro-spinal meningitis New York 6, Brooklyn 3, Cleveland, Worcester, Lowell, Lynn, Somerville and Fitchburg 1 each. From erysipelas Boston 2, New York, Cleveland, Pittsburgh and New Bedford 1 each. From malarial fever Brooklyn 3, New York, Nashville and Brockton 1 each. From small-pox New York and Boston 2 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending December 16th, the death-rate was 26.6. Deaths reported 5,275: acute diseases of the respiratory organs (London) 711, whooping-cough 172, diphtheria 122, measles 74, scarlet fever 66, fever 52, diarrhœa 47.

The death-rates ranged from 16.0 in Norwich to 36.4 in Bristol; Birmingham 21.2, Bradford 22.1, Cardiff 21.2, Croydon 24.9, Leeds 23.6, Leicester 29.4, Liverpool 31.8, London 31.8, Manchester 27.6, Newcastle-on-Tyne 21.2, Nottingham 31.9, Portsmouth 20.3, Salford 19.7, Sheffield 27.0, Sunderland 19.0, West Ham 25.5, Wolverhampton 19.2.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 23, 1893, TO DECEMBER 29, 1893.

By direction of the Secretary of War, leave of absence for two months, to take effect on or about January 15, 1894, with permission to apply for an extension of one month, is granted **Major John D. Hall**, surgeon.

Lieut. John S. Kulp, assistant surgeon, U. S. A., is relieved from further duty at Jackson Park, Chicago, Ill., from December 23, 1893.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOUR WEEKS ENDING DECEMBER 16, 1893.

Bailhache, P. H., surgeon. Granted leave of absence for five days. November 28, 1893. To inspect quarantine ports. December 7, 1893.

Purviance, George, surgeon. To inspect quarantine ports. December 7, 1893.

Sawtelle, H. W. surgeon. To inspect quarantine ports. December 7, 1893. Granted leave of absence for three days. December 4, 1893.

Austin, H. W., surgeon. Detailed as chairman, Board to amend and revise the Quarantine Regulations. December 9, 1893.

Gassaway, J. M., surgeon. To proceed to Mobile, Ala., as inspector. November 22, 1893. To inspect quarantine ports. December 7, 1893.

Mead, F. W., surgeon. Detailed as chairman, Board to examine candidates, Revenue Marine Service. December 9, 1893.

Carter, H. R., surgeon. To proceed to Brunswick, Ga., for temporary duty. November 29, 1893. To inspect quarantine ports. December 7, 1893. Detailed as member, Board to revise and amend the Quarantine Regulations. December 9, 1893.

Wheeler, W. A., surgeon. Detailed as member, Board to revise and amend Quarantine Regulations. December 9, 1893.

Banks, C. E, passed assistant surgeon. Granted leave of absence for seven days. November 22, 1893.

Carmichael, D. A., passed assistant surgeon. To inspect quarantine ports. December 9, 1893.

White, J. H., passed assistant surgeon. To proceed to Savannah, Ga., for duty. December 4, 1893. Detailed as member, Board to revise and amend the Quarantine Regulations. December 9, 1893.

Carrington, P. M., passed assistant surgeon. To proceed to Baltimore, Md., for duty. December 9, 1893.

Williams, L. L., passed assistant surgeon. To proceed to Charleston, S. C., for duty. December 4, 1893.

Pettus, W. J., passed assistant surgeon. Granted leave of absence for eleven days. To proceed to Buffalo, N. Y., for duty. December 4, 1893.

Kinyoun, J. J., passed assistant surgeon. To rejoin station Washington, D. C. November 24, 1893. Granted leave of absence for three days. December 4, 1893. Detailed as recorder, Board to revise and amend Quarantine Regulations. December 9, 1893.

Woodward, R. M., passed assistant surgeon. Granted leave of absence for seven days. To proceed to Cairo, Ill., for duty. December 4, 1893.

Vaughan, G. T., passed assistant surgeon. Detailed as recorder, Board for physical examination of candidates, Revenue Marine Service. December 9, 1893.

Cobb, J. O., passed assistant surgeon. To inspect quarantine ports. December 7, 1893.

Guiteras, G. M., passed assistant surgeon. To report at Bureau for temporary duty. December 6, 1893.

Geddings, H. D., passed assistant surgeon. To proceed to New York, N. Y., for duty. December 2, 1893.

Young, G. B., assistant surgeon. To proceed to New York, N. Y., for duty. December 4, 1893.

Stimpson, W. G., assistant surgeon. To proceed to Detroit, Mich. December 4, 1893.

Burns, B. W., assistant surgeon. Granted leave of absence for seven days. To proceed to Washington, D. C. December 4, 1893.

Houghton, E. R., assistant surgeon, To proceed to Vineyard Haven, Mass., for duty. December 4, 1893.

Rosenau, M. J., assistant surgeon. To proceed to St. Louis, Mo., for duty. December 4, 1893.

Nydegger, J. A., assistant surgeon. Granted leave of absence for seven days. To rejoin station Pittsburgh, Pa. December 7, 1893.

Stewart, W. J., assistant surgeon. Granted leave of absence for fourteen days. November 27, 1893.

Strayer, Edgar, assistant surgeon. Granted leave of absence for seven days. November 27, 1893.

Oakley, J. H., assistant surgeon. To proceed to Halifax, N. S., for temporary duty. November 24, 1893. To proceed to New York, N. Y., for temporary duty. December 14, 1893. To proceed to San Francisco, Cal., for duty. December 16, 1893.

SOCIETY NOTICE.

Boston Society for Medical Improvement. – The *annual* meeting of the Society will be held at the Medical Library, No. 19 Boylston Place, on Monday, January 8, 1894, at 8 o'clock, P. M.

Election of officers. Report of the Treasurer.

Dr. W. J. Otis will read a paper on, "External Piles and their Relation to the External Hemorrhoidal Veins." Discussion by Dr. C. B. Porter, Dr. H. L. Burrell and others.

Dr. Myles Standish will read a paper on, "Two Cases of Chancre of the Eyelid." Discussion by Dr. A. Post, Dr. E. Wigglesworth and others.

Dr. C. B. Porter will show patients illustrating results of some exceptional operations for exceptional surgical lesions.

Members are kindly requested to show interesting cases and pathological specimens.

John T. Bowen, M.D., *Secretary.*

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The next lecture will be given on Wednesday evening, January 10th, at 8 o'clock, by Assistant Professor Ernst. Subject, "Advances in Bacteriology." Physicians are cordially invited.

RECENT DEATHS.

Charles M. Cresson, M.D., a well-known chemist of Philadelphia, died December 27th, aged sixty-five years.

Dr. S. Guttmann, of Berlin, the editor of *Deutsche Medicinische Wochenschrift*, died of influenza, December 22d.

BOOKS AND PAMPHLETS RECEIVED.

Epileptic Insanity. By James H. McBride, M.D. Reprint. 1893.

Fourteenth Annual Report of the Associated Charities of Boston, November, 1893. Boston. 1893.

Bacteriology in its Relations to Chemical Science. By Percy Frankland, Ph.D., B.Sc. (Lond.), F.R.S. Reprint. 1893.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland, Ninety-fifth Annual Session held at Baltimore, April, 1893; also Semi-annual Session held at Easton, March, 1892.

Spastic Senile Entropion cured by Canthotomy. The Treatment of Blennorrhœa Neonatorum. The Relation between the Eyes and Disease of the Female Genital Organs. By Boerne Bettman, M.D., of Chicago, Ill. Reprints. 1893.

The Measured Effects of Certain Therapeutic Agents, among which especially are Lavage, HCl, and Intragastric Electricity, upon the Secretory and Motor Functions of the Stomach in Cases of Chronic Catarrh (Glandular Gastritis). By D. D. Stewart, M.D. Reprint. 1893.

Chirurgie des Malades du Systéme Nerveux. M. le Professeur Charcot, Leçons du Professeur, Mémoires, Notes et Observations Parus pendant les années 1889–90 et 1890–91 et publiés sous la directiore de Georges Guinon, chef de clinique avec la collaboration de MM. Blocq; Souques, et J. B. Charcot, internes de la clinique. Tome II. Paris: Aux Bureaux du Progrès Médical. 1893.

Original Articles.

CASES OF ABDOMINAL SURGERY OCCURRING IN THE PRACTICE OF DR. J. COLLINS WARREN AT THE MASSACHUSETTS GENERAL HOSPITAL DURING THE WINTER OF 1893.

REPORTED BY CHARLES L. SCUDDER, M.D.

(Concluded from No. 1, page 5.)

Case XIV. Exploratory laparotomy for tumor in the region of the kidney; recovery.

A negro, forty-two years old, single, always well with the exception of some rheumatism, six weeks ago complained of pain in the back and the left side of the abdomen. This pain has gradually increased, accompanied by nausea. Decubitus on the left side. The chest and spine, upon examination, were negative. There was a tumor in the left loin extending under the ribs, which moved slightly with respiration. The edge of the tumor was rounded, rather ill-defined, and not movable. The colon passed in front of the tumor.

Operation. — A curved incision was made from the eighth rib on the left, with the convexity down, as far as the left anterior superior spinous process. The colon presented. The patient having been tipped over on one side, the intestines were displaced so as to uncover the region of the left kidney. Irregular nodular masses (not connected with the spleen, but retro-peritoneal) were found adherent to the inferior vena cava and to the left iliac vessels and to the brim of the pelvis, these being enlarged lymphatic glands. Large and tortuous veins covered the mass in the region of the left kidney. An incision was made through the posterior wall of the peritoneum. The abdominal contents were displaced from over the tumor as far as the spinal column, clearly exposing this region. Owing to the presence of infected glands, it was found impossible to remove the mass without incurring too great risk, and further interference was advised against by those seeing the patient in consultation. Consequently, the abdominal wound was closed, and the patient made an uninterrupted recovery from the exploratory operation. He was heard from several months after he left the hospital, and was in fairly good health, the mass in the side still being present.

Case XV. Pyo-salpinx; operation; recovery.

A woman, married, twenty-three years old. The catamenia have always been regular and painless until within the last two years, when there has been some irregularity. She has two children, the youngest being three years old. For two years there has been some swelling in the left side of the pelvis, which has caused a certain amount of pain. She entered the hospital on the medical side a few months ago, and was treated for a left salpingitis, and apparently improved while under treatment. Symptoms of pain in the left groin returned shortly after her discharge from the hospital. Examination upon re-entering found tenderness in the left groin upon deep pressure, and by the vagina the left cul-de-sac filled with a doughy mass which was tender.

Operation. — Trendelenberg position. A median incision found the omentum slightly adherent to the uterus and to a tumor in the left side. While freeing the adhesions the sac of the tumor was ruptured and a puriform fluid escaped, some of it into the abdominal cavity. The sac was removed, the abdomen washed with boiled water and drained by glass drainage in the posterior cul-de-sac together with iodoform gauze. The tube was removed in two days, when the temperature was normal. She was discharged four weeks from the time of the operation, well.

Case XVI. Exploratory laparotomy; carcinoma of stomach; recovery.

A man fifty years old, single, had always been well, although not very strong. Two months ago he had the feeling of weight in the left side, especially on rising in the morning; had lost some weight during this time, and had a dull, dragging feeling in the left abdomen. At no time has there been vomiting or distress after eating. His bowels have been fairly regular. He was pale, but not cachectic. In the abdomen, a hard, ovoid mass was felt in the epigastric region, which was movable, slightly irregular on the surface, seen to move with respiration, and was not adherent to the abdominal wall.

Operation by an incision parallel to the left costal margin. The stomach presented in the wound very much enlarged, with a tumor at the greater curvature reaching nearly to the pylorus. The tumor involved the inferior, posterior and some of the inferior and anterior walls of the stomach. It was nodular posteriorly and adherent to the transverse colon. No secondary nodules were detected in the liver. On account of the extent of the growth, which previous to the operation could not be accurately determined, further interference was advised against. The wound was closed with interrupted sutures.

The man made a good recovery from the laparotomy, and died about six months later from the disease.

Case XVII. Double pyosalpinx; operation; recovery.

A woman thirty-one years old, married. Catamenia regular until the past few months. No children or miscarriages. Two weeks ago pain and soreness developed in the right ovarian region accompanied by tenderness in the right side of the abdomen; and upon vaginal examination bulging of the right vaginal vault, with fluctuation, was detected.

Operation. — Trendelenberg position. A median incision disclosed a tumor on the right side, the size of a small orange, adherent to the omentum and small intestine posteriorly. The tip of the vermiform appendix was adherent to the tumor. Half an ounce of foul pus and cheesy material escaped posteriorly upon an attempt to unroll the tube, which had become twisted backward. Upon removal of the tube, the pelvis was thoroughly irrigated with boiled water, a glass drainage-tube placed in the posterior cul-de-sac, and the abdominal wound partially closed. The drainage-tube was removed in one week. Two days later there was a sudden rise of temperature, and a phlebitis developed on one side. This gradually subsided, and the patient was discharged a few weeks later, the wound entirely closed. Shortly after the removal of the glass drainage the discharge became fæcal, but remained so for only a day or two. Evidently a fistula formed, which rapidly closed without interference.

Case XVIII. Abdominal hysterectomy for cancer of the uterus; death.

A woman fifty-one years old, married. Her grandmother died of "cancer of the womb." The patient passed the climateric six years ago. For the past six months she has complained of pain in the left ovarian region, which has extended into the groin and left thigh. Vaginal examination found present an os uteri three or four times the normal size, ulcerated, and the vaginal wall adjacent to the external os likewise ulcerated. An extension of the disease beyond the regions above named was not detected. Twenty-four hours previous to the operation the cervix was cauterized with the Pacquelin cautery and packed with iodoform gauze, the vagina being likewise packed. At the time of operation the vagina was irrigated with corrosive sublimate (1 to 3,000). The cervix was again cauterized, and an iodoform gauze tampon placed in the cervix. In the Trendelenberg position by median abdominal incision the uterus was exposed. The right and left broad ligaments were clamped and divided, the ovarian arteries being separately ligatured. The peritoneum was separated anteriorly from the bladder and posteriorly from the rectum. The vaginal wall was found, excepting in the area felt by previous examination, to be free from new growth. The vagina was packed with gauze up to the vaginal wound. A glass drainage-tube was placed through the abdominal incision down to the vaginal wound, and surrounded by gauze so that there was continuous gauze drainage from the abdominal wound to the vaginal wound externally. The infiltration of the vaginal wall below the cervix made the attempt to remove the disease through the abdominal wound exceedingly slow, and prolonged the operation so that the shock was necessarily very severe, and in her weak condition proved to be too great. The patient died twenty-four hours after her recovery from ether.

Case XIX. Secondary laparotomy in presence of a suppurating sinus ; death.

A woman, four months ago, complained of pain in the left ovarian region. There was some swelling in this region later. She remained in bed for ten weeks; and some ten weeks ago the doctor in attendance aspirated the swelling, getting no fluid. Two weeks later a purulent discharge appeared from the vagina and the rectum. A laparotomy was done soon after this. The left ovary and a pus-tube were removed. Several months later she returned to the hospital with a discharging sinus in the abdominal wound, and complained of great pain and tenderness just posteriorly to the anus. Under ether, an abscess in the region of tenderness posterior to the anus was opened, curetted and packed with iodoform gauze. It was found that there was a communication between the anal sinus and the abdominal sinus. The fæcal discharge contained pus. Various attempts were made to close the abdominal sinus by means of curetting, cauterization and various careful dressings.

With the hope of excising the abdominal sinus, and because of the presence of an encysted tumor of the right broad ligament and ovary which had developed since the left ovariotomy, a second laparotomy was performed. At the time of this operation very great precaution was taken to prevent infection of the fresh abdominal wound by the old sinus. To prevent this, the sinus was, previous to the operation, thoroughly cauterized, and the fresh wound very carefully protected. The left ovary and cyst were removed; the sinus was excised; and a glass drainage-tube was placed in the posterior cul-de-sac. The upper part of the wound was sutured. Three days later, after gradually increasing symptoms of peritonitis, the patient died.

Case XX. A male deaf mute, thirty-six years old and married, entered the hospital with the history of having been several times jaundiced; otherwise, he had always been well. A little over two months ago he was said to have had typhoid fever. The symptoms at that time were right iliac pain, vomiting, constipation followed by diarrhœa. Four weeks ago he had a similar attack, but less severe, since which time he has not been very well. A week ago a painful tumor was noticed in the epigastrium, tender upon pressure. The man was fairly well developed. His skin was slightly yellow. The sclerotic of the eye was white. The pulse was 110 and was of fair strength. The heart and lungs were negative. The epigastric swelling was about the size of a small orange. The movements from the bowels were of natural appearance. He slept fairly well. The temperature at midnight was 103.4°, and was normal in the morning.

Operation by an incision parallel to the right costal border. A cavity the size of the end of the thumb was opened and a small amount of puriform fluid evacuated. Several blind pus cavities were opened and curetted it not being possible to determine their exact anatomical boundaries. The bowel appeared to be healthy in the immediate neighborhood. The pus cavity seemed to be situated in a mass of inflammatory exudation. Gauze drainage was inserted and an absorbent dressing applied. In the right iliac fossa at the time of this operation there was very slight dulness. Three days after the operation this dulness in the right iliac fossa became more marked and pain in that region developed. One week after the first operation the patient was again etherized and an incision was made parallel to Poupart's ligament, over the dull and tender area in the right iliac fossa. A bile-stained fluid with light green flakes was evacuated, indicating a fæcal fistula. The vermiform appendix was not found in connection with the cavity from which the fluid came. An opening was made in the colon during the operation, and this fæcal fistula gradually closed, and the wound of the first operation closed rapidly; and the patient was discharged about five months after entering the hospital gaining in flesh and strength, apparently well, having had a normal temperature for four weeks previous to his discharge.

Case XXI. General suppurative peritonitis following the reduction of an inguinal hernia by taxis; laparotomy; washing and drainage of the abdominal cavity; recovery.

For a year, the patient, who was a thin and yet fairly well developed man, had had a left inguinal tumor. Two days before entrance tenderness developed in the region of this tumor and an attempt was made by the attending physician to reduce it, which was supposed to be an inguinal hernia, by taxis. The tumor was reduced in size, and there was no impulse upon coughing. Because the symptoms of strangulation and intestinal obstruction remained, he was sent to the hospital, and it was decided to lay open the hernial sac, and a very peculiar condition of things was discovered. On laying open the sac, which had thick and rigid walls, it was found to be uninhabited, containing serum and flakes of fibrin only. A finger being passed through the neck of the sac into the abdominal cavity was, upon removal, followed by a gush of thick creamy pus. The first incision was enlarged nearly to the anterior superior spinous process of the ilium. Coils of intestine were thus exposed, which were found injected and covered with flakes of fibrin and pus. A finger introduced into the opening passed to the hollow of the sacrum freely among the coils of intestine.

An abdominal incision through the umbilicus, halfway to the pubes, was now made for purposes of drainage of the entire abdominal cavity. Pus gushed from the median incision. The entire abdominal cavity was flushed with warm water through the median incision, the wash-water passing out of the left inguinal opening. Glass drainage-tubes were inserted through both incisions to the hollow of the sacrum. A counter-opening was made in the left loin, through which two large rubber drainage-tubes were passed from the median incision. The wounds were packed about the tubes with iodoform gauze. The operation relieved the general peritonitis, but the symptoms of obstruction remained; consequently after six days the presenting coil of bowel, which proved to be small intestine, was opened in the left inguinal region with great relief to the distention. A discharge of fæces by both rectum and fistula followed. The median abdominal wound healed kindly, but considerable difficulty was found in preventing the digestion of the skin about the opening of the fæcal fistula in the left groin. The skin immediately surrounding the fistulous opening was protected by means of absorbent cotton and oxide of zinc ointment, which was allowed to dry, forming a firm crater-like opening around the fistula. A special nurse was in constant attendance, and removed the discharge from the fistula as fast as it appeared at the bottom of the crater. Gradually under this very careful attention the fistula healed. Dr. Warren decided not to attempt closure of the fistula by suture, but to trust to healing by granulation, as the fistulous opening was situated at the bottom of a deep wound, the conditions differing materially from those present in cases in which the bowel presents close to the abdominal wall in artificial anus. The man left the hospital in splendid physical condition, with the fistula healed, about three months after the operation.

Remarks. — This case may be very well regarded as one of most desperate character. A suppurative peritonitis was probably caused by an inflammation of the strangulated loop of intestine which had been reduced out of an old and rigid sac. It illustrates too, the value of efforts to relieve general suppurative peritonitis by operative procedure.

Case XXII. Chronic appendicitis; recovery.

A man, thirty-five years old, married, had always been well previous to his present illness, four months previous to the entrance to the hospital, when he had a sharp attack of pain across the middle of the abdomen, was constipated, but did not vomit. This attack lasted for a few days, and he went away as a sailor to sea, since which time he has had one other similar attack. At the time of entrance some resistance was felt to the right of the epigastrium. He had considerable pain in the right iliac region and fulness in the right flank, where there was dulness and increased resistance. There was very great tenderness present.

Operation. — An incision was made parallel to Poupart's ligament upon the right side. The muscles, as divided, appeared œdematous. An abscess cavity was opened, containing a small amount of puriform material. The wall of the abscess cavity presented the appearance of sarmomatous tissue. The wound was thoroughly washed and packed with iodoform gauze. Six weeks later a tender spot, with some swelling, was felt just below the right false ribs. Under ether, an incision here evacuated eight ounces of foul pus. One day later a second fluctuating area developed just above the last incision, and was opened, giving exit to four ounces of pus. The exploring finger entered an abscess cavity behind the liver. Three weeks later, having a continuous pus temperature and growing weaker, another operation was done, laying open the previous incisions, which had not yet entirely healed. The patient is still in the hospital, the old sinus discharging.

Case XXIII. Movable kidney; nephrorrhaphy; recovery.

A woman, married, in good health, has had since her last child was born, sixteen months ago, distress in her abdomen in the region of the stomach, accompanied by a dragging feeling. Has lost some flesh of late. Examination found a rounded movable tumor in the right hypochondrium, pressure upon which caused pain in the epigastrium. The tumor is easily moved. The knee-chest position permits more ready access to the tumor, which resembles the kidney in shape. An operation for the fixation of the kidney to the posterior abdominal wall was advised, as offering the best chance of relief from the symptoms. The operation of nephrorrhaphy was done by an incision four and one-half inches long in the right flank, starting two and three-quarter inches from the spine, one-half inch below the twelfth rib, and extending outwards towards the iliac crest. The muscles were divided in the full length of the incision. The edge of the latissimus dorsi slightly encroached on the wound. The perinephritic fat was found. All bleeding points were tied, and the fat tissue incised. Pressure over the abdomen caused the surface of the kidney to present in the wound. Five silk sutures were taken through the fibrous capsule and a little of the kidney substance, and then through the lumbar fascia and erector spinæ muscles. Two of the sutures were slightly above the middle of the kidney. The wound in the abdominal muscles was closed with three silk sutures, leaving some of the perinephritic fat bulging between them. The skin was sewed with interrupted silk sutures; baked gauze dressing; swathe. The condition of the patient at the end of the operation was good. The recovery was uneventful. The patient, after four weeks' recumbency, was allowed to walk about, wearing an abdominal binder of flannel.

Case XXIV. A man, sixty-five years old; carcinoma of rectum; Litrè's operation; recovery; condition six months after operation.

The patient was small, always well and strong till a year ago, when he noticed pain in the rectum on defecation. He has been troubled with frequent micturition for the last six months. Examination showed the patient to be well developed, but thin and somewhat cachetic. The radial and temporal arteries were atheromatous. By rectum, the prostate was found to be somewhat larger than normal and tender. Internal sphincter was rigid. Just above it was a tender spot; no induration was felt. The rectum was ballooned. Externally, in the left iliac region, a hard band was felt; it was tender, and corresponded to the site of the sigmoid flexure. Rectal tube passed readily eight inches up the bowel. Small movements resulted from high injections of glycerine and suds.

On the 24th of the month the operation was done. An incision three inches long was made in the left inguinal region, two inches above Poupart's ligament, starting just inside the line of the anterior superior spine. On opening the peritoneum, the sigmond flexure presented, much distended with gas, and was sewed to the margins of the wound with three fine silk stitches on each side for a distance of one and one-half inches above and below the loop of bowel; the lips of the incision were united with three deep silk sutures.

On the 25th he had a good night; little pain or nausea. The gauze was slightly stained. Some three or four feet of small intestine were found protruding from the wound. Under ether the escaped bowel was cleansed with boiled water and replaced.

The man made a good recovery. The artificial anus was a success. Daily formed movements occurred. He had much less pain and ate well. After six weeks he was discharged from the hospital, greatly relieved.

Six months after the operation, December, 1893, he was examined, and the general condition was found to be much improved. Said he could walk a mile with ease. He had formed movements through the artificial anus, and some liquid always passed per rectum. He had very little pain, mostly in the left lumbar region. He had no pain in the leg. There was a tendency for superficial abscesses to form around the fistula, which discharged slightly and then dried up.

The foregoing cases serve to illustrate the variety of abdominal surgery occurring in a single service at the Massachusetts General Hospital, and are suggestive of the methods of procedure in certain obscure and difficult cases.

In every instance great care was exercised in the preparation of the field of operation, the instruments used, the ligatures, suture and dressing material. The hands and arms of the operator and his assistants were first scrupulously cleansed with soap and nail-brush, then with a saturated solution of permanganate of potash, decolorized with oxalic acid and peroxide of hydrogen and soaked in a solution of corrosive sublimate of the strength of one to two thousand. In spite of the great care exercised in the counting of sponges, one was left in the abdominal cavity of one of the fatal cases.

There were in all twenty-four cases, as follows:

Solid tumor of the ovary	1
Multilocular cyst of the ovary, single	2
Salpingitis	3
Congenital liver hernia	1
Cyst of the broad ligament	1
Appendicitis, acute	3
Appendicitis, chronic	1
Salpingitis, double, tubercular	1
Carcinoma uteri	1
Carcinoma uteri (hysterectomy)	1
Cysto-adenoma of the ovary	1
Intra-ligamentous ovarian cyst	1
Exploratory laparotomy	2
Sinus of abdominal wall	1
General suppurative peritonitis	1
Movable kidney (nephrorrhaphy)	1
Carcinoma recti (Litrè's operation)	1
Obscure abdominal abscess	1

There were three deaths, making a mortality of twelve and one-half per cent.

A NOVEL CHRISTMAS ENTERTAINMENT. — A daily paper relating the events at the annual Christmas party at the poor-house of a neighboring city, says: "An excellent entertainment by local talent was given. Among the features was the treating of several of the inmates who have rheumatism by a magnetic healer."

OBSTETRICAL ASEPSIS.[1]

BY JOSEPH PRICE, M.D., OF THE PRESTON RETREAT, PHILADELPHIA.

IT is customary to come to Boston to listen. The one who comes here to talk should be sure he has something to say. This fact gives me embarrassment. I do not bring to you those graces of classic culture attained in old Harvard's college halls. I have no surprises in the shape of new facts; and my only logic will be that with which my experiences, observations and reading supply me. The same may be yours, and in giving mine I only strengthen and confirm yours. Within myself I represent but little; yet with you I enjoy the proud privilege of sharing in the common triumphs of our profession. A distinguished novelist, one who gives us in our brief leisure delightful entertainment, sitting talking with a Boston friend on a public occasion in one of your great halls, remarked, on the entrance of one of your illustrious citizens, orators and statesmen — a man he did not know, had never seen before: "There goes one of God's noblemen." It is with such men I would be in touch for what they are to me, for what they have for me, for the strength such contacts and associations renew in me. If there be a human calling, service or profession that commands only the best, all the forces of innate and cultured manhood, all that distinctively makes up the nobleman, it is that of medicine and surgery.

It may impress the profession that I urge with a relentless persistency the importance of cleanliness in maternity work, and in all surgery, special and general. For this urging there is no need of apology. It is one of the lines in which our efforts run no risk of extravagance. From time immemorial there has been much discussion of dietary precautions, drink, climatic influences, dress, exercise, morals. Much that is wise has been said, and much that is otherwise. Yet the subject of cleanliness has never been given that consideration in all its many bearings its importance to the general health demands, and that is yet more imperatively demanded in all cases where medical and surgical treatment is involved. No matter how scrupulous our purely personal precautions may be to render the patient less liable or susceptible to infections, if the influence of environments are against us, our success cannot be complete. But science is going on correcting our mistakes and evolving for us new truths. It is not my purpose to deal with the abstruse questions of the science of obstetrics. Our increased knowledge of anatomy and of the phenomena of labor has cleared away many of our difficulties.

A high mortality in a maternity or in private obstetrical practice is simply evidence of bad management. Success in our maternities and in private obstetrical practice requires scrupulous attention to cleanliness. This cleanliness should begin with the physician, with his person, his clothing; his hands should not be in mourning. There should be no room for the application of the witticism of Charles Lamb to his companion in the game of cards: "If dirt were trumps you would hold a full hand." This cleanliness should extend to the nurse and with equal scrupulousness to the patient. In considering what cleanliness has done for maternities, it is interesting to note the views of some of the men who have filled important positions in our great schools as teachers.

---

[1] Read before the Obstetrical Section of the Suffolk District Medical Society.

Professor Hodge says: "The result of the whole discussion will, I trust, serve, not only to exalt your views of the value and dignity of our profession, but divest your minds of the overpowering dread that you can ever become, especially to woman, under the extremely interesting circumstances of gestation and parturition, the *minister of evil;* that you can ever *convey*, in any possible manner, a *horrible virus*, so destructive in its effects, and so mysterious in its operations as that attributed to puerperal fever."

Professor Meigs says: "I prefer to attribute them to accident, or Providence, of which I can form a conception, rather than to a contagion of which I cannot form any clear idea, at least as to this particular malady."

That is a pitiable, professional courage which makes Providence responsible for these calamities, when they are the result of unskilful work, neglect of important details of treatment, of the common-sense lessons of practical obstetrics, and of sleepy, lazy, slovenly, sloppy nursing. If you should tell one of that class of gentlemen who shift their bad work off on Providence, that their results were caused by filth, by inattention, bad nursing, unskilful treatment, their reply would probably be that of Emerson's school boy to the teacher: "That letter is A," said the teacher. "A," drawled the boy. "That is B," said the teacher. "B," drawled the boy. "That is W," said the teacher. "The devil it is," exclaimed the boy, "I thought it was something else."

But listen to the good sense of one of your New England teachers, Oliver Wendell Holmes: "The disease known as puerperal fever is so far contagious as to be frequently carried from patient to patient by physicians and nurses."

Gordon, as far back as 1795, wrote: "I arrived at that certainty in the matter, that I could venture to foretell what women would be affected by the disease, upon hearing by what midwife they were to be delivered, or by what nurse they were to be attended, during their lying-in; and almost in every instance, my prediction was verified."

Since Gordon has made mention of the midwife, I will say that I am not so sure that she is a boon to the physician. She may serve to prevent his sleep from being disturbed, but I am uncertain as to her success in saving the lives of mothers and children. They rarely come from the more cleanly, refined and educated ranks of society. As a rule, they are without pretension to training for such responsibility; and the risks are those that come of ignorance and all that follows in its train. The nurse attending in lying-in cases should be scrupulously clean by habit in everything that pertains to her person, be of some refinement and culture, have had a prolonged period of pupilage. In the service of every obstetrican there should be the trained nurse.

I am not stating a modern medical experience when I state that we cannot expect good results in a stinking atmosphere, by breathing air filled with the volatile refuse of the human body, the effluvia of sewers. It is the stealthy, lurking poisons, those in ambush, our cleanliness must reach. It would be interesting as well as valuable to us if we had reliable statistics of the many cases of septicæmia caused in young and healthy women by the impurity of the air of the room in which they are confined, by the septic influence of chronic pyæmia and malignant disease. Cancer of the stomach, all discharging malignant sores are a source of danger when in close proximity to a lying-in woman. We have passed beyond questioning drain and sewer-gas poisoning. And in this connection we must get beyond simply interrogating tables of mortality. The inquiry should be extended as to how many women barely escape with their lives, and thus escaping live out miserable lives, useless as wives and mothers, a burden to their families or the community.

There can be no restricting the broad meaning of the term "cleanliness." It applies with strong force to person, to clothing, to hands, to finger-nails, and with yet stronger force to personal morals. As physicians we are the supremely trusted of society; we are the missionaries of a humanly saving Gospel, the one supreme command of which is, "Be clean." When we have clean men — clean morally; men with high self-control, the energy and intensity of whose moral lives diffuses itself through — permeates — their very clièntile; then we shall have less syphilitic complications. Improved morals and healthful physical conditions go together. And there is no form of cleanliness more strongly and devoutly to be hoped for. We have much to do with the underlying, the better life-principles of our social fabric. We communicate what we are; we dominate in proportion as our own cleanness is beyond reproach. The alliance of clean morals with the forces of our science, with our improved arts and methods, will greatly aid in reducing the sum of human suffering, and relieve us of much of that severe tension, that weighty, wearing burden of anxiety inseparable from much of our work. That general practitioner or surgeon who lightly takes a case into his hands for treatment, no matter what its nature or character, who does not realize that it appeals to the best genius of his science and art, who does not feel the motor force of solicitude as to issue, is unworthy of a place in our profession. There should be done with him that which your heroic — though, from the Briton's standpoint — naughty forefathers did with the tea: he should be thrown overboard.

I have been speaking of cleanliness in obstetrics, not as to its wider possibilities in the matter of general health. In obstetrics it is local uncleanness and not so much with general that we are concerned. Since health is one of the conditions of human happiness, there is nothing in which we should have so much and so enlightened and active an interest as in the health of our communities. Suppose you take note of the dumping-grounds within your municipality or its environs, of the particular localities where there are cesspools or putrescent collections of solid and liquid matter, and reckon the percentage of the sick and enfeebled, and the mortality within the same and in contiguous neighborhoods, and compare these with other localities where there is a rigid observance and practice of wise, scientific, healthful sanitary conditions. The result would be startling. It is not possible though to so analyze the statistics of mortality as to give due credit to filth.

Science and experience confirm the fact that under filthy conditions we run great risks and have deaths, and that under opposite conditions we have good results. We know that cases of zymotic disease are much more frequent and numerous within certain filthy localities or areas than they should be, than they are in others where sanitary conditions are as nearly perfect as it is possible to make them, where there is a more strict observance of the plain, conservative laws of hygiene.

An important question with physicians should be, How many diseases are preventable by absolute cleanliness, by rigidly enforced sanitary regulations, by rules that are the very transcripts from nature, those approved by the best science? We know that many diseases have their birthplace exterior to the human body. Many sad, horrifying experiences convince us that many diseases have their origin amid controllable conditions. The fact that many diseases go on more actively in summer than during any other season of the year can be credited to no other fact than that organic decomposition goes on more rapidly then than in other seasons.

The general public has not yet grown to a full appreciation of the beneficence of sanitary science and the necessity of the scrupulous practice of all its lessons. Such an appreciation will only be reached through enlightened, wisely directed and energetic efforts on the part of the medical profession. The extent of the responsibility of the profession in this matter cannot be overestimated or too strongly pressed home. We claim to be a self-governing people, to make our own laws, to have incorporated in them our own wills: their wisdom must be taken as the reflex of our wisdom. If they are inadequate or faulty in their provisions or they fail of execution, it is not difficult for us to trace a large share of the responsibility. The general public should be educated up to the understanding that there is no politics in disease, and that our sanitary authorities should be representative of the highest intelligence and scientific culture and research. They should be above the reproach of having any politics in their motives or their methods; they should be typical representatives of the best morals, intelligence, public spirit and enterprise to be found in the community, irrespective and regardless of party affiliation. They should not be appointed simply because they are the Governor's, the Mayor's or some City Father's friends, but for their clean morals and their brains. If disease only affected the small district or ward politician, no matter of what "kith and kin," we would say, Let the filth pile up, dump the garbage at the doors, dam up the sewerage, and be cheerful while the funerals pass. But these tough men live on while filth-diseases destroy the worthy and good.

The condensing of populations into close neighborhoods renders cleanliness and perfect sanitary administration difficult. This fact renders it the more important that the responsible work should be placed in intelligent hands.

My experiences and observations have not been confined to maternity hospitals, but have extended into the homes of the well-to-do, the refined and educated. They had their beginning in alleys and courts densely crowded with the poor; our best lessons, those of most practical value, we gain there. These unfortunates in their dire distress ask no questions, imply no doubts, but trust; and we put to severest test our resources, our best skill. The lessons we learn there, we carry into the sick-chambers of the more fortunate. My experiences and observations, therefore, have not been entirely drawn from or confined within the limits of a maternity hospital. I speak for maternities for the reason that I believe that there should be more of them, and that they should be better sustained. They should be established, and put under the best of management, in every manufacturing and mining town, in every centre of any considerable population.

It has not been long since the propriety of closing maternity hospitals in some of the cities of Europe was seriously discussed; by reason of their mortality they were condemned. This was very prominently a fact in Dublin not many years since, and was aimed specially at the great Dublin Hospital. The beneficience of the maternity hospital prevailed over ignorance and prejudice. They are a great source of education in one of the most important departments of medical education; but they have grown to be recognized to be something more than educational, as humane institutions and the most Christian of charities.

It will always be difficult to obtain full and accurate statistics in private obstetrical practice, such statistics usually being derived entirely from memory, no careful record being kept. It is also difficult to always obtain truthful and reliable statistics from many hospitals. In the matter of the data bearing upon this subject, we cannot do better than quote so eminent an authority as Dr. Matthews Duncan, of England.

"To judge the hospitals aright, the proper course is, evidently, to take the best as an example. We cannot justly condemn all hospitals because in that of Leipzig the mortality is one in seven. We do not condemn ovariotomy because in the hands of some surgeons the mortality of it is nearly cent. per cent. We take the practice of the best ovariotomists to judge by. To judge of hospitals, let us take the Dublin Hospital as managed by Collins. In seven years he had 16,654 births under his care. The mortality of mothers was one in one hundred. When I take this example, I must add that I regard it as not the best, but as a fair, handy and well-known example. If all hospitals are to be condemned, then this one must be condemned (1 in 100). And I ask any obstetrican to come forward and cast the first stone. Several have already come; but, in future, if any one is bold enough to come, he must tell us what is the mortality in his own practice, and he must consider whether or not his own practice is comparable with that of a hospital which receives the poorest, having among them drunkards, the diseased, the seduced, and also cases of difficulty in higher relative proportion than in ordinary practice. The great Dublin Hospital, then, can show a mortality of 1 in 100. Sir James Simpson has published the mortality of two years of his practice; it is 1 in 45, at least. Dr. Cross had in his practice a mortality of 1 in 98. I have had a mortality in mine (Duncan's) of, at least, 1 in 105. Dr. McClintock's is 1 in 108. Dr. T. E. Beathy's is 1 in 121."

When we get really trustworthy and comparable figures, how does hospital practice look? I, at least, cannot condemn it. I see no reason to doubt that it may be, and has been good enough to compare with any kind of practice. I know no good, large and unexceptional data of deliveries, which show results that are better than those of Dr. Collins in the Dublin Hospital.

I would here acknowledge an individual professional debt, one shared in by the profession at large — to that grand old man, the "Professor and Autocrat of the Breakfast Table," Dr. Oliver Wendell Holmes. We honor and love him for the delights we find in all the pages of his books; for his many witticisms pointed with great common-sense; for the elegant diction, clothing the great thoughts, veining every page he has written. We honor and love him the *more* for the *great truths* he has taught us, truths vital and guiding in the practice of our profession. When all that was ever done, uttered or written, by a Hodge or a Meigs has passed out of human memory, ceases to be even honored by traditional mention, that described by Meigs as the "jejune and fizenless dreaming of the sophomore writer" will live on. The grand old "sophomore writer" lives to-day in a bright, cheerful old age, filled with the sense of a useful and nobly spent life, that his fellow-beings are the better for his having lived; honored of two worlds, and looking with assured trust and confidence into the next. What a depth of truth, what a deep touch of pathos in the following words of your loved New England Professor! They are words that should be deep graven in the memory of every obstetrician: "No man makes a quarrel with me over the counterpane that covers a 'mother, with her new-born infant at her breast.'"

◆

TREATMENT OF SMALL-POX BY NON-ADMITTANCE OF THE CHEMICAL RAYS OF LIGHT.

BY RICH. HOGNER, M.D., BOSTON, MASS.

AN article in the Swedish medical journal *Eira*, November 30, 1893, over the signature "F——" sums up what is at present known about the medico-practical significance of the ultra violet rays of light and begins with a mention of Prof. J. E. Widmark's article on "The Influence of Light on the Skin," published in *Hygiea* (Stockholm, Sweden), 1889, in which Widmark demonstrates that eczema (erythema) solare is caused by the ultra violet (chemical) rays of light from the sun, and in which he, at the same time, advances the opinion that this eczema must not be confused with eczema caloricum, which is caused by the influence of great heat. The latter usually develops instantly and hastily, and traces of it disappear with comparative rapidity; whereas the sun-erythema, on the contrary, first develops several hours, or even a day after exposure, is of longer duration, disappears after several days by scaling, and leaves a pigmentation.

In 1858, Charcot observed that the electric arc-light could cause a skin disease which greatly resembled sun-eczema. In the meantime it was reserved for Widmark to strengthen, through a series of exact experiments, the observations of Charcot, and to prove that the ultra violet rays of light played the chief part in the cause of eczema electricum. Finally Widmark quotes from Veiel the history of a woman who suffered from sun-eczema for a long time, which reappeared as soon as she came into the open air, even if the sky was clouded. She was not troubled by heat from a stove or intense lamplight and Veiel concluded, therefore, that the chemical rays were the cause. After Veiel had learned from a photographer that he succeeded best in excluding chemical rays of light by the use of dark red paper, he allowed his patient to go out in full sunshine when wearing a red veil. The experiment succeeded and she could remain out-of-doors for forty minutes at a time without inconvenience.

Through his experiments Widmark arrived at the conclusion that the ultra violet rays (whose caloric energy may be so little that it can scarcely be measured by the most sensitive instrument, and whose power of irritating the retina is so weak that it is only perceived by our eyes when the rays of light are entirely shut out), do develop pathological processes on the surface of the body, in case they are of sufficient strength.

In the *Hospitals Tidende*, No. 27 (published in Copenhagen), appears an article concerning "The Influence of Light on the Skin," by Prosector N. R. Finsen. After relating Widmark's experiments and proofs that the ultra violet rays of sunlight produce eczema solare in an acute form, some observations of Unna are related, which show that pigmentation in such a case is the result of a chronic influence from the same light, and forms a protection for the skin. It is further shown from a paper in the *Lancet* for 1867, by C. Black, that the latter has employed non-admittance of daylight with remarkable success during a small-pox epidemic, and that Black's observations were endorsed by Barlow and Waters (*Lancet*, 1871).

On the strength of the foregoing and our present knowledge of light as an irritant of the skin, Finsen advanced the opinion that in place of complete exclusion of daylight from the small-pox patients, a closely-drawn red curtain or a window of red glass may be used.

The proposition was soon put into execution; for only one month later, Dr. Lindholm, of Bergen (Norway), wrote to Finsen as follows: "I am pleased to be able to tell you that the proposed treatment of small-pox seems to have a remarkable effect, inasmuch as the œdema disappears rapidly, and the suppurative fever does not appear at all." This applied to ten unvaccinated cases.

In No. 44 of the same journal we find a further statement of the small-pox epidemic in Bergen, related by Dr. Svendsen, where the following occurs: The clinical diagram of the cases treated in this way shows the following deviations: "The stage of suppuration was avoided; there was no increase of temperature, no œdema, etc. The patients went from the vesicular stages, which seemed to me somewhat protracted, immediately to convalescence and were spared disfiguring scars." Although the material is indeed small, from which to prove the efficacy of this mode of treatment in all cases, Dr. Svendsen considers that the results call for further trials of this simple and harmless method. But it must be strictly employed and before the suppuration stage begins; later its use would be of no avail. A couple of test cases where the patients were exposed to daylight, after exsiccation began everywhere except on the hands, showed that the vesicles there began to suppurate and left small scars.

In the same number of the *Hospitals Tidende*, Prosector Finsen writes — in a new and longer treatise, — "Concerning the Injurious Influence of Chemical Rays on the Animal Organism," after having briefly recalled the contents of the preceding article: "The so-called chemical rays which have their place principally in the blue and violet, but especially in the ultra violet portion of the spectrum, are the most frangible rays of light; in them the chemical influence is strongest, but the caloric influence at a minimum. The condition at the other end of the spectrum is just the reverse; there the red and ultra red rays are the least frangible, there the caloric influence is strongest and the chemical influence at a minimum."

These two kinds of rays, the red and the violet, being representatives of the two extreme ends of the spectrum, seem also to exert very dissimilar physiological influences. The violet seem to act with more intensity, at least their influence is more obvious to the eye; and when one collects observations on the influence of monochromatic light on different organisms and combines them, one finds that there seems to be a common quality in all living organisms (perhaps with the exception of vegetable growths), so that they are affected disagreeably, even injuriously, by chemical rays whenever these exist in sufficient intensity.

As proof of this assumption, reference is made to the power of light in destroying bacteria, in doing which the chemical rays are most active. On the light-shunning dew-worm red light acts as darkness, violet as daylight. The same is the case with the proteus.

The shiftings of color on the chameleon under the influence of light depend on the fact that those cells of the skin which are rich in pigments lie near the surface when in light, but deeper when in darkness. Paul Bert has also found that neither red nor yellow light works upon these cells, but that both the blue and violet light act so much the stronger. It has even been shown that horses and horned cattle get erythema from the chemical rays on such portions of the body as lack pigment — a fact which Widmark had previously proved concerning rabbits. The injurious effect of the chemical rays on human beings has already been stated.

The acute effect (which is discernible macroscopically) presents all stages from slight irritation and redness to strong inflammation with blisters which contain liquid, and desquamation of the epidermis. The stages depend on intensity, light and the quality of the chemical rays; and in this connection it is noticed that of the artificial lights, lamplight contains relatively fewer, but electric-light relatively more chemical rays than sunlight. The stage further depends on the duration of the influence and on the greater or less pigmentation of the skin. Unlike every other inflammation which lasts the same length of time it leaves pigmentation after it. It is distinguished from inflammation resulting from heat by its not appearing immediately after exposure to that which causes it, and that it reaches its climax a half or a whole day later.

That the skin is most easily affected in spring depends, says Finsen, on the fact that during winter time the pigment wears away with the epidermis, and the skin is left less protected in consequence. The bridge of the nose and the cheeks are most affected. But with glacier tourists who are subjected to reflected light, the rays coming from below, the skin under the nose and chin is most affected. Boat-racers get a typical sun-erythema on their bared arms during the spring, and the militia on their faces at the same season.

The Russian physician Maklakoff brought on a severe erythema like that of the laborers when he witnessed a smelting of metal by means of five hundred accumulators. This erythema could not be ascribed to development of heat, which was relatively slight, which proves what Professor Widmark said of the effect of the chemical rays on the skin (as previously stated) to be true; that is, that it is not the caloric rays, but principally the ultra-violet ones, that cause the well-known effects of light on the skin.

Following this, Finsen attempts to search out the histological processes of the inflammation in question. To this end, he has made use of tadpoles, whose tails he examined under a microscope after exposing them to sunlight from which the caloric rays were excluded; thereupon the usual signs appeared in and around the capillary vessels, but, besides this, the blood-corpuscles changed from oval to round. It is well known that light acts as a contractor on living protoplasms. Finsen thinks the influence of light on the capillary vessels should be taken as explanation of the inflammatory process in the skin. He bases this assumption first and foremost on the fact that the pigment which forms a means of protection from the chemical rays lies alongside the capillary cells, and, further on, the fact that no living tissue absorbs só much light, and at the same time such a mass of violet rays, as the blood.

"Now that we have seen," says Finsen, "what strongly acute affections the chemical rays can produce, we can easily understand that even several chronic skin troubles stand in relation, both as to etiology and its subsequent course, to these rays. Of such diseases, we already know pellagra, xeroderma pigmentosum and Hutchinson's summer prurigo. But as the chemical rays have been so recently recognized as irritants of the skin, it is possible that the list of such diseases will be extended.

"In another category may be placed such diseases as, without being etiologically dependent on the chemical rays, are unfavorably affected by them, and among these we should place small-pox. It is impossible to say at present whether in time we shall come to reckon with the latter other exanthematic diseases or skin diseases, but it seems not impossible when the chemical rays can act so injuriously upon a healthy skin. As to small-pox, we see by concurring reports, and most recently that of Dr. Svendsen, that when the chemical rays are shut out the vesicles dry up without becoming purulent, and thus suppurative fever is avoided, in consequence of which the disease is less dangerous, of shorter duration, and, when ulceration is eluded, less painful. By this means scarring is obviated."

It seems to be undisputable that on the exclusion of the chemical rays depends the non-purulent character of the vesicles and the changed character of the disease. Still the author declares that a complete explanation cannot at present be given. But while awaiting further examination of the process, he thinks it may be stated thus: the power of chemical rays to produce irritation acts as a plus quantity, it increases already existing skin inflammation and prolongs it, so that the conditions become more favorable for the development of micro-organisms.

As the proposed treatment for small-pox is not, according to the author, a special thing for this disease, but a new therapeutic principle, he recommends physicians, especially those treating epidemic diseases, to try its effect on other exanthematic diseases, such as measles, scarlet fever and erysipelas.

As a last addition to this subject of treatment of small-pox, an article appeared in *Hospitals Tidende* for November 8th, written by the well-known medical historian, Prof. Julius Petersen. "The interesting communications," he writes, "of Prosector Finsen and Dr. Svendsen have strengthened for me, as medical historian, the old rule, which I often advanced, of the constant working in a circle in medicine — a circular movement which consists of the reappearance of the old permanent principles, though newly applied and fortified through the more exact investigations of the present." Then he tells how it was customary, even in the Middle Ages, to make use of red curtains and cloths in the treatment of small-pox. For example, in the "Rosa anglica" (about 1300) of the English royal physician Gaddesden, we read that when the king's son had small-pox "everything used around his bed was of red, and that it is a good cure. I cured him without pock-marks (sine vestigiis)."

When small-pox was rife in Denmark in the seventeenth century, Thomas Bartholin spoke of this recognized method of treatment; and in the eighteenth century Fouquet wrote from Montpelier that in his childhood, "on vetaissait les petits vérolés de trap ecarlate et que l'on les tenait dans les lits formés des rideaux de la même étoffe." Further on, in the "enlightened period," the method was denounced as superstition, and was forgotten entirely by historians of medical practice. And there was no rational foundation for its use. "It is," says Professor Petersen, in closing, "investigators of the present day who have the whole honor of having found an undeniably more satisfactory and exact scientific foundation for the old empiric fact."

◆

Clinical Department.

A CASE OF UTERINE TUMOR.[1]

BY DR. E. W. CUSHING, BOSTON.

Miss E., of New Hampshire, forty years old, came under my care this winter with the following history:

Was well until six years ago, when a small tumor was noticed, which increased gradually. There never was any menorrhagia. She consulted various physicians, both at home and in this city; but from all she received advice to wait and see if the tumor would not disappear at the menopause. It has grown steadily and rapidly, however, until now her condition is very serious — health broken, heart rather feeble, digestion impaired, respiration impeded. She realizes that she cannot live much longer without surgical relief.

At present the patient is slight in figure and much emaciated. The abdomen is occupied by a large tumor, which is so soft as to give an indistinct sensation of fluctuation. The pelvis is filled with the lower portion of the tumor, which is smooth and not very hard, and continuous with the uterus.

Diagnosis, probably a soft myoma.

On opening the abdomen the tumor was exposed, and as it seemed too soft for a myoma it was punctured with a trocar, but no fluid escaped. Incision was prolonged, and the upper part of the tumor was delivered through the opening. It was seen that the growth had lifted the layer of peritoneum from the posterior abdominal wall, and had separated the folds of the broad ligament; so that the large intestine appeared to be adherent to the tumor high on its posterior surface. The apparent adhesions, however, were really the insertion of the mesentery, as is often seen in such cases, but not always understood at once.

The outer part of each broad ligament, with the ovarian arteries, was tied off; but it was impossible at this stage to tie the uterine arteries, as the tumor could not be lifted from the pelvis. On each side were several great veins, each larger than a lead-pencil.

To free the tumor, the thin capsule of peritoneum and uterine tissue was divided by a circular incision, some four inches above the brim of the pelvis and well clear of the mesenteric insertion. On the left side a little spurt of clear fluid, from what appeared to be a large vein, was noticed.

By enucleation of the tumor and clamping of vessels the growth was lifted from the pelvis, and an attempt was made to secure the uterine arteries for intra-peritoneal treatment of the stump; but, owing to the bulk of the tumor and the size and variety of the vessels, this method was abandoned, and a rubber tube was used as a constrictor, the tumor cut away, and the stump treated extra-peritoneally, as usual.

When the tumor was removed a deep cavity remained bare of peritoneum on each side, so that at the bottom of each side of the pelvis the iliac vessels were visible. On the right was a large, tortuous tube, dilated in some places more than others. This had been carefully avoided in tying off the vessels and separating the tumor; and it was well that it had been spared, for its relation with the iliac vessels and with the broad ligament in the region of the bladder showed that it was the ureter.

On the left, near the iliac vessels, where the ureter should be situated, was found the cut extremity of a large vessel which had already been ligated. This was close to the ligature which had tied the ovarian artery, but it was also close to the iliac vessels, the peritoneum, which before had been pulled up, now having retracted. Convinced that this vessel was the ureter, I took off the ligature, and after some search found the corresponding end; and then came the question what to do. I knew of no instance where a ureter had been severed and united. Simon, on cutting a ureter, had gone on and extirpated the kidney; and Greigg Smith advises this procedure. The patient's condition, however, would not permit of such a course at that time; and the choice offered was between bringing the upper end of the ureter out through the wound, leaving the extirpation of the kidney as a future operation, or suturing the two ends of the ureter together, hoping for union if possible, but providing for leakage if it should occur. The latter course seemed preferable, for I saw no reason why a ureter should not unite as well as an intestine if properly brought together, and I had had some experience which led me to believe that the ureter had more capacity for closing a partial defect than is commonly supposed. I therefore sewed the two ends of the ureter together with two silk and one catgut sutures. I was afraid to put in more, not being absolutely sure that the distal cut end was really ureter, and also fearing that more stitches would obstruct the lumen. I therefore used the catgut, to hold if possible, and give way if necessary.

All this seems long to describe; but the decision had to be made in a minute or less, and the suturing did not take long. After thorough irrigation of the abdominal cavity, I laid the ureter where I thought it belonged, and pressed it against the floor of the pelvis on the left with the middle of a square of iodoform gauze, into which I packed strips of the same material after the manner of Miculicz. The cavity in the right side of the pelvis was similarly packed with gauze, and a glass tube carried to the bottom of the pouch of Douglas. The stump was fastened in the angle of the abdominal incision as usual, and the tube and gauze were brought out of an opening separated from the stump by two sutures.

---

[1] Read before the Obstetrical Section of the Suffolk District Medical Society.

I now felt sure that if the severed ureter should leak I could lead the urine to the surface without danger to the abdominal cavity; and my plan, if all the urine from that ureter came through the wound, was to turn the current through the lumen of the cervical canal into the vagina, and then later turn the extremity of the cervix uteri into the bladder, and so finally lead the urine where it belonged. Happily, this is not likely to be necessary.

The patient did very well after the operation; but on the fourth day the discharge from the gauze on the left side smelled ammoniacal. The gauze on the right side and the glass drain had meanwhile been removed. By the next day it was clear that some urine was escaping from the abdominal wound. The amount passed from the bladder had from the beginning been normal in quantity. The last of the iodoform gauze was now removed from the wound, and a rubber tube carried down to the site of the ureter. By care and some ingenuity the stump had been kept dry, and on the tenth day it was cut away. The quantity of urine escaping from the tube, which was never more than three ounces during twenty-four hours, now diminished; and the tube, which had been shortened, was taken out about the fourteenth day, the whole wound treated with balsam of Peru and covered with gauze and absorbent cotton.

The patient is now sitting up, and wets one napkin over the wound during the day and one during the night. I have taken care to preserve the patency of the cervical canal, and have closed in the skin so that the opening of the urethral fistula is close to the upper end of the cervical canal. The discharge is slight, however, and I hope it will finally cease without further operation.

NOTE. — November, 1893, the patient wrote that the fistula had closed entirely, that she was in perfect health and able to take active exercise of all kinds.

Medical Progress.

RECENT PROGRESS IN ORTHOPEDIC SURGERY.

BY E. H. BRADFORD, M.D., AND E. G. BRACKETT, M.D.

(Concluded from No. 1, page 11.)

SPASMODIC TORTICOLLIS.[14]

HOFFA has collected the recent literature on this subject, and reports the opinions of the different writers. Paralysis of the sterno-cleido mastoid follows the operation of section of the spinal accessory nerve. Cure of the spasm does not usually follow immediately after the operation, as slight spasm of the other muscles follows, but these secondary spasms gradually diminish and in time entirely disappear. If this is not the case, Keen advises the section of the posterior branch of the cervical nerves. A head support is needed for several months after the operation, and the employment of massage is advised.

SCIATIC SCOLIOSIS.[15]

Fischer and Schonwald give observations on seventeen cases, and describe the two forms which occur; the one, the homologous form in which the concavity, and the other, the heterologous, in which the convexity is toward the affected side. The former is caused by a condition of irritation produced through the short anterior branches of the lumbar plexus, and when there is no implication of the lumbo-sacral muscle. The second type is caused by a weakness of the sacro-lumbar muscle which is due to affection of the posterior branches of the plexus supplying it. When both groups of nerves are affected, either variety is assumed, the one or the other predominating according to whether the disease affects one or the other to a greater or less degree. The second form may develop rapidly in those cases where the anterior branches either are not affected or only to a light degree, and it may also develop when the pain becomes located in this region, in those cases which appear early as the first variety. When both sets of nerves are affected to the same degree, the patient attempts to assume whichever attitude gives most ease, and the form may not then be well marked, but if improvement occurs in one or the other groups, the variety then becomes well defined.

In general, it can be said that the irritation of the anterior branches causes the homologous variety when the lumbo-sacro muscle is not affected. The heterologous variety occurs when this muscle is weak.

The following differential diagnosis is given: In the second, the patient complains of fatigue in the back, before the onset of the disease, during extension of the spine, while this symptom is wanting in the homologous form. Also the heterologous form is prolonged beyond the period of pain, on account of the weakness of the sacro-lumbar muscles, whereas the homologous disappears with the pain. The heterologous form never changes to the homologous, while the reverse often occurs suddenly. Both varieties have, however, one symptom in common, namely, that of the forward inclination of the trunk. In the second variety it is due to the action of the sacro-lumbar muscles; in the former, to a relaxed condition of the muscles supplied by the anterior branches of the lumbar plexus.

Other references to this subject may be found, by Higiea and by Remak.[16]

HOFFA'S OPERATION FOR CONGENITAL DISLOCATION OF THE HIP-JOINT.[17]

Denucè, of Bordeaux, reports a case in a child of six, operated upon by him. The child entered the hospital September, 1891, with characteristic deformity of the hip. The left trochanter major was three centimetres above the Nélaton line, while the right was upon that line. According to the statement of the parents, the shortening had increased.

An incision was made seven centimetres long, parallel to the axis of the femur, reaching four centimetres above the top and three centimetres below. The muscles were divided in the course of the fibres of the glutæus maximus, the capsule laid bare and incised The insertion of the muscles on the great trochanter was then divided with scissors. The head of the femur was found to be slightly flattened and oval in shape; some granulations were present at the point of the insertion of the round ligament, which was entirely wanting.

If traction was made upon the foot the head could be pulled down somewhat, but not sufficiently to place it in the cotyloid cavity. The muscular insertion of the pyramidalis, the obturator internus and the gemelli were pushed backwards, and a portion of the cartilage of the great trochanter was cut at the point of muscular insertions. After this, the head of the femur could, under traction, be pulled downward. The cotyloid cavity was found to be small and of a triangular shape. The loose tissue in the cotyloid cavity was incised to the bone, and a flap detached with the periosteal elevator (curved on the flat), leaving the upper portion undivided and attached. This flap was raised by means of a silk suture passed through the edge, and the head of the femur was reduced underneath this cartilaginous flap into the cavity. The cavity was deepened by means of a gouge, and after the operation it was found that the head did not have any tendency to slip out of its new position. The capsules and flaps were sewn together. A traction by weight of four pounds was applied. The muscles, cartilages and the capsules were sewed with catgut, and a slight orifice left for drainage. The skin was sutured by silk. Iodoform gauze dressing. Plaster-of-Paris bandage was applied.

---

[14] Zeitschrift for Orthopedic Surgery, 1892, p. 315.

[15] Wiener med. Woch., 1893, Nos. 16 and 21.

[16] Deutsch. med. Woch , 1892, 27.

[17] Revue d'Orthopedie, p. 108, 1893.

The temperature was raised the night following the operation and on the following day, but afterwards dropped. The patient was allowed to walk on the 30th of October, and it was found that the lordosis had entirely disappeared. The 15th of November the patient was again seen, and was found to walk well. The patient was allowed to walk without crutches on the 10th of November, and when seen a year after the operation, the patient was in good condition. There was no lordosis, and but little scoliosis; the muscular atrophy had diminished; the head of the great trochanter was not above the Nélaton line. The difference in the length of the legs was about two centimetres, having been five centimetres before.

Lorenz [18] reports an operation on a child of seven, and does not agree with Hoffa in thinking that the contraction of the muscles is the chief hinderance to the reduction of the dislocated head, but the muscles which arise from the tuberosity of the ischium; that is the adductive group. He considers that the reduction can be facilitated by myotomy of these muscles, and that the joint should be opened from the front, and reports four cases operated upon in this way. In one, a child of about five years of age, the reposition took place without opening the joint. One of these patients was fifteen years of age.

Karewski [19] disagrees with both Hoffa and Lorenz, and thinks the difficulty in reduction lies chiefly in the head of the femur and in the improper shape of the acetabulum. He reports five cases. In most of the cases the head remained after operation in the new socket. An equality of length of both limbs was not gained, through the faulty formation of the neck. The good results were obtained by the use of appliances carried out for a long time. In two cases, where the apparatus was worn only three months, the head was dislocated upward again. In two, where the treatment was thoroughly carried out, the gait was almost normal.

Karewski enlarges the acetabulum by means of a chisel, dividing the cartilaginous tissue over it to make a place for the head. In a few instances he has driven a nail into the ridge of the acetabulum, keeping it there for six or eight days.

Hoffa, in the same publication, replies to both these surgeons, and states that he has operated in 24 cases, and that the definite results will be published. He prefers an early operation, and claims satisfactory results. He does not think that the resistance of the adductor muscles is of importance, or that in all cases there is a faulty shape of the head of the femur to an extent of preventing reduction.

Nota,[20] of Turin, has operated by the method of Paci upon 12 cases, of which five were double and seven were single; that is, he has operated eighteen times, eleven with good, one with partial, four with negative, and two with doubtful results. He thinks that a cause of the difficulty of a permanent cure of the deformity sometimes lies in the faulty shape of the pelvis, which is either too flat or too oblique, and that, combined with a shallow acetabulum and a rudimentary edge, promotes dislocation after reduction of the deformity. Nota regards an apparatus as necessary after the operation, and thinks that good results are largely due to this. He regards it necessary to retain the limb after the forcible reduction (the method of Paci) in a position of extreme forcible rotation outwards.

Panzeri is not convinced of the value of the method of Paci, as he does not see how the development of a new joint can be brought about simply by violent reduction.

Oliva is of the same opinion, and mentions a case in a girl of twelve operated on by him according to Hoffa's method without positive benefit, though he favors this operation in young children.

Panzeri prefers the operation of Hoffa in children from three to fourteen; in old cases the results are not good. Under three, he would advise the method of Paci and mechanical treatment.

SCOLIOSIS.

Wisser [21] has investigated the deviations of the spinal column in 515 school-children. These children were from seven to eleven years of age: 292 boys and 293 girls. Tables are given to illustrate the observations. At the beginning of the school-year a large percentage of habitual curvatures were discovered; some of them of the typical form, others of various curves. He also found that a larger percentage of curves was found in the boys than in the girls at the age of seven. The percentage of curves he found to be 41 per cent. of the boys at the end of the first school-year, and 33 per cent. of the girls. The second and third year the number had increased from 40 to 49 per cent. The increase in pathological cases was not in proportion to the longer course of study, and for that reason he concludes that the school is only one of the factors in the development of scoliosis.

Redard [22] calls attention to the connection between scoliosis and flat-foot. He finds this common in primary lumbar scoliosis on the side of the convexity where the lumbar curve exists.

Heusner [23] considers that there is a definite relationship between flat-foot and deformity of the lower extremities and the existence of scoliosis, and further claims that the element of rickets is an active one, not in children alone, but during the period of adolescence. He gives a series of observations from which his deductions are made, having examined 1,000 patients at Barmen, of whom 335 had scoliosis; 283 of these showed a flat-foot. Of 663 men, 288 had scoliosis; of 337 women, 147. Of the 283 patients having flat-foot, 167 had scoliosis; and of 717 patients without flat-foot, only one-fifth showed deformity of the back. He also examined 250 infants at the orphanage, and found among these 64 with the back deformity, and 65 with flat-feet. Of the 65 cases of flat-foot, there were 24 which showed back deformity; and of 185 children without flat-foot, there were only 40 who showed a lateral curvature. Of 143 boys, 26, and of 107 girls, 28, showed a lateral curvature.

---

[18] Centralblatt für Chirurgie, 1893, No. 31.

[19] Zeitschrift für Orthopædische Chirurgie, 1892, Bd. ii, Heft 3.

[20] Zeitschrift f. Orthop. Chir., 1892, p. 273, Bd. ii, Heft 3.

[21] Centralblatt Zeitschrift für Orthopædische Chirurgie, p. 298, Bd. ii, Heft 3.

[22] Gazette Medical de Paris, August 6, 1892.

[23] Compte rendu du 21 Congrès de Chirurgie Allemand, 1892.

He considers that the treatment by muscular exercise to be of paramount importance, and useful in all cases; but, in addition to this, he employs the treatment of correction by mechanical force, and for this uses an apparatus which he describes and pictures in his book. This consists of an inclined plane, on which the patient rests, at the same time having head-suspension, and by means of broad leather straps weighted by sand-bags, pressure is made on the curves in the direction of correction, and this carried out for an hour or two every day. While in the apparatus efforts are made at forcible inspiration.

Schede[25] describes his apparatus for forcible correction. Schulthess comments upon this, and states that he has seen better correction by means of this appliance than by that of Lorenz. Schede reports excellent results, and mentions the almost entire disappearance of projection of the ribs in a sixteen-year-old child under the use of this appliance.

Messner[25] reports in the case of a twelve-year-old child a year after infantile paralysis the development of a paralytic curve, although the muscular paralysis had apparently passed away. The appearance was exactly as if the right side of the thorax had been imperfectly developed, and this seems to be proved by measurement. The difference between this and the ordinary scoliosis lay in the less amount of rotation. The treatment consisted in massage and electricity.

◆

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY.
OBSTETRICAL SECTION.

G. H. WASHBURN, M.D., SECRETARY.

REGULAR meeting Wednesday, February 22, 1893, DR. F. H. DAVENPORT in the chair.

DR. JOSEPH PRICE, of Philadelphia, read a paper on

OBSTETRICAL ASEPSIS.[1]

DR. EMMA L. CALL: The lying-in department of the New England Hospital was established in November, 1862, and from that time till October 1, 1892, 3,259 patients have been delivered there.

In order to mark the progress of modern methods, in its effects on the health of maternity patients, it will be convenient to divide the work done into three periods of ten years each.

During the first ten years, namely, from 1862 to 1872, the hospital consisted of three small houses on Pleasant Street. The wards were necessarily crowded and inconvenient and the general surroundings not of the best. At this time the hospital was the only lying-in hospital in Boston, and consequently received in emergencies many patients brought by the police from the worst parts of the city. The use of the clinical thermometer was quite unknown, so that we did not have the aid of that valuable danger-signal, while the employment of antiseptics in the modern sense of the word was not understood.

During this period 1,009 women were delivered, with a mortality from septic diseases of twenty, or about one case in fifty. These fatal cases occurred chiefly in two epidemics, one in 1867, the other in 1872. In addition to the twenty fatal cases there were, of course, a still larger number of septic cases, which after varied periods of illness, escaped with their lives.

In 1872 the hospital was removed to Roxbury, and a new cottage was built especially for the maternity cases. Temperature records were kept, and very early in this period, the use of carbolic acid for hands and in douches was begun. During the latter part of the period, frequent douches with carbolic acid, permanganate of potash, phenol, etc., were a part of the routine treatment of every case.

From 1872 to 1882 the number of cases was 1,026, with nine deaths, the mortality being reduced to one in 114. Nevertheless the records give us nearly every year cases of sepsis that were only pulled through with anxious care. There was no decided epidemic during this period, which was probably due largely to the fact that in 1879, an annex cottage was added, to which septic cases were at once removed and cared for by separate doctors and nurses.

In 1882 the maternity cottage was closed and thoroughly repaired and replumbed, since which time the records have been much more satisfactory.

From October, 1882 to October, 1892, among 1,224 cases (200 more than the other periods) we have lost but two patients from septic diseases, reducing our mortality to one in 612. These two deaths occurred in 1884, since which time we have had 897 cases without a death.

In the latter part of 1886 the use of antiseptic pads and of bichloride solutions for personal disinfection was established, and has been continued, with slight modifications, ever since. Patients receive an antiseptic vaginal douche at the beginning and end of every labor, and an intra-uterine douche after complicated labor. After labor the antiseptic pads, with irrigation of the external genitals before and after each urination, and rigid disinfection of the hands of the attendants before and after touching each case, is practised. If fetid lochia appear, bichloride vaginal douches are ordered; if this is accompanied by chill or decided rise of temperature, an intra-uterine douche is given. If the symptoms do not quickly subside, curettement of the internal surface of the uterus is employed.

Since this method of treatment has been followed, the number of cases which we have been obliged to isolate has steadily diminished. Most of these cases have occurred among patients who have come to us in depressed conditions of health, and their removal to the annex has stopped the trouble. Thus, during the last three years, we have had one case of septic peritonitis, and two of extensive diphtheritic deposit, occurring in different years. Not the slightest trouble among the other cases resulted from these.

In the spring of 1892 we again removed to our new

---

[1] See page 32 of the Journal.

[24] Deutsche Med. d'Orthopedie, No. 12.
[25] Centralbl. Chirurgie, 1892, No. 44, p. 97.

"Sewall Maternity," which has been fitted up with all the latest sanitary appliances, and where we hope the next ten years will give us still better records, than those of the past.

Dr. J. G. Blake: I have listened with pleasure to Dr. Price's paper. During the twenty years preceding the last ten I had a large number of cases of labor, and during that time there was but little attention paid to antisepsis. I must say that I was singularly fortunate, however, and had but a small mortality. The great benefit resulting from it has been conclusively demonstrated by the results in the Lying-in Hospital. I think that favorable as they have been in the New England Hospital those of the Boston Lying-in Hospital are even better. We all remember the paper of Dr. Richardson in which he showed that in one thousand births they had had no death; and that, in fact, any rise of temperature more than one or two degrees was of rare occurrence. Unfortunately, in private practice the necessity for antisepsis does not seem to be recognized. This was brought forcibly to my attention in the uterine ward of the City Hospital, where during the last summer term of service I was called upon to curette eight or nine cases where patients had had chill, and offensive lochia and all the conditions pointing to septic poisoning. Under the treatment which we all recognize now, and which it is not necessary to speak of in detail, I believe we had no death. One woman came in in a condition which precluded recovery. If it could be made a legal obligation that doctors and midwives should be compelled to fully carry out antiseptic precautions, I think a great many lives would be saved to the community. Of course, amongst a certain class of physicians such measures are taken, and the mortality has steadily diminished; but unfortunately a large number do not fully appreciate the necessity. I believe I took that side of the question myself in the Obstetrical Society some years ago. I argued that you had susceptibilities on the part of patients, and you could not avoid septic poisoning. Dr. Richardson's paper cleared my mind of that cant; and I am a strong and earnest believer in the absolute safety attending it. If I had my way, I should make it a criminal offence if complete antiseptic precautions were not always taken.

I want to thank Dr. Price for myself and for those who were present at the operation at St. Elizabeth's Hospital this morning, for the careful, painstaking, minute carrying out of all the details of what to me was the most perfect operation I ever saw.

Dr. Price: Boston has done more, perhaps, than any educational centre in our country for saving women. The work of Dr. Richardson and a few others cannot be estimated. It would be difficult also to estimate that great contribution of Dr. Homans. Hundreds and thousands of lives have been saved by it. I want to suggest that you read more papers. I find the profession ignorant regarding the simple precautions of cleanliness. In saying this I am not criticising Boston or Massachusetts in particular.

I am glad to hear the results in the New England Hospital. Two deaths in twelve hundred cases is hard to beat. If that means two deaths from septic cases it probably can be beaten.

The history of maternity hospitals, mixed and special, is exceedingly interesting. The mortality has varied from one to forty per cent. Several maternity hospitals have been closed. A satisfactory solution of the shocking mortality in some hospitals can be reached when we look into matters a little. For instance, in one hospital a large sponge was used for months and years sponging patients off after delivery. This indicates that gross carelessness and reprehensible filth existed in many maternity hospitals. Some of the old nurses washed their hands superficially once a day. The towel was washed perhaps once a week. In the mixed hospitals the resident physician attended to a patient with erysipelas, and went without washing the hands to attend to a woman in labor.

I have always felt, and still feel, that maternity hospitals should be used wisely for educational purposes. The rich have to take care of the poor, and I feel that the pauper element of society should be wisely and humanely used for educational purposes, that we may have more finished physicians and more good work, and we will not attain that acme of perfection in any specialty until we have that condition of affairs, until directors and trustees realize the importance of practical education in every public institution, and until all material of that class be used wisely and humanely for educational purposes.

Dr. Price then spoke of the details of the work in the out-patient department of the maternity hospital with which he was connected. Out of eight hundred cases a year attended by the students among the poor of the city, there were sometimes one or two genuine cases of child-bed fever. Usually these cases could be traced to some neglect of cleanliness on the part of the student. In some instances scrupulously clean men had attended women in labor after caring for surgical cases, and without mischief. He had himself attended women in labor after treating all sorts of contagious diseases, and had never seen any harm arise from it. He saw no danger in this, provided a man kept himself scrupulously clean.

At the Retreat in Philadelphia patients were admitted two weeks before labor, and remained four weeks after. This he considered very important. The plumbing was entirely out of the building, which was also a very important matter, and the effect of which could be seen in the temperature charts. Patients, upon being admitted, received a thorough bath, were given a laxative, and, if there was a suspicion of renal trouble, the urine was examined. The patients receive two soap-baths weekly; the bowels are kept open; and they improve wonderfully in general health. The patients admitted two weeks before labor always do better than those admitted in labor. When a patient complains of labor pains, she receives a bath and a vaginal douche of corrosive (1 to 2,000), and goes into the clean delivery room. The toilet is made by a nurse who has nothing to do with puerperal wards. Both nurse and physician bathe before entering the room, and scrub again after entering. But one examination is made, if everything is favorable, until the head is ready to clear the perineum, when the physician sits down and superintends the delivery. After the delivery a vaginal douche is given, and the patient receives the occlusion dressing of Dr. Richardson. Nothing short of extravagance in maternity work will give a *nil* mortality. In the Retreat, out of 1,200 cases, there has been no death from any cause.

"I regard vaginal douches important, particularly in women with a relaxed vaginal outlet, in order to protect the child's eyes against acrid and irritating discharges; and if specific virus lurks there, it is the more important that we should protect the eyes of the infant. If every woman in Massachusetts should receive in the next ten years the antepartum douche, and receive the same toilet as at the Retreat, you would reduce your blind asylums from five to one in the next ten years. All dirty instruments, and the old dirty bag which has been carried ten or fifteen years, should be discarded."

Dr. E. W. Cushing described

A CASE OF UTERINE TUMOR.[2]

Dr. Price: This subject of hysterectomy I have been much interested in. I almost feel like apologizing now for a big tumor. This operation has been criticised considerably lately, and I want to say in all fairness to the operation that I know none giving me at least better results. I consider the early removal of the appendages in disease one of the most valuable operations in surgery. After the tumor grows large it becomes a very formidable operation. The size of the tumor impairs the health of the patient by interfering with breathing and by producing pressure symptoms. These growths seem to be on the increase. More of them grow now after the menopause than years ago. I have two or three patients now who have waited for the menopause, and have had the benefit of well-directed palliative treatment; and these growths have continued to grow, notwithstanding the menses ceased four or six years ago. I have removed a good number of these tumors between the ages of fifty and sixty; and the œdematous form, the muscular form and the multinodular form seem to grow more after the menopause than they did years ago. That has been the observation of a good number of operators at home and abroad. A few years ago but little was said about the soft variety of myomas. At present about every operator has something to say about the œdematous forms. They grow rapidly, they are quite symmetrical, and, as a rule, very easy to deal with. It is a quick operation.

Dr. Cushing has alluded to injuries of the ureter. I believe Keith severed one or both in one case. Mr. Tait opened the bladder in a hysterectomy he did in Albany. The bladder injuries, if the patient lives, always close; but the ureters do not close so kindly, and they are hard to manage. I have had injuries of the ureters in two cases out of 101 supravaginal hysterectomies. Dr. Cushing has called attention to the method of dealing with these capsules. Until one learns how to make a pedicle, he had better keep his hands off of them. It is of vital importance first to learn how to make a pedicle; and if you cannot make pedicles, you cannot deal with them successfully; you are apt to include bladder or something in the pedicle. I am satisfied from my own experience that you should never use a temporary clamp, that you should simply use a large, long-bladed, hæmostatic forceps, and never a constrictor before severing this great capsule. I am satisfied that many of the early operators included one or both ureters in the pedicle, and that to that may be attributed some of the deaths from so-called suppression, etc.

Dr. H. W. Cushing showed two tubes and ovaries removed on account of inflammatory trouble. The tube on the left side was largely dilated, and there was an abscess situated apparently in the left ovary. This communicated with the vagina and with the rectum. It was removed by enucleation, breaking up adhesions, ligating and cutting off. Two small fibroids were also taken from the uterus of the same patient.

Dr. E. W. Cushing showed specimens of pus tubes.

Dr. Price: Our present idea of the pathology of pelvic inflammatory troubles has been slow in gaining ground. In New York I do not believe they have as yet accepted it. It would seem from what they are doing at present that every woman suffers from endometritis, that every patient must be curetted. Now, in the presence of those huge abscesses, of course, the woman has a discharge. In this case the woman did discharge from the bladder and bowel. Why not curette the bladder? The indications are as clear as for curetting the uterus, and yet that goes on for this condition of affairs in New York. There is but one treatment in these cases. As yet I have never found a pelvic abscess wholly independent of ovarian disease except in traumatism or criminal abortion. A good number of these cases are treated for typhoid fever, appendicitis, dysentery, etc. They are not examined. There has been of late a good deal of conservative talk and writing; but as this conservative talk goes on, the complications increase and our cases are getting worse. They are neglected. All this talk means a higher mortality for all of us.

* * *

THE NEW YORK ACADEMY OF MEDICINE.
SECTION ON ORTHOPÆDIC SURGERY.

Stated Meeting, October 20, 1893, W. R. Townsend, M.D., Chairman.

A CASE OF CLUB-HAND AND CLUB-FOOT.

Dr. Reginald H. Sayre presented a little boy with a congenital club-hand. There was an absence of the thumb, radius, and certain of the carpal bones, and also a marked curve in the ulna. This last was corrected by subcutaneous osteotomy. Some weeks later, an open incision was made, and it was found that the ulna did not articulate with the carpus, and that there were some ligamentous bands which bound down the hand at right-angles to the forearm. These bands were divided, and an attempt made to bring the hand down, but the flexor tendons, particularly the flexor carpi radialis, were so short that it was not practicable to bring the styloid process clear of the carpus. He then removed the os magnum and the unciform, cut off the styloid process of the ulna, and put the bone into the cavity thus formed. Another time he would not destroy the ligaments on the posterior part of the carpus, on account of the difficulty experienced in keeping the bone in place. There is still a noticeable tendency for the hand to turn to one side, as there is a very small surface on the ulna out of which to make a wrist-joint.

He had seen a picture of a similar case where the carpus articulated with a facet on the side of the ulna, making a good joint. Under such circumstances, one might cut the ulna just above the articular surface, and turn it at right-angles to itself, thus bringing the joint surface in its normal position.

His patient also had a congenital club-foot, which was operated upon before the hand was treated, by the use of subcutaneous incisions and Bradford's instrument. This boy also had a curvature of the spine, and the right upper and lower extremities seemed to be more developed than those on the other side. Since the deformity of the foot had been corrected, there had been a notable improvement in the lateral curvature.

---

[2] See page 37 of the Journal.

The speaker said he had only seen five cases of club-hand. In one case under treatment at present, an infant of three or four months, plaster-of-Paris dressings are applied, and changed at short intervals; and he expected a fair result. In the other cases there were simply contractions of the tendons, but the skeleton was apparently normal.

A CASE OF MYOSITIS OSSIFICANS, WITH MULTIPLE EXOSTOSES.

Dr. V. P. Gibney presented a boy, ten years of age, who was admitted to the Hospital for Ruptured and Crippled for the first time when five years old. At that time a diagnosis was made of myositis ossificans affecting the levator anguli scapulæ. He was taken into the hospital with the idea of severing the strip of ossified muscle, but the parents would not consent to the operation, and removed the child. He did not return until last spring, when he was seen by Dr. Townsend. He stands with his head tilted a little to the right; the upper extremities are bowed so that the thumbs touch, and the elbows are separated some distance from the sides. There is a bony enlargement springing from the middle of the jaw, about the size of a split pea. He is able to bring his neck up to a vertical bearing, but his head soon falls down into the position already noted. The rotation of the head is limited to a very small arc, about ten degrees. The right clavicle has an extra curve at its outer half, the greatest convexity being toward the spinal column. The outer end presents an appreciable enlargement, while the sternal end is subluxated forward and seems to be ankylosed. The left clavicle presents an unusual curve throughout its whole extent, the convexity being towards the neck. Springing from the middle is a bony, irregular mass, elevated half an inch. The base of the tumor spreads out into the clavicular portion of the pectoralis major, and continues into the pectoral portion, terminating in an irregular mass in the anterior wall of the axillary space, deepening this space very much. Over the articular surface of the second rib with the sternum is a small exostosis, which shades off into the mass just mentioned. There are similar exostoses over the sternal end of the third and fifth ribs. There are no such bony masses on the right side. The respiratory movements of the thorax are limited. Beginning about the middle of the fifth rib, just in front of the axilla, is a bony enlargement, triangular in shape, which extends backward and downward, taking in the whole area of the latissimus dorsi and the serratus magnus. He was re-admitted to the hospital on March 9, 1893. With the idea of freeing the shoulder, the bony tendon of the latissimus dorsi on the right side was divided, and a piece of bone about one inch wide and very dense and hard was excised, but new bone was thrown out very soon, and the mass became if anything more unyielding than before. There was also a peculiar osseous tumor over the right tendo-Achillis, about the size of a peanut, which interfered with his wearing a shoe. This was dissected out at the time of the other operation, and has not recurred.

About the time of this operation an old case returned which he presented to the Pathological Society many years ago. An account of it was published in the New York *Medical Record*, 1875, Vol. X, page 747. She was at that time ten years of age, and first came under his care on September 14, 1875. She had been perfectly well up to December, 1874, when she had an attack of diphtheria, followed by paralysis of the vocal cords. The muscles involved in her case were the latissimus dorsi, the scaleni, and the erector spinæ. Her right arm was held down by the tendon of the latissimus dorsi, and she suffered more or less pain in her back. There was also a lateral curvature from lack of muscular tone. At the suggestion of some members of the Pathological Society, she was put on lactic acid; and though no real improvement was noted, it was observed that after a year and a half there had been no further increase in the disease. Since 1884 she has been working at millinery, and the disease has made no further progress.

The boy just presented has been taking lactic acid for the past six months. He has had very little pain.

The speaker said that so far as he had been able to ascertain, the first American case of this kind was published by Dr. Byers in the New Orleans *Journal of Medicine* in 1870. The first reference to the subject which he had found in literature was by Bulhak, who published a dissertation on the subject in 1860. Kummell has reported a case where the ossification probably began in intra-uterine life, since it was noticed as early as fourteen days after birth. When the child was two years of age, there were numerous fluctuating tumors over the back, which ultimately became as hard as bone. Nothing is known of the etiology. There is no traumatic element in the case presented by him.

Dr. N. M. Shaffer said that such cases must be very rare, as this was the first of the kind he had ever seen. He would suggest that the electrical reactions of all the muscles be determined, also the condition of the reflexes, and that a critical examination be made of all the organs. He would classify it as a nervous disease, the changes in the muscles being the result of pathological changes in the central nervous spinal system.

THE TREATMENT OF CLUB-FOOT BY WOLFF'S METHOD.

Dr. A. B. Shands read a paper on this subject, exhibited a number of illustrative cases, and gave a demonstration of the manner of carrying out the treatment.

Dr. Shaffer asked how many of the patients had been operated upon prior to the adoption of Wolff's treatment.

Dr. Shands replied that most of them had been operated on previously, but in one of the cases exhibited no operative treatment had been employed.

Dr. Shaffer said that the principle embodied in this treatment was one which he had taught for a long time. By this method one accomplishes with plaster-of-Paris what he had long done, and he thought in a more thorough manner, with his lateral traction shoe. With lateral traction a certain amount of force is applied at frequent intervals. His success had been such as to entirely warrant him in saying that the method just presented is perfectly competent to bring about a cure, and hence, it would be found very useful where more elaborate apparatus is not obtainable. He preferred to make changes in the position of the foot every three or four hours instead of at intervals of a few days, as in the method described in the paper.

The great majority of cases of club-foot under ten years of age can be cured without operative interference.

Dr. Henry Ling Taylor said he had been much interested in Dr. Freiberg's account of Wolff's method when published in the *Medical News*, for the method seemed very reasonable, and presented certain analogies to one which he himself employed. The method described in the paper was simple and efficient, and placed the proper mechanical treatment of club-foot within the reach of any country practitioner who possessed a clear notion of just what he wished to accomplish.

Last summer while away from the city, he had seen, at the request of a surgical friend, an easily curable case of club-foot in a child two years old. Nothing had been done because the surgeon was "waiting until the child was old enough for an operation." This was a great mistake; if the surgeon cannot construct a proper splint out of metal or wood, he should correct the deformity by means of plaster-of-Paris dressing, according to the method shown this evening. There was not much difference between this method with plaster and that which he had called "the method of continuous leverage." In the former, moderate correction is made, and the foot retained in this position. The correction goes on while the splint is applied, because the foot continues to yield; when it has yielded sufficiently, another correction is made in the splint. This is not very different from applying his leverage apparatus, and following up improvement in the position of the foot by adjusting the straps or bending the side-bar from time to time. The foot is being continuously impelled in the right direction, and is at all times prevented from falling back into a wrong position. This method of Wolff is essentially the same in principle.

Dr. A. B. Judson said that in children as young as these, the deformity easily yields to persistent and appropriate treatment. Plaster-of-Paris used in this way embodies a lever with points of pressure and counter-pressure; but he preferred to use steel, adhesive plaster and webbing, by which more gradual steps are made toward correction, taking more time, giving no pain, and taking advantage of the weight of the body properly directed on the foot, the same apparatus being used for the after-treatment as long as may be required. He was reminded by Wolff's method of having seen Dr. Gibney many years ago using plaster-of-Paris and a wedge in the reduction of flexion of the knee. He was surprised that there are so many young children whose club-feet are neglected till large calluses form on the outer borders of the feet. Our duty is to extend a knowledge of what may be done with little trouble on the part of the family physician towards correcting this deformity in young children.

Recent Literature.

Manual of Bacteriology for Practitioners and Students, with especial reference to practical methods. By Dr. S. L. Schenk, Professor Extraordinary in the University of Vienna. Translated from the German (by the author's permission) with an appendix by W. R. Dawson, B.A., M.D., Univ. Dubl., Late University Travelling Prizeman in Medicine. With 100 illustrations, partly colored; 302 pp. with an index. London and New York: Longmans, Green & Co. 1893.

The book appropriately begins with an introductory chapter on the general morphology of micro-organisms, after which bacteriological technique is considered. Then follow chapters on the bacteriological analysis of air, water, foods, putrefying substances and pus. In the remaining chapters the organs and cavities of the body and their contents are discussed from the point of view of bacteriology. Under these various heads, descriptions of the bacteria met with are given, an arrangement of the subject which is quite satisfactory.

The bacteriological methods are, on the whole, well described, though there is much that is disappointing.

A great many staining methods are included, some of which are certainly rarely used and are of no importance. It would seem that in a book of the scope of this one a much smaller number of well-approved methods, selected with the discrimination of a trained bacteriologist, would better suit the needs of those for whom the author writes. We note with pleasure that the use of the double glass dishes of Petrie is recommended for obtaining discrete colonies, though the antiquated and cumbersome apparatus of Koch is still described with great detail and illustrated by figures, some of which have grown familiar in other books on bacteriology.

In the chapter on air we find no mention of the excellent method of Sedgwick. The description of the biology of the various species of bacteria is, in general, unsatisfactory. Numerous saprophytes which are to be found in all of the text-books on systematic bacteriology here also appear, but the customary descriptions of most of them, useless and inadequate as they are for purposes of their identification, have been still further abbreviated by the author, so that it would probably be just as well if he had limited himself to a simple catalogue of their names. In the treatment of the pathogenic and better studied bacteria, similar defects are observed. A conspicuous instance of this is seen in the case of the typhoid organism, the differentiation of which from the bacillus coli communis, is very imperfectly given; some of the most important and trustworthy distinguishing characteristics being altogether omitted. The statement is also made that the typhoid bacillus forms spores and the same is said of the bacillus prodigiosus. This teaching is not now accepted. The account of the relations of various bacteria to pathological conditions of the organs and tissues of the body is also defective. Thus little or no importance is assigned to the part played by the streptococcus in pseudo-membranous inflammation of the throat.

The translation is done in a very readable manner, but here and there an apparent ignorance of the technical English equivalents betrays itself by the use of the terms "islets" for "colonies," "thrust" for "stale" culture, Petrie's "capsules" for Petrie's "dishes" or "plates," "second" for "secondary" infection, "heat" for "temperature." At times also there are indications of a too close adherence to German idiom.

In an appendix by the translator there are *résumés* on the subjects of pathogenic protozoa, cholera vaccination, and action of light on bacteria, together with some additional technique.

The publishers' part has been well done in Messrs. Longmans' well-known style. Some of the illustrations are new and excellent, especially those of gelatine cultures which constitute the most valuable part of the book. Many, however, are taken from the usual stock in common use. Misprints are few.

Diseases of the Skin. By H. Radcliffe Crocker, M.D., (Lond.). Second edition, revised and enlarged. Philadelphia: P. Blakiston, Son & Co. 1893.

We are somewhat late in taking notice of the second edition of Dr. Crocker's work for the reason that a hasty examination convinced us that the large amount of new matter that had been added, together with the many alterations, demanded careful reading and study, and it is with great pleasure that we are able to say, that the time has been most profitably spent. As a proof that dermatology is not standing still, we may point to the fact that one of the foremost dermatologists of Great Britain, a writer who has shown much critical discernment in his attitude towards innovations, has felt justified in adding to the list of affections that appeared in the edition of 1888, twelve titles of more important affections of the skin, and thirteen subjects of minor interest. Too much praise cannot be accorded for the careful and systematic manner in which these new subjects have been presented, so that this book will be gladly turned to by the expert, as well as by the general practitioner, when a short, accurate account of the modern contributions to dermatology is demanded. Much weight and dignity is added to the book, by the impartial and scientific spirit shown towards the so-called "schools" of dermatology, and to this much of the book's value must be attributed. The writings of German, French and English speaking people have been impartially and carefully studied, and the result, as we view it, shows that no one school can to-day afford to slight the contributions of the others, without danger of retrograding.

As is natural, we are not always able to agree with the writer, but that is mostly in matters of minor details. We should have liked to see lupus vulgaris included together with scrofuloderma, and verrucous tuberculosis, under the heading of tuberculosis of the skin, and cannot but think that an abundance of material was at hand for an amplification and broader treatment of this whole subject. Dermatitis herpetiformis is treated under the heading hydroa herpetiforme. It is better and fairer, we think, to retain the name given it by Duhring, who was the first to call attention to the polymorphism of this disease, until its pathology and etiology have been more clearly defined. It is gratifying to see impetigo contagiosa, ecthyma, furunculus and carbunculus grouped together under diseases due to pus cocci, and these affections are considered tersely in the light of modern pathology.

The paragraphs on pathology are well and critically written and receive added value from the author's experience in histological investigation. The treatment is more concise and emphasizes the writer's own preferences more strongly than is the rule in text-books, and this is also a merit, as a prosaic rehearsal of the different drugs that have at any time been used, is apt to prove an embarrassment rather than a help, to the seeker for aid in therapeutics.

Altogether this second edition of Crocker stands, in our opinion, as the best modern exposition of the subject of dermatology that has been offered by an English-speaking writer.

The total income of the London Hospital Sunday collections for 1893 was £39,000 as against £41,000 for 1892.

THE BOSTON
Medical and Surgical Journal.

THURSDAY, JANUARY 11, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

THE THERAPEUTIC ACTION OF BLOOD-SERUM.

At the present time when reference is so often made to the action of blood-serum in producing immunity, another brief *résumé* of the leading facts in connection with it, and what has been established is timely, and will be of aid in understanding the value of future experiments in the same line. Such an analysis has been recently made by Günther, and it is from his article that the chief points in our present review of this subject are taken.[1]

The principle rests on the discovery of Behring, that the serum from an animal, which has been rendered artificially immune to a disease, if introduced into the body of another animal, cures him of the disease or renders him immune. Thus the mouse, which is especially susceptible to tetanus, is cured after the outbreak of the disease through the injection of the serum from a horse that has been made artificially immune.

But before sketching the development of the blood-serum therapy, the chief points of the theory of immunity must be touched upon.

It is well-known that one species of animal is very refractory to a certain infectious disease, while another is very susceptible. Among the susceptible individuals there are those which have a greater or less degree of immunity. This rests on unknown factors. These can, however, be acquired, accidentally or otherwise, through exposure to which the individual is subjected. A child which has passed through scarlet fever, is generally immune for the rest of its life, through accidental exposure to the disease. On the other hand, a sheep, very susceptible to anthrax, can acquire immunity against this through an intentional artificial vaccination.

From the time of Jenner to 1880 there was no advance made in the direction of protective inoculation. In that year Pasteur found that if the bacterium of hen cholera was exposed to the air for months its virulence was greatly lessened. If a hen was inoculated with one of these weakened cultures, there was set up only a local transitory affection, and after this had passed off the bird was not susceptible to the virulent form of the disease. The same line was followed in the artificial immunity given to animals through the injection of weakened cultures from anthrax, swine plague, and hog cholera. Various methods to attain this weakening of the virulence were employed. For some the action of oxygen was sufficient, to others chemical substances had to be added. Others had to be grown at a high temperature, while others had to be passed through the body of some other animal. In general, it was found that in order to be weakened, the bacteria must be placed under conditions which are unfavorable to them. As to the real cause of this, little can be said to be known. Many show no change of form or method of growth, while with others a partial degeneration goes hand-in-hand with the decline in virulence.

---

[1] Carl Günther: Die Blutserumtherapie. Ihre geschichtliche Entwickelung und Ihr gegenwärtiger Stand. Deutsch. Med. Woch., November 16, 1893.

Several hypotheses have been advanced to explain the action of these less virulent forms and the changes in the body of their recipient.

The first, which may be called the hypothesis of "exhaustion," was supported by Klebs and Pasteur. This supposes that to produce immunity some peculiar nutritive material of the body necessary for the bacteria was used up, so that bacteria that came afterwards could not thrive. This hypothesis is to-day given up. Another which comes nearer the truth is that of "retention," advanced by Chauveau. He believes that for immunity certain products of the bacteria must be kept back in the body, and that these prevent further growth. A third is that of Metschnikoff, grounded on his theory of phagocytosis. He has shown that certain of the body-cells, especially the white corpuscles of the blood and the larger cells of the organs, have the power to seize upon and destroy bacteria. For the act of immunity it is necessary that the phagocytes should first destroy the weaker forms, and in this way they acquired the power to make way with the virulent ones.

A further advance was made by Salmon and Smith in 1887, who discovered that immunity was possible through pure chemical means. Thus the products of a culture of hog cholera, freed from all bacteria, could render pigeons immune to the disease. By this it was surely proved that it is a chemical change of the juices of the body in the act of immunity, which makes the body resistant to the attacks of the virulent bacterial material.

At about the same time Fodor showed that the juices of the normal living body, especially the blood, possessed qualities destructive to bacteria. Blood freshly drawn from a vein was found to kill large numbers of the bacteria placed in it. This property was lost after a few hours, however, and then all kinds of bacteria grow abundantly in it. Serum was found to work in the same way. And Buchner in 1889 announced that the albuminoids in blood-serum freed from all cells were the possessors of this peculiarity. At the same time it was discovered that all serum did not work in exactly the same way. While these facts might be used in the explanation of immunity, they were found to fail in so many cases, that they had to be set aside, and the conclusions formulated as follows: "The bactericide properties of the blood or its serum cannot be used in general to account for the condition of immunity."

Further studies made in this field by Behring brought out, however, a perfectly regular peculiarity of the blood-serum of an individual rendered artificially immune. He stated this as follows, and it is called Behring's law: "If an individual is rendered artificially immune against a certain infectious disease, then his blood or its serum has acquired the property of transmitting immunity against the same infectious disease to a susceptible individual (no matter of what species) into whose organism it can be brought in sufficient quantities."

The first communication was made in regard to tetanus by Behring and Kitasato in 1890. They were able to render rabbits immune against tetanus. The blood-serum of these rabbits, when introduced into the bodies of mice (extremely susceptible to this disease by nature), protected these little animals completely.

It must be mentioned here that the tetanus bacilli belong to that group of bacteria which are called "toxic" in contradistinction to the "infectious" in the narrowest sense. These last work harmfully by their enormous increase in the body, while, on the other hand, the toxic work by the production of a specific poison. If the tetanus spores enter into a susceptible body they develop in the spot of introduction, and it is here that the active poison of tetanus is produced, which is taken up into the body, and then develops its general deleterous working. The poison can be produced outside of the body in artificial cultures as well. If such a culture is freed from its living bacteria (by filtration), then this filtrate, introduced in proper doses into the body of an animal, causes an outbreak of tetanus just as surely as if the bacteria are used. In the first case it is a tetanus infection. The bacteria penetrate the body and increase. From this there is developed an intoxication, which is absorbed from the poison produced by the developing bacteria. In the second case we have at once, and primarily, an intoxication. The ready-formed tetanus poison penetrates the body as a soluble chemical, and acts thus.

Behring and Kitasato have shown in the above work that the introduction of the serum of animals made immune against tetanus protects the susceptible animals not only against the infection of tetanus, but also against the primary intoxication. These authors have thus added a new point to our knowledge of immunity, and have drawn the following conclusion from their experiments: "The immunity of the experimented animals depends upon the capability of the blood-serum freed from cells to render harmless the toxic substances which the tetanus bacillus produces.

A further proof is that the blood-serum of animals made artificially immune acts in the same way against the tetanus poison in the test-tubes. Further, it was found that animals suffering from tetanus could be cured by the inoculation of the serum of immune animals. This acquired resistance rests, therefore, on the antitoxic peculiarities of the blood-serum."

This epoch-marking discovery in the case of tetanus has been the point of departure for a great number of experiments to see to what extent the blood-serum of artificially immune individuals can be used for the purpose of healing in the infectious diseases. As would be supposed, investigation has been carried on with the blood-serum of individuals immune by nature, and the result has been that in their blood-serum there is no substance which can render other individuals resistant. These substances are therefore never present naturally in an individual, but must be first formed; and this happens only by artificial means. For the understanding of natural immunity, every point fails us at the present time.

Diphtheria was the next disease to tetanus to be investigated (1892). We have to deal here with one which is also produced by toxic bacteria. Here all the general symptoms are to be referred to an intoxication; and the blood-serum of artificially immune individuals was proved to be active through its antitoxic properties. This process of immunization against tetanus and diphtheria can be regarded, from the nature of those diseases, in the light of a seizure of the virus (Giftfestigung). Ehrlich, too, has shown that Behring's law holds also for the seizure of other poisons than those produced by bacteria. He was able to render mice immune against ricin (an extremely poisonous albumen obtained from the seeds of the ricinus communis), as well as against abrim (the toxic albumen from the jequirity beans), by feeding them with gradually increasing doses of these poisons.

The serum of these animals was capable of transferring its property of seizing these poisons to healthy animals. It also rendered the poison harmless when they were brought together in the reagent glass.

In all infectious diseases Behring's law has turned out to be true, even where one cannot speak of the seizure of the virus. For example, in all cases of septicæmia which have been investigated in this regard. Even in those where as yet the poison has not been isolated — for example, rabies — it holds good that the blood-serum of artificially immune individuals can transmit immunity to normal individuals.

The above investigations have also thrown light upon the spontaneous healing of infectious diseases. This appears, in general, to come about when there have been formed in the body, especially in the blood, substances which paralyze the harmful agents. If the disease has been overcome, these "anti-agents" in the blood are found afterwards. In men who have lived through a pneumonia, typhus, cholera or diphtheria, the blood-serum has been found to act in rendering animals immune.

It has been stated above that the protective serum can also heal diseases that have already broken out (therapeutic action of blood-serum). But it has been generally found that very much more serum is necessary for healing than to produce immunity; and still more is needed the further advanced the disease. And, furthermore, the necessary amount stands in direct relation to the body-weight of the individual.

It will at once be realized that there are practical difficulties in the way of obtaining a large quantity of very active serum for treatment in the care of man. In the two diseases in which it has been tried, diphtheria and tetanus, the sheep and horse are the animals from which the immunizing serum has been obtained. The results from this treatment, however, will have to be subjected to the severest scrutiny before all that is claimed for them can be allowed. Certainly the work is a great contribution to our understanding of these obscure processes, and while that can at once be accepted, the practical outcome must still be regarded as under judgment.

Of the chemical nature of the active substance in the serum there is little known. In the case of the anti-tetanus, it has been found to be very resistant against physical, chemical and atmospheric influences. It passes through the dialyser, and by this the characteristic reactions for albumens are lost.

It has been shown by Ehrlich that the immunizing substance of the blood can pass into the milk, and through nursing immunity can be obtained. At the same time, it has been shown that immunity (through seizure of the poison) can be transmitted through the mother, but not the father. In the inheritance of artificial immunity two factors come into play: first, the supply of the fœtus with immunizing substances from the maternal blood, and, second, the continued accretion to this by the offspring through the milk.

In regard to the length of time and the persistence of the artificial immunity, the two ways in which it can be acquired are to be kept sharply separated. If the immunization is "active" — that is, if the body itself helps prepare the substance which overcomes the disease — then the resulting immunity is relatively strong, and exists a long time. If, on the other hand, it is "passive" — that is, if immunity is given to the organism by the introduction of serum, blood or milk in which the agent is already prepared, then the immunity is a relatively short one, probably not extending over more than a few weeks.

MEDICAL NOTES.

The Congress for Hygiene and Demography. — At the eighth International Congress for Hygiene and Demography, to be held this year at Budapest, an entirely new section is to be organized for the study of the hygiene and etiology of diseases of the tropics. Dysentery, malaria, yellow fever, elephantiasis, beriberi, the influence of tropical climates upon Europeans, tropical affections of the liver, and the effects of the use of alcohol in warm countries, are some of the especial topics for discussion.

FIRE IN A LONDON HOSPITAL. — A fire occurred in the Royal Free Hospital in London, last week, which was extinguished with some difficulty. The patients in the wards were all removed safely, and no serious damage was done.

SMALL-POX AT NASHVILLE, TENN. — Six cases of small-pox were reported at Nashville, Tenn., January 8th, from four different sections of the city, all of the patients being negroes.

BOSTON AND NEW ENGLAND.

BOSTON WATER CONSUMPTION. — The daily average consumption of water in December last was as follows; Sudbury and Cochituate system, 47,807,800 gallons as against 43,766,400 in December, 1892; Mystic, 11,620,800 as against 10,475,700 for the corresponding month of 1892; total, 59,428,600, an increase of 5,188,500 gallons over December, 1892. The flow of the Sudbury and Cochituate is now about 10,000,000 gallons a day more than its consumption.

BEQUESTS. — The Carney Hospital and the Free Home for Consumptives of Boston, have each received a bequest of five hundred dollars by the will of Mr. Dennis Cawley.

FREE VACCINATION IN BOSTON. — The free vaccination stations were closed last Saturday evening. During the two weeks in which they were open over forty thousand persons were vaccinated. During the present week a physician is to be sent to each public school to vaccinate all children who are in need of it, though the vaccination is not to be compulsory.

SMALL-POX IN BOSTON. — There have been five new cases of small-pox in Boston in the week ending at noon January 10th. There have been no deaths.

SMALL-POX AT LOWELL. — Several new cases of small-pox have occurred at Lowell, Mass., during the week and there are now seven patients at the small-pox hospital, one of whom is not expected to live. In spite of these cases much opposition is being shown to vaccination in both Lowell and Lawrence, chiefly by the German population.

SMALL-POX AT WORCESTER. — A case of small-pox occurred at Worcester last week, in an employé at a tannery. His boarding-house has been put under close surveillance.

INFLUENZA AT PORTSMOUTH, N. H. — The influenza is prevalent to a serious extent in Portsmouth, N. H. Over seven hundred persons are now ill, and there have been many deaths during the last few days, directly due to the grippe.

"VARIOLENA." — Several cases have come to notice this week, in which patients have been given some small white, sweet-tasting pills to take every two hours or so for the purpose of "effecting vaccination without the discomfort of scarifying and causing a sore arm." In, at least, one case, the patient had been unsuccessfully inoculated, and was told, "Well, no matter, the pills will do just as well."

NEW YORK.

ACADEMY OF MEDICINE ELECTIONS. — At the annual meeting of the New York Academy of Medicine, held January 4th, the following officers were elected: Vice-President, Dr. Joseph D. Bryant; Member of the Board of Trustees, Dr. Abraham Jacobi; Treasurer of the Board of Trustees, Dr. Wm. F. Cushman; Member of the Committee on Library, Dr. W. Gilman Thompson; Member of the Committee on Admissions, Dr. John S. Warren.

DEATH OF MRS. LEWIS A. SAYRE. — Much sympathy is felt in the profession and the community at large for the venerable Dr. Lewis A. Sayre, on account of the loss of his estimable wife, who died suddenly on January 5th, in the seventy-second year of her age. Mrs. Sayre was the daughter of the late Charles Henry Hall, and came of a distinguised old New York family. Up to a day or two of her death, she enjoyed good health.

THE WAY SMALL-POX IS SPREAD. — The way in which small-pox is often spread is strikingly illustrated by the discovery of three cases in a tenement-house in Harlem. On December 20th, a man by the name of Murphy was found with the disease in the annexed district beyond the Harlem River, and sent to the hospital for contagious diseases on North Brother Island. The house was promptly fumigated, and the inmates vaccinated, but the wife of the patient managed to escape the vigilance of the authorities, and disappeared with her child. On January 4th, the officers of the Bureau of Contagious Diseases found the child and two Italian children suffering from small-pox in a house on East 111th Street. In the meanwhile, the Board of Health is carrying on the work of general vaccination vigorously, and the extra corps of vaccinators, whose term expired with the old year, has been reappointed.

APPROPRIATION FOR THE BOARD OF HEALTH. — The $425,080 mentioned in last week's JOURNAL as having been appropriated for the expenses of the Department of Charities and Correction for 1894, should have been set down to the Board of Health.

TUBERCULOSIS AMONG LEVI P. MORTON'S CATTLE. — Seventeen pure Guernsey cattle owned by ex-Vice-President Levi P. Morton, at his country place at Rhinecliff on the Hudson, have been found to be suffering with tuberculosis, and the State Board of Health, acting on the report of Dr. John Faust, of Poughkeepsie, have ordered that they be killed. Dr. Faust is of the opinion that the tubercle bacilli have only recently invaded the systems of the cattle from the fact that the animals are to all outward appearance entirely free from disease, the presence of tuberculosis having been revealed only by the Koch test of the hypodermic injection of tuberculous matter. Among the infected cattle are a number which were exhibited and won prizes at the Chicago World's Fair, and it is probable that the disease was contracted there. It is stated that over one hundred head of cattle exhibited at the Fair from the State of New York, have been found, by the Koch test, to be suffering from tuberculosis, and have been killed.

◆

Miscellany.

INAUGURAL ADDRESS OF THE GOVERNOR OF MASSACHUSETTS.

In his inaugural address, Governor Greenhalge recommended the passage of a medical practice act by the State Legislature. He said:

"I ask you also to consider the expediency of requiring that practitioners of medicine be registered, in somewhat the same manner as pharmacists are now registered.

"In every State of the Union, except five, such a system of registration has been established, and it cannot fail to protect the public, and at the same time help to maintain a high standard among medical practitioners."

Other matters of medical interest of which he spoke were the various State boards and their work.

"The work of the State Board of Lunacy and Charity is one of vast scope, comprehending the supervision and visitation of the public and private insane hospitals and asylums of the State, State almshouse and State farm, and three State schools, and the State and town almshouses containing insane inmates; the care of insane patients boarded in families, with the supervision of juvenile offenders, and the administration generally of the laws concerning the support of State paupers by cities and towns, together with many other duties of kindred nature.

"The importance to the community of this great work of charity cannot be overestimated. It is in such lines of work that Massachusetts has won her high reputation among the States of the Union and throughout the civilized world.

"The care and improvement of the unfortunate coming within the jurisdiction of this Board is no insignificant standard by which to mark and measure the degree of civilization in this community.

"The work assigned to the Board appears to have been faithfully and efficiently performed in all its departments."

After calling attention to the need of new buildings to prevent overcrowding, and the necessity of separating the different classes of inmates, the innocent from the criminal, he said:

"Various suggestions will be made by this Board in their forthcoming report in regard to amending the statutes relating to the form of mittimus, the commitment laws, the record books in the State hospitals, and on various other points which I regard as practical and beneficial. The propriety of furnishing to the insane some light and interesting employment merits also your consideration.

"The Board of Health is performing its difficult and responsible duties in a most effective and satisfactory way. The Board exercises a strong and salutary influence over local Boards of Health. The year just closed has been marked by faithful and intelligent labor, and by excellent results, as the report of the Board will plainly demonstrate.

"I commend this report, with its suggestions and recommendations, to which I find no occasion to add anything, to your careful examination."

◆

THE DUTIES OF ARMY MEDICAL OFFICERS.

At the opening session of the newly established Army Medical School, Colonel Alden, President of the Faculty, spoke of the important duties of an army medical officer. He should be a sanitarian first and a practitioner next. His primary duty is to prevent disease and preserve the efficiency of the command. The questions of practical sanitation which he must deal with at every turn he has had but little experience in. Questions of soil, buildings and ventilation, of drainage, sewerage and disposal of garbage, the wholesomeness of water-supplies and animal foods are but a few instances of the many points bearing on the preservation of the health of the military comitia under his sanitary care, on which the ordinary medical graduate needs further instruction to fit him for military service.

"The actual duties of the medical officer are divisable into three branches. First, he is to see that none but able-bodied and effective men fit to perform the duties and endure the hardships incident to military life are admitted to the service. He must therefore critically examine the voluntary recruit or person about to receive a commission. Second, he must carefully watch over the health of the command to which he is attached in order that no causes that may mar its efficiency can gain headway. He knows that the mere aggregation of men leads to disease and that the experience of all campaigns shows that disease kills more than does the enemy. He must be ever ready to draw attention to unsanitary conditions. Third, he must keep himself always ready to relieve the sick and wounded in garrison and in the field; to endeavor to make them effective again at the earliest possible moment, or extend such measures of relief as may be possible if restoration to duty is impracticable."

◆

DRUNKENNESS IN WASPS.

Some of our readers may have seen a flock of crows fed on corn or meal previously saturated with whiskey, and grieved at the wickedness of man in extending the vices of civilization to the innocent animal world. They may be relieved, or perhaps even more grieved, to learn that the desire for strong drink is natural in other orders than man. Mr. Lawson Tait, in an address on the use of alcohol, relates the natural fondness of wasps for intoxication. He says:

"I have watched wasps with great interest, and have noticed the avidity with which they attack certain fruit when fully ripe, rotting, in fact, and I have also noticed some of the peculiar results of their doing so. The sugar in some fruits which are most attacked by wasps has a tendency to pass into a kind or kinds of alcohol in the ordinary process of rotting, a fact which is easily ascertained by the use of a still not large enough to attract the attention of the excise authorities. On such fruits, particularly grapes and certain plums, you will see wasps pushing and fighting in numbers much larger than can be accommodated; and you will see them get very drunk, crawl away in a semi-somnolent condition, and repose in the grass for some time, till they get over the "bout," and then they will go at it again. It is while they are thus affected that they do their worst in stinging, both in the virulent nature of the stroke and the utterly unprovoked assaults of which they are guilty."

◆

WORK AS A THERAPEUTIC AGENT.

A correspondent has sent to the *Spectator* the following short letter from Sir Andrew Clark:

Dear ——: There are two things about all patients which help us to discover their maladies: what is found by the physician and what is felt by the patient. What is felt helps us very little; what is found, for the most part settles our judgment. What is felt by Mr. —— amounts to a great deal. Various disturbances of digestion, weakness, inaptitude for work, recurring faintnesses, *malaise*, and the feeling of getting worse and worse. What I found amounts to very little. . . . Every organ that I can reach is free from obvious structural disease; and as the patient has suffered for years in this way and nothing has come of it, it is reasonable to say that there is no structural disease. Mr. ——, therefore, is ailing, and perhaps suffering, but not in the ordinary sense ill; furthermore, I think that he is introspective, morbidly nervous, and occupied with himself. He cannot at present be made well; but he may reach his best by a simple regular diet, by self-effacement (dying to live), by light, regular, daily occupation, by the resolution to give a deaf ear to his trying sensations, and by a determined fighting and struggling to lose himself in outward things. . . . To do nothing would be to go backwards and downwards. True, he may suffer if he works; nevertheless, it is best to work. Hundreds suffer to work. I have always suffered to work, but work keeps me where I am; I have to wrestle with it, but thus my antagonist becomes my best helper. Yours sincerely,

Andrew Clark.

◆

VACCINATION IN ANCIENT TIMES.

A correspondent of the *American Practitioner and News* writes that at a recent meeting of the Epidermiological Society of London Dr. Pringle called attention to the following passage, he had found in an ancient Hindu work, which he thought proved that vaccination was known and practised in India centuries before the birth of Jenner:

"The small-pox produced from the udder of the cow will be of the same mild nature as the original disease, the pock shall be of good color, filled with clear liquid, and surrounded by a circle of red. There will only be a slight fever of one, two, or three days, but no fear need be entertained of small-pox so long as life endures."

◆

A REMINISCENCE OF THE NICARAGUAN FILIBUSTERS.

In a recent number of the *Journal of the American Medical Association* Dr. L. C. Lane describes the condition in which he found the American filibusters who had been taken prisoners by the Costa Ricans in 1858. He was at the time assistant surgeon on the U. S. Sloop *Decatur*, which was moving from port to port for the purpose of aiding or protecting Americans who might be found in distress.

On arriving at Punta Arenas, the Pacific port of Costa Rica, they found a body of American prisoners, most of them under thirty years of age, half-naked, and suffering from starvation. Nearly all were troubled with ulcers of peculiar type, seated chiefly on the arms and legs and due to wounds received from thorns or insects. These ulcers consisted of half-formed tissue which, in the exuberance of its growth rose two or three lines above the adjacent surface. They were of a pale-yellow color, and so non-vascular that when touched they did not bleed. This pseudo-formation differed widely from any form of granulative tissue, and in appearance it resembled a thick emulsion, rather than an organized animal tissue. In fact, it was a new type of structure, so low in organization that it was the analogue of a fungoid plant, and was no more sentient than the latter. This fungoid neoplasm had arisen in the human body that was saturated with malarial poison, half-starved and living on a non-nitrogenous food. Under the simple treatment of cleanliness and feeding on man-of-war's rations the ulcers rapidly healed.

◆

THE LITHOTRIPTIST.

In a recent address on the progress of surgery during the present century, Professor Clark, of Glasgow, gives the following interesting bit of medical history. Speaking of the great advance in operations on the urinary bladder, he says:

"I have in my possession an old English dictionary, the author of which was James Knowles, the father of Sheridan Knowles, the playwright and poet. In that book, on the usual blank page behind the title, is this note:

"'N. B. — Look for a New Word after the last word in P, and a further explanation in an added Page at the end of the Preface.'

"The new word thus indicated is *Lithotriptist*, and the meaning is 'A professor and operator in the recently discovered art of lithotripsy; which consists in breaking, triturating, and pulverizing the stone in the bladder, and removing all the particles of it. The word is here, with thanks to God, a sense of duty to the public, and a deep feeling of gratitude to the Professor Baron Heurteloup, associated with his name; he having on Saturday the fourth of April, in presence of several surgeons and physicians, in about five minutes operated upon the author, whose age is seventy-three, without giving him much uneasiness; and by his consummate skill, not only relieved him from a state of suffering, which he had endured for twelve months, but preserved his life, which, in all human probability, he must have lost under the operation of lithotomy.' This book is dated 1838, and we have thus a definite time from which to date the commencement of the operation for crushing stone."

◆

PHARMACY, THERAPEUTICS AND CREDULITY.

Professor Cash opened the Edinburgh session of the Pharmaceutical Society with an address[1] on some of the present aspects of therapeutics. In tracing the relations that connected the scientific chemist with the therapeutist, he said it was the part of the chemist to produce a pure substance, so that the pharmacologist might be able to assign to it its definite and proper value. The product once obtained, the question arose, Why do we use this drug? The answer involved an answer to the pharmacologist's questions, How is it to be used? which gave scope to the dexterity of the pharmaceutist to prepare it in many forms for the exigencies of practice; and When should it be used? To this third query the therapeutist gave the final reply. He it was who, bearing in mind and relying upon the labors of the men who answered the questions, Why? How? applied the accumulated knowledge to the cure of disease. It was not rash to forecast that the advent of new remedies would be through the channels of close research and study, and that the scientific practitioner of the future would refuse to make use of anything which reaches his hands by less certain ways. Pure empiricism was decaying, although its decline was likely to be slow. Credulity was losing its hold on all, and whether the cry was a new cancer cure by green or yellow electricity or a great Chinese cure, the rush of the credulous amongst those who had been educated to know the left hand from the right in medical matters was but a trifling one. Still, it was not likely that this generation nor the next would fail to contribute its numbers to those who chased the will-o'-the-wisp into medical bogs. But credulity might be shaken by firm example, and he hoped much from the confidence that could be justly obtained from what had been weighed in the balance and not found wanting.

---

[1] British Medical Journal.

◆

THERAPEUTIC NOTES.

Local Anæsthesia. — A mixture of chloroform (ten parts) ether (fifteen parts) and menthol (one part), used as a spray, is recommended as an excellent and prompt means for obtaining local anæsthesia lasting for about five minutes.

Coryza.— Hayem[1] gives the following prescription for the relief of acute coryza:

℞	Acid. carbolic Aquæ ammoniæ	aa ʒ iiss	
	Alcohol	ʒ v	
	Aquæ destil.	℥ i	M.

Sig. Inhale from several drops upon a piece of bibulous paper.

Lotion for Pruritus Vulvæ.[2]

℞	Hydrargyri perchloride	gr. i
	Aluminis	gr. xx
	Pulv. amyli	ʒ iss
	Aquæ menthæ pip. q. s. ad	℥ vi

M. et fl. lotio.
Sig. Apply externally to the affected parts.

To Prevent Cocaine Intoxication. — Professor Parker, in the *British Medical Journal*, states that he has discovered that the unpleasant or even poisonous symptoms which occasionally follow the application of strong solutions of cocaine in the nasal and buccal cavities, may be entirely prevented by combining the drug with resorcin.

An Inhalation for Pulmonary Tuberculosis. — Dr. Carasso Michele, Director of the Military Hospital at Genoa, has used since 1888, in the treatment of pulmonary tuberculosis, constant inhalations of oil of peppermint. He combines the inhalation with the internal administration of an alcoholic solution of creosote, glycerine and chloroform, to which is added oleum menthæ piperitæ, 1:100. His results are reported as remarkable. Not only were incipient cases cured, but advanced cases also, some thirty-nine in all, with cavity-formation and abundant bacilli in the sputum. All the cases treated were of pulmonary disease only, without tubercular affection elsewhere.

Inhalant for Acute Laryngitis.[1]—Casselberry recommends the following combination as a soothing spray in acute inflammation of the larynx and trachea:

℞	Ol. pini canadensis	m. v	
	Ol. gaultheriæ	m. ii	
	Ol. eucalypti	m. ii	
	Menthol	gr. i	
	"Benzoinol"	ʒ ii	
	"Vaseline oil" q. s. ad.	℥ i	M.

Sig. To be used with a double-bulb atomizer.

Whooping-Cough.[2]— Bergeon reports that for six years he has successfully treated his cases of whooping-cough by rectal injection of carbonic acid gas. Immediately after the paroxysm one or two litres of the gas are injected into the rectum provided that three hours have elapsed after the last meal. The injections are repeated every four hours if necessary. They cause no gastric or intestinal disturbance and the child can eat immediately afterwards. Under this treatment his cases usually yield at the end of a week. Unruh[3] directs his treatment chiefly to the initial bronchial catarrh, and advises the insufflation of a grain and a half of powdered quinine once a day. In young children where this cannot be accomplished, he uses turpentine inhalations by means of face masks. Internally, he gives every three hours a teaspoonful of a three-per-cent solution of antipyrin, which is the only drug he has found of value. Pizzocaro[4] calls attention once more to the favorable effect of vaccination upon whooping-cough. In several very severe cases, with twenty or thirty coughing spells a day, which had been unrelieved by the usual remedies, inoculation with animal lymph resulted in a complete cure in from eleven to eighteen days.

◆

Correspondence.

"HIGHER MEDICAL EDUCATION."

Chicago, January 10, 1894.

Mr. Editor: — The following notice will be of interest to many of your readers. Hoping that its publication may induce other colleges to enter upon the same policy,

I am yours truly,
E. Fletcher Ingals, *Registrar.*

"In pursuance of the policy recently announced in the resolution to be presented to the American Medical College Association, the Trustees and Faculty of Rush Medical College have decided to require four years' attendance at college from students who begin the study of medicine this year with a view to graduation in 1898; however, those who have already studied medicine one year or more with a preceptor, so that the four years of study, already required, will be completed before July, 1897, may graduate after three courses of lectures, as heretofore. To encourage proper preliminary study, graduates in Arts and Sciences from high-grade colleges, and graduates in Pharmacy and Dentistry from colleges requiring a proper amount of study and two full courses of lectures will, until further notice, be allowed to graduate after an attendance on only three courses of lectures."

[We think announcements of this sort would be more useful if the length of the school year were stated, as well as the facilities for taking a four years' course in three years. — Ed.]

---

[1] Rev. de Laryngol. d'Otol. et de Rhinol., 1893, No. 18.
[2] Practitioner.

[1] New York Medical Journal, October 21, 1893.
[2] Lyon Medical, No. 26, 1893.
[3] Jahrbuch fur Kinderheilkunde, vol. xxxvi, 1893.
[4] Reforma med., No. 56, 1893.

METEOROLOGICAL RECORD,

For the week ending December 30, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S..24	30.17	48	55	40	70	78	74	W.	S.W.	8	13	O	C.	
M..25	29.87	52	57	46	79	72	76	W.	S.W.	12	19	F.	C.	
T..26	30.09	24	30	19	64	47	56	N.W.	N.W.	19	19	O.	C.	
W .27	30.06	28	37	18	64	57	60	W.	W.	12	20	F.	C.	
T..28	29.72	34	42	26	60	77	68	S.W.	S.W.	14	12	F.	F.	
F..29	29.66	44	49	40	78	68	73	S W.	W.	9	12	O.	C.	.06
S..30	30.08	28	33	22	69	97	83	N.	N.	12	15	O.	N.	.14
☞	29.95		43	30			70							.20

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, December 30, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Diarrhœal Diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,891,306	824	295	14.52	22.44	1.80	.48	8.64
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,115,562	—	—	—	—	—	—	—
Brooklyn	978,394	370	121	8.91	23.76	.27	1.35	4.86
St. Louis	560,000	—	—	—	—	—	—	—
Boston	487,397	254	74	10 92	29.64	.39	.78	5.07
Baltimore	500,000	—	—	—	—	—	—	—
Washington	308,431	119	24	12.90	17.20	.86	5.16	4.30
Cincinnati	305,000	130	36	14.63	20.79	4.62	3.85	3.85
Cleveland	290,000	71	27	12.69	22.56	1.41	—	11.28
Pittsburg	263,709	102	40	9.80	20.58	—	.98	2.94
Milwaukee	250,000	75	31	18.62	18.62	3.99	2.66	—
Nashville	87,754	46	10	2.17	10.85	—	—	—
Charleston	65,165	40	12	2.50	15.00	—	—	—
Portland	40,000	24	0	—	24.96	—	—	—
Worcester	96,217	39	10	5.12	30.72	—	—	2.56
Fall River	87,411	31	13	9.69	32.30	9.69	—	—
Lowell	87,191	54	18	14.80	20.35	7.40	3.70	—
Cambridge	77,100	40	12	12.50	27.50	2.50	—	2.50
Lynn	62,656	19	2	—	5.26	—	—	—
Springfield	48,684	24	7	4.16	24.96	—	—	4.16
Lawrence	48,355	—	—	—	—	—	—	—
New Bedford	45,886	25	8	4.00	20.00	—	—	4.00
Holyoke	41,278	—	—	—	—	—	—	—
Salem	32,233	12	3	—	58.31	—	—	—
Brockton	32,140	9	1	—	88.88	—	—	—
Haverhill	31,396	7	1	—	14.28	—	—	—
Chelsea	30,264	15	3	—	13.33	—	—	—
Malden	29,394	13	3	—	15.38	—	—	—
Newton	27,556	—	—	—	—	—	—	—
Fitchburg	27,146	7	3	—	14.28	—	—	—
Taunton	26,972	12	2	8.33	—	—	—	—
Gloucester	26,688	8	1	—	—	—	—	—
Waltham	22,058	4	0	—	75.00	—	—	—
Quincy	19,642	4	2	—	—	—	—	—
Pittsfield	18,802	1	1	—	—	—	—	—
Everett	16,585	6	1	—	16.66	—	—	—
Northampton	16,331	6	2	—	22.22	—	—	—
Newburyport	14,073	12	2	—	—	—	—	—
Amesbury	10,920	6	1	—	—	—	—	—

Deaths reported 2,446: under five years of age 774; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 306, acute lung diseases 552, consumption 266, diphtheria and croup 131, diarrhœal diseases 33, typhoid fever 28, scarlet fever 24, whooping-cough 24, measles 22, cerebro-spinal meningitis 6, small-pox and erysipelas 6 each.

From scarlet fever New York 7, Boston 6, Brooklyn and Pittsburg 3 each, Cambridge and Somerville 2 each, Milwaukee 1. From whooping-cough New York 6, Brooklyn 4, Boston, Cincinnati and Pittsburg 3 each, Washington, Charleston, Worcester, Somerville and Taunton 1 each. From measles New York 12, Milwaukee 8, Brooklyn and Cambridge 1 each. From cerebro-spinal meningitis New York and Lowell 2 each, Brooklyn and Washington 1 each. From erysipelas New York, Boston and Washington 1 each. From small-pox New York 2, Boston 1.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JANUARY 6, 1894.

Frank C. Cook, Washington, D. C., commissioned an assistant surgeon in the Navy, January 4, 1894.

SOCIETY NOTICE.

Massachusetts Medical Society, Suffolk District. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, January 17th, at 8 o'clock.

Papers: Dr. G. G. Sears: "Pregnancy and Heart Disease."
Dr. R. C. Cabot: "Diagnostic and Prognostic Significance of Leucocytosis."

F. C. Shattuck, M.D., *Chairman.*
Henry Jackson, M.D., *Secretary.*

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The next lecture will be given on Wednesday evening, January 17th, at 8 o'clock, by Assistant Professor Ernst. Subject, "Advances in Bacteriology." Physicians are cordially invited.

RECENT DEATHS.

Oliver Augustus Willard, M.D., M.M.S.S., died in Lowell, Mass., January 7th, aged thirty-eight years.

Francis Minot Weld, M D., died in Jamaica Plain, December 31st, aged forty-three years. He graduated from Harvard College in the class of 1860, and while a student in the Medical School, received an appointment as medical cadet and was soon commissioned as assistant surgeon at the Naval Hospital in Chelsea. During the year 1863 he served on the ironclad monitor *Nantucket* in blockade service at Charleston and Savannah, and later in the year served on the frigate *Wabash*. He was relieved from naval duty in January, 1864, and completed his course at the Harvard Medical School. In April, 1864, he entered the army as a surgeon and was with Grant in the Campaign from the Wilderness to Petersburg, and with the Army of the James before Richmond, and joined Sherman at Raleigh. During his service he was at different times brigade and division surgeon, and in charge of various field and post hospitals. After the war, October 1, 1865, he began the practice of his profession in Jamaica Plain, but moved the next year to New York City, where he practised until 1887. He was medical superintendent of the New York Hospital in 1876–7. He was for twelve years a member of the board of overseers of Harvard University.

Hampton E. Hill, M.D., died at Saco, Me., January 9th, aged forty-three years. He was at one time demonstrator of anatomy in the Bowdoin Medical School and a member of the medical staff at the Soldiers' Home at Togus.

Lucius Flagg Billings, M.D., M.M S.S., died in Barre, Mass., November 26, 1893, aged seventy-one years.

Pierre J. Van Beneden, M.D., D.Sc., LL.D., Professor in the Faculty of Sciences at Louvain, died at Louvain, January 9th, aged eighty-four years. His life was spent in scientific research in many departments of knowledge, anatomy, zoology, physiology and ethnology. He was a member of the Academy of Science of Belgium; a foreign member of the Royal Society of London; a member of the Institute of France.

BOOKS AND PAMPHLETS RECEIVED.

Thirty-eighth Annual Report of the Trustees of the Northampton Lunatic Hospital for the Year ending September 30, 1893.

The Healing of Rodent Cancer by Electricity. By J. Inglis-Parsons, M.D., M.R.C.S., M.R.C.P. (Lond.). London: John Bale & Sons. 1893.

Outline of Physical Diagnosis of the Thorax. By Arthur M. Corwin, A.M., M.D., Demonstrator of Physical Diagnosis in Rush Medical College; Attending Physician to the Central Free and Bethesda Free Dispensaries, Department of Rhinology, Laryngology and Diseases of the Chest. Chicago: The W. T. Keener Co. 1894.

A Text-book of the Physiological Chemistry of the Animal Body, Including an Account of the Chemical Changes Occurring in Disease. By Arthur Gamgee, M.D., F.R.S., Emeritus Professor of Physiology in the Owens College, Victoria University, Manchester; Lately Fullerian Professor of Physiology in the Royal Institution of Great Britain. With two chromolithographic charts by Spillon and Wilkinson. Vol. II. The Physiological Chemistry of Digestion. London and New York: Macmillan & Co. 1893.

Original Articles.

ON THE VALUE OF EXAMINATION OF THE BLOOD OF THE INSANE.[1]

BY J. A. HOUSTON, M.D., NORTHAMPTON, MASS.,
Assistant Physician, Northampton Lunatic Hospital.

It is a truism that the mind requires, for the proper maintenance of its operations, a sound body.

You are all cognizant of the influences which mind and body have upon each other. Their interdependence is noted every day by the hospital physician; he sees it in many cases on admission, it having been estimated that in 55 per cent. of admission to hospitals for the insane the bodily health is considerably below normal; he notices it in convalescents by the advancement together of mind and body toward a condition of soundness, the weight-charts of recoveries showing almost universally an upward curve; he realizes it in those cases that retrograde till death seems to result solely from the physical exhaustion induced by the mental state; and finally he admits it by his method of treatment, which is largely directed toward the restoration of the body to its normal tone.

How great a factor impaired vitality is in the etiology of mental troubles is not easy to determine, because in so many of our cases it is a result rather than a cause.

Of 1,678 admissions to the State hospitals of this commonwealth last year, the assigned cause of insanity was ill-health and privation in 74 cases, or 4.5 per cent., while in seven per cent. additional cases the assigned causes were such exhaustive diseases as influenza, phthisis, typhoid fever, pneumonia, rheumatism, neurasthenia, etc.

Inasmuch as numerous agents and conditions which influence the quantity of blood supplied to the higher nervous centres, thus increasing or diminishing the amount of nutriment, do thereby cause disturbances of the normal action of those centres, it has been inferred with reason that marked variation in the quality of the blood-supply may similarly produce impaired action of the nervous centres.

To determine what connection, if any, exists between certain mental states and pathological conditions of the blood, Dr. S. Rutherford Macphail several years ago made an extensive series of examinations of the blood of the insane with special reference to its richness in corpuscular elements and in hæmoglobin.

The results of his investigations, which are published in the *Journal of Mental Sciences* (Vol. XXXII), appear to be quite conclusive that poverty of the blood is in many cases a predisposing cause of insanity. Later observers confirm the results obtained by him.

An account of my experience in the examination of the blood of the insane within a few months past may be of interest to any who have not personally made such examinations. For estimating the number of corpuscles I made use of the Thoma-Zeiss instrument, which is probably the best adapted to the purpose of those made. For estimating the percentage of hæmoglobin several methods are in use. Probably Fleischl's hæmometer is the most accurate instrument for practical use. I made use of Gower's method, which is simple, and which, I am informed by Professor Henry, of Philadelphia, an authority on the subject, is sufficiently accurate for clinical use — probably within two or three per cent.

In my examination of men in sound health, I found that Gower's standard tint for comparison is apparently too high, none of the examinations showing more than 90 per cent. of hæmoglobin. Learning that other observers had the same experience, I made a new standard, as follows: taking blood from 11 men, as many as I could conveniently obtain at the time, whose blood registered 90 per cent. by Gower's standard, I diluted each 100 times with distilled water and mixed the dilutions. Taking the tint thus obtained for normal, I copied it with glycerine jelly tinted with picrocarmine, which makes a stable tint. I corresponded with Professor Henry about the matter, who replied: "I have found the standard of Gower's Hæmoglobinometer too high, and am accustomed to regard as normal a blood which contains a normal number of red corpuscles, and of which the color corresponds to 90 or even 85 of Gower's or Fleischl's test. . . . Your method of obtaining a color standard is the only correct one."

Stimulated by the results obtained by others, I had hopes of obtaining satisfactory results in my own observations. But when, after a few trials, some of the enumerations showed an abnormal plethora in apparently anæmic individuals, and other enumerations indicated an immediate need of tonics in those robust to outward appearance and enjoying the blessings of health; and when finally the same individual would be found rich and poor in the formed elements of the blood, all in the same day, I may add that my enthusiasm was somewhat lessened and my faith was tinged with doubt.

My further experience and further knowledge of the experience of others convince me that conclusions based upon single observations are quite unreliable.

There are many opportunities for making an inaccurate estimation of the number of corpuscles. The chief source of error, in my opinion, lies in the qualities of temperament peculiar to the observer — in the method of conducting the observation from the puncturing of the skin for the blood to the final count. As for the errors of manipulation, I will mention those of importance. Pressure on the finger to induce a flow of blood from the puncture is said to disturb the relative proportion of corpuscles and serum. I do not know as to this; it is easily remedied.

Of more importance is the mixing of the blood and diluent. It should be done thoroughly to ensure an equal distribution of blood-corpuscles through the mixture. I believe this can be done with more certainty in the bulb of the pipette than in an open jar with stirring rod, as some observers do. The objection to mixing in the bulb is the difficulty with which the bulb is afterward cleansed and dried. I think accuracy will outweigh inconvenience in the method. I would recommend having the solution for diluting the blood at blood-heat, and would then rotate the pipette from two to three minutes. In my practice I expel nearly or quite half of the mixture, that I may get a drop from as near the middle as possible. I would not recommend the common practice of counting a second drop from the same preparation, because I fear some undue proportion of liquid or of hæmacytes may adhere to the sides of the bulb during the second mixing, which is rendered necessary by the settling of the corpuscles in the bulb while the first count was in progress.

---

[1] Read before the New England Psychological Society, September, 1893.

The size of the drop placed upon the cell for counting is supposed to influence the result, though, theoretically, from the nature of the cell's construction, the variation should be slight.

And finally, the care with which the corpuscles on the squares are counted has much to do with the result, since each corpuscle counted, in a dilution of 1–200, represents 3,125 corpuscles in the total estimated.

Considering these facts, it is well-nigh impossible for the observers to obtain the same results from the same individual, and even from the same drop of blood.

Dr. Daland, of Philadelphia, has recently sent me a paper embodying the results of examinations of blood by himself. From a study of eight cases counted by himself and Dr. Sadler conjointly, he reaches conclusions which I will briefly notice. First, he states that when the same squares are counted by two competent observers with the minutest care, a difference between the two counts of between 50,000 and 150,000 corpuscles may be expected, 5,000,000 being the normal average. In the case cited by him where he and Dr. Sadler differed by 150,000 in a total of 4,150,000, he must have counted in 64 squares 320 corpuscles, and Dr. Sadler's count must have been 332 corpuscles, a difference of three corpuscles per field of 16 squares, which seems to me to be an error three times too great. I think 50,000 corpuscles should represent the highest limit of difference.

I would state here that I invariably count 256 squares, and feel more confident of results, though it requires more time.

To ascertain the liability of error when two observers count the same squares, my associate, Dr. Holmes, and myself counted eight consecutive cases with care, though not with minutest care. The greatest difference between our counts was 34,000 corpuscles (considerably less than one per cent.), while the average of difference was less than one corpuscle per two fields, as is shown by the accompanying table.

	Dr. Holmes's.	Dr. Houston's.	Difference.
Case No. 1. . . .	5,056,000	5,062,000	6,000
Case No. 2. . . .	5,860,000	5,881,000	21,000
Case No. 3. . . .	5,734,000	5,703,000	31,000
Case No. 4. . . .	5,168,000	5,134,000	34,000
Case No. 5. . . .	4,106,000	4,091,000	15,000
Case No. 6. . . .	4,712,000	4,678,000	34,000
Case No. 7. . . .	4,900,000	4,925,000	25,000
Case No. 8. . . .	5,478,000	5,450,000	28,000

Again, Daland states that when two preparations are made from the same diluted blood, and counted immediately by the same observer, a difference ranging from 187,500 to 525,000 may occur. In my experience I have found liability to error in making the second count from the same mixture, as to the reason for which I have already expressed an opinion. I prefer to verify by counting from a fresh mixture of blood.

Daland further says, "When two observers take blood from the same drop, dilute, and each prepares two slides and counts 128 squares, the results of the two observers may differ as much as 1,381,250."

Dr. Holmes and myself have never been so unfortunate when verifying each other's count by separate preparations of blood. It seems to me that the great differences in results obtained by observers may be due to the small number of squares counted, to differences in the instruments used, and to the personal equation of the observers. The error from the last cause should be nearly constant.

Dr. Henry has shown that differences in instruments exist; and Dr. Daland shows that his enumerations are almost invariably smaller than Dr. Sadler's.

Dr. Daland considers the hæmatokrit a more accurate instrument. It is designed to exhibit the volume of corpuscles in a given amount of blood by means of centrifugal force.

Referring to the unsatisfactory results obtained by Dr. Daland and Dr. Sadler in blood counting, Professor Wilcox, of New York, in a pamphlet on anæmia, writes that he has abandoned making estimations of the numbers of blood-corpuscles, but continues the use of the hæmoglobinometer.

In spite of the doubts of accuracy thus mentioned, my experience convinces me that much reliability may be placed upon the results. By careful and methodical operation the error should be reduced to three per cent. at the highest. I have numerous cases which I have counted repeatedly, from fresh mixtures each time, and on different days, in which the results agree within a range of one per cent.

When we consider the error peculiar to each observer, the same percentage of variance would seem to attach to each case of a series counted, which series for purposes of comparison would thus not be vitiated; the relative significance of the cases would be just as valuable.

I have dwelt at some length on the question of accuracy in blood counting, because thereon hinges all the value of the operation.

Owing to lack of time the number of cases observed by me has been small, though the number of observations has been several times larger.

In 13 cases, well mentally and physically, whose blood was examined by me I found the average for males to be 5,101,000 per cubic millimetre and for females 4,764,000 per cubic millimetre. Some observers obtain greater, some smaller, numbers than these. The mean of averages by 17 observers, as computed by Dr. Daland, is for males 5,130,000, which is but a fraction of one per cent. larger than the average obtained by me.

Of the insane I examined 25 males and 27 females, as appears in the accompanying table.

These are average cases representing several of the various forms of insanity. The results, which largely confirm the conclusions of other observers, show that in a large proportion of the insane there is marked diminution in the number of red blood-corpuscles and noticeable deficiency of hæmoglobin.

Considerable decrease in the number of corpuscles was found in 60 per cent. of the males (averaging 4,427,000) and in 40 per cent. of the females (averaging 4,196,000). The percentage of hæmoglobin was much below normal in 84 per cent. of the males (averaging 74.3 per cent. of hæmoglobin) and in 77 per cent. of the females (averaging 69 per cent. of hæmoglobin).

Since many of the cases had been under tonic treatment for some time when examined, and since there are in the list but four cases of dementia which of all forms of mental disorder presents the greatest poverty of blood in the elements under consideration, I think an examination of all cases in the hospital would give much lower averages than the above. An analysis of the cases in detail would prove tiresome to listen to. I will give only general results.

MALES.

No.	Form of Disease.	Age.	Wght.	Hæmo-globin.	No. of Corpuscles.
1	Mania a potu	32	175	95%	5,520,000
2	Toxic mania	38	170	80	5,250,000
3	Acute mania	26	108	90	5,260,000
4	" "	40	168	90	5,400,000
5	" "	43	156		5,270,000
6	Recurrent mania	74	137	70	4,910,000
	Average,			85	5,268,000
7	Acute melancholia	24	175	75	4,940,000
8	" "	26	131	73	3,875,000
9	" "	15	117	72	4,390,000
10	" "	32	160	75	5,100,000
11	" "	57	127	82	4,950,000
12	" "	46	140	81	5,090,000
13	Chronic melancholia	58	130	74	4,660,000
14	" "	70	108	40	4,100,000
15	" "	49	182	78	4,045,000
16	Senile melancholia	72	145	75	4,460,000
	Average,			72.5	4,561,000
17	Epilepsy	30	135	80	5,130,000
18	"	33	170	72	4,900,000
	Average,			76	5,015,000
19	Paresis	40	125	70	4,820,000
20	"	35	145	78	4,940,000
21	"	43	129	80	4,880,000
22	"	44	170	73	4,340,000
	Average,			75.2	4,745,000
23	Organic dementia	50	140	82	4,435,000
24	Senile dementia	73	144	80	3,430,000
25	Secondary dementia	40	128	70	4,220,000
	Average,			77.3	4,028,000
	Total averages, males,			76.4	4,732,000

FEMALES.

No.	Form of Disease.	Age.	Wght.	Hæmo-globin.	No. of Corpuscles.
26	Acute mania	15	78	68	4,820,000
27	" "	18	123	50	4,300,000
28	" "	22	123	90	5,260,000
29	" "	20	112	70	5,000,000
30	" "	62	84	75	4,640,000
	Average,			70.6	4,804,000
31	Acute melancholia	32	140	76	4,375,000
32	" "	35	97	77	4,820,000
33	" "	33	130	74	3,975,000
34	" "	33	119	80	4,800,000
35	" "	33	90	78	4,275,000
36	" "	35	96	72	4,840,000
37	" "	47	83	62	5,260,000
38	" "	37	116	69	4,725,000
39	" "	34	140	68	4,720,000
40	Chronic melancholia	83	94	50	3,997,000
41	" "	39	109	67	4,319,000
42	" "	38	97	63	4,231,000
	Average,			69.6	4,528,000
43	Epilepsy	23	106	80	4,875,000
44	"	34	106	72	3,980,000
	Average,			76	4,427,000
45	Prim. del. insan.	59	178	85	5,043,000
46	" "	45	130	85	5,435,000
47	" "	35	156	95	5,035,000
48	" "	30	140	95	6,100,000
49	" "	33	130	86	4,600,000
50	" "	48	216	73	5,303,000
	Average,			86.5	5,252,000
51	Senile dementia	81	93	55	3,160,000
	Total averages, females,			73.6	4,699,000

I shall make no mention of white corpuscles in the analysis of the cases, because in none did I find any considerable departure from the average number to be found in health.

Reasoning *a priori* would lead to the inference that in those forms of mental disease characterized by quickened mental processes, such as the manias, the blood would be found rich in corpuscles and hæmoglobin — while the converse would be found to exist in psychoses characterized by an abeyance or loss of mental powers as in the melancholias with sluggish circulation and in dementias. Such is in a measure the case, though the relationship between the condition of the blood and the mental state is far from constant.

Macphail says the proportion of corpuscles and of hæmoglobin in mania is equal to or greater than the normal percentages. Dr. W. Bevan Lewis says that in his experience a diminution in the number of red corpuscles is more frequently met with in maniacal conditions.

Of eleven cases of mania (six males and five females) examined by me, there was an excess of corpuscles over the normal average in five males and in three females, a deficiency in one male and in two females. The percentage of hæmoglobin was nearly normal in three males and in one female.

Examination of 22 cases of melancholia shows a marked tendency to deterioration of the blood in this form of disease. In numbers of corpuscles about 50 per cent. of those examined were below normal: 6 of 10 males (averaging 4,272,000) and 6 of 12 females (averaging 4,195,000). All the cases were deficient in hæmoglobin, the males averaging 72.5 per cent. and the females 69.6 per cent. One woman had the large number of 5,260,000 verified by repeated counts on different days. This was a case of melancholia with excitement.

Of four cases of epilepsy, too few to be of much value, two cases were found to be considerably below the normal as to corpuscles: one of these latter cases was counted while the patient was in the status epilepticus. In all the cases the amount of hæmoglobin was subnormal.

As was expected, the percentage of corpuscles and of hæmoglobin was low in the cases of paresis examined, four in number, all males, and still lower in the cases of dementia, three males and one female. The case of paresis which presented the lowest percentage was considerably demented.

The six remaining cases, all females, were cases of primary delusional insanity — paranoia. The results of the examinations in these cases were of much interest. I expected they would register high, probably at the normal average, but was unprepared to find them exceed the normal and by so much. Only one case was below the normal. One case showed more than 6,000,000 corpuscles, verified repeatedly; while five of the cases averaged 700,000 more than the average of females in health, and 360,000 more than the average for males in health. These cases also exhibited a higher percentage of hæmoglobin than did any other class of cases, 86.5 per cent., which is not much below the normal for females.

I have examined several of my cases at intervals to watch the progress of the disease and the effect of remedies with interesting results.

CASE XV. Male. Hypochondriacal melancholia, chronic, no delusions. Patient was pale and weak;

at times did not feel able to go out-of-doors. Arsenic had been administered for about a month, with no improvement in mental symptoms or in the number of corpuscles and quantity of hæmoglobin. Iron, quinine and strychnine were then given. In about eight weeks he was discharged much improved. The amount of hæmoglobin had not increased from 76 per cent.; but the number of corpuscles had increased from 4,045,000 to 4,923,000, and he had gained in weight five pounds.

CASE XXVI. Acute mania in a girl fifteen years old. She was much excited and very irrational. The first count, taken during her excitement, showed the number of corpuscles to be 4,820,000 and the percentage of hæmoglobin to be 68. Her weight was 78 pounds. In six weeks from the time of the first count she had become quiet and rational. The second count then showed a loss of corpuscles to 4,360,000, but her weight had increased. Enumeration of corpuscles just prior to her discharge (recovered) showed an increase to the number of 4,775,000. The hæmoglobin had increased (seven per cent.) to 75 per cent. and her weight (20 pounds) to 98 pounds. For a tonic she had taken iron, quinine and strychnine.

CASE XXVII. Female, eighteen years old. Acute mania, with remissions. The first count was taken after she had passed through a period of great excitement lasting about six weeks. She was then quiet and rational, but a little above par mentally. The number of corpuscles was 4,300,000 per cubic millimetre; the hæmoglobin showed a percentage of 50; and her weight was 123 pounds. The second count, taken ten weeks later while she was again excited, showed a loss in number of corpuscles to 4,050,000. The corpuscles were at this time very irregular — in the condition called poikilocytosis. Five weeks later she had become quiet and rational again, when it was found that the number of corpuscles was about the same as at the second count (4,078,000) but the amount of hæmoglobin had increased (17 per cent.) to 67 per cent., and the body weight had increased by four pounds.

CASE XL. Has for a number of years been subject to periods of melancholia attended by delusions and by hallucinations of sight and hearing. Several of these periods have been concurrent with attacks of pelvic peritonitis. In March she was cheerful and as well as she had been for years, weighing about 120 pounds. In April and May she suffered from dysmenorrhœa, followed by peritonitis. She became very melancholy and delusional. In July she was convalescing both mentally and physically. On the first of August she weighed 84 pounds. Examination of blood showed 50 per cent. of hæmoglobin and 4,000,000 corpuscles. The first week in September she was cheerful and rational; her weight had increased 14 pounds; the hæmoglobin had risen (10 per cent.) to 60 per cent., and the number of corpuscles to 4,500,000. The tonic was saccharated oxide of iron.

CASE XXXIII. Female. Acute melancholia, coming on during lactation. At the time of first blood count, July 8th, she was much depressed and very irrational, with some delusions of persecution. Her weight was 130 pounds; percentage of hæmoglobin 74, and number of corpuscles 3,975,000. September 4th, the weight had increased by seven pounds; the hæmoglobin remained at 74 per cent.; but the number of corpuscles had increased to nearly 5,000,000. She is cheerful at present, but mentally rather above par.

Of the cases thus far examined to learn the results of treatment about 33 per cent. show no mental or physical improvement, and the condition of the blood remains practically unchanged; but these examinations have not extended over a long period, and their number is not large. Macphail says: "The result of investigation, comprising over two hundred observations, would seem to indicate that the four tonics which alone or in combination were most efficacious in improving the quality of the blood may be classed in order thus: (*a*) iron, quinine and strychnine; (*b*) iron and quinine; (*c*) iron alone; (*d*) malt extract." With him the blood of epileptics was found to improve with use of bromides, prolonged use having no deteriorating effect.

One of my cases of paresis improved much under a course of iodide of potassium, whether from effects of the remedy or not I am not prepared to say. On admission he was so feeble as to require being kept in bed; and he soon had a syphilitic ulcer appear on his leg. It was thought he would not live long, but he gradually improved. He has gained in weight over twenty pounds; the number of corpuscles has increased by about 400,000, and the hæmoglobin by 10 per cent.; and he is less boisterous and somewhat more rational.

It would be of interest to compare a series of consecutive admissions to a hospital with a similar series of those discharged recovered. Macphail thinks there is impoverishment of blood in more than 50 per cent. of cases admitted; and he says of patients who recover, that the quality of blood improves, and is not much below the normal standard on discharge.

While I am not prepared to endorse the opinion of one enthusiastic observer, that the time is coming when we shall examine the blood of our patients as regularly as we count the pulse and take the temperature, my experience convinces me that such examination will show with approximate accuracy any deterioration of blood in our patients, thus indicating need of, and perhaps line of, treatment, and that it will also aid us greatly in observing the progress of our cases and in studying the effects of remedies administered.

HYPERTROPHY IN THE POST-NASAL SPACE, ESPECIALLY AFTER CHILDHOOD.[1]

BY JOHN W. FARLOW, M.D., BOSTON.

THE importance of nasal respiration has been so frequently insisted on in the last few years that there is no need for me to call your attention to it this evening. The post-nasal space, where the horizontal passage through the nose turns to become the vertical passage to the larynx and trachea, should be free from obstructions and encroachments, just as the bent heating and ventilating pipes of our houses should not be choked up or narrowed at the elbows and bends. The fact that air goes through the nose, and the mouth is not habitually open does not, by any means, prove that there is no nasal obstruction. The body can adapt itself to various abnormal conditions and overcome them after a fashion, but the work performed is almost certain to be imperfect in certain particulars. It has seemed to me that a very erroneous idea of the nature of free nasal respiration was prevalent. The post-nasal space may contain a large amount of hypertrophied tissue; the patient may claim that he can breathe well through the nose; he may not be a mouth-breather; he resents the idea that there can be any obstruction to his breathing; he has never had any other nose, and has never breathed better than he does now. But after the removal of the hypertrophy he will confess that he never really breathed well before.

---

[1] Read before the Boston Society for Medical Observation, November 6, 1893.

I have seen so many instances of this, and have been told so many times by physicians that such and such a case had no post-nasal hypertrophy because there was no mouth-breathing, cases where I have later removed large, obstructing masses, that I feel the importance of insisting that mouth-breathing is only one of the symptoms of nasal obstruction, and that considerable obstruction can exist without mouth-breathing, especially in adults.

The same holds true of snoring. If the soft palate is pushed forward and kept from applying itself against the posterior pharyngeal wall by large growths behind, it becomes paretic, and easily flaps backward and forward in sleep, giving rise to marked snoring. But the palate may be strong, the obstruction high upon the posterior wall, and snoring entirely absent.

If, then, two of the great cardinal features of post-nasal hypertrophy may be wanting, we should naturally expect that many cases would be overlooked, and such I believe to be the case. The degree of obstruction depends upon the relation of the size of the obstructing mass to the space in which it is contained. In young children the post-nasal space is very small, and a small amount of growth would naturally cause very different symptoms from the same amount in a larger child. If the tonsils are very large, narrowing the throat from side to side and preventing the free play of the palate, a smaller amount of growth behind the palate would suffice to cause more marked symptoms than where the tonsils are small.

If the growth is spread out uniformly on the upper part of the posterior pharyngeal wall, the symptoms will differ from the cases where the growth is massed together near the posterior openings of the nose.

With regard to the frequency of post-nasal hypertrophy after childhood, I should say that such cases are very common. The idea that adenoid disease nearly always atrophies after puberty, leaving no enlarged or diseased structures behind, is entirely erroneous. That many such cases are called nasal or post-nasal catarrh, or are attributed to slight deviations and ridges of the septum, or to large tonsils, prevents them from being properly recognized and placed in the category where they belong. But whoever makes frequent and thorough examinations of the post-nasal space with the rhinoscopic mirror must soon be convinced that a pathological amount of adenoid disease is very common after puberty, even up to thirty-five years of age. At puberty the whole region of the throat enlarges, and more open space for respiration exists in the back of the nose; but the diseased glandular tissue is not so prone to disappear, and continues to secrete, inflame and cause trouble by its presence in a different way, ordinarily, from what it did before.

Let us consider what symptoms we may look for where there is no respiratory obstruction. The post-nasal space is a great centre for reflex action, and naturally resents the presence in it of any growth, just as it would a foreign body. A very common symptom in such cases is a dry, hacking cough, often very persistent and more or less paroxysmal. This is quite apart from the cough due to secretion dropping down into the pharynx. Scraping of the throat and sniffing are also endeavors to get rid of an irritant. I have occasionally seen picking of the nose, and more often an outward forcible expulsion through the nose, an evident desire to get rid of an irritant behind the nose. Particularly in young persons is it important to examine the post-nasal space in cases of obstinate cough. I have seen one case of torticollis apparently caused by the presence of a small, firm adenoid. I have also seen several instances of chorea where the post-nasal congestion and irritation seemed to be a factor in the disease.

The glandular nature of the growth shows itself by profuse secretion, tendency to engorgement and proneness to inflammation. Repeated colds are common, and constant sniffling and a loose cough become a part of the daily life. The secretion dropping in the throat keeps the tonsils and pharynx in a state of congestion and hypertrophy. A gland does not need to be large to secrete a surprising quantity and hence the importance of not overlooking the post-nasal space even when there is good nasal respiration. In acute follicular disease of the tonsils, we should also bear in mind that the follicular tissue of the vault is probably also involved and merits attention. I have seen a number of cases where the faucial tonsils were hardly affected at all, while the pharyngeal tonsil was swollen and covered with a whitish exudation and the constitutional symptoms were very marked. In adults, it is not uncommon to find considerable secretion at the vault, apparently having its origin in old diseased glandular remains. I have seen the same after operation where the follicular tissue had been only partially removed, leaving a certain amount of diseased and secreting gland behind, an argument in favor of thorough removal. I have sometimes thought that the amount of secretion had been increased by the incomplete removal.

I shall say nothing of the bearing that large adenoid masses have on the hearing. Such cases usually have other marked symptoms which attract attention, and hence are not likely to be overlooked. But the smaller growths, less easily recognized, and occurring in adults, have a very great significance as they are apt to be overlooked until the hearing has become quite impaired in one ear, or tinnitis aurium has demanded attention. They act more slowly and accompany or cause the more chronic disease of the hearing. It is the situation and nature of these growths which makes them of such importance to the aurist. Small growths in the fossa of Rosenmüller, which keep the Eustachian tubes closed, swollen and bathed in secretion, require careful removal. I have seen a number of instances where bands, the remains of old adenoid tissue, stretched across from the Eustachian eminence to the vault, interfering with the function of the tube.

While the post-nasal space remains in a state of congestion and hypertrophy, the ear must suffer. I am sorry to say that many of the cases of chronic disease of the middle ear, probably caused by a moderate amount of adenoid disease existing undiscovered for many years, are often not much relieved by the removal of the adenoid growth. I think the attempt should certainly be made to free the tubes and the post-nasal space with the hope of relieving the ears, but the benefit is much less certain to follow than in the early, acute cases of childhood. This is all the more reason for systematic examination of the post-nasal space at as early an age as possible, even when there are no special symptoms.

The deformed mouth, the high arch and projecting upper teeth, are well recognized results of nasal obstruction. The alienist lays great stress on the high palate as a mark of mental deficiency, but the dentist and the physician who sees much of nasal disease are certainly aware that a high palate often has no connection with mental inferiority. In an article on deformed vaults in the *Dental Cosmos*, for November, 1893, Dr. E. S. Talbot says: "In cases of arrest of development of the bones of the nose, and adenoid growths, when it is impossible for the child to breathe through the nose, and mouth-breathing is a necessity, the jaws are separated, and the teeth not having a resting-place, the alveolar process elongates, and a high vault is almost always noticed; hence the reason why imbeciles, and all degenerates who keep the mouth open, as a rule, have high vaults." There remains much to be learned on this subject. I have seen a number of cases of high palate in children where there had never been nasal obstruction, and where the mental faculties were very bright, and also a smaller number of instances of marked adenoid obstructive disease where the palate was not high. Where the palate is very high arched, the post-nasal space is sometimes narrow and very high. In operating in such cases, I have been surprised on removing a large amount of growth to find that I needed to go still higher to a second or even third story of growth before reaching the high vault. Such cases are sometimes deceptive in the rhinoscopic mirror. The post-nasal space being narrow, the growth may look small, and one is surprised on learning the vertical diameter of the growth. When dentists attempt to spread the upper jaw in young persons where the post-nasal space contains a considerable amount of obstructive hypertrophy there is sometimes a degree of nervous irritation caused which renders it impossible for the patient to submit to the spreading-plate. I have seen several such cases with dentists, and not until after the removal of the adenoid growth could the dental work be continued with satisfaction.

The importance of a free post-nasal space can hardly be exaggerated. There may be plenty of room for nasal respiration, there may be little or no secretion, but if the posterior wall and vault are covered to a greater or less extent with a thickened tissue, the voice loses just so much resonance, carrying power, and part of its upper register. Our New England climate is held responsible for many thick, catarrhal voices, but this can be overcome in many cases by attention to the post-nasal space and removal therefrom of secreting and hypertrophic structures. I have seen a gain of several notes in the upper register after the removal of a small, soft mass at the vault. The voice does not tire so soon, and can be used much longer at a time in speaking or singing.

The diagnosis is most surely and accurately made with the mirror. I am not speaking of cases of great mouth-breathing, etc., where the symptoms are very marked, and where the finger readily determines that the post-nasal space is filled, I refer rather to cases where the symptoms have to do with the other functions of the post-nasal space than the respiratory. The upper jaw may be very long, and it may be difficult to reach the vault with the finger. The patient can tolerate the finger for a short time only, and accuracy in diagnosis is impossible. I once operated, under ether, on a case where I had not made a positive diagnosis. The space between the uvula and the posterior pharyngeal wall was so small, owing to projection of the spine at this spot, that I was unable to see anything with my smallest mirror, and the upper jaw was so long that I was unable to reach the vault, even during anæsthesia.

There is sometimes more hypertrophy at the vault than appears in the mirror, as the growth may be of a fairly uniform thickness, or the vault may be very high and able to contain a great deal more tissue than usual. The probe is an aid in such cases. We often see irregular masses with clefts between, and are surprised to find how far the probe will enter into these clefts, from which there may exude a copious secretion. Such are remains of Luschia's tonsil, which has taken on a diseased action.

The regions near the Eustachian tubes should be carefully examined for bands, or small projections, which interfere with the function of the tubes.

The size of the cavity should be carefully noted, as the smaller the space, the greater the discomfort from a given amount of hypertrophy. I should say that in young persons great enlargement of the tonsils was almost invariably accompanied by a considerable degree of hypertrophy at the vault, especially if there is any mouth-breathing.

Treatment in the mild, soft, secreting cases consists in the use of cleansing sprays and various astringents, such as iodine and glycerine. But most cases will require removal by surgical means. Cocaine serves to diminish the pain, and with the co-operation of the patient, the desired pieces can be removed with great accuracy. If anæsthesia is necessary it should be light, as it is much safer than deeper anæsthesia where considerable quantities of blood may enter the air-passages.

Sometimes caustics or the galvano cautery are of use, especially where the diseased and secreting clefts and sinuses are present. My own preference is for forceps, while others favor curettes and various snares. The important point is to remove all the diseased hypertrophied tissue. The lower pharynx should also be treated whenever there are any large follicles present.

THE EFFECT OF CLIMATE AND ENVIRONMENT ON THE NEW ENGLAND GIRL.

BY J. WARREN ACHORN, M.D., BROOKLINE, MASS.

Man and the forest, man and the mountains, man and nature grow together. Wherever you find the highest mountains, the mightiest forest, (the forest that knows no ancestry,) the deepest ocean, the most graceful lakes (like those one sees in Switzerland), and hear the roar of the cataract that tells of a mighty river, there the most rugged and characteristic in nature abounds (the climatic conditions being also favorable), there you find the noblest type of man — the finest physically, and if civilization has reached him, and educated minds have helped his own to think, the physically and mentally proportionate man. There you find the most potent man and the most thoughtful; not necessarily the tallest, though the race grows tallest in the tallest country; not necessarily the shortest, though the shortest usually grow where the hills are stunted; not necessarily the brawniest, though the brawniest grow where the physique is greatest and the heart and the perception and the emotions, as well as the endurance and skill, are all appealed to. When you have that combination of brain and body in keeping with a mighty country and its climate, other things being equal, there man works out the longest life and the greatest measure of happiness and usefulness, for happiness and usefulness depend more upon a well body and a contented mind than upon anything else in the wide world.

Who ever thought of hunting for grizzly bears on the rice islands in the delta of the Altamaha? The fierce Numidian lion is no longer a lion if born in a cage and fed with a fork. The gray wolf of the Michigan forest stands you at bay, and snaps and snarls defiance at your coming. I have seen a whole pack of prairie coyotes disappear at the twirl of a finger. Who ever thought of looking for the white-pine of the Maine forests or the pink-pine of Oregon — the masts for ships that sail the world around — in the coast-plain country about Albemarle and Pamlico Sounds, where only the stunted loblolly grows — rough-barked, all sap, with little heart, standing there with half-starved look among the coarser grasses of the great morass? Who ever thought of looking for the finest type of negro among the sand dunes that rise above the level of the waste places in the Great Dismal Swamp? Why the darkey of the uplands despises the rice-island "nigger"; and the southern planter when he would harvest seeks not the coast-plain idler but the foot-hill dweller. Who ever saw the coast-plain negro seeking a home among the mountains that stretch from Harper's Ferry to the Mississippi? Never does he do it. The negro of to-day weds the plain. He loves the hummock lands that lie along the Suwanee River far better than the sight of mountain peaks that, rising in succession, overpower his imagination and appear to him but the tents of great giants who are resting for the night but with the morning will go on; and the thought for his life, like the great hills he is gazing upon, makes him superstitious and afraid. Mentally he is not equal to the eternal hills. His cabin home is not found beyond the uplands. His mind is still in the beginning of its thought. Later on he may exchange the plain for the mountains, the muddy lagoon for the crystal lake, the red-running river for the sparkling waterfall, the stunted low-land pine for the mountain valley variety with its longer shatter, whose top sighs an hundred feet in air and the whisper of whose voices make for silence. The Sioux Indian of the northwestern prairies is no match for his neighbor, the Chippewa, whose possessions rise where those of the Sioux leave off. The Sioux knows only his pony and the prairie. His arms are small and his chest narrow; and his strength, aside from his hips, is slight. The Chippewa's shoulders are broad, his arms powerful and his back strong. His horse is not the prairie pony but the birch canoe. His battle-field has not the sameness of the plain nor has his physique, but the grandeur of the hills and the ever-restless waves of the great inland seas.

I have been trying to show that the country marks the man. The American is recognizable from whatever part of our country he may have come, not only because he is imbued with the American spirit which crops out and betrays him, but also from his American physique — the elongated head, the fine and transparent skin, the quick-glancing eye, the mobility and flexibility of body, the changing features, the genuine laugh, the nervousness of his movements. But if the four present types of Americans from the north, south, east and west are brought together, their likenesses are not so apparent. There yet remain differences due to climatic influences and the topography of that particular section of country from which he came, environments that declare for him what manner of man he is. Never could I persuade the old darkey woman of the South, the Auntie whom everybody knows, that I was a Southerner. "Ah, boss," she used to say, "you's come a long ways north of hyer."

The Yankee is recognizable everywhere; there's no mistaking *him.* The figure of Uncle Sam is the traditional Yankee. Here in New England the people grow tall and lank, and their temperament becomes vital and nervous. I believe the New England people are becoming nervous and dyspeptic, although born in a rugged, picturesque country that is reputed to and should produce a rugged, characteristic race. They eat little and hurriedly; they sleep little; they have a burned-out look that bespeaks nervous strain and malnutrition. They worry and they tremble. The women lose their rotundity and the men strive; and both grow thin.

The Southerner comes among us from the land of flowers and ease, with the grace of one accustomed to repose and leisure; but before the Indian Summer is over and the birds are flown, the feeling that he must hurry begins to possess him, and by the Ides of March he is on the run with the rest.

The foreigner comes to us from the rational-living, slow-going countries of the Old World. At first he is astonished to see us get up from the table and leave him to take his dessert alone. He preaches moderation; but the wild race of the people, and the climate, will not let him have it.

And the German of to-day, whose grandfathers landed here two hundred years ago, is no longer a German in appearance; the country has trade-marked him. In spite of the lymphatic, phlegmatic temperament of his ancestors, who were thick-set, broad-shouldered, beer-loving and sausage-eating, he has the refinement of figure and the vital temperament of the Yankee. "He is the European" as somebody has said, "with a drop of nervous fluid added."

Gladstone's longevity may be due in part to this act of his life, that he never cuts a string from a bundle, but takes time to untie the knot. What are we born and living for? Is it to hurry? For money? For dyspepsia? For a pain in the side (the virtues of which we recite every morning at table)? For the bubble of a reputation? Or is it rather for happiness and usefulness, so that some one at least, may say of us when we are gone, that he has been happier and better because we have lived?

At ten, the school-girl is physically the equal of the boy. She can run as fast as he; she can jump as high; she can tussle him down over half the time in a rough and tumble; she can skate; she can slide knee-fashion on a sled. The one thing she cannot do that he can do is, throw a ball; but that is not due to her physical condition but rather to an anatomical difference in the shoulder.

What is it then that between the ages of ten and twenty kills the girl physically, and establishes upon this continent and particularly in New England, a new disease which the Germans style Americanitis — American nervousness? And why, if the boy escapes, in part at least, does not the girl escape also?

And first the boy; the country has marked him for its own. Like the man of whom we spoke at length, he is tall and spare and active. He is a typical child of New England parents. But he escapes; and there are two reasons for his escape. The first is, that he *will* play; that he *will* stay out-doors, *will* indulge in recreation of all sorts; that he *will* not study, that is, will not exert himself to the point of going to bed tired from study, rather than tired from play. That is where he is right. In other words, his physical status keeps abreast of his mental advancement and savors constantly of it, so that at the age of twenty, when his mind is really beginning to get on its legs and think for itself, he has a body back of it that is equal to the demands made upon it. And so he continues to grow. At twenty his physical strength is twice that of the girl with whom, at ten, he used to play as an equal.

Now how is it with the girl? At ten, she is the physical and mental equal of the boy. She is doing the same amount of school-work, brain-work, as the boy, and, if anything, is doing it better. To this is added for each day an hour or two of nerve-work at the piano, or at the easel. By the time she is fifteen her dresses have grown, in length, to the ground, and in weight, beyond what any woman's hips should ever carry. By this she is hampered. In addition to these burdens and drain upon the strength, she is helping her mother in home duties daily. Then because every daughter or young woman at home should know the world and learn to carry herself in it, social exertion and excitement are beginning to crowd upon her and eat up her evenings and prolonged periods of rest. Time for recreation of the physical strengthening sort is denied her. Or, perhaps this is not her case; she may have gone out for work and bread-winning as a stenographer, type-writer and book-keeper combined, to become a sort of an electric machine, an organette that will play three different tunes, with her nerves for wires, and her body for a key-board. This comparison, as you will see, is in favor of the organette as against the girl; for the girl has not only to furnish the music, but she has also to turn the crank.

Our typical girl then, does not only the work of the boy, during the formative years, the growing years, when she is naturally perhaps the weaker vessel, but she is doing also, house-work, needle-work, music-work or painting, or taking care of *possibly* invalids or children. To these must be added social forms of which I spoke, most exhausting demands upon her strength, such as making three-minute calls (which a boy will never do, bless him!) or playing good angel to family hand-downs, stupid people who come and stay and absorb one's time and strength as a sponge absorbs water. Add to this the growing dress and the proprieties that must attend its wearing, its hinderance to free movements, and we have one factor more in the count of the things that go to destroy the health of our school-girls. Woman's dress with her entering the avocations of men is a tremendous negative. Not an element in it belongs to a busy, open, exhaustive life. It was devised under and is a result of conditions wholly at variance with such a life. It is fit only for the retired, protected, domestic living within doors, like that our grandmothers enjoyed. They dipped candles, made apple-butter by September firesides, pickled meats, and knitted their own stockings. It belongs to the time of homes, and not flats and janitors.

Now, further, add to what I have already summed up the fact that a young woman's work is almost entirely mental, spiritual, or vital, preying upon emotions as well as intellect, all through her school life, and that her physical development is practically cut off at fifteen, when she needs physical training most; that the very best blood in her veins is constantly used to develop her brain at the expense of her body, when it is just as necessary, and more necessary, that the hips and shoulders get their share, since they are the parts physically the most used and needed and abused afterwards, and the first to suffer because they have been robbed. Consider that in whatever capacity she works, the girl of to-day is pitted against men, working under laws set for men, working under negative influences — for in many of the pursuits into which they have entered they are not wanted; and is it any wonder that they grow tall and gaunt and have a burned-out look, and finally break — not mentally, but physically, before they are thirty?

At twenty the boy is just beginning to put on steam. At thirty, if he has not broken himself in some vain effort to get rich in a hurry or wear his father's shoes before he is out of college, he is in a position, both mentally and physically, to do his life-work. But if he has taken the other course, he is on a par with the girl I have been describing to you. At twenty, she has mental development in excess; but at thirty she is only a shell — mentally developed, physically good for nothing. Good for a trip down-town perhaps, or two hours' work in the morning; good for one child, but an invalid after that; good to adorn the end of a sofa for the rest of her life; always a cause of concern and regret for others; never contented; never quite happy; never altogether useful in the best sense. Always, as a bird in a cage, she struggles against the bars that fetter her freedom.

I contend then that whatever we do, it is not so much a question as to whether we have brain enough, but have we body enough? Whatever we do we must keep within the *physical limit.* If one is not held by mental inability, but is held by physical disability, then gracefully accept fate and be guided by that. If, on the other hand, the physique is perfect and never tires, then work as hard as you please and drive the mind of mediocrity to its highest level.

"Going to college, are you?" said an old physician to his son. "Well, if you come out all head and no body, or all body and no head, I wouldn't give a copper for you; but if you come out pretty well mentally and pretty well physically, you'll get along in the race."

"Getting along in the race" is exactly the idea. We cannot all of us be orators or great poets, or great singers. We may have the brain but not the physique, or the physique and not the brain; though on the average I think it is fast becoming, with Americans, not so much a question of brain as physique.

Particularly I think this true here in the East where there is repose of neither body nor mind. This nervous climate is telling upon us, but more upon the physique of our women than upon that of our men. What advantage is it to be first mentally in some accomplishment, as, for instance, first in English literature, if after you get it you spend your life in semi-invalidism.

Of what advantage is it to become an intellectual slab, tatooed with Greek and Latin, if after you are so adorned and honored you can neither work nor walk, but must go to bed with it. If you are acquiring something for the use you intend to make of it — *brod studien* — what does it profit to give all your health and strength to approximating perfection when you never shall be able to use it to any advantage for the purpose for which it was intended?

And now about these women whose occupations are not essentially intellectual. Watch the eight-o'clock girl as she hips it across the Common toward Park-Street Church on the way to some of those great kitchen emporiums down-town, where she stands all day long and sells dippers or diamonds. She is alone. They are birds of solitary passage. She has a business nose and the air of publicity. Shoulders high — she is lugging them. Hips narrow — a fact not infrequently commented upon by the stranger physician in the town. A bunch of clothes hang from her undeveloped hips, practically from the small of her back. She tips forward to offset their weight and settles back to ease the strain. Her life during the formative years fitted her for anything but what she is now doing. She taxes every part of her body every day to its utmost that all through the growing years she unconsciously and unknowingly robbed and starved. From ten to eighteen she was worked and taxed from her waist up, since that time the strain has been from the waist down. Her early attainments, if any, are little called into this daily bread-winning account.

Watch the nine-o'clock girl, as she comes an hour later. She is a little better dressed, a little fresher in look, a little less hurried; but still she has that indefinable something in her general appearance that tells she is working on her nerves, or with them to an extent that is drawing upon her general health and strength. She is the personification of the organette I have already pictured.

And now comes the half-past-ten-o'clock girl. She is well-dressed, with a rounded figure and a lazy air and an expression of intelligence and mental alertness that is both refreshing and pleasing. Perchance she is the rich man's daughter and has lived, a part of her life at least, where the balm and aroma of the orange and magnolia, and the swaying grace of the gray Spanish moss has coaxed her into repose and forgetfulness of ambitions and the cutting north winds of this land of ice and industry. Mere beauty needs no appeal; it makes its own. Physical health with adequate harmony of mind and heart, however, be the woman ever so plain, has its attractiveness and its reward in a long and useful life.

Whenever I hear a young man or woman say, he or she is working on nerves, I know at once that sooner or later, the break will come. And when they do break they break all over. The wreck is often complete. All other parts of the body are servants to the nervous system. The nervous system is the last to be perfected, the last to be matured. It is the last to give way. It is king, but the most unsympathetic of all rulers.

One's head is one's capital city; one's body the outlying country. The city people are consumers; the country people, producers. If the body — the country — is thrifty and prosperous and peopled, in time, and time enough, the brain — the city — will be full. But if the city is filled first, or if the city is over-peopled in proportion to what the country parts are able to provide for, in time the city, that is, the brain, will starve. In other words, an acute brain by its very activity makes demands upon the body that only a well-conditioned body can supply.

The boys and girls of to-day, born of nervous parents, when they become fathers and mothers cannot but produce children more nervous than they themselves were. The law of hereditary transmission is unerring and never-failing. We are made up of two-thirds of what has been and one-third of what is.

Train the mind, but not at the expense of the body during the formative years. They do better life work hand-in-hand together, since they are mutually dependent and inseparable as links in the golden chain of right life and living. Whatever else we do or don't do, we should keep within the physical limit and be satisfied to stay in that field and upon that plain to which we are fitted, both mentally and physically.

Happiness and usefulness depend more upon a well body than anything else in the wide world. Success in life, as the world sees it, does not necessarily bring happiness. Gratified ambition satisfies only vanity. But vanity satisfied and ambition satisfied — bodily strength *nil*, and the nervous system shattered — what avails it to live?

◆

Clinical Department.

APPENDICITIS, WITH APPARENT RESOLUTION OF ABSCESS; RELAPSE; DEATH; AUTOPSY.[1]

BY FRANK E. PECKHAM, M.D., PROVIDENCE, R. I.

The case which I shall report this evening occurred in the practice of Dr. Coxe, of Riverside, R. I., who has kindly given me the history of the first four days of the disease.

The patient was a young man, twenty years of age. On Friday, November 10, 1893, he went to work as usual; but during the afternoon complained of severe pain over the ileo-cæcal valve, and in the evening there were chilly sensations followed by several attacks of vomiting through the night.

On the morning of the 11th the temperature was 101°, pulse 108. Percussion note normal over entire abdomen, but there was considerable tenderness over the region of the appendix. The bowels had not moved in four days. In the evening, the pulse was 120 and temperature 102°. There was a little fulness over the appendix, with slight dulness and tenderness on percussion. During the night there was a severe chill.

On the 12th, the third day of the disease, the condition being unchanged, the bowels were thoroughly evacuated by castor-oil, and in the evening there was some improvement. The temperature had dropped to 100° and pulse to 96. There was less tenderness and tympanites. During the night the bowels moved freely twice.

On the morning of the 13th, the fourth day of the disease, there was a change in the symptoms. There had been no vomiting for eighteen hours. The temperature was 99° and pulse 90. The skin was moist. There was no tenderness, no tympanites. The patient felt better and wanted something to eat. Resolution had apparently taken place. The diet was restricted to milk and lime-water.

On this day, a kind friend brought in some grapes, which, of course, were eaten. During the night there was a severe chill, with vomiting, which contained bile for the first time. After the chill there was profuse sweating.

---

[1] Read before the Providence Medical Society, December 1, 1893.

On Tuesday, November 14th, I saw the patient with reference to operation. At this time, while talking, there was another slight chill, lasting perhaps five minutes, followed by profuse sweating. There was no sign of mental disturbance. The tongue was coated, the centre being dark brown. Temperature 102°, and pulse before the chill being about 100 and of fair strength. The abdomen on the left side of median line was soft and easily compressible. No tenderness on pressure. On the right side, there was some resistance to pressure, most marked over McBurney's point, and radiating outward to the median line and upward to the border of the liver. Firm and deep pressure revealed considerable tenderness, but nothing could be felt in the shape of a tumor. There was also slight tenderness near the border of the liver. On percussion there was very slight dulness over the area about McBurney's point, and even with the hand pressed well down during the percussion nothing more definite could be learned. There was some tympanites which was generally distributed over the abdomen.

Here was a case of appendicitis which had reached its maximum on the third day, with apparent resolution on the fourth day.

On the fifth day or during the first twenty-four hours of the relapse, with no palpable tumor, and nothing definite on percussion, the patient being in fair condition, I deemed it best to wait twenty-four hours, and to watch the patient carefully in the meantime. I left about three P. M. on Tuesday; and the patient died in collapse about three A. M. on Wednesday.

AUTOPSY.

The autopsy was performed by Dr. W. W. Hunt, who kindly asked me to assist. Dr. Coxe was also present.

The abdomen was opened by a long median incision from the ensiform cartilage to the pubes and also by an incision extending from the lower end of this one diagonally into the area about McBurney's point.

The omentum in the middle and all over the left side and some distance to the right of median line was perfectly healthy. In the right iliac region it was congested and matted together into a bunch. This portion was adherent to the intestines beneath.

On lifting the omentum the intestines were found considerably distended with gas. In the hypogastric, the right inguinal and right lumbar regions, the peritoneal surface of the intestines was congested. In all the other areas they looked perfectly healthy.

Pus was found, to the extent of two or three drachms, free in the abdominal cavity, in the right lumbar region. The intestines were adherent to themselves and to the abdominal wall; everything being bound down to one point, where, when the adhesions were broken up, the appendix was found. It extended outward and upward on the outer surface of the cæcum, being closely adherent. About the appendix was a circular ulceration, nearly as large as a silver dollar. The appendix was easily separated, was congested, but not gangrenous. The ulcer had not extended through the intestinal wall, but the tissue broke down at the slightest touch. This was evidently where the small abscess had existed.

Another small ulcer, about the size of a silver quarter, was found on the anterior surface of the ascending colon near the hepatic flexure. This point was also adherent to the abdominal wall, and the colon was adherent to the liver.

Looking at the case from the post-mortem appearances, it is probable that an operation on Tuesday would have hastened death.

The usual incision would have revealed the appendix and the ulcerated surface to which it was adherent; but whether or not the second ulcer would have been discovered is a question.

The only time that an operation could have resulted favorably was during the first attack; and at this time it was not demanded, as the disease apparently ended in resolution.

It is fair to presume that if the case had been operated as soon as the diagnosis was made, a life would have been saved.

The great question to decide in all cases of appendicitis is, when and when not to operate. There are a few surgeons who have placed themselves on record as being ready to operate as soon as the diagnosis is established, and the tendency of surgical opinion to-day is undoubtedly toward that point.

I offer this case in detail as a plea for immediate operation.

◆

Medical Progress.

REPORT ON DISEASES OF THE NERVOUS SYSTEM.

BY PHILIP COOMBS KNAPP, A.M., M.D.

INFLUENCE OF INFECTION UPON THE NERVOUS SYSTEM.

Roger,[1] recognizing that all infectious diseases may affect the nervous system to a greater or less degree, admits the following divisions:

(1) Reaction of the nervous system in the course of the most diverse acute affections: fatigue, headache and sometimes delirium and convulsions may occur in the course of all forms of infectious disease. These symptoms may depend upon an accumulation of the noxious substances which are constantly forming in the organism, or upon difficulties of elimination.

(2) By the side of these general phenomena of a toxic order we must place the secondary localizations of the infectious process in the nervous system. We often observe paralysis following acute diseases analogous to the paralysis which follows diphtheria. This paralysis may be transitory and due to no organic alteration, or it may be due to lesions of the peripheral or central nervous system. "We admit for tabes, or rather for all scleroses of the nervous system, what we admit for scleroses of other organs. It is demonstrated by clinical observation and by experiments that visceral scleroses may arise from infection or intoxication. In this way syphilis plays a more important rôle than other infections, and represents a chief cause of the sclerotic process, its localization depending upon the predisposition of the individual affected."

(3) Certain nervous diseases may represent a primary localization of the morbid process, in particular infectious multiple neuritis and acute poliomyelitis;

---

[1] Revue générale des sciences, 15 April, 1893.

others always represent a primary infection of the nervous system, as is the case with hydrophobia.

(4) Infection may be the starting-point of nervous accidents which are sometimes very persistent, but which seem to be due to no material lesion; it may provoke the onset or the reappearance of various neuroses. Hysterical phenomena, epilepsy, paralysis agitans, and especially chorea, frequently present themselves under these conditions. With regard to chorea the author thinks that the influence of rheumatism has been somewhat exaggerated, yet he considers that rheumatism is to chorea what syphilis is to tabes. [Yet the statistics with regard to the two affections show a much more intimate relation between syphilis and tabes than between rheumatism and chorea. Rep.]

Many of these facts can be verified by experiments: paraplegia represents in the lower animals an ordinary reaction, observed after the inoculation of all sorts of microbes. The author has even produced experimentally a chronic poliomyelitis of infectious origin, which demonstrates the rôle of infection in the development of certain systemic forms of myelitis; and other observers have obtained analogous results. The microbe acts as poison does, and both may give rise to troubles or lesions which the most elaborate vivisections are incapable of realizing.

DISTURBANCES OF SENSATION IN VISCERAL DISEASE.

Head[2] has made an extremely valuable and interesting study of the distribution of pain and cutaneous tenderness in visceral disease. He found that the pain was in many cases associated with cutaneous tenderness, and, where tenderness existed, the pain lay in that area. If the tenderness be present at one time and not at another, but if the pain remain, tenderness always makes its appearance in the area said to be painful. The tenderness is not deep-seated, but is purely cutaneous or subcutaneous. One of the best methods of eliciting it is to pick up the skin gently between the finger and thumb, or the pressure of the broad blunt head of a large pin may be used. These areas of tenderness bear a definite relation to the different organs affected, but in many cases they lie at a considerable distance from the organ affected. The pain produced by stimulation is not produced by any action on the organ itself, which may lie at a considerable distance from the tender spot. Again, the tenderness may be on the right side, though the organ affected lies on the left side of the body. The superficial reflexes are usually exaggerated over the tender areas produced by visceral disease. Suspecting that these areas bore some definite relation to nerve distribution, Head undertook the study of the distribution of herpes zoster. The eruption of herpes does not follow the distribution of the peripheral nerves at all, and these areas of the herpes eruption agree with the areas of tenderness in visceral disease; in neither case do they overlap, and they have the same maxima. They are also clearly defined. It is not at all likely that these areas have any relation to the cortical distribution, and, as has been said, they certainly have none to the distribution of the peripheral nerves. The areas of distribution of the posterior roots overlap greatly and the border of anæsthesia is not definite. The areas of herpes and tenderness in visceral disease do correspond most closely to the areas of analgesia in lesions of the spinal segments. (The areas of anæsthesia in lesions of the segments are less extensive and less definite.) After a careful study of the tenderness in different forms of visceral disease, the author concludes that the pain and tenderness are referred along the distribution of certain somatic nerves corresponding to the different spinal segments, and this sensory supply of the viscera corresponds very closely to Gaskell's[3] scheme of their motor and inhibitory supply. The sensory supply is as follows:

Heart.—1st, 2d, 3d dorsal segments.
  Cervical plexus [= depressor?]

Lungs.—1st, 2d, 3d, 4th, 5th dorsal.
  Cervical plexus [= vagus?]

Stomach.—6th, 7th, 8th, 9th dorsal.
  Cardiac end from 6th and 7th.
  Pyloric end from 9th.

Intestines.—[A] Down to upper part of rectum.
  9th, 10th, 11th and 12th dorsal.
  [B] Rectum.
  2d, 3d, 4th sacral.

Liver and Gall Bladder.—7th, 8th, 9th, 10th dorsal. Perhaps 6th dorsal.
  Cervical plexus [= vagus?]

Kidney and Ureter.—10th, 11th, 12th dorsal. The nearer the lesion lies to the kidney the more is the pain and tenderness associated with the 10th dorsal. The lower the lesion in the ureter the more does the 1st lumbar tend to appear.

Bladder.—[A] Mucous membrane and neck of bladder.
  [1st], 2d, 3d, 4th sacral.
  [B] Over-distension and ineffectual contraction.
  11th, 12th dorsal, 1st lumbar.

Prostate.—10th, 11th, [12th] dorsal.
  1st, 2d, 3d sacral, 5th lumbar.

Epididymis.—11th, 12th dorsal, 1st lumbar.

Testis.—10th dorsal.

Ovary.—10th dorsal.

Appendages, etc.—11th, 12th dorsal, 1st lumbar.

Uterus.—[A] In contraction,
  10th, 11th, 12th dorsal, 1st lumbar.
  [B] Os uteri.
  [1st], 2d, 3d, 4th sacral, [and 5th lumbar very rarely].

In unilateral affections the pain and tenderness is very apt to be bilateral, possibly because the organ may receive some fibres from either side of the cord. In most cases if the patient be debilitated, or if the affection persist at all, the pain and tenderness tend to spread to other areas, often very remote from the original area; as is seen by the aching and tenderness in the legs in follicular tonsillitis. Anæmia and fever are very common causes of this generalization of tenderness, which generally occurs in various acute diseases, such as influenza and typhoid fever.

ACROPARÆSTHESIA.

Schultze[4] describes under the name of acroparæsthesia that form of paræsthesia which is often painful and is localized chiefly at the ends of the extremities. He reports twelve cases, and gives the following account of the symptomatology:

The affection is most common in women (although half his cases were men) who have passed the thirtieth year, and its chief localization is in the hands and fingers. It usually takes the form of formication, but it may increase to actual tenderness and may extend up the arms or legs. The affected parts feel stiff, and fine movements may be slow or limited. The paræsthesia may be worse at night or on waking in the morning ("waking numbness"), and it may be worse in winter. It is usually obstinate and it may last for years. The color of the skin is usually unchanged, but it may be very white and cold during the attacks; it is never red. The sensibility is usually normal, but during the attacks it may be blunted, and hyperæsthesia and hyperalgesia are not uncommon. The nerves are not tender; there is no atrophy; hysterical symptoms are wanting; the joints are not affected; but the affected limbs may be weak.

---

[2] Brain, Spring and Summer Number, 1893.

[3] Journal of Physiology, vol. vii, 1885.

[4] Deutsche Zeitschrift für Nervenheilkunde, iii, 300, 1893.

Schultze then discusses the various theories which have been advanced to explain the disturbance. He admits that the occasional pallor of the affected parts lends some support to Nothnagel's theory of a vasomotor disturbance, but this pallor is by no means to be observed in every case, and it is hard to understand why, as sometimes happens, the warmth of the bed should cause arterial contraction. He therefore regards the contraction as merely a co-ordinated symptom. The absence of pain and tenderness, of muscular atrophy and degenerative reactions, and of any progress in the symptoms are all arguments against ascribing the symptoms to neuritis. He recognizes the possibility of pressure on the brachial plexus from connective-tissue changes, and of the influence of cold water or chemicals, but these factors are not of universal application. Central lesions are not to be thought of. It has no relations to any general neurosis, but it has some analogies with neuralgia.

The ætiology is obscure, but in many cases there is exposure to hot and cold, with sudden changes in temperature, and to injurious chemical influences; manual labor has little influence. Many cases occur about the climactric period, but the influence of that change is wholly unknown. In the diagnosis we must distinguish the condition from neuritis, tabes, Raynaud's disease and erythromelalgia. The treatment is not very efficacious. Drugs are of little use, except to relieve pain when present; electricity, warm baths and warm local applications may do some good, but the affection, although never giving rise to more serious consequences, is often very obstinate.

Friedmann[5] considers the affection to be as independent and individual as neuralgia, yet similar paræsthesia is sometimes seen as a symptom of more serious affections, such as tabes. In itself, however, it is harmless, although annoying and persistent. He divides the affection into temporary and intermittent forms, acute, subacute and chronic, the transitory forms being usually limited to one extremity, possibly extending to other parts, and being often subject to exacerbations. In women the menstrual period often has an influence in increasing the severity of the paræsthesia. The acute form is the commonest, and the prognosis is usually very good. The average case usually lasts either a few days or weeks, or else months or years; intermediate, sub-acute forms seem to be rare. The more persistent forms vary in severity at different times in the day; the paræsthesia is apt to be worse at the beginning of the night, or on waking in the morning. In cases of short duration there may be recurrences, yet they are less common, but there are chronic forms where there are remissions of several months. Friedmann has also seen cases with a different distribution, sometimes involving the region of a single nerve. In cases of simple paræsthesia, without severe symptoms or anæsthesia, Friedmann is disposed to ascribe the trouble to general anæmia, with a weak circulation, and he thinks there is often some cardiac affection, especially a slight amount of fatty degeneration of the heart. General neurasthenia seems of little importance. When cold is an ætiological factor there is often pain, with a burning, swollen feeling, and objective disturbances of sensibility. Friedmann puts in a third group of cases which begin suddenly, are often unilateral and are associated with vertigo and occasionally are followed by slight paresis, but these cases are probably due to focal lesions in the brain. A fourth class of cases are often accompanied with pain, either in the affected parts or elsewhere, and occur in persons with a strong tendency to rheumatic troubles. These cases are allied to cases of neuralgia and neuritis, where the pain is slight but where there is obstinate and severe paræsthesia and burning. The severe chronic forms are seen usually in women at the period of the menopause. Friedmann is disposed to refer the trouble to two pathological conditions — passive hyperæmia of the extremities, and irritation of the peripheral end branches of the nerves. Acroparæsthesia is a typical mild functional neurosis of the sensory nerves of the extremities. In treatment electricity holds the first place, and tonics and cardiac stimulants are often indicated.

Laquer,[6] basing his experience of eighteen cases, in women between thirty-five and forty, recognizes the picture described by Schultze, and notes the absence of anæsthesia, nerve-tenderness, motor disturbances, electrical changes, muscular atrophy and cutaneous changes, and he also has not observed the pallor of the hands, nor any angio-spastic conditions. In several of his cases he has noted a previous history of severe labors with profuse hæmorrhages. The distress and burning often became so severe at night as to render sleep difficult. Menstrual disturbances and the menopause were not considered as causal factors. The influence of hard work with the hands seems to Laquer to be of great importance. He is disposed to regard the affection as an exhaustive neurosis.

The subject cannot be abandoned without a brief reference to the paper by Collins[7] in a recent number of this JOURNAL, in which he holds that the trouble is due to defective innervation in the blood-vessels which causes a low degree of blood-pressure and lack of proper blood-supply to the terminal branches of the peripheral sensorial nerves.

ACROMEGALY.

Claus and Van der Shicht[8] report an autopsy on a case of acromegaly made two or three hours after death. They were therefore able to obtain the tissues in a fresh state, which enabled them to elicit certain new facts. The lymphatic ganglions of the neck had undergone profound modifications. Their structure had become uniform, and they no longer contained lymphoid follicles. All varieties of white corpuscles were found: those with a single nucleus, with a polymorphous nucleus, and with multiple nuclei, even megacaryocytes and polycaryocytes. The muscular tissue of the neck was sclerosed and atrophied; the nuclei had many budding processes, and the sarcoplasm had undergone a vascular and fatty-granular degeneration. The glandular tubes of the hypophysis of the patient, an old man, were filled with principal and chromophilous cells, both rich in fatty granulations. As intermediate forms existed, it seemed probable that one variety engendered the other. The hypertrophied and acromegalic pituitary gland was necrosed and its constituent parts were liquefied. The parts which had escaped this destruction were formed by a lymphoid tissue analogous to that of the lymphatic ganglions of the neck. Several megacaryocytes and polycaryocytes were also found. There was no trace of the primitive glandular tissue. The organ was poor in blood-vessels, and its degeneration and necrosis was attributed to insufficient nutrition. The thyroid gland showed both atrophy and glandular hypertrophy, and hypertrophy of the connective-tissue structure with lymphoid infiltration. The liver showed fatty degeneration and atrophy of the glandular elements, with a slight lymphoid infiltration in the interlobular connective tissue. There was chronic parenchymatous and interstitial nephritis. There was hyperplasia of the splenic pulp and the follicles of Malpighi. The enlargement of the tongue was due to connective-tissue hyperplasia.

---

[5] Deutsche Zeitschrift für Nervenheilkunde, iv, 450, 1893.

[6] Neurologisches Centralblatt, 15 March, 1893.

[7] See this Journal, cxxix, 264. 14 September, 1893.

[8] Annales et Bulletin de la Société de médecine de Gand, Nos. 71 and 72, 1893.

DISEASES OF THE CAUDA EQUINA.

Komayer[9] has collected twenty-six cases of disease affecting the cauda equina, on which he bases an account of the symptomatology. The affections have the double character of diseases of the peripheral nerves and diseases of the cord. Its resistance and its greater mobility protect the cauda from more frequent lesions, and, furthermore, the lumbar vertebræ are more resistant than the dorsal or cervical. One of the constant symptoms of lesions of the cauda is a disturbance in the functions of the bladder and rectum. There is also more or less paralysis of the lower extremities, the paralyzed muscles rapidly losing their electrical excitability and becoming atrophied. There are very severe pains and paræsthesia. In all cases the sensibility in certain regions is diminished or lost, and the reflexes may disappear. Vaso-motor and trophic disturbances are also noted. The causes of disease of the cauda are traumatism, tumors, and syphilitic, tubercular and inflammatory processes, and the course varies according to the cause. Traumatic lesions are apt to be due to hæmorrhage into the spinal canal. Sometimes there may be hæmorrhage into the canal or the cord and spinal roots, without any lesion of the vertebræ. The symptoms depend upon the seat of the lesion. Ordinarily in traumatic cases, the muscles of the posterior part of the thigh are paralyzed. In meningeal hæmorrhage the course is more benign. Death is often due to purulent infection (bed-sores) or ascending nephritis. Seven out of thirteen cases died within ten weeks, the others made a relative recovery. Paralysis of the bladder, and anæsthesia resist treatment. Lesions of the conus medullaris cannot be distinguished from lesions of the sacral roots. If there has been no injury the disease develops insidiously, and is almost always attended with pain and paræsthesia. The pain is intolerable and is situated in the lumbar and sacral region, extending to the legs. Vesical and rectal symptoms follow, but paralysis of these organs is not so complete as in traumatic cases. In both forms there is impotence. The anæsthesia is also somewhat characteristic. It involves the genitals, the perineum and the posterior parts of the buttocks and thighs. In traumatic cases the conus is more apt to be affected; in idiopathic cases the pain and the greater sensibility of the vertebral column indicate an affection of the nerve roots. The most hope in treatment is from surgical interference.

According to a police census, there are nearly four thousand doctors' signs in New York City.

---

[9] Les maladies de la queue de cheval, Prague, 1893.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

J. C. MUNRO, M.D., SECRETARY.

Regular Meeting, Monday, November 6, 1893, **Dr. Charles P. Putnam** in the chair.

Dr. J. W. Farlow read a paper on

HYPERTROPHY IN THE POST-NASAL SPACE, ESPECIALLY AFTER CHILDHOOD.[1]

Dr. Sprague: I think this is a very important subject. Post-nasal hypertrophies are without doubt the cause of many troubles. As Dr. Farlow has said it is almost a daily occurrence in the clinic to find these cases where the patients have never complained of any nasal obstruction, and in fact almost deny that there is any trouble there. It is surprising how small an amount of hypertrophy will cause a great deal of trouble. I think that the vast majority of cases of deafness, and hypertrophic condition of the middle ear, are due to primary trouble in the naso-pharynx. I remember one case where there were adhesions from the anterior portion of the orifice of the Eustachian tube stretching backward to the posterior pharyngeal wall, so that the tube was almost entirely occluded and thereby backing up the mucous into the middle-ear and causing a great deal of trouble in that direction, finally resulting in mastoid inflammation and requiring operation.

Dr. A. Coolidge, Jr.: Dr. Farlow has covered the ground very thoroughly and very well. I have noticed many of the things of which he has spoken, and agree with him that these hypertrophies are often the unsuspected cause of different symptoms. In addition to the evil results of these hypertrophies, I have noticed in several cases a marked atrophy of the adjacent mucous membrane, and of the mucous membrane lower in the pharynx, apparently as a result, a condition which has been noted by Dr. Delavan in the recent Pan-American Congress. There is no doubt that the adenoid hypertrophies of children sometimes do not atrophy, or only very slowly when persons have attained their full growth; but I think that we can hardly say that this is the rule. The number of children who have more or less of this tissue is very large. In young adults the percentage is not nearly so large. I agree with Dr. Farlow that after the removal of part of these growths, in adults, the remainder often remains apparently the same size for a long time; and I agree with him as to the necessity of thorough removal. Unless the amount of growth is large it may not obstruct nasal respiration; but, as Dr. Farlow has shown, this is only one of the numerous evil results of their presence. In reference to diagnosis, in a full-grown person an unusually long finger is required to reach to the vault, if the person is not etherized. It is very difficult to judge of the amount of hypertrophy with insufficient light. By far the best view of this region I have got by sunlight. In using sunlight it is better to have a flat head mirror, one that does not focus the rays. If such is not at hand an ordinary head mirror may be used, but care must be taken not to focus upon the patient's uvula, which may burn the patient's palate. It is sometimes possible, with cocaine, to thoroughly remove the growths in a few sittings, without much discomfort, but in many patients the naso-pharynx is too sensitive to make this practicable. A long etherization is often a good deal of an undertaking. I have on many occasions been able to operate very satisfactorily by primary etherization. Everything is ready at hand before beginning the ether; the patient sits in a chair in a position to be operated on; the operator also sits in position. The patient is then told to breathe as rapidly as possible from a sponge well soaked with ether. After breathing in this way for from three-quarters of a minute to a minute, the sponge is removed, a gag immediately put in, and the naso-pharynx cleared with a Gottstein curette and the finger-nail. This gives about from half a minute to a minute of anæsthesia. In two minutes after beginning the ether, the patient has sufficiently recovered to understand directions given him, and in two or three minutes more he is ready to go home. No pain has been felt, and there is never any vomiting. It is not always possible to induce the patient to breathe rapidly enough for this method of etherization, but in many cases of older children or adults, it is very satisfactory, provided that all that is necessary can be done in the short time. In advocating this method of anæsthesia I do not mean to say that I prefer such an operation to the careful removal of all traces of hypertrophy. The latter is the more complete method of treatment and produces better results, but it implies a longer etherization with its attendant discomforts. If after beginning this short operation it is evident that it is impossible to do satisfactory work in the time, it is always possible to prolong the ether.

---

[1] See page 56 of the Journal.

Dr. Jack: The connection between the ear and naso-pharynx is a very important one. Ear diseases are perhaps as largely influenced by the post-nares as by causes operating through the auditory canal. The pharyngeal tonsil probably operates as much if not more than any other one thing in causing middle-ear inflammation. The air is cut off from the air cavity by swelling around the Eustachian tube, or by a piece of growth obstructing the mouth of the tube, producing a collapsed drumhead with possibly fluid accumulations, a condition with which you are familiar.

I am in the habit in my work of paying especial attention to the posterior part of the nose, and try to obtain as free breathing through the nose as possible. Childhood is the time to arrest any tendency to ear trouble. From the attention given to adenoids it seems probable that the number of cases in adults will grow less as time goes on. It has been my custom in removing this growth in young adults to operate under cocaine. The success of this method depends largely upon the patient's self-control. It is better in some cases to do the thing thoroughly in one operation under ether. In children an anæsthetic is absolutely necessary, for the growth should be entirely removed to prevent recurrence. The vegetations may reappear after apparent removal, although it is known to be a rare exception to the rule. The Gottstein curette is useful in removing loose ends left by the forceps, but is not as effective in sinking into the base of the tonsil. Careful attention should be paid to the neighborhood of the Eustachian tubes. The growths are usually soft here, and the finger furnishes a safe and satisfactory substitute for the forceps. Profound anæsthesia is not necessary or safe. Hæmorrhage, as we know, is often copious, and threatens to invade the larynx. Important as is the position of the head in cleaning the throat of clots, of still greater importance is the action of the larynx in case blood tries to enter it. One early experience with this accident, which fortunately, as I was able to remove the clot, did not result seriously, has made me very careful not to give ether to complete anæsthesia of the throat.

Dr. Cobb: I have very little to add. I have seen Dr. Coolidge do these operations under primary anæsthesia, and it seems to me a very excellent method. With regard to the forceps in operating without ether, there is a great deal of difficulty on account of the contraction of the soft palate and the danger of wounding it with the post-nasal forceps, even in exercising great care; and I think for that reason in certain cases that the Gottstein curette is preferable. With regard to the diagnosis of these growths simply by the post-nasal mirror, it is not always satisfactory, because the mirror pointing somewhat forwards and upwards instead of backwards, one does not get as satisfactory a knowledge of the posterior wall as he does if he examines with the finger; and often when the naso-pharynx has looked comparatively clean, the finger feels considerable growth on the posterior wall of the vault not shown by the mirror. Therefore, I think both methods practised together are much more satisfactory than reliance on either one of them. The tendency of these adenoids to recur is, I think, interesting in cases where one feels quite sure that one has eliminated them; for even when after examination with the posterior nasal-mirror and with the finger one finds that they are practically gone, one will some years afterwards see signs of them, and I do not believe it is entirely due to lack of radical operation. I think there is certainly a fair chance that adenoids have recurred in these cases. Dr. Jack spoke of a case in which he suspected that he had not operated thoroughly. I think that may have been one of these cases.

Dr. H. F. Vickery: I should like to say that a fatal case of secondary hæmorrhage is reported in the November number of the *American Journal of Medical Sciences*. The operator was called to the little boy just in time to see him die. He makes some valuable remarks on the care which should be exercised.

Dr. M. H. Richardson: I have seen this operation performed many times by the specialist in diseases of the throat and nose. Personally I have had no experience whatever with the procedure, this operation being so much out of the field of general surgery. I was glad to hear what Dr. Coolidge said about the dangers of complete anæsthesia; and on this subject I should like to say a word. We are too confident in the use of ether. We feel much safer in giving it than we ought; not as regards its physiological action, but the methods of administration. Whatever dangers there are in the use of ether lie in the latter consideration. It is to the most inexperienced person present that we intrust this most important function. This fault is not peculiar to those presumably the least familiar with the subject; it is the practice of every hospital to have its junior men give the anæsthetic. This practice is open to criticism, it seems to me, not only because it increases unnecessarily the inherent dangers of etherization, but because it may disconcert the operator, and at times embarrass him even more than the operation itself. Whenever possible, therefore, anæsthesia should be at least supervised by an experienced man. At times, of course, the nurse, or even one of the family, must be intrusted with the ether. I think all operators will agree, however, that the anxieties incident to the operation are much increased at such times.

The first operations I ever saw on adenoids were among the bloodiest in my experience; the hæmorrhage in excisions of the upper jaw does not exceed that occasionally seen in the removal of adenoids. Moreover, in the former operation the head can be put forward and the blood allowed to run out; while in the latter there is nothing to prevent the blood from running directly from the posterior nares into the larynx. It seems to me, therefore, that the only safe plan is either to have the anæsthesia so light that the patient can himself keep his pharynx clear of blood, or to adopt some position, like that of Rose, in which the blood by gravitation leaves the air-passages free.

Dr. Coolidge: In regard to getting blood into the larynx and trachea, if the patient is profoundly etherized, the danger is great; but I think if lightly etherized, it is not great, provided the person is not cyanotic. If there is anything in the pharynx, cyanosis, with or without ether, is dangerous; for instance, in opening a retro-pharyngeal abscess we sometimes hear that there is danger of drawing the pus into the lungs. I believe that the danger is slight, provided the child is not cyanotic. In operations in the throat it is sometimes tempting to complete a proceeding in spite of the fact that the patient has begun to get blue. Most patients will swallow anything in the pharynx unless they are either profoundly etherized or cyanotic. Occasionally a case is met with, which from the start acts badly. The reflexes do not seem to be quite right. In such cases it is necessary to proceed with extra caution.

Dr. De Blois: There is an operation with the head thrown back over a block or pillow, in which case the posterior nares would be filled with blood before any could escape into the larynx. Dr. Major, of Montreal, always operates in this way. In cases of retro-pharyngeal abscess which I have frequently opened, I invariably turned the patient upside down just as soon as I have dropped the knife. In cases where I operate on adults I take them by the hair and push their heads down on the floor, because as soon as you cut into the abscess the rush of pus is more than can ordinarily be cleared even if there is no anæsthesia. There is a great deal of the pus, and it comes with a gush. I never have operated on a retro-pharyngeal abscess under ether. I think they should always be opened without ether, because you should have what assistance the patient can give to keep himself from asphyxia.

Dr. Sprague: I was very much interested in the suggestion of primary anæsthesia. About a week ago I had a patient in whom I tried primary anæsthesia. I asked the etherizer to get along with as little ether as possible. As soon as the patient was under primary anæsthesia I had her set up, and operated immediately. I cleared out the vault of the pharynx with the forceps, and the fossa of Rosenmüller with my finger. By the time the patient began to struggle she began to clear the throat, and everything was over. I do not know how long it was. It was not more than three minutes perhaps. I think that ordinarily too much ether is given.

Dr. Farlow: With regard to the use of anæsthetics, ether or cocaine, I spoke of them with reference to adults. Many people, especially young ladies, have a great dread of ether, and prefer to have the growth removed under cocaine, even if there is some pain, unless the amount to be removed is large. I am glad to hear what Dr. Richardson has said about the danger of anæsthesia in these cases. I think the anæsthesia should be very light, and great attention paid to the amount of blood lost. It is important to look after the respiration and the pulse. I have seen patients go into a state of collapse even when the anæsthesia was light and the amount of blood lost inconsiderable. I have seen one case of secondary hæmorrhage. It was in a young man, twenty-five years old, from whom I had removed considerable hypertrophied tissue on several occasions without much bleeding. One afternoon I removed several large pieces with forceps, and thirty-six hours later he had a hæmorrhage which lasted several hours.

I think the mirror by all means the best aid to diagnosis, though the finger often gives valuable information as regards the depth of the growth.

With regard to cases becoming less numerous in the future, this is probably true; but I also think that there will continue to be a great many cases where the hearing is involved, where there is cough and a considerable amount of secretion trickling down from the post-nasal space, keeping the nose and pharynx in an hypertrophied condition — cases which may not have caused any great disturbance in childhood, but which, instead of atrophying at puberty, have persisted and even grown larger, requiring treatment in later life.

SPECIMEN OF GANGRENOUS AND PERFORATED APPENDIX.

Dr. M. H. Richardson: This specimen is a very beautiful one. The case is one of extreme interest. It is the third case of appendicitis that I have operated on within the last two weeks where the diagnosis was very difficult indeed — in spite of what has been said as to the ease with which the diagnosis of appendicitis can generally be made.

In the first case Dr. F. C. Shattuck, on the second day after admission, made a correct diagnosis of appendicitis where every one else was wrong. I had made a correct diagnosis of it the first day, and had advised immediate interference, but yielded to the advice of all who saw the case that day — all the more willingly because the type was one almost invariably fatal in my hands; and I was glad to be supported in the plan of waiting, for I wanted to see if any different result would follow the let-alone policy. The next day I changed my mind as to diagnosis, and thought it was not appendicitis. I was influenced partly by the absence of leucocytosis, reported by Dr. Richard Cabot; for this condition had been present in every case of suspected suppuration in which an examination of the blood had been made. Death followed operation in a few hours.

In the next case, seen about two weeks ago, all the symptoms were in the region of the liver, and the appendix was found there. The extravasation had extended up between the liver and the ribs and around the foramen of Winslow. I have no doubt it would have resulted in a large subphrenic abscess.

The third case was exactly like the second. The patient, a boy of eleven, was taken five or six days ago. The operation was done on the fifth or sixth day — I may say the fatal fifth or sixth. The fourth, fifth, and sixth are the fatal days, and the mortality on these days is frightful. Death results, of course, from the general peritoneal infection. The reason why operations performed on the eighth, ninth, tenth, eleventh days, or later, are more successful lies in the "survival of the fittest" — the general infections have all been fatal, and patients with localized abscesses only survive. This young boy of eleven was taken with vomiting and diarrhœa about a week ago. They sent for Dr. Atwood, of Haverhill, on Saturday, to-day being Monday. I saw the case this morning and found the boy with pain over the liver, and sensitiveness especially marked over the hepatic flexure of the colon. Dulness extended from the crest of the ilium into the lungs. The right lung was flat all over its lower half; respiration 40, temperature 102°, pulse 160. On going through the flank with a long incision I came down on the walled-off ascending colon with the appendix situated externally to it at that point. There was a sero-purulent effusion running up between the liver and the ribs and over the kidney, and as far as I could see to the foramen of Winslow. That the diagnosis of appendicitis is correct, is shown in this specimen by the perforation at the tip, with a small fæcal concretion under it. I tied off the appendix, drained and packed with gauze. I have no doubt that there is an infection of the pleural cavity and a pleurisy or some lung trouble dependent on direct contagion. The prognosis is very grave, even from the appendix; and with the trouble in the lungs it seems very severe.[2]

In appendicitis I do not believe that the peritonitis is often caused by these operations. The infection already exists. Two cases of general infection are apparently precisely alike; the treatment is the same in each; one gets well and the other dies. The reason why one dies and the other gets well must generally be found in the nature of the poison. In one case of general infection we get pure cultures of the bacillus coli communis; in another we do not. In a third we get nothing, or very mild micro-organisms. We are going to find, in the bacteriological elements, the explanation for the prognosis of these cases. Since the first of May I know of at least twenty deaths from appendicitis in this community. You cannot say that they were all due to surgical interference, because many of them were beyond surgical aid, and no operation whatever could be done. From my own experience I can say that the diagnosis in many cases is very difficult indeed; and as to the prognosis, you cannot tell anything about it. Some cases get well where you think there is no chance of recovery, and some you think very favorable, die.

BAPTISM BY BRANDT'S METHOD. — Baptism by immersion was performed in an unusual manner in a Pennsylvania town not long ago. A patient too ill to leave his room was desirous of baptism. A large portable tub was filled with water at the bedside. The man was lowered into it on a sheet quite in the Brandt manner, and the ceremony successfully performed.

NEW YORK COUNTY MEDICAL ASSOCIATION.

STATED Meeting, December 18, 1892, the President, DR. S. B. W. MCLEOD, in the chair.

A paper by DR. T. GAILLARD THOMAS on

THE IMMEDIATE CAUSATION OF THE DISEASES PECULIAR TO WOMEN,

was read by Dr. C. C. Carmalt, Dr. Thomas being unavoidably prevented from being present. There were, he said, four great climacteric periods in the life of the female in connection with which the great bulk of the diseases in question occurred. It could be safely stated that eight-tenths of them took their rise from these climacterics. The first of these was puberty, marked by the development of ovarian activity; the second, marriage; the third, child-bearing; and the fourth, the menopause, marked by retrograde processes in the ovaries.

It was with the ovaries, and not the uterus, that the woman advanced and retrogressed; the activity in the uterus being entirely dependent on the former. The changes in the ovaries constituted the phenomenon, and those in the uterous the epi-phenomenon. During the first two-thirds of the period between birth and the age of puberty the ovaries, uterus and annexia remained almost entirely undeveloped. During the last third, they gradually increased in size, and just before the girl reached puberty developed with amazing rapidity. If, when the time of puberty came the appropriate changes had not taken place, if the uterus had not properly grown or had become misplaced, if the ovaries remained undeveloped, or the Fallopian tubes were impervious, diseased conditions would inevitably arise. If ovarian abnormalities existed, the most serious consequences would result, and the young woman might perhaps become the victim of hystro-epilepsy. If the tubes had become strictured, dysmenorrhœa would be the consequence.

The First Climacteric was a period to be watched with the greatest anxiety. On the first of the month the girl might be blooming and in the full tide of health, on the 15th of the same month she might suffer in a way that would indicate to the experienced physician that she was to be a chronic invalid. A system of appropriate treatment for the existing dysmenorrhœa and other symptoms might be instituted, but if the normal changes had not taken place in the ovaries and tubes, every means would be exhausted in vain, and eventually it would be necessary to perform the humane and entirely justifiable operation of removing the ovaries and tubes.

The Second Climacteric. — After passing the time of puberty in safety the young girl would live in health and happiness up to her second climacteric, marriage, unless she was unfortunate enough to take cold during a menstrual period or suffered from other accidental illness. As a result of marriage she was liable to encounter new ills, the three principal of which were vaginismus, gonorrhœal infection from specific urethritis in her husband, and abortion. In speaking of the second of these Dr. Thomas quoted from an address of his which he had delivered upon a former occasion. Until twenty years ago, he said, specific urethritis was but lightly thought of. It was to Dr. Emil Neoggerath, formerly of New York, that the profession was indebted for its present knowledge of the enormous importance of this affection as a factor in the etiology of the diseases of women. He had shown conclusively that behind the strictures in the male urethra produced by gonorrhœa, which were so extremely common, the germs of the disease were liable to linger, and that they were capable, even after a long time, of transmitting gonorrhœal infection to the female, with the most disastrous results. Among the troubles to which it gave rise were oöphoritis, pyo-salpinx, and peritonitis, which were always serious, and might result in death. For a time the assertions of Noeggerath were assailed with bitterness and met with ridicule; but they are now universally recognized as true.

---

[2] December 14, 1893. These two cases recovered. The last had an empyema on the right side, which Dr. Atwood opened. The abdominal wound closed rapidly. From the appendix Dr. McCollom obtained pure cultures of the bacillus coli communis. The infection of the pleural cavity was probably from this microbe, though no cultures were made.

In his (Dr. Thomas's) opinion, specific vaginitis was one of the most frequent and active of all the causes of the diseases of women. Its effects are often simply appalling, and left us nothing as a last resort but the operation of celiotomy, which might of itself prove fatal to the patient under the circumstances. How common it was for an unsuspecting young man of nineteen to slip from virtue. A few years afterward when he had married, still suffering from a low grade of chronic urethritis, he would give all that he possessed if he could undo the terrible results of that early indiscretion. It was, therefore, highly important that every intended bridegroom should be instructed by his physician as to the necessity of a clean bill of health before entering the marriage state. The existence of the gonococcus should be carefully looked for, and a marital quarantine was as necessary as a quarantine for the ordinary contagious diseases.

The Third Climacteric. — Even in normal labors child-bearing was liable to be followed by serious results. Thus, comparatively slight lacerations of the cervix uteri or of the perineum might give rise to the most untoward consequences. In ordinary conditions of the system such lacerations of the tissues would be but a trivial matter, but in the puerperal state it was to be remembered that there were two circumstances which rendered them of grave significance. In the first place, from the moment of the fixation of the ovum after conception there was a rapid development of all the pelvic organs. Secondly, wounds made in the genital canal was bathed, after the birth of the child, by the lochia, made up of cervical and vaginal epithelium, blood and mucous corpuscles, bits of decidua, and, at times, shreds of membranes and of the placenta. Under favorable circumstances the discharge in contact with the abraded surfaces would set up either a sapræmia or septicæmia, with their attendant evils. When it had become the general practice to carefully examine patients at the time of delivery, and to at once repair any injuries that might have been suffered during labor, the diseases of women would be less numerous than they are at present and gynæcologists would have fewer operations to perform.

The Fourth Climacteric. — When we considered the far-reaching nervous influences which attended the process of ovulation, it was not to be wondered at that the cessation of this at the menopause should be accompanied with marked changes. While, however, the importance of the menopause as an etiological factor was admitted, it could not be doubted that too much significance had often been assigned to this. Not infrequently there are other causes of disease, which, occurring at this period, were improperly referred to the menopause. Care should therefore be taken to avoid an over-estimate of its importance and at the same time an under-estimate which might lead us to postpone necessary operations. Having referred to some of the changes incident to the menopause and its effect upon uterine fibroids and other abnormal conditions, he mentioned vaginitis and especially hæmorrhagic vaginitis and procidentia of the uterus as affections liable to be met with at this period.

Dr. George T. Harrison dwelt upon the extreme importance of gonorrhœa as a factor in the production of the diseases of women. Perimetritis, endometritis and peritonitis were the common result of latent gonorrhœa in the female, as first pointed out by Dr. Noeggerath, and it was with rare prevision that the latter asserted his conviction that this affection was of microbic origin. It was reserved for Neisser to fully establish the existence of the gonorrhœal germ, and the gonococcus was now as universally recognized as the bacillus of tuberculosis. The diagnosis of acute gonorrhœa was an easy matter. It was in the chronic form of the disease that mistakes were made, and the real cause of many cases of oöphoritis and other serious troubles was thus often overlooked. But, if carefully studied, the clinical features would be found to be characteristic. In speaking of the later infections due to gonorrhœa, he said that salpingitis was rare. Peritonitis due to this cause, was fortunately confined to the pelvic peritoneum, as no ptomaines were generated by the gonococci. From his experience he believed that syphilis was an innocent disease in the female in comparison with gonorrhœa. In this connection he related the case of a young married lady who was attacked with metrorrhagia and violent uterine pain, accompanied with a high temperature; an examination showing the presence of endometritis, salpingitis and peri-oöphoritis. She was placed upon appropriate treatment, and began to improve, when suddenly violent gonorrhœal ophthalmia developed, and, notwithstanding the best efforts of two eminent eye-specialists and the most careful nursing and attention, she lost the sight of one eye entirely, and the other was only saved with difficulty.

We constantly saw young men entering on marriage with bright hopes of offspring, only to see them blasted. Sterility was the almost constant result of this chronic gonorrhœa, and women affected with it were liable to protracted ill health. Hysteria was frequently associated with their sterility.

Dr. H. J. Boldt said that while the principal causes of the diseases of women were given in the paper, there were a few points which had not been touched upon. Among the etiological factors were dress and the neglect of hygiene. High-heeled shoes had long been a potent cause of trouble by placing the pelvis in a bad position. Personally he believed that the agency of gonorrhœal infection had been exaggerated, and that the puerperal state (including abortions) was responsible for more ailments than this. Still, we should not underestimate this factor. It was not the acute form, but the chronic which gave so much trouble. In the acute stages of the disease we could, as a rule, cure the patient completely. In the chronic there was apt to be an atrophic form of parametritis, with only slight thickening of the broad ligaments.

Another point to be considered was, what amount of trouble is produced by uncalled-for gynæcological interference. He had known pessaries, unadvisedly employed, to produce intense pelvic irritation, and related a case in point. A patient took cold and suffered from pelvic pain. Her physician diagnosed malposition of the uterus and introduced a pessary, and this had the effect of setting up metritis and double salpingitis. Yet when he (Dr. Boldt) made an examination he found that the uterus was not out of place at all. In other cases he had known the treatment for dysmenorrhœa by dilatation, divulsion, etc., to result in metritis, salpingitis and ovaritis. In all such procedures it was necessary that the patient should be fully prepared beforehand, and he looked upon the simple introduction of the uterine sound as as much of an operation as larger operations. In any case presenting itself it was important to decide whether the patient should be treated at all, and it was without doubt a fact that hundreds of women suffer from unjustifiable interference.

The suppurative diseases of the generative organs were more frequent causes of trouble than gonorrhœal infection. It was, however, impossible to make a differential diagnosis between gonorrhœal and non-gonorrhœal conditions, and we could only surmise that women were suffering from specific trouble who remained sterile for a number of years, (without any other assignable reason,) and had constant pelvic disorder. In all cases where there was sterility without an evident physiological cause he claimed that no treatment should be undertaken for this condition until a microscopical examination of the semen of the husband had been made for the presence of spermatozoa. Exposure to cold during menstruation was, of course, a generally recognized cause of disease in women.

Dr. A. H. Goelet said that one common cause of trouble was neglected dysmenorrhœa previous to married life, and it was one that was very apt to be overlooked. He related an illustrative case and then called attention to an association which he had noticed between fibroids of the uterus in married women with dysmenorrhœa during maidenhood. Having referred to neglect of proper care of the bowels as a potent cause of pelvic disease, he spoke of abnormal obliquities of the pelvis produced by faulty positions, in assumed attitudes, certain occupations, etc., as another common cause. He also mentioned tight-lacing and improper suspension of the clothing, and to improper interference of the physician, said he would add improperly executed uterine operations. In all such procedures we should use as much care to secure perfect cleanliness as in operations in the peritoneal cavity, and that we should have as much respect for the uterine cavity as for the peritoneal.

Dr. E. E. Tull said that deformities of the pelvic organs were found in a considerable proportion of cases where the individual had received all proper care during early life and was in all other respects perfectly healthy. This was usually, though not always, to be explained as the result of scarlet fever or some other exanthematous disease occurring at the age of 12 or 13. In some cases pelvic disease was due to syphilis, and in one case of oöphoritis where he had removed one of the ovaries, he found gummata in the organ. The patient was at once placed upon antisyphilitic treatment, and was thus saved from another operation, for the removal of the second ovary. Gonorrhœa he believed to be the most potent cause of pelvic inflammations, although it was very difficult to make a positive diagnosis from the fact that it was rare to find a man who had never suffered from gonorrhœa. Another frequent cause of trouble was neglect of proper cleanliness of the genital organs, and the accumulation of foreign matters in these parts, he believed, often resulted in a mild septicæmia. To this should be added lack of proper cleanliness after childbirth. As to displacements of the unimpregnated uterus, he believed that they were of no importance whatever from an etiological point of view, and that it was a mistake to suppose that they gave rise to any trouble.

Dr. Boldt having asked whether Dr. Tull meant to say that he favored the use of the douche after childbirth, the latter replied that he would not recommend the douche as a uterine treatment. After the third or fourth day he believed it to be of value, but he would not employ it immediately after delivery on account of the danger of introducing infectious material into the uterus.

Dr. Harrison said that he wished to go on record as protesting most earnestly against the practice of vaginal irrigation after childbirth. After normal parturition the vaginal canal and uterus were entirely free from septic material, and said he had the authority of the greatest of all obstetricians, Credé, for this statement. Personally he had performed all manner of obstetrical operations, and neither before or after them did he employ the douche. All that he required was that the operator and everything that came in contact with the woman's parts should be aseptic. Septic hands and instruments were a common cause of puerperal infection. Dr. Harrison said he also differed with Dr. Tull in regard to the importance of uterine displacements. He believed that retroversion was always pathological and a cause of trouble, and that it should be rectified.

Dr. Robert Murray spoke of the practice that had prevailed of late years at the Maternity on Blackwell's Island, where he is one of the attending accoucheurs. The same care as regards cleanliness was used in all cases of labor there, as surgeons were in the habit of employing in laparotomy. At the beginning of labor and just after the birth of the child a creoline douche was employed, and at all other times an antiseptic occlusion-pad (in which a bichloride of mercury solution, 1 to 4,000, was employed), was kept closely applied to the vulva. The results were equal to those of any other maternity hospital in the world. From October, 1890, to October, 1893, there were 957 cases of labor, with not a single death. In 110 of these the forceps were applied at the middle strait or the outlet, in 12 at the superior strait, before the head had engaged at all, in 28, version was performed, in 8, craniotomy, in 1, Cæsarian section, and in 2, symphyseotomy. Dr. Murray believed that the great cause of disease in married women, was the bad treatment of childbirth and miscarriage. After the latter they were especially apt to act imprudently. In unmarried women (setting aside the effect of tumors), he thought the great cause of trouble was the lack of knowledge as to how to take care of themselves during the menstrual period.

Doctors' Bills as Debts of Honor. — Doctors' bills are said to be classed as debts of honor in Austria, China and Sweden. They are left, as gambling debts are here, so far as the law is concerned, to be paid or not, according to the inclination of those incurring them. This way may not, however, be entirely a disadvantage, because it is well known that such obligations are frequently paid where legal debts could not be collected.

Recent Literature.

The Physician's Visiting List for 1894. (Lindsay and Blakiston's). Philadelphia: P. Blakiston, Son & Co. 1893.

This conveniently arranged visiting-list is now in the forty-third year of its publication, and deserves the continued success which it has met. The various tables upon doses, poisons and antidotes, disinfectants, diseases of the eye, asphyxia, examination of the urine and utero-gestation are well arranged for reference.

A Syllabus of Lectures on the Practice of Surgery. By N. Senn, M.D., Ph.D., LL.D., Professor of Surgery, Rush Medical College, etc. Philadelphia: W. B. Saunders. 1894.

The title describes accurately this volume, which is compact, of convenient size, and contains 211 pages. It is clearly and concisely written. Its contents are arranged in tabular form, with broken lines and separated headings, so that a particular affection is readily found. It is a syllabus in the true sense of the word. The work is arranged in conformity with "The American Text-Book of Surgery," and whenever the text was deficient, the writer has added facts and names of authors and operation. It is practically an index, and a very good one.

Descriptive Catalogue of the Anatomical and Pathological Specimens in the Museum of the Royal College of Surgeons of Edinburgh. By Charles W. Cathcart, Conservator, Fellow of the College. Vol. I. The Skeleton and Organs of Motion. Edinburgh: James Thin. 1893.

The Museum of the Royal College of Surgeons of Edinburgh dates from the end of the last century. The former printed catalogue was published in 1836; but as it contained only the specimens illustrating pathology, the present catalogue is in no way a continuation of the old, but rather a new and more systematic arrangement of the collection. The labor involved in new classification must have been great; but Mr. Cathcart has given the college a catalogue which is far more than a list of specimens. It is a book which has a value in itself, and which is made readable, even to the stranger, by the short clinical notes added to the cases.

Clinical Gynæcology. Being a Hand-Book of Diseases peculiar to Women. By Thomas More Madden, M.D., F.R.C.S., Ed., etc. With 259 illustrations. Philadelphia: J. B. Lippincott Co.

This work embodies forty-seven lectures, which contain the results of the author's teaching, extending over a quarter of a century. They have been thoroughly revised and put into form for publication, and the result is on the whole very satisfactory.

It covers the whole range of gynæcological subjects, and even includes the diseases and abnormalities of pregnancy, which, with the exception of ectopic gestation, are not usually treated in a work of this kind.

The general tone of the work is conservative and safe, perhaps too much so for our American ideas, inasmuch as he rejects entirely various operative procedures which have proved their usefulness and their right to be employed in suitable cases. For instance, he does not recommend the employment of the Alexander operation, and utterly rejects ventro-fixation as a cure for obstinate and adherent retro-displacements.

The book, taken as a whole, is interesting and instructive reading. The illustrations are not quite up to the standard of the latest works on gynæcology, and some of them have outlived their usefulness.

A Dictionary of Medical Science. Containing a Full Explanation of the Various Subjects and Terms of Anatomy, Physiology, Medical Chemistry, Pharmacy, Pharmacology, Therapeutics, Medicine, Hygiene, Dietetics, Pathology, Bacteriology, Surgery, Ophthalmology, Otology, Laryngology, Dermatology, Gynæcology, Obstetrics, Pediatrics, Medical Jurisprudence, Dentistry, etc. By Robley Dunglison, M.D., LL.D. Twenty-first Edition, thoroughly revised and greatly enlarged, with the Pronunciation, Accentuation, and Derivation of the Terms, by Richard J. Dunglison, A.M., M.D. Philadelphia: Lea Brothers & Co. 1893.

This Dictionary needs no introduction to the medical public. The former editions were the standard medical dictionary for many years. The last was issued in 1874. Since that time, and especially within the last ten years, a number of rivals of greater or less pretension have laid claim to public favor.

With the great progress and many changes in medicine and the allied sciences during that time, a new edition was much needed, and we are glad it has been supplied. Forty-four thousand new subjects and terms are contained in this edition. The volume is enlarged; but by rigid condensation and the omission of obsolete matter the dictionary is still kept within the limits of one volume — a large volume it is true, but not unwieldly or inconvenient for consultation.

The title-page gives the scope of the work and the aim of the editor, which have been faithfully and judiciously executed. Without entering into detailed criticism, and admitting frankly at once that any such work must necessarily exhibit some errors and some omissions, we do not hesitate to recommend this old friend in a new form as once again admirably adapted for every working medical library.

Sciatica: A Record of Clinical Observations on the Causes, Nature, and Treatment of Sixty-eight Cases. By A. Symons Eccles, M.B., Aberd. Small 8vo; pp. viii, 88. London: Macmillan & Co. 1893.

This little monograph, which was originally published in the *Practitioner*, states nothing that is new with reference to the cause or the nature of sciatica. Based on a limited number of cases, the author states a few well-known facts, but he has omitted to give the results of more thorough recent observations, — much of the work is devoted to the treatment. He commends rest, warmth, massage and electricity, swinging the leg in a Salter's swing, and swathing it in flannel. He commends ironing the leg with a hot flat-iron electrode. The book is clearly and pleasantly written.

Dr. Kent, in the Glasgow *Medical Journal*, says: "I would make the degree in Arts compulsory upon all candidates for the degree of Medicine and Surgery, and I undertake to say that not one medical graduate of five years' standing out of a hundred would, upon looking back, consider the time spent over his Arts course had been wasted."

THE BOSTON

Medical and Surgical Journal.

THURSDAY, JANUARY 18, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 WASHINGTON STREET, BOSTON, MASS.

REPORT OF THE MASSACHUSETTS STATE BOARD OF LUNACY AND CHARITY.

THE State Board of Lunacy and Charity, in its Report for the year 1893, makes five recommendations for legislation:

(1) A separate hospital for epileptics.

(2) The appointment of medical examiners in lunacy by local judges, as in New York.

(3) Six months' residence in the State as a prerequisite to a commitment to a State hospital for the insane, in order to avoid having insane persons brought here from other States for the sake of being committed to our hospitals.

(4) Authority to transfer insane patients from the hospital for dipsomaniacs and inebriates to one of the hospitals for the insane without new commitment papers.

(5) A medical registrar for each of the hospitals for the insane, whose duty it shall be to keep the hospital records, which are now quite imperfect.

The Massachusetts law provides for the ordinary commitment of an insane person to a hospital for the insane by the judge upon the sworn certificates of two physicians, each of whom is a graduate of some legally organized medical school, and has practised three years in the State, and neither of whom is connected with any hospital or other establishment for treatment of the insane, emergency cases being committed by the judge within five days after the patient is placed in the hospital, with the least possible delay, and under proper restrictions to prevent abuse. There is no penalty if unqualified physicians sign certificates, or if judges accept their certificates without sufficient scrutiny of their qualifications. On the whole, our law has worked reasonably well in all respects and remarkably well in most respects, although certificates of insanity are sometimes valueless by reason of their meagreness and incompleteness, as happens under all laws and in all countries, England and Scotland even included. In November last, a patient was received at one of the State hospitals, committed in due form by the judge, but upon the certificates of two "doctors" possessing diplomas of a bogus medical college, in violation of the statutes. The patient was discharged as not insane two days later, after a brief examination of the evidence as to his insanity, although it is only fair to say that in court his insanity was testified to by one of the leading experts on insanity in the State. In commenting on this case, the Board says:

"In New York, any judge of a Court of Record may qualify a physician properly recommended as an examiner in lunacy, and give him a certificate to that effect, and no mittimus can be signed by a physician not a qualified examiner in lunacy. This would seem to be an excellent provision in lunacy laws, and the Board recommends its adoption in this State."

It is not difficult for a respectable general practitioner in New York to get his certificate, which is simply an official declaration of the qualifications required by the Massachusetts law, except in its limitation as to being connected with any institution for treating the insane; and the question of the insanity of the patients committed, there as here, "must of necessity fall to the superintendent of the hospital to which they are committed," especially in some doubtful or difficult cases, where "judges of courts of record appear to be going farther than the actual requirements would seem to justify. If this tendency continues in any marked degree, it will be necessary to have such cases determined by the courts." [1]

The New York law also has its difficulties, and experts are by no means agreed that it is in any way better than ours, except that it would be a great gain if our Central Board should provide uniform and complete blank certificates for commitment, and if their use should be required in all cases, as is the law in New York. Our law is so liberal and flexible that many fear that the effect of calling the attention of the legislature to it would be to make it worse than it now is, as has been twice unanimously voted by the councillors of the Massachusetts Medical Society.

The Board urges the necessity of frequent inspection — in fact, of a supervision at night as constant as that by day — and of some appropriate way by which patients can be inspected in their rooms at night without being disturbed. Certain established rules of precaution are seemingly more uniformly followed in other States than they are in Massachusetts, where the institutions for the insane show a wide difference in the manner in which night-supervision is conducted.

The law concerning commitments to the Westborough Insane Hospital permits those desiring homœopathic treatment to be sent there at their own or their friends' request. When patients are sent from Suffolk County to Westborough, those desiring other treatment than homœopathic have no option in this matter. There are disadvantages connected with this liberality of method.

The Board recommends laboratories for scientific research, medical-improvement clubs and training-schools for nurses in all hospitals for the insane, and suggests that all patients be photographed upon admission, as is done at the Westborough Hospital, by which means escaping dangerous patients might be identified. Occupation is advised so far as it is practicable to employ the patients, and "something more than a long-existing routine treatment, into which it is easy to lapse, may properly be looked for in Massachusetts hospitals."

---

[1] Fourth Annual Report of the New York State Commission in Lunacy, Albany, 1893, pp. 246 and 247.

Of the hospital for dipsomaniacs and inebriates, the Board disapproves of too much lenity and consideration, and an indulgent parole system for drunkards, suggests enforced labor and discipline, and condemns the looseness of many of the commitments, by which "an accumulation of inmates of disorderly and criminal habits and tendencies imperil the success of the humane venture of the State in its effort to treat habitual inebriety of itself by just and rational methods."

A striking case is cited by the Board, which illustrates the possibility of gross abuse in the face of laws prepared with the greatest care for the protection of the insane and hospital management second to none in the world in its solicitude for the welfare of its patients.

A private patient who had been in the McLean Asylum twenty-seven years, legally committed and detained, with the late Dr. Isaac Ray as one of his certifying physicians, seventy-five years old, demented and subject to convulsions which were increasing in frequency, was summarily removed by a deputy sheriff with a writ of *habeas corpus* and placed in the hands of strangers in one of our large hotels, his old attendant and his guardian being denied access to him. On the fourth day he was returned to the asylum, the judge deciding that his commitment was legal. On the following day the judge passed a further order, setting out that it was conceded that —— was not of sound mind, and that he was properly in the custody of the asylum; and after reciting that it now only "remained for the court to inquire whether it is best for said —— to be further kept and cared for at said hospital, or in some other manner," appointing a guardian *ad litem*, "charged to care for his interest in this investigation, and particularly to inquire in such manner as to him shall seem best, and to report to the court at such time as he may find it convenient, whether it is best for said —— to be cared for in the said hospital, or in some other manner, and if in some other manner to report to the court some scheme for his care." The guardian *ad litem*, after a careful investigation, lasting more than two months, reported to the court that Mr. —— had better remain in the hospital; and a final decree was entered, dismissing the original petition, and remanding Mr. —— to the custody of the hospital. In the ultimate result, therefore, it may be said that no wrong has been done, either to the hospital or to the patient confined there; but the whole proceedings have been so extraordinary, and so inconsistent with the carefully-guarded provisions of our statutes relating to the insane, and to the powers and duties of the judicial and other officers of the Commonwealth as to such persons, that the case should receive a more extended consideration.

With the evidence which we have given in the two cases mentioned and in the quotation from the report of the New York Commissioners, it may be doubted whether the medical profession would be ready to give to all judges the discretionary power of appointing permanently such examiners in insanity as they might see fit to appoint.

◆

THE MICROBE OF SCARLATINA.

Despite the progress of bacteriology, the pathogenic microbe of scarlet fever still remains undetermined, unless, in fact, the views enunciated by Bergé at a late meeting of the Société de Biologie (December 10, 1893) should find acceptance. He states that it is useless any longer to search for a new microbe as the cause of this disease, and that scarlatina is primarily a local disease, with secondary infections (the eruption, etc.) due to the formation and absorption of toxines; the pathogenic agent is the streptococcus pyogenes, the microbe of erysipelas, of puerperal septicæmia, etc. In common or tonsillar scarlatina, the streptococcus finds a rich culture field in the crypts of the tonsil and there secretes (in all probability) "an erythematogenous toxine," whose diffusion throughout the organism produces the cutaneous or mucous eruption.

Bergé remarks that the tonsillar affection takes precedence in order of time, and that while the microscope invariably reveals the presence of the streptococcus in the tonsillar crypts, bacteriologists have never found microbes in the cutaneous exanthem, even by the recent methods of research formulated by Nicole.

Puerperal and traumatic scarlatina results from the local streptococcus-infection of the uterine (or other) wound, exception being made of morbid coincidences and of cases of tonsillar scarlatina which may be met with in the course of certain epidemics of puerperal fever, and are sufficiently explained by the existence of the common infectious agent, the streptococcus. It is admitted, moreover, that there may be scarlatina without eruption, characterized exclusively by the angina.

The principal arguments on which this writer bases his conclusions may be summed up as follows: (1) the succession of the eruption to the tonsillitis in common scarlatina; (2) the fact that careful observers have never found the tonsillar affection absent, even in certain rare cases where its presence was overlooked and denied (the so-called *scarlatina sine angina*); (3) the existence of a scarlet fever, really without amygdalitis, of uterine or traumatic origin; (4) the existence of a scarlatina without eruption in which the streptococcus-tonsillitis and its complications constituted alone the disease; (5) the constancy of the streptococcus in the tonsils of scarlatinous patients; (6) the streptococcic nature of the complications of scarlatina; (7) the relations of scarlet fever to the puerperal infection; and, lastly, the ready demonstration of the "erythematogenous" property of the streptococcus (pyæmic eruptions, infectious erythemata of bucco-pharyngeal origin, etc.).

These conclusions are also corroborated by the study of the clinical comparison between the acute amygdalitis (generally due to the streptococcus) and scarlatina (contagiousness, the same duration of the incubation, the same possible complications, similarity of the febrile cycle, the same symptomatology, save the eruptions, etc.).

The diffusion of the infectious agent is no argument against the view advanced; we know only in part its modalities and its divers pathogenic actions. The nonrecurrence of the disease can be affirmed only in respect to the eruption; the tonsillar affection may return again and again with the same violence.

It can hardly be said that M. Bergé's theory, which we have endeavored to state above, explains anything more than the complications and sequelæ of scarlet fever in connection with which a variety of common microbes, and in particular the streptococcus, have been found; it does not sufficiently explain the specific eruption, nor can it be said that this is identical with the erythema of puerperal infection. It will now be in order for M. Bergé to isolate the specific "erythematogenous" toxine, and show that it is produced by some "modality" of the streptococcus; then his chain of evidence will be complete.

◆

MEDICAL NOTES.

PROFESSOR SENN'S GIFT TO CHICAGO. — Prof. Nicholas Senn has given his entire collection of medical books to the Newberry Library of Chicago. A large part of this collection was once the library of Prof. William Baum, of Göttingen. Dr. Senn retains only his working library; all the others are now at the use of the medical profession of Chicago. The money value of the collection is estimated at fifty thousand dollars.

A FOUR-YEARS' COURSE AT JEFFERSON MEDICAL COLLEGE. — At a meeting of the Faculty of Jefferson Medical College held on January 8, 1894, it was unanimously resolved to institute a compulsory four-year course with the session 1895–96. This step was taken in order that the large clinical service of the Jefferson College Hospital (350 cases a day) might be utilized to the fullest extent in carrying out the desire of the Faculty to provide advanced medical education of a practical character.

THE CAMERON PRIZE. — Mr. Victor Horsley has been given the Cameron Prize of the University of Edinburgh for the last year. The prize consists of the income from a sum of £2,000, and is given annually "to the practitioner or member of the medical profession who shall be adjudged to have made the most valuable addition to practical therapeutics during the year preceding; and in determining the word 'therapeutics' shall be taken in its widest sense as including every agent or agency capable of influencing the human body in the maintenance or improvement of health, avoidance or cure of disease, or the alleviation of suffering."

THE ROME MEDICAL CONGRESS. — The International Medical Congress at Rome will have no lack of papers. Already a thousand articles have been given a place upon the programme. Up to the middle of December there were nearly four thousand names registered of persons intending to be present to listen to the one thousand papers.

AN INTERESTING JENNER RELIC. — The prevalence of small-pox in England, and the insufficient protection of the people by vaccination was a fitting time for the discovery of an interesting relic of Edward Jenner not long ago. At a sale of unredeemed pledges at a London pawnbroker's, there was purchased the casket in which the freedom of the city of London was presented to Jenner on the 11th of August, 1803, for "his skill and perseverance in the discovery of, and bringing into general use, the vaccine inoculation."

BOSTON AND NEW ENGLAND.

SMALL-POX IN BOSTON. — During the week ending at noon, Wednesday, January 17th, there were two deaths from small-pox in Boston. No new cases were reported. There are now eleven patients in the hospital on Canterbury Street.

SMALL-POX IN LOWELL. — There was another death from small-pox in Lowell, Mass., this week, making the third death from the disease this year.

DEATH AT AN ADVANCED AGE. — Mr. Edward Ryan, the oldest resident of Newton, Mass., died January 11th, aged nearly one hundred and ten years. He was the father of sixteen children; the oldest one now alive, being the third of the sixteen, is seventy-one years old.

A GIFT TO THE PORTSMOUTH HOSPITAL. — Mr. George Bilbruck has given the trustees of the Cottage Hospital at Portsmouth, N. H., ten thousand dollars for a new hospital building fund.

INFLUENZA IN PITTSBURG, N. H. — A severe epidemic of influenza is prevalent at Pittsburg, N. H., nearly the whole adult population being ill. There have been twelve deaths in this and the neighboring town within the last few days.

AN ESCAPE FROM AN INSANE ASYLUM. — Two inmates of the State asylum for the insane at Cranston, R. I., made their escape last week after smothering the keeper with a blanket and locking him in an empty room. After the keeper was rescued he was discharged for neglect of duty.

VACCINATION: A STUDY IN BLACK AND WHITE. — A physician in Boston who has been vaccinating the employees of some of the large hotels, reports that he was able to vaccinate forty-eight white persons an hour, but only thirty-eight negroes in the same time. As all the other conditions were the same, the greater thickness of the black man's skin suggested itself as the explanation.

NEW YORK.

The Governor's Annual Message. — The annual message of the Governor, submitted to the Legislature January 2d, contains considerable matter of interest to the medical profession. In regard to the preservation of the Adirondack forests, the Governor says: "The year just ended has marked a new era in the State in the matter of forest preservation. A new policy has been established, whose good results are already far beyond expectation." During the year a large extent of territory, valued at a million dollars, was added to the State Preserves, not only without expense to the State, but with an actual profit in money sufficient to pay the expenses of the bureau. Such a demonstration of the immediate money advantage of the tax-payer from preserving forest land, to say nothing of the climatic, meteorological and æsthetic gain, ought to be an incentive to the people of other States to continue such good work.

Public Health. — On the subject of the public health the Governor says: "The spread of cholera in Western Europe last spring called for extra work on the part of the State Board of Health to prepare for the reception of the disease, should invasion take place. Local boards of health throughout the State are required to report upon the sanitary condition of their municipalities, and as to what arrangements had been made to care for cases of cholera, if any came. In order to assure active and efficient work, six inspectors were appointed by the State Board to visit all places of entry into the State, and such other places as would be exposed, reporting the needs for further sanitation, erection of hospitals, disinfecting stations or such like matters of importance to the public health. The wisdom of this work has been well shown in greater energy on the part of local health authorities; and while it is a matter of congratulation that cholera did not reach this side of the Atlantic, had it done so, the readiness in which the most exposed places were put was an assurance that an extended epidemic would have been prevented. The precautions at the Quarantine Station in New York Harbor were equally vigilant and thorough."

Care of the Insane. — Much space is devoted in the message to the matter of State care of the insane. In regard to this the Governor says, in part: "One of the inevitable results of the new system of State care was that the Central State Board should be endowed with reasonably broad powers of supervision and regulation. It was inevitable also that the creation of such a central board with broad powers should lead to more or less conflict between it and the local boards of managers which were established for each hospital, and whose official life, in most cases, considerably antedated that of the State Commission. That conflict was quite marked and spirited immediately after the adoption of the State Care Act, but subsequently subsided after the courts had upheld the powers assumed by the Commission. It has arisen again, however, within the last two months, and there seems to exist to-day anything but a cordial feeling of co-operation between the State Commission in Lunacy and the local boards of hospital managers. . . . I have endeavored, by bringing local managers together with the State Commissioners, to ascertain where the causes for grievances lay, and to bring about their correction so far as the administration of the law was at fault. These conferences have disproven many published allegations, and I am confident that as soon as the new system is fully understood it will prove satisfactory to the people. At the same time, the existence of the local boards of managers will serve a useful purpose in checking any arbitrary tendencies on the part of the State Commission. Certainly, in carrying on so noble a State charity, there should be no unnecessary friction among public officers. Neither personal nor political considerations should find any place in the discharge of this official obligation. For this reason, we should not only establish sufficient safeguards around the administration of the law, but encourage harmonious enforcement of its provisions by administrative officers."

Tuberculosis in Cattle. — This subject is thus spoken of: "The examination of cattle for tuberculosis has been steadily pushed. In all, since January 1, 1893, 19,001 head have been examined, and 613 killed to prevent the spread of the disease. Microscopical and bacteriological examinations have been made of milk and specimens made *post-mortem*, showing the presence of the tuberculosis germ in all. Care is exercised in the examinations, and careful records are kept. The result will be, if work in this direction is continued, to improve the cattle in the State, enhance the dairy interest, and add a further protection to the public health by removing this source of disease germs."

A Dislocated and Fractured Neck. — There is at present at the Gouverneur Hospital, a lad nine years of age, who was knocked down by a truck on January 10th, and suffered a dislocation and fracture of the cervical vertebræ. The dislocation was set, and the patient placed in a plaster-of-Paris dressing. As the fracture was slight and the spinal-cord apparently uninjured, he seems to be in a fair way of recovery. Since the apparatus was applied he has been gradually improving. His mind is perfectly intelligent and there is no paralysis of motion; but he does not articulate very well, and his respiration is somewhat labored and irregular.

Dr. Stoddard's Appointment to the State Board of Charities. — Governor Flower has nominated Dr. Enoch V. Stoddard, of Rochester, as a member of the State Board of Charities, to fill the vacancy caused by the death of Mr. Oscar Craig, and the nomination has been confirmed by the Senate. Dr. Stoddard was born in Connecticut in 1840, and was graduated from Trinity College. For two years he was at the Yale Medical School, and then completed his studies at the Albany Medical College, from which he received the degree of M.D. in 1863. In the same year he was commissioned a surgeon of volunteers by Governor Seymour, and went to the front with the 65th New York Regiment. Immediately after the close of the war Dr. Stoddard commenced the practice of his profession in Rochester, and for many years he has been on the staff of the City Hospital there. In 1873 he was appointed to the chair of Therapeutics and Hygiene in the Buffalo Medical College, and in 1892 was made Professor Emeritus.

◆

Miscellany.

ELEVENTH INTERNATIONAL MEDICAL CONGRESS.

A letter directed to Dr. A. Jacobi by the Secretary-General of the Eleventh International Medical Congress, and dated December 19, 1893, contains the following communications:

American members will pay on the English, French and Italian railways single fares for double journeys, and will obtain a reduction of twenty per cent. on fares for Italian round-trip tickets.

"The documents required for their identification will be sent to you in January, and Americans intending to visit the Congress will have to apply to you for them.

"Full particulars concerning the journeys will accompany the documents.

"Messrs. Thos. Cook & Son, London, Paris, Rome and Naples, should be applied to for accommodation and for tickets for the excursion at Rome, Naples, and to Sicily. Such excursions will be arranged at Rome under the guidance of Mr. Forbes, member of several scientific societies and correspondent of the *Times* — for Naples, three days, including Vesuvius, Pompeii, Capri, Sorrento, Castellamare, Bajæ, etc. — for Sicily, ten days from Naples, including Messina, Taormina, Catania, Girgenti, Siracusa, Palermo, and return to Naples.

"The fares for members of the Congress will be considerably reduced and comprise hotel accommodations, carriages, guides, boats, etc. — about 70 francs each, for the three days, and 285 francs for the ten days.

"Full particulars concerning these excursions will be contained in a leaflet to be added to the instructions and documents for the journey."

Only the North German Lloyd (22 Bowling Green) and the Compagnie Générale Transatlantique (3 Bowling Green) have thought fit to grant any reductions to Congressists.

◆

FOOT-BALL *VS.* INSURANCE.

In a recent editorial in the *New York Medical Examiner*, Dr. G. W. Wells speaks of the bearing of foot-ball upon the insurance of a player. The subject of athletics is one which every insurance company considers in a very practical way. As underwriters, they are obliged to look upon foot-ball as upon any other occupation; that is, in the light of danger to life or health, or as a cause of shortening the normal longevity of man.

There are in the game three classes of casualties: namely, those which are fatal, either immediately or shortly after; second, those from which recovery takes place sooner or later, with or without deformity; and third, those from which recovery never takes place, but ever after the victim carries with him results or reminders, either physical or mental, which place him in the category of chronic invalids.

If he is a policy-holder, and engages in this dangerous game, as now presented, he is putting his company to an extra hazard, for he is in immediate and constant danger of death; and his insurance may become a claim, by death, at any moment during the season.

In view of the many insidious and secondary affections resulting from foot-ball, of which he gives a most appalling list, Dr. Wells considers that a history of having played foot-ball should cause a more rigid scrutiny of the applicant for insurance by the examiner than in ordinary cases. In spite of this view that foot-ball and athletics are liable to render the applicant a questionable subject for insurance, we can but think that the members of our foot-ball and athletic teams are about as healthy and promising specimens of young manhood as are often seen, and that, save for social reasons, they stand in less need of insurance than any other class of men.

◆

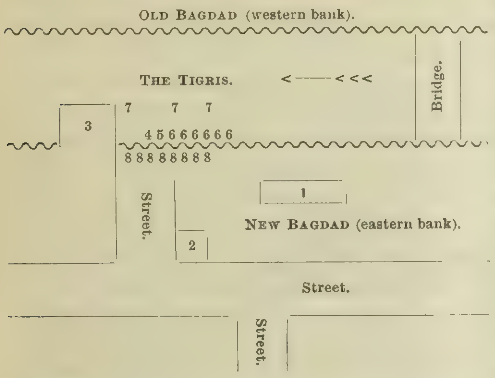
SELF-MUTILATION IN CHINA.

The *Medical Press* gives the following account of a curious custom which only the ancestral worship of China could account for:

"The dearest hope known to an elderly Chinaman is to have descendants, and the main reason of this appears to be that when he comes to die his last days may be cheered by the conviction that he has left a goodly following of his own flesh and blood to worship, as the custom is in China, at his grave. But even the calculations of the "Heathen Chinee" are, in this respect, sometimes prone to be wofully thrown out of gear by a concatenation of circumstances, the occurrence of which could not have been foreseen. Of course, the Chinese father relies on his sons to propagate the race, and when there is only one son left upon whom this responsible duty devolves, it is obvious that much should be made of him. Facts go to show that sons are fully aware of the important position which in this particular they fill in the domestic circle, and consequently they expect and demand a full measure of consideration and regard from their male progenitors. Should it happen, however, that any serious quarrel arises between father and son, the son has it within his power to revenge himself to an extent which is absolutely unknown in more civilized communities. Probably no one but a Chinaman could understand the anguish of a Celestial father who suddenly learned one day that his only son had by one swoop of a razor relieved himself of his penis and testicles! But this is the mode of retaliation which aggrieved Chinese sons adopt towards fathers who offend them. Dr. Robert Coltman, of Pekin, has just recorded two cases in which, for the reason mentioned, the sons made a clean sweep of their generative organs.

A SANITARY SERMON IN DIAGRAM.

Dr. John C. Sundberg, the United States Consul at Bagdad, has sent to the *Pacific Medical Journal* so telling a sketch of the sanitary condition of the water-supply of Bagdad that it is worthy of reproduction. It needs no comment.



1. United States Consulate. 2. Board of Health. 3. A house built out in the river, the wall of which stops dead cats and dogs, human fæces, etc., floating down. 4. Place where the water-carriers take the water which we have to drink. 5. Women and men washing clothes, rugs, etc., stained with cholera dejecta. 6. A row of men defecating in the water and washing their ani, also urinating. 7. Dead buffaloes, horses, dogs, cats, etc., floating down the river. 8. Water-carriers' donkeys always urinating and defecating while waiting for their loads.

◆

PATHOLOGY AND THE SCIENTIFIC MIND.

In his introductory lecture at the Medical College for Women, Dr. William Russell[1] spoke of the development of our knowledge of pathology and the evolution of the scientific mind to its present ideal.

The most primitive idea of pathology was simple and spiritual enough. Disease and sickness were the work of evil spirits who, by the initiated, could be exorcised by charms and ceremonies. Prevention and exemption from disease might be sought for in a devil-worship. An advance upon this was the attributing of disease to a spirit, not normally evil, but beneficent; disease being the manifestation of his righteous anger, relief was sought not by propitiation but by sacrifice. The Hebrew idea was but a modification of this in the monotheistic belief of special revelation and punishment. The speculative character of the Greeks led to a different order of things, with them it became the province of philosophy to explain the ever visible phenomena of disease and death. There were hot, cold and moist hypotheses — doctrines of one cause. From this speculative chaos light arose when Hippocrates separated medicine from philosophy, and began crudely and falteringly to make medicine a science of observation instead of speculation. It was this that gave to him the fathership of modern medicine.

No material advance was possible until the structure of the body was followed and its various functions more or less defined. As knowledge of these was being acquired, as new facts were discovered, and new light was thrown upon the working of the complex animal organism, their bearing upon diseased processes led necessarily to controversies and contentions, and there were solidistic and humoral schools of pathology, there were beliefs in spontaneous generations, in epidemic constitutions, and so on, all of them indicating and proof of the uncertainty of knowledge and its incompleteness. However, the bounds of reliable knowledge gradually extended. Following upon assured knowledge of normal structure came the recognition of abnormal structure in the various parts and organs of the body.

This progress has gone on till such "is the state of our certain knowledge of visible processes, that in the great preponderance of instances there is no room for differences of opinion amongst experts. Cases, however, remain in which from incomplete knowledge there is still room for differences of view as to the interpretation of appearances; as to appearances themselves there is practically none. But even here it is necessary for the truly scientific mind to candidly and frankly dissociate appearances and their interpretation. Interpretation is sometimes a matter of provisional judgment or opinion, and often must and ought to remain so until knowledge is so complete that doubt can no longer exist. And it is this candid open-mindedness which is, I take it, the ideal scientific spirit towards which we have all to work."

The aim of medical training is the development of a well balanced judicial mind upon assured knowledge and accurate observation. The unimpassioned search for truth is the highest conception.

◆

Correspondence.

[Special Correspondence.]

LETTER FROM PRAGUE.

The Study of Pathology in Prague.

Prague, December 17, 1893.

Mr. Editor: — The conditions for the study of pathology are better here in Prague, so far as I can learn, than anywhere else in Europe. The number of autopsies is very large, and the material is well worked up from every point of view. Anatomy, histology, embryology and bacteriology enter constantly into the daily work, and my respect for each of these branches of medical science is rapidly increasing. The view of pathology taken is very broad, and the ideal taught by example is one not easy to attain. The study of pathology is centred in the Pathological Institute, a large building in the suburbs of the city on Krankenhausgasse. In close proximity to it, on the same street, are the General Hospital, the Anatomical Institute and the Chemical Laboratory. The post-mortem examinations for most of the hospitals in the city are made at the Pathological Institute between the hours of eight and eleven in the forenoon. The *Secir-Halle*, or autopsy-hall, is a large room on the first floor, and is furnished with three marble autopsy-tables. On the same floor are three large rooms for the assistants, one for the demonstrators, a room for medico-legal autopsies, the lecture-room, a chapel, macerating-room, etc.

The present Professor of Pathology is Hans Chiari, who was called here from Vienna ten years ago. In his department are three assistants, two demonstrators and several volunteers. The autopsies at the Pathological Institute and at the hospitals are divided equally among the three assistants. Chiari makes only those autopsies which are of especial importance, and also what are called clinical autopsies. These latter are made by special request before a visiting physician or surgeon and his class in interesting cases, and they take place, as a rule, several times a week.

---

[1] Edinburgh Medical Journal, January, 1894.

By eleven o'clock the autopsy-room must be in perfect order, the bodies removed and the tables cleaned. Chiari first reviews the diagnoses of the previous day, corrects mistakes present, and adds any bacteriological or microscopical notes that may be ready. Then each assistant demonstrates the organs from the various autopsies which he has made, and Chiari advises, corrects, commends or reproves as necessity demands. All the diagnoses must be given in correct Latin. After the organs have been looked over and arranged for the demonstration, the two demonstrators show first the fresh tumors which have been received, and later slide-preparations of the tumors which have already been hardened; descriptions of the appearances are entered in the histological protocoll, and the reports of the completed cases are filled out for the surgeons. In the protocoll, opposite each tumor is entered the name of the demonstrator or special student who has taken it for examination, so that if a report lags the one to blame is easily traced. Every day in the week, from quarter-past twelve to one, a lecture on pathology is given in the lecture-room across the hall from the autopsy-room. As a lecturer Chiari is delightful; he speaks without notes, clearly, distinctly and rather rapidly; his subject is perfectly arranged in his own mind; and he never hesitates in the expression of his thoughts or for the lack of the appropriate word. His lectures are illustrated naturally and easily by numerous blackboard sketches and by many beautiful and appropriate specimens from the Pathological Museum. He calls his lectures *demonstrative lectures.* Immediately after the lecture comes the demonstration of the fresh pathological specimens in the autopsy-rooms, by Chiari at one table and by one or more of the assistants at the other tables. Three times a week an autopsy is made by students during the demonstration, under the supervision of an assistant. Microscopical sections illustrative of the subject of the lectures are also shown at the time by the demonstrators.

The medico-legal autopsies are made in a room adjoining the autopsy-hall by Professor Dittrich, until lately Chiari's chief assistant; and the material obtained is also used at the demonstrations.

The following table will show the number of autopsies made each year for the last seven years:

Year.	Pathological Institute.	Children's Hospital.	Other Hospitals.	Total.
1886	824	144	75	1,043
1887	790	152	68	1,010
1888	857	212	46	1,115
1889	773	186	44	1,003
1890	882	209	93	1,184
1891	843	175	102	1,120
1892	941	157	74	1,172

The Children's Hospital is but two blocks away, and has a large autopsy-room furnished with everything needful, as have also the other hospitals at which autopsies are made. Infectious diseases furnish a large part of the pathological material, and include small-pox, influenza, scarlet fever and diphtheria.

The room for pathological histology is on the second floor, over the autopsy-hall. The class meets twice a week from five to seven P. M., doing all work by lamplight, as it is the only spare time left in the day. A student can take the course only after having heard first the lectures on pathology. Six specimens are given the class each time; and towards the close of the exercise Chiari gives a talk concerning what they have been studying. Smoking is indulged in by every one during the exercise. The class usually numbers from forty to fifty men.

The lectures on pathology are heard by about one hundred men in the course of the year; and, in spite of six lectures a week, the field of special pathology is never completely covered.

The Pathological Museum is in a large hall on the second floor, and contains over six thousand rare and valuable specimens, all carefully arranged and catalogued. On the same floor are the professor's private rooms, library, and also his home.

The assistants are also lodged in the Pathological Institute, and receive a salary of 600 guldens ($240) a year. An effort is now on foot to increase the salary to 900 guldens. Internes in the hospitals receive the same remuneration.

The examination in pathology consists of two parts, practical and theoretical, and can be taken only after a student has attended the university for five years. Any time after that, when he thinks he is properly prepared, he can apply for his examination. Besides attending the lectures and the course in pathological histology, it is customary for each candidate for examination to take three or four weeks' drill under an assistant in performing autopsies and in examining microscopical specimens. The practical examination or *rigorosum* lasts about half an hour. I have attended several of them, and found them very instructive. Usually the candidates come in groups of two or three. One is requested to describe the external appearance of the body, and to make a part or even the whole of an autopsy, demonstrating the lesions found. Another removes the brain, and later is required to demonstrate part of the organs from another autopsy. Each man must do enough to show what he knows. Immediately after the examination of gross material each candidate is given a hardened pathological specimen, from which he cuts razor sections, stains, mounts and makes a diagnosis. On the same day, but usually at some later date, comes the theoretical examination, a fifteen minutes' quiz on a variety of subjects in pathology. The examinations are public, and the dean and one other official are usually present.

Besides the autopsies, the assistants have certain other duties portioned out to them: the first assists at the demonstration, and, with the second, has charge of the bacteriological department. The second assistant looks after the instruments and the museum preparations. The third has charge of the histological course, the protocolls and the microscopes. They are appointed from the demonstrators, two in number, who make microscopical preparations of the various tumors, etc., and have numerous other duties. The demonstrators are selected from the volunteers, of whom there are usually half-a-dozen in the laboratory, those having the preference who have worked in the anatomical or other laboratories. It will thus be seen that each assistant has worked up to his position, and is well trained in the various kinds of laboratory work.

The position of assistant in the Pathological Institute is greatly sought for, for the reason that it is a great stepping-stone to the position of interne in the hospitals. Here a clinical professor chooses his own interne, who not infrequently holds his position for two, four and even for ten years. The fact that the university and the hospitals are State institutions has certain great advantages. A clinical professor in the university receives a certain clinic in the hospital, which is henceforth known by his name; and his instruction is continuous, a matter of great importance to the student. The bodies of all who die in the hospitals come to autopsy, so that the pathological lesions in each case are known, and the diagnosis previously made is verified or corrected. At home, clinical instruction is interrupted by change of service, and autopsies are few, and rarely obtained in the most interesting and doubtful cases, over which, perhaps, much time and study have been spent.

A special student in any of the various branches of medicine could hardly find a better place for the study of the pathological side of his subject than in Prague. The number of autopsies is very large, and the material interesting and varied, for the reason that chronic tubercular cases are for the most part excluded. The museum contains not only many rare cases, but also the best specimens of all the more ordinary forms of disease. The number of special students is constantly varying; at present there are three, of whom two are Russians. Chiari devotes considerable time nearly every day during the forenoon to his special students, who are taught to work in a systematic manner, and to make sketches and drawings with notes of their various preparations. His reception of strangers is most cordial; and he treats them all as fellow-workers with himself in the great field of pathology.

The bacteriological department is in two large rooms on the ground-floor, and is well fitted up with the necessary apparatus and with abundant culture media.

Briefly stated, the advantages for the study of pathology in Prague are the following:

The abundance and the variety of the pathological material, including all the acute infectious diseases.

A large museum stored with rare and valuable specimens from previous autopsies and from operations.

A large collection of histological material from various cases.

The personal supervision and instruction from the professor of pathology.

The concentration of the autopsies, bacteriological and microscopical work, museum, library and protocolls within the same building, and all under the direction and immediate control of one person.

The perfect order and system preserved in every department, from the autopsy-room to the museum, and required of every person working in the laboratory.

Very truly yours,
F. B. Mallory, M.D.

◆

MODERN REALISM AND ZOLAISM IN SPANISH LITERATURE.

Mr. Editor: — The following passages are *literal* translations from a modern Spanish society novel, and may be interesting from a medical point of view in that they show to what source the present school of writers of fiction in Spain is compelled to resort for matter interesting (?) to the general public:

"All, all had she suffered with resignation up to that moment; the auscultations, the palpations — which she considered shameful — of the accoucheur; the explorations to which she submitted her denuded body and enormous belly, in the lateral or dorsal decubitus, in order that this unknown man might examine the sides or fundus of the uterus — as he said — that he might profane her body! — as she felt assured; — the stethoscope constantly fixed upon her abdomen in order to perceive and count the fœtal heart; the spiderlike tickling in the innermost parts of her belly, so persistent and annoying that it produced spasms, a species of incessant convulsions; the vomitings, the bulkiness, the monstrous tumefaction of the breasts, with pains so acute that they made her cry to heaven; the unwieldiness of her belly, rounded, fluctuating, convex, really incommodious, which impeded the liberty of her movements; the insupportable tremblings of the fœtus in its prison, at times more constant and brusque; the varicose and œdematous condition of her lower limbs and of her vulva, which made her think of death with pleasure; the vaginal granulations so profuse that they had made of her parts a deposit of pus rather than the external genitals of a woman; . . . the leucorrhœal flow, abundant, viscid, trickling down her thighs, staining the sheets." . . .

"Rafaela was a case of rickets, or, better said, of osteomalacia; he knew, because it was plainly evident, that the primipara had no hips, that she must, consequently, have a narrow and deformed pelvis; and he knew, from a consideration of the preliminary phenomena of pregnancy, the suppression of the menses, the vomitings, the swelling of the breasts, the prominence of the nipples, the deep and accentuated coloration of the central areolæ and the increasing extension of the mottled areolæ, the evacuations of milk, the disappearance of the umbilical depression, the albumen in the urine, the vaginal granulations, the leucorrhœal flow, and in general the whole symptomatology of pregnancy; he knew that failure to bring about abortion at a certain time, and the sooner the better, before the sixth month, condemned Rafaela to death." . . .

"She had stained the counterpane of the bed with green vomitus; and as her whole body was one convulsion, from head to foot, and the vomiting never ceased, that room was transformed by her into a sewer so full of viscosities of every sort that they almost reached to the doctor's ankles." . . .

"But the good doctor from the house of succor had reckoned without his host; the host in this case was Doctor Nieto, who by his delay in operating, by his citations, and his 'distinguo's' had caused the parturient grave injuries, such as beginning rupture of the uterus and of the bladder, inflammation of the peritoneum, and an adynamic and febrile state, very evident from the mental confusion of Rafaela. Moreover, the time which he had allowed to pass without performing the operation, and the force with which the fœtal head had been compressing the parts below the straits and of the excavation, had produced in Rafaela violent contusions, which might be the origin of gangrene; and as a result of it, the formation of vesico-vaginal and utero-vaginal fistulæ, of a separation of the symphyses pubis, and as a probable result of this, the determination of exhausting inflammations and suppurations and perchance as well of a great mobility of the articulations of the pelvis; . . . or what is the same, in clearer terms: of the impossibility to walk or stand." . . .

"He made use, this doctor, the saviour, with the dexterity acquired by the hand of a man who is guided by great conscientiousness, he made use, in order to accomplish his bloody operation, of a system which merits the term 'double'; a system made up of the series of operations which together receive in obstetrical science the name of craniotomy — perforation of the skull by means of Smelley's scissors; extraction of the cerebral substance and crushing of the base of the skull by the cephalotribe — and of decollation by Lee's method; moreover he amputated the fœtal arms, perforated the chest and abdomen, and, finally, introduced the blunt hook into the pelvis of Rafaela, making traction on it, once it was well fixed, with force sufficient to extract the distorted creature." . . .

What a delicate and beautiful picture of the process of pregnancy and parturition to place within the reach of the modern Spanish woman under the guise of a society novel!

Very truly yours,
J. W. Courtney, M.D.

Roxbury, January 12th.

RECORD OF MORTALITY

For the Week ending Saturday, January 6, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Scarlet fever.	Typhoid fever.	Diphtheria and croup.
New York	1,891,306	878	330	13.86	20.90	1.21	.55	8.25
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,115,562	613	188	8.48	22.56	.64	1.28	4.80
Brooklyn	978,394	367	111	12.42	25.65	1.08	.27	8.37
St. Louis	560,000	—	—	—	—	—	—	—
Boston	487,397	277	78	8.64	26.64	1.44	.72	5.76
Baltimore	500,000	—	—	—	—	—	—	—
Washington	308,431	113	29	3.56	21.36	—	1.78	1.78
Cincinnati	305,000	111	36	9.00	13.50	.90	2.70	4.50
Cleveland	290,000	88	24	13.68	21.66	2.28	2.28	5.70
Pittsburg	263,709	—	—	—	—	—	—	—
Milwaukee	250,000	86	40	13.92	13.92	—	3.48	3.48
Nashville	87,754	26	9	—	23.10	—	—	—
Charleston	65,165	45	10	—	24.42	—	—	—
Portland	40,000	22	4	—	27.90	—	—	—
Worcester	96,217	37	5	2.70	32.40	—	—	—
Fall River	87,411	40	16	15.00	22.50	—	—	—
Lowell	87,191	29	12	20.70	10.35	—	3.45	3.45
Cambridge	77,100	39	13	17.92	15.36	15.36	—	2.56
Lynn	62,656	24	—	—	12.48	—	—	—
Springfield	48,684	12	1	—	25.00	—	—	—
Lawrence	48,355	—	—	—	—	—	—	—
New Bedford	45,886	17	3	—	5.88	—	—	—
Holyoke	41,278	—	—	—	..	—	—	—
Salem	32,233	7	1	—	14.28	—	—	—
Brockton	32,140	11	3	—	9.09	—	—	—
Haverhill	31,396	12	—	—	16.66	—	—	—
Chelsea	30,264	24	8	4.16	33.44	—	—	—
Malden	29,394	12	1	—	33.33	—	—	—
Newton	27,556	—	—	—	—	—	—	—
Fitchburg	27,146	—	—	—	—	—	—	—
Taunton	26,972	7	2	—	28.56	—	—	—
Gloucester	26,688	5	0	—	—	—	—	—
Waltham	22,058	10	1	10.00	30.00	—	10.00	—
Quincy	19,642	6	1	—	33.33	—	—	—
Pittsfield	18,802	6	0	—	—	—	—	—
Everett	16,585	5	3	—	60.00	—	—	—
Northampton	16,331	6	0	—	33.33	—	—	—
Newburyport	14,073	3	1	66.66	—	—	33.33	33.33
Amesbury	10,920	0	0	—	—	—	—	—

Deaths reported 2,987: under five years of age 941; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 325, acute lung diseases 665, consumption 344, diphtheria and croup 173, scarlet fever 35, typhoid fever 28, diarrhœal diseases 24, measles 23, whooping-cough 22, cerebro-spinal meningitis 11, erysipelas 5, malarial fever 2, small-pox (New York) 2.

From diarrhœal diseases New York, Philadelphia and Fall River 5 each, Brooklyn 4, Milwaukee and Lowell 2 each, Boston 1. From measles New York 18, Philadelphia, Brooklyn, Cleveland, Milwaukee and Fall River 1 each. From whooping-cough New York 9, Philadelphia 5, Milwaukee 3, Brooklyn 2, Boston, Cincinnati and Woburn 1 each. From cerebro-spinal meningitis New York 4, Lowell 2, Brooklyn, Cleveland, Worcester, Somerville and Chelsea 1 each. From erysipelas New York 3, Brooklyn and Cleveland 1 each. From malarial fever New York and Brooklyn 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,327,846, for the week ending December 23d, the death-rate was 24.7. Deaths reported 4,898: acute diseases of the respiratory organs (London) 635, whooping-cough 149, diphtheria 82, measles 81, fever 70, scarlet fever 63, diarrhœa 34, small-pox (Birmingham 4, West Ham 2, London and Liverpool 1 each) 8.

The death-rates ranged from 13.5 in Blackburn to 41.5 in Plymouth; Birmingham 26.8, Bradford 18.6, Bristol 33.6, Croydon 23.0, Hull 24.2, Leeds 17.5, Leicester 22.6, Liverpool 31.6, London 26.3, Manchester 22.8, Newcastle-on-Tyne 19.1, Nottingham 24.4, Sheffield 23.9, West Ham 19.3, Wolverhampton 35.3.

METEOROLOGICAL RECORD,

For the week ending January 6, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..31	30.22	22	22	16	84	81	82	N.W.	W.	12	10	N.	C.	.09
M.. 1	30.34	26	26	18	85	64	74	W.	W.	11	6	C.	C.	
T.. 2	30.20	30	30	19	68	66	67	S.W.	S.W.	6	15	C.	C.	
W. 3	29.97	38	38	31	78	83	80	S.W.	S.W.	10	13	F.	C.	
T.. 4	29.83	44	44	37	82	68	75	S.W.	S.W.	17	9	O	C.	
F.. 5	29.90	42	42	36	73	91	82	S.W.	N.	12	8	O.	O.	.03
S.. 6	30.09	34	34	31	91	90	90	N.E.	E.	5	10	O.	N.	
☞	30.08		34	27			79							.12

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 6, 1894, TO JANUARY 12, 1894.

The extension of leave of absence granted **CAPTAIN CHARLES E. WOODRUFF**, assistant surgeon, U. S. A., is further extended one month and twelve days.

Leave of absence for two months, on surgeon's certificate of disability, with permission to leave the Department of Dakota, is granted **FIRST-LIEUT. CHARLES F. KIELLER**, assistant surgeon, U. S. A.

FIRST-LIEUT. EDWARD L. MUNSON, assistant surgeon, U. S. A., is relieved from duty at Jefferson Barracks, Missouri, and will report in person to the commanding officer, Fort Assinniboine, Montana, for duty at that post.

AN ARMY MEDICAL BOARD.

An Army Medical Board will be in session at Washington, D. C., during April, 1894, for the examination of candidates for appointment to the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before March 15, 1894, for the necessary invitation, giving the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal acquaintance, from at least two reputable persons, as to his citizenship, character and habits. The candidate must be between twenty-two and twenty-eight years of age, and a graduate from a regular medical college, as evidence of which, his diploma must be submitted to the Board.

Successful candidates at the coming examination will be given a course of instruction at the next session of the Army Medical School, beginning in November, 1894.

Further information regarding the examinations may be obtained by addressing the Surgeon-General, U. S. Army, Washington, D. C.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Wednesday evening, January 24th, at 8 o'clock, by Dr. Edward Cowles. Subject, "Mental Physiology." Physicians are cordially invited.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.— A regular meeting of the Society will be held at the Medical Library, No. 19 Boylston Place, on Monday, January 22, 1894, at 8 o'clock, P. M.

Dr. H. C. Baldwin: "Two Cases of Syphilitic Origin; Meningitis and Progressive Muscular Atrophy." Discussion by Drs. M. Prince, G. L. Walton and others.

Dr. F. W. Goss: "Two Cases of Pulmonary Congestion and Œdema Occurring during Pregnancy." Discussion by Drs. E. Reynolds, C. M. Green and others.

Dr. E. G. Brackett: "The Use of Gymnastics in the Treatment of Lateral Curvature." Discussion opened by Dr. E. H. Bradford. Drs. E. M. Hartwell and C. Enebuske have been invited to be present and to take part in the discussion.

Members are kindly requested to show interesting cases and pathological specimens.

JOHN T. BOWEN, M.D., *Secretary.*

SUFFOLK DISTRICT MEDICAL SOCIETY. — The Section for Obstetrics and Diseases of Women will meet at 19 Boylston Place, on Wednesday evening, January 24, 1894, at 8 o'clock.

Dr. E. H. Stevens, of Cambridge, will read a paper on, "Twelve Cases of Obstetrical Septicæmia Seen in Consultation." Discussion by Drs. W. T. Councilman, C. M. Green, M. H. Richardson and C. W. Townsend.

Dr. H. C. Baldwin: "Three Cases of Retroversion."

EDWARD REYNOLDS, M.D., *Chairman.*
GEO. H. WASHBURN, M.D., *Secretary.*

APPOINTMENTS.

The managers of the Boston Dispensary have made the following appointments: **HORACE D. ARNOLD, M.D.**, assistant in the orthopedic department; **JOSEPH C. STEDMAN, M.D.**, assistant in the department for diseases of the rectum and anus; and **F. R. TOWER, M.D.**, and **FARRAR COBB, M.D.**, district physicians.

RECENT DEATH.

CHARLES GILMAN SMITH, M.D., died in Chicago, Ill., January 10th, aged sixty-five years. He graduated from Harvard College in the class of 1847 and from the medical school of the University of Pennsylvania in 1851.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the American Ophthalmological Society, Twenty-ninth Annual Meeting, New London, Conn., 1893. Hartford: Published by the Society. 1893.

Twenty-third Annual Report of the Bureau of Statistics of Labor, March, 1893. The Annual Statistics of Manufactures, 1892. Boston: Wright & Potter Printing Co., State Printers. 1893.

Essentials of Practice of Medicine. By Henry Morris, M.D. And an Appendix on Urine Examination. Illustrated. By Lawrence Wolff, M.D. Third edition, enlarged by some three hundred essential formulæ, selected from eminent authorities. by Wm. M. Powell, M D. Philadelphia: W. B. Saunders. 1894.

The Art of Living in Australia. By Philip E. Muskett, Late Surgeon to the Sidney Hospital; Formerly Surgeon Superintendent to the New South Wales Government; Medical Superintendent, Quarantine Station, Sidney, and Senior Resident Medical Officer, Sidney Hospital. London, Edinburgh, Glasgow, Melbourne, Sidney and New York: Eyre & Spottiswoode, Her Majesty's Printers.

An American Text-book of Gynecology, Medical and Surgical, for the use of Students and Practitioners. By Henry T. Byford, M.D., John M. Baldy, M.D., Edwin Cragin, M.D., J. H. Etheridge, M.D., William Goodell, M.D., Howard A. Kelly, M D., Florian Krug, M.D., E. E. Montgomery, M.D., William R. Pryor, M.D., George M. Tuttle, M.D. Edited by J. M. Baldy, M.D. With 360 illustrations in text and 37 colored and halftone plates. Philadelphia: W. B. Saunders. 1894.

Lecture.

LECTURES ON SURGERY.[1]

BY DAVID W. CHEEVER, M.D.,
Professor of Surgery in Harvard University.

XXIII.

HIP DISEASE. — POTT'S DISEASE.

You must conceive, of course, that these lectures are mere outlines; and when you see the large books that have been written upon these special deformities, and reflect how much the student has got to carry in order to learn all that is known on any given subject, it seems to be rather discouraging; but our business is merely to mass together certain facts, to draw outlines, so to speak, which you can fill in afterwards; and, therefore, if a great many details are omitted, you must expect that you can only get the principal things firmly fixed in your minds, and that is all that I attempt to do.

In speaking of hip disease, I said that the earlier symptoms of the disease were the slight limp, eversion of the foot, apparent elongation of the limb, and that, soon after, this gave place to more marked lameness, drawing in of the foot, evidently inversion of the limb with decided shortening, this marking the completed stage of the disease. In the earlier stage of the disease the diseased condition begins in the synovial sac, or it begins in the head of the bone. In one case it proceeds to the pulpy degeneration of the synovial membrane, ulcerating the cartilage and finally affecting the bone; and in the other case it starts as cheesy, tubercular deposit in the head of the femur, destroys the cartilage by its contact with the disease and the cutting off of its nutrition, invades the joint, converts it into an abscess, bursts through the joint, and finally ends in dislocation of the bone. The child, at first a little lame, now becomes a great deal more lame, and shrieks out with pain at night. After a period of great feverish excitement, a space of time follows in which there is entire relief, and the child seems better. This coincides with the bursting of the abscess through the capsule of the joint, getting rid of the tension and relieving the extreme symptoms of pain and fever. Subsequently to this inversion and shortening of the limb, another period of fever comes on, marked by the progress of the abscess into the cellular tissue, finally breaking through a small opening through the skin, and this again followed by a period of relief. The shortening and inversion which take place at this period are due to dislocation of the head of the femur, which occurs as perfectly on the dorsum of the ilium as if it were in consequence of violence. In other words, the ligaments have given way, the joint being disorganized, synovial sac ruptured, the head is pulled out from the socket, thrown out on the dorsum by the powerful action of the muscles, and shortening of one and a half to two and a half inches, with inversion of the limb, takes place.

Subsequently to this, nature pursues one or two courses, usually the latter. The first course would be to try to establish a new and false joint on a new part of the bone, the head resting on the dorsum. The other and more common termination is to establish anchylosis — absolute bony anchylosis between the diseased and wasting head of the femur and the false socket, surrounded with osteophytic growths, on the dorsum of the ilium. This is the usual termination. The child who goes through all the stages of the disease from the first synovial inflammation ends with anchylosis, with the head of the femur against the dorsum of the ilium in the characteristic position of dislocation of the thigh upon the dorsum of the ilium. Sometimes, in fortunate cases, this is all the deformity that ensues; but in many other cases, on account of entire neglect of treatment in keeping the limb in the proper position while these changes are taking place, the patient yields to the natural impulse to relieve suffering by drawing up the leg. The leg, then, is not only shortened by the disease, but the knee is drawn up and shortened by the efforts of the patient. In addition to this, powerful adduction takes place, so that, in extreme cases, the deformity is great, the head of the femur being dislocated and the leg shortened, and the knee drawn up nearly in contact with the abdomen. These are the extreme cases of deformity which afterwards result in anchylosis, with a perfectly useless limb; the child walking with crutches upon one foot, and the other foot wasted, and carried high (in the air). This is the natural course of the disease if it pursues all its stages. It does not necessarily, however, pursue all these stages, for sometimes it becomes arrested in its progress, and then, in some very favorable cases, the disease may be made to stop short of dislocation, and in some cases, probably, stops short of real abscess; or if slight abscess exists, it does not become enough to burst the capsule, becomes inspissated and absorbed, and the child gets well. The head of the bone altered somewhat, but still inside the socket, and fastened by fibrous if not bony adhesions. That is in the mild cases.

Inasmuch as treatment, to be effectual to arrest the disease, must be applied at a very early stage, it becomes important to know what are the exact diagnostic signs of this disease when it is first beginning, for it is in the very early stages only that we can do much good.

Lameness, limping and pain moderately marked, usually concealed a good deal by the child. The hollow of the back is very peculiar. The child, laid down on a table, arches the back in such a way that the hand can be readily passed under the small of the back without touching the back. On examining such a child and comparing the two sides, it will be found that the first noticeable change is a loss in the sharp contour of the line of the groin which separates the femur from the abdomen and pelvis; and next to this a wasting of the glutæi muscles, due to disease, and a consequent loss of that sharp fold which marks the division of the lower edge of the glutæi from the posterior femoral group of muscles; in addition to this, an increased prominence of the greater trochanter of the femur. If now the two joints of this child are examined, first the hip of the well side and then of the diseased side, a marked difference will be found. In case of a healthy femur, we may take the femur and rotate it almost as freely as the humerus without eliciting any movement on the part of the child. The moment we touch a diseased limb we have a joint locked by the muscles, firmly held by muscular spasm set up at once by nature the moment we touch the limb in order to avert the chance of suffering from moving the diseased joints upon each other; and although the child may go about with a moderate amount of motion in these cases, yet the suddenness and completeness with which nature will lock the joint when it is seized and attempted to be moved is a very significant fact. We find a limited motion. We find that the movement which we are making is moving the pelvis as well as the femur; that there is an anchylosis which is false, and which, under ether, is shown to be absolutely false, but which demonstrates the great difference between the diseased and the healthy side. I do not think that this muscular spasm and anchylosis is ever wanting in the well-marked case; and that, together with the loss of the fold in the groin, flattening of the nates, arching of the back and stiffness of the joint, are the very early diagnostic marks of the disease itself. Direct pain by pounding about the joint is not generally elicited, except in the advanced state. Grating or rubbing in the joint itself is almost never elicited unless the patient is not only etherized, but in a very advanced stage of the disease; and even then it is seldom got, for the reason that, although the cartilages give way, and you would think the bony surfaces would be brought in contact, yet nature has protected them with a bed of velvet-like granulations, which cover all the diseased surfaces, and prevent them from rubbing together with a crepitus like that of diseased bone. No motion can be got without ether, and with ether the signs of crepitus are not usually to be found. Of course, when abscess has taken place, when dislocation has taken place, we can hardly mistake the disease for anything else, provided we can eliminate any violent accident or injury, which might have caused the dislocation or the abscess from traumatic reasons.

---

[1] These are unwritten lectures printed from the stenographers' reports. Verbal corrections are made in revision, but no rhetorical changes. They were delivered to the third and fourth classes as part of the regular course.

Given a slow-coming-on disease with these phenomena, it means hip disease, and the child will present other signs of tuberculosis in its system, in its features, in its nails, in the eye-lashes, in the shape of the lip and a wasted condition, which speedily shows a state of chronic scrofulous disease. So much for the symptoms and the diagnosis. If nature is left alone in the favorable case, she produces a cure by anchylosis. If this disease has begun early enough in life, and runs on fast enough to complete its stages before the period of puberty is reached, a cure by anchylosis, with entire healing of the sinuses, and subsequently a strong limb, are frequently the result. If, on the other hand, the disease starts later in life, or does not conclude its three stages by the time puberty has come on, then usually the disease remains permanently; and although partial anchylosis may take place between the femur and the ilium, still sinuses are apt to occur, caries is apt to go on. The sinuses may heal and the patient go on a few years, and then, after some sudden exposure, it breaks out again from the old opening. There is a new discharge of pus, a new attack of pain, and new evidence of disease in the joint. This is especially the case in males after they have received a slight sprain or injury, or exposure to cold, if they have grown up with hip disease imperfectly cured; and, in females, it is quite liable to follow the condition of pregnancy, where, after childbirth, the diseased condition is again lighted up, abscesses reopen, and the old trouble about the joint asserts itself again.

As to the treatment we can employ. It must divide itself into a number of stages. The most effectual in the early stages; the less effectual mode of treatment in the later stages. In the early stages, the moment these preliminary signs are detected, it is essential at once to obey the voice of nature, which teaches us by the muscular spasm that she is making every effort to keep the joint at absolute rest. That is the first and great essential of the treatment of hip disease. The patient should go to bed and keep still. The bed, with extension, is the first treatment of hip disease as soon as it is suspected; and this should be continued until the nightly cries and pain and such symptoms are gone. Frequently in these early cases six weeks in bed will suffice to overcome all the active inflammatory symptoms. The joint becomes almost like the other. The patient is apparently almost relieved; and when that appears, then we can venture to let them get out of bed, and not before. The moment they get out of bed they must be supported by another form of extension, by a splint; which can be applied in such a way that the patient walks on the perineum. I will not describe the apparatus used for this purpose. In addition to this it is of extreme usefulness to oblige the patient for a while to go on crutches; to put on a high shoe on the sound foot, which forces them to keep the sick foot up in the air. The child can get about in that way freely; with extension kept up, so that the diseased bones do not press and churn upon each other. This mode of treatment must be continued a number of months. When you are convinced that another stage of the cure has arrived, you can venture next to take off the high shoe; keep on the splint, and allow the patient still to go about on crutches, and put weight on the limb. Eventually crutches are discarded and the splint alone used; and finally, after a long while, several years, the patient may be trusted to go without anything; and, if fortunate, you may have succeeded in arresting the disease. All this treatment, provided the disease does not go on to abscess, can be continued without suffering, or interfering with the health of the child. Although we consider it bad policy to put one of these feeble children to bed and shut them away from good air; yet we have got to balance this against the rest and ease and absence of fever we shall produce by extending the limb and keeping the joint still; and the moment the early inflammatory stages are passed, the child can be got up and out of doors, and put in the healthiest possible circumstances. Tonics, of course, should be used to build up the child's health.

When abscess comes on before treatment, or in spite of treatment, extension is badly borne. When abscess is forming, and before it has burst the capsule; when it is reforming and trying to make its way into the cellular tissue; extension produces no relief; but produces terrible pain and has to be abandoned. In such a state we must content ourselves by allowing the patient to lie still in bed; apply soothing applications to the limb; wait for the giving way of the abscess at some point; and try to keep the limb down with a gentle splint into as good a position as we can while these inflammatory changes are taking place. When the abscess has burst, or is evacuated, extension can be again applied. Now is the time when nature is about to pull the bone out of the socket, and the time when extension, if kept up vigorously, may avert this; or diminish the extent to which nature will get the advantage of the bone and draw it up on the dorsum. In these cases where abscess has formed, where dislocation is bound to occur, extension in bed by weight and pulley becomes of vastly more consequence than before. A good deal of weight should be put on; the parts held as still as possible; perhaps the child held down in bed by some brace or confinement; and if the child does well; if it does not suffer; if its constitution holds out; unquestionably that is the best mode of treatment for some months until the tendency to dislocation has subsided. Then a splint can be used; and the treatment continued, for several years, in the way described. Supposing the disease has gone through all its stages and made spontaneous cure by bony anchylosis with the head in contact with the dorsum of the ilium and the limb in an extremely deformed condition, so that the foot cannot be got to the ground, the legs cannot be separated at all, and the limb is wasted and useless; two alternatives present themselves; one is to saw through, or cut through, this anchylosis, or rather through the neck of the bone below the anchylosis, to draw the limb down into place, keep it there in splints for a considerable length of time and to expect union to take place at the point of section in the limb, in a better position; or in some rare cases we expect a false joint. Probably union in the new position is the most favorable result we can have. The only other alternative in this class of cases, or in cases where the disease is still going on actively with abscess and caries, great shrivelling of the limb and uselessness — the only other alternative is amputation at the hip-joint; which, if the patient survives it, cures it. It takes off this mill-stone which is dragging the patient down. Restoration to health and a fat, strong condition is usually the result. Formerly this could hardly be thought of, on account of the immense mortality of amputating at the hip-joint. Now it may be done with comparative safety by the new method of amputating, where great loss of blood is avoided. The vessels are best secured by the figure-of-8 rubber twist held by an assistant with a firm twist which can be tightened; and the limb is amputated, not by the old French method, but by the slower process of excision; and amputating the remaining portion of the thigh by the circular method. By this mode of operating the child loses very little blood; and if in a sufficiently strong state to stand any operation, will recover promptly and get a useful life afterwards, with a useless limb taken away.

The other point of which I wish to speak is, as to operative interference in the earlier stages of hip disease. That operative interference means either opening abscess, and cutting down and tunnelling out and gouging the diseased bone; or doing a still more marked operation, and endeavoring to excise the head and neck of the femur; endeavoring to scrape the acetabulum, if necessary; and allowing the patient to recover with what is called a false joint. The operation of excision of the head of the femur was formerly much more popular than now. In the first few years I was on duty at the City Hospital I did the operation a great many times and published a good many cases; and thought I obtained, sometimes, very excellent results. More mature experience has proved that these results are not so good as they first were thought to be; and the operation is not to be resorted to, provided the patient can be trusted to make a spontaneous cure. The arguments used in favor of excising were these: that you hastened the progress of cure; took out the diseased portion; gave thorough opening and evacuation of the abscess; and made a more useful limb and joint. The most useful limb the child with hip disease can have is with a moderately well-placed anchylosis with the femur fastened to the ilium. That once firmly bridged over and solid, no subsequent disease affects it; and it is a strong limb which can be used without fear and without pain. The great deformity which was thought to be unavoidable, in former times, not only from shortening, but from inversion, is now known, as the child grows up, to be largely overcome by subsequent mobility of the ankle and knee, and of the pelvic joints at the sacrum; so that I have seen many of these cases where they were not touched by the surgeon, where the patient could walk very well indeed, and without the inversion which was thought unavoidable. That takes away one of the arguments in favor of excision. If you excise, you get fully as much, if not more, shortening, than if you trust to spontaneous cure with the head of the bone on the dorsum. Excision means two to two and a half inches of shortening always; and the subsequent joint is a loose joint. It is not so reliable. It is flexible, but not so firm; and it is liable to recurrent abscesses, and to continuation of the carious processes in the shaft of the femur. You cannot cut off much without making a useless limb; and there may still exist a tuberculous focus. After excision this may follow; that although you have taken off all the disease of the head of the bone, still there remains a tubercular condition of the acetabulum; which afterwards goes on to disease of the pelvic bones and defeats your object.

In addition to this there is another argument against great operative interference in hip-disease, and against opening up medullary cavities; and that is the chance of rapid dissemination of tubercular material throughout the system from any severe surgical operation. Of course, many children with ordinary hip-disease will die of tubercle in other parts of the body; will have tubercle in the mesenteric glands; in the membranes of the brain, or amyloid degeneration of the liver and kidney; so also they will have it in many cases with excision; and sometimes, to my surprise, it has become developed with such rapidity after excision that it seems as if the operation had started a new process of dissemination throughout the body. It seems to be pretty well conceded that the successful treatment of hip-disease is the mechanical treatment; that the earlier you get at it the better the result; and that operations should be reserved for two classes of cases; that operations to saw the bone and replace the limb in a new position should be reserved for those cases where there is anchylosis with such deformity that the patient cannot walk or stand or use the limb in any direction; and that formal excision should be reserved for cases where there is no prospect of cure by anchylosis, and where you may do something by cutting open the parts freely; scooping out the disease, and subsequently closing the wound.

In operating, you have an immediate mortality which is considerable. I have seen several patients die within the first forty-eight hours after excision; and if you get the most perfect result, you have a swinging joint and no more useful limb than before. There can be hardly any doubt, I think, that while surgery ought to interfere in advanced cases, where the child is dying of hectic and suppuration and caries; and that surgery ought to interfere in cases where the limb is so deformed that the child can neither stand nor sit; that in other cases it is safer and wiser to follow the dictates of nature and seek her method of cure, which is by anchylosis.

Early diagnosis and early treatment are the best here, as in all acute diseases — in any disease, I do not care what it is. In any acute disease, which is threatening, you accomplish more in the first twenty-four to forty-eight hours than in the subsequent weeks; and in any acute disease of bones and joints, you accomplish more in the first few weeks, than in the subsequent months.

The main thing is to keep the joint at perfect rest; to restore it to its natural functions very slowly indeed, and with extreme care; and subsequently, if dislocation and anchylosis take place, to try to keep the limb in as good a position as possible; and to expect, if these stages can be gone through with before the age of puberty, that we shall get a permanent and spontaneous cure.

POTT'S DISEASE.

The next class of diseases of the joints that we shall take up, are those of the spine; and as we are on the tubercular and suppurative class, I will proceed to that which is called Pott's disease, or caries of the spine.

In the specimens passed around, it will be seen that the disease generally begins between the bodies of the vertebræ, in the intervertebral cartilages; that it is distinctly a joint disease. It may proceed as an ulceration of the cartilage, finally affecting the bodies of the vertebræ, or may begin, occasionally, in the bodies of the vertebræ themselves, as a tubercular deposit, affecting and destroying the cartilage by cutting off its nutrition; then leading to erosion of the bones, and to abscess and the deformity, humpback, which we recognize as characteristic of Pott's disease of the spine. Some authorities have gone so far as to say that caries, or Pott's disease of the spine is the result of injury; that the child gets a fall which injures its back; that the fall produces the disease. On the other hand, most authorities seem to be agreed that a condition existing beforehand of intrinsic delicacy of constitution, call it scrofulous or tuberculous or what you like, is essential to the production of the disease; that it may be precipitated and brought into action by a fall; but that it may arise spontaneously; that it is more likely to arise if the child has a fall than without it; but that the fall is not the one sole cause of the disease. One can hardly look at ordinary strong children in the first period in which they run about, from ten months to three years of age, and see their extraordinary suppleness and activity, and the falls they get, and the injuries they undergo without any permanent result, without thinking that the mass of mankind, who are healthy, at that age are so built and constructed, that ordinary injuries do not produce caries of their spines, or diseases of their hip-joints. On the other hand, in the very delicate child, slight injuries, which are thrown off and shed easily in the healthy one, start up this pre-existing tendency to inflammation of the cartilages between the vertebræ, or in the bone. That, I believe, is the usual history. Delicacy in the child, a slight injury or none at all, the commencement of disease in the cartilages, and caries of the vertebræ following. Unfortunately, in the early stages, this disease is more likely to be overlooked than hip-disease in its early stages. It is only in the very earliest stages of this disease that treatment can arrest the diseased process; and as time goes on treatment becomes more and more hopeless; and when we interfere in the latter stages we should bear in mind that the cure of nature in this disease is also wholly by anchylosis; anchylosis at the expense of deformity; life at the expense of deformity; health at the expense of deformity: and that a case of advanced Pott's disease of the spine which recovers without deformity, and recovers straight and well, must be very rare — I mean without some deformity. Of course, we have all degrees.

The cartilages ulcerate, the vertebræ break down, their bodies drop together and melt away, the spines are thrown backwards out of position, the body becomes bent forwards, and in this false position nature makes a great effort at repair; throws out new bridges of bone; fastens together two adjoining vertebræ; holds the bones in their new position; and finally makes a cure with a stiff joint, and with deformity. That is the common result if left alone.

The early symptoms of caries of the spine are very insidious. They are so because of the youth and activity of the patients; and also on account of the great natural mobility of the spine, and the fact that pain, or diseased conditions, are disseminated, so to speak, up and down the long column, where one part can compensate, to a considerable degree, for a loss of motion and usefulness in the other part of the spine. This disease comes on generally soon after the child begins to run about and be active; one and a half to two years of age, to three or four years of age, is the common time. It rarely begins after childhood. It may begin in consequence of injury, or in consequence of that active tubercular or scrofulous condition which may be lighted up in the feeble child by the second dentition, at ten to twelve years of age. It rarely begins after puberty. If it does not go through its stages and cure itself before puberty, it never gets well, so far as my experience goes. It usually begins as soon as the child begins to run about and be active, and is overlooked, in this way. The child complains of being tired, and is thought to be merely fretful and capricious, or cross. The child is unwilling to go upstairs; it is unwilling to stoop down and pick up things with any celerity; it complains of constantly having pain in the stomach. This pain is about the præcordia and ensiform cartilage; and is a transmitted pain carried along the nerves between the ribs and to their terminations in the centre of the body in front, and the pain is experienced there, and is really a reflex of a disease of the bodies of the vertebræ and about the intervertebral foramina, from which two or three of these pairs of nerves have made their exit. The abdominal and præcordial pain, pain at the pit of the stomach, is a spinal pain; has nothing to do with the alimentary canal. The child is tired; unwilling to make exertion; complains of stomach-ache; frequently sits down to rest itself; supports itself on chairs and furniture; seeks a position where it can get its elbows on the table. A peculiar stiffness of the gait becomes developed very early; the child walks with care, instead of running with that perfect abandon seen in young children. It squares its shoulders, differently from the ordinary loose gait of the child: and it has a sort of military look in its whole bearing and gait. The scapular muscles are set. The child walks as if it were made of glass; and this is very characteristic, and unlike any other disease.

A stiff back, square shoulders, dislike to stooping, constantly supporting itself, and after a little while spasm of the legs, legs adducted, and a tottering gait. If this child is examined, you will find, probably, in the dorsal or lumbar region, a projection, a slight knuckle projecting beyond its fellows. This, however, may exist without the other symptoms; and when it exists without the other symptoms, it does not mean anything at all. You may take a healthy child, strip it, and stand it up, and if it is not very strong, you will occasionally see one vertebra out beyond the others, and looking as if it must have Pott's disease. You will find on examination that this is a false sign. This false sign is to be diagnosticated in this way. When the projecting knuckle is the result of caries of the vertebræ beginning, it is immovable; can never be thrown out of sight; never be effaced; and always stays, in whatever position the child puts its back. You must take this sign in connection with every other sign; but it is an extremely valuable diagnostic mark. But the weakly child, with a loose, projecting spinous process, retains the suppleness of the back, and if pricked or pinched, hollows the back and draws the projecting spinous process in, out of sight.

There is not much pain in the back in caries of the vertebræ. Very little pain is elicited on pressure. Much more pain is elicited on pressure in ordinary sprains of the back, or in an hysterical or nervous condition of the spine, than in Pott's disease. You may press on this vertebra; you cannot elicit pain or displace it. It is held by the muscles, by the ribs, by the locking of bones, in such a way that the pressure has no effect on the diseased point. There are two modes in which you can elicit pain. One is brutal and dangerous; the other is not. You are instructed by some authorities to crush down the spine, and see if the child will cringe. That is dangerous, because it may produce new crushing of the vertebræ already softened. There is another way; you may take the child, that is, lift the child, with the hands around the ribs, about opposite the seat of disease. The heads of these ribs are crowded in against the diseased vertebræ by this effort, and while no harm is done, a scream is almost always elicited; while it does not hurt a healthy child a particle. I do not attach so much importance, however, to these methods, nor do I advise you to pursue them. You can learn much by the general symptoms, and the fact that the projection will not disappear in the case of Pott's disease, and will otherwise. The spasm of the limbs, tottering gait, irritable bladder, wetting the bed at night frequently, constipation, change in the shape of the arch in front, so that the ribs become turned up, and the child becomes pigeon-breasted, the shoulders sinking more and more; the child ceases to grow in size; the head becomes sunken between the shoulders; one knuckle of the vertebræ becomes three, then becomes five, three prominent and two less so, until the marked and unmistakable hump is apparent in the back. This last sign is much more evident in some parts of the back than in others. In the dorsal region, where the curve is outwards, a prominence will show itself much more quickly, than in the lumbar vertebræ, where the curve is inward. The most marked and characteristic of all are the deformities produced in the cervical vertebræ; not only from the sinking in of the head, but by the great spasm of the muscles of the neck; by the peculiar position in which the child constantly carries itself, and the deformity. Soon after this, signs of abscess begin to come on, marked by hectic fever and sweats. It is a long while before that abscess shows itself on the surface. It is at a great depth. It is near the centre of the body, in front of the vertebræ. There it seeks an outlet in two ways: either gravitates down and gets into the psoas sheath, and emerges under Poupart's ligament, and makes a psoas abscess: or else pushes directly backwards in the loins, emerges from between or below the ribs, and becomes a lumbar abscess. This abscess is essentially a cold abscess; full of caseóus matter, and from broken-down vertebræ. It is extremely slow, a matter of months and years; frequently passes away in the end, after the child recovers by anchylosis, without breaking at all. It is absorbed and inspissated in such a way that the abscess finally disappears. When it does break it is after a long period and by a minute opening, by which nature guards the ingress of air into the sac, and lets the pus trickle from a little valvular hole. The abscess continues to discharge for several years. Meanwhile the deformity of the back goes on to cure; reaches its limit; ceases to press out further; begins to assume a fixed position; grows more and more so from month to month; bony anchylosis takes place; the abscess dries up, and the child has recovered, at the expense of great deformity of the back; of deformity of the chest; with strong arms and shoulders, but weak and wasted legs.

These patients live to old age. They appear to withstand other diseases with great vigor. When they have Pott's disease, they rarely have anything else. They are well and active. Moreover, in all this peculiar class of cases affecting the spine it is noticeable, I think, that mental vigor is greater than the bodily loss; that these children are distinguished by mental acuteness; like the blind, who shut off from one sense, develop all the others; so these children, shut off from locomotion and play, and possibly having some sort of diseased condition of the nervous system at one part, seem to develop a certain precocity of mind in the brain; so that wherever you see a humpback child, you find a bright one, who knows a great deal, and has learned as much by observation, as his fellows learn by education.

What shall be done in the way of treatment? Of course treatment to do any good must be applied at a very early stage; and here, just as in hip disease, we try to keep the part at rest. The treatment must be mechanical. The child at first must be confined upon its back on a frame, or with double extension, in some way, so that anchylosis may take place; or if this is impracticable, the child must be allowed to go about with a spinal support, in such a way as to take off the weight of the shoulders and head from the diseased part; to support the spine on the pelvis, and also to hold the parts at rest. The use of the frame on which the child can be strapped and held temporarily, is, I think, most useful, because this does not necessarily confine the child to bed. It can be taken up, turned about and kept clean, carried out of doors and kept more or less in the open air; while at the same time the spine is kept at a perfect state of rest. On the other hand, if this is not practicable, a good spinal support, and allowing the patient to run about, is probably the best mode of treatment. That gives nature a slight chance; and a slight chance usually suffices; and unless an abscess has taken place, a cure usually results by anchylosis.

As to the treatment of these abscesses themselves. Like all cold abscesses there are four methods of treatment: repeated aspiration; injection of a fluid to promote absorption; incision of the abscess, and fourth, I should say, letting it alone. It may become inspissated. Incise it and you run a great risk of septicæmia unless you can clear out and clean every pocket and scrape the carious bone. Repeated aspirations may be useful, but they inevitably end in a permanent opening through which the needle has been passed, and establishing a sinus, so that you merely anticipate nature a little, and prick an abscess, giving it exit through a valvular hole. These abscesses must be watched. There is no haste about them. They are slow. You can afford to wait. If they are opened, you must wash them out and scrape in so thorough a manner that the development of septic absorption may not take place; and even then death sometimes takes place in forty-eight hours from the shock of opening a large pus cavity. Apparatus, if applied early, will check the disease and hold the bones so that they will get in good position and unite by anchylosis. The cure, to be perfect, must be before puberty. Abscesses must be opened very slowly indeed. Remember, the best mode of treatment is to have the child secured on a frame or splint, and taken out of doors; kept in warm air; somewhere where it is constantly summer, if possible; or under the influence of sea air, and the best hygienic surroundings. It is extraordinary how much better these cases do in sea air, than in the air of the hot, inland country.

LATERAL CURVATURE OF THE SPINE.

This is very common. It is a distortion, but not a disease. There is no caries, there is no affection of the spinal canal. There is a twisting of the vertebræ in various directions on account of the unequal action of the muscles of the back. In consequence of this twisting and distortion, the ribs and sternum also get drawn out of place. One of the first signs which attracts attention is the fact that the shoulders are not even. You know how common this is in young people and in those who are growing rapidly; one shoulder is a little higher than the other, preferably the left. That is due in young subjects, however, frequently to careless attitudes in sitting and studying and writing, etc. But this comes on insidiously, and at the same time the shoulder is drawn up, the hip on the opposite side becomes pushed out, to compensate for it, so that we have a high right shoulder and a prominent left hip, for example. It is especially a disease of females, though not confined to them; probably more in females because they have less active exercises than boys. The curve is double, and when it inclines, for instance, to the right side in the upper portion of the vertebral column, there always is what is called a curve of compensation to the left in the lumbar part of the column, in order to balance the body. These two things always go together. In the early stages the spinal column is flexible and movable, and by throwing the arms and muscles in certain positions, the column can usually be restored to shape. As time goes on, if this trouble is not attended to, it begins to distort the cavity of the thorax very much, so that it becomes one-sided, and the child is also pigeon-breasted, so-called, from the projection of the sternum. In a little while the vertebræ begin to be rotated upon themselves, through the action of the displaced and weakened ligaments and muscles, and although they are not drawn apart from each other, and although the spinal canal is never infringed upon in a way to make meningitis, the resulting deformity sometimes is incurable. The vertebræ become so far twisted out of shape that it is impossible to restore them.

The diagnosis and treatment both are most important in the earliest stage; and in that early stage the trouble can generally be corrected by the proper use of the muscles. One very useful exercise, which is very simple, is to have the child drilled to carry light weights upon the head. This may be any form of light weight; but a very good way to teach the child to do it is to place a little mat upon the head and set in it a bowl of water; and the child is instructed to walk backwards and forwards so many times. The slightest deviation will cause the tipping of the bowl and the wetting of the neck, and speedily remind the child to resume the upright position. It is a well-known fact, that among the races of the tropics and some parts of the south of Europe, the custom of carrying heavy burdens upon the head leads to an unusually upright and steady form. It is not the custom here in any form of labor; and it is never practised in gymnastic exercises. In addition to this, the child should be watched carefully about sitting, studying and sitting at school; and instructed, if weak, to lie down certain parts of the day in the prone position, on the stomach and chest, and with the arms in such a position as to bring the spine back to its natural curves. These children are weak, and if the spine begins to get out of place, the back muscles grow weak, and the child droops more and more. The other exercises which are more important are gymnastic and calisthenic exercises, which may be done with light weights and wands or dumb-bells and light gymnastic apparatus: rings, pullies, chest weights, etc. Care must be used in these exercises that the weakened set of muscles are exercised more than those on the well side; and the left-arm exercise for example is especially useful for the child who has a curvature to the right. Take the child and put it in different positions until you find what will best restore the curve, and then outline the exercises. By these, and the use of electricity and rubbing, the recumbent position and the carrying of weights on the head, the early cases can be cured; but when the disease becomes well confirmed and the vertebræ are really twisted out of place, we must try to force them back by the use of apparatus. This is difficult. Apparatus should not be used with the idea of being the only means, or the great means of cure; but only in bad cases, as a support, to prevent the parts from dropping over farther, until the muscles can be restored by proper gymnastic exercises.

The disease leads to terrible deformity if untreated. The child becomes dwarfed because the length of the vertebral column is lost in these curves. And some of the most marked deformities you see on the street are from this cause; at the same time there is nothing to interfere with the patient's living; and although remaining deformed, they may remain reasonably healthy; but after the vertebræ are thoroughly twisted, and the period of puberty is passed, and the growing age is beginning to diminish, a cure and perfect restoration to the upright form is almost impossible.

THE Royal Astronomical Society has awarded a gold medal to Prof. S. W. Burnham, of Chicago.

Original Articles.

FIVE CASES OF CHOLECYSTOTOMY.

BY JOHN W. PERKINS, M.D.,
Senior Surgeon, St. Margaret's Hospital, Kansas City, Mo.

Case I. Impacted gall-stone, with dropsy of the gall-bladder and abscess formation about the stone; recovery.

Mrs. B., age twenty-two, a well-developed, rather spare woman, I first saw in May, 1889, suffering from an intermitting fever apparently malarial in origin. There was no history or symptoms of gall-stones other than that she had been subject to "bilious attacks," and had been losing flesh for about eighteen months. Early in July she had an attack of diarrhœa with griping, apparently due to gross indiscretion in diet. This lasted a week, at the end of which, July 16th, she had a chill, vomiting, great pain, at first all over the abdomen, but later referred to the epigastrium and right iliac fossa. Pulse 140, temperature 102°. About twelve hours after the chill she noticed a tumor midway between the umbilicus and Poupart's ligament. This appeared as an ill-defined, rounded, fluctuating mass, slightly bulging the abdominal wall forward — tense, tender and dull on percussion. The area between it and the liver was tympanitic. Extension of the legs was painful. Five days later the acute symptoms had partially subsided; she was still vomiting, and in pain except when under the influence of opiates.

On July 21st I operated, Dr. E. W. Schauffler kindly assisting. Ether. The incision was made in the right linea semilunaris, from the level of the umbilicus, two and one-half inches downward. The peritoneum was much injected. The abdomen contained considerable thin, yellow, flaky fluid. The gall-bladder was one-quarter of an inch thick, free from adhesions, and contained over a pint of glairy fluid of the color and consistency of white of egg. There were three green gall-stones, the size of large filberts, in the sac, and a fourth firmly impacted in the cystic duct. The dislodgement of this stone was followed by a flow of about three ounces of pus into the sac. This had formed between the stone and the liver, evidently from ulceration of the stone through the duct. I sewed the gall-bladder into the wound, and she recovered with a fistula which closed six weeks after the operation. She gained flesh rapidly, and has remained perfectly well up to the time of writing, four years after the operation.

The points of interest in this case were:

(1) The youth of the patient, in connection with the fact that the gall-stones had been present for many months, if not years, as shown by their size, their many and well-worn facets, and by the great thickness of the wall of the much-distended gall-bladder. There had been no bile in the bladder for a considerable time, its walls being pearly white. The stone must have been impacted in the duct at a period antedating the dropsy of the bladder and the subsequent hypertrophy of its walls. I know of no data by which to estimate the time which such a process represents, but it is not improbable that the onset of dyspeptic symptoms beginning eighteen months previous to the operation marked the time of the impaction of the stone, and that the symptoms were the result of the continuous flow of bile into the intestine. The chill in May, with the subsequent intermitting fever, was probably not malarial in origin, but was an instance of Charcot's hepatic intermitting fever, and marked the beginning of the inflammatory action around the impacted stone, which terminated in the ulceration of the stone through the wall of the duct, the abscess formation and the peritonitis.

(2) The degree of exactness with which this case presented Fitz's cardinal symptoms of appendicitis. A history of diarrhœa and griping for a week, at the end of which occurred a sharp attack of general abdominal pain, rapidly locating itself over the right iliac fossa, followed by fever and the appearance of a tumor within the necessary area, showed a rapid but proper evolution of the symptoms. The position of the tumor was higher and more internal than is seen in the majority of cases of appendicitis, yet not uncommon, for in twenty-four cases observed by me in which the situation of the tumor was noted there were two in which the tumor occupied this high superficial position. Mr. Treves[1] has called attention to the possibility of the cœcum and the appendix lying as high, even, as the liver, due either to the non-descent of the cœcum or an extreme mobility. He comments upon the possible difficulties of diagnosis in case of an attack of appendicitis in parts so placed. Similar difficulties arise from the encroachment of a distended gall-bladder upon the pelvic contents, as in the present case, and one, more marked, related by Mr. Tait,[2] in which the enlargement was so great that he mistook it for a parovarian cyst.

Case II. Multiple gall-stones, with crystalline deposit in bile; hepatic colic for twenty years; recovery.

Ellen M., age forty, Irish, five children. Entered St. Margaret's Hospital July 24, 1891, after a severe attack of colic, during which her medical attendant, Dr. J. W. Thompson, thought several times that she was dying. She was a slight woman, thin-visaged, with a brownish-yellow skin, not jaundiced. She had had repeated attacks of colic for twenty years, the attacks lasting from one hour to a day, and frequently preceded by intense jaundice. For ten years past she has also had periodical attacks of so-called malarial fever two or three times a year, and had been confined to her bed for months on account of it. She was in a state of constant distress, even when free from the more acute attacks. Examination showed a marked degree of tenderness over the region of the gall-bladder, but otherwise nothing abnormal. Her urine on two examinations was alkaline.

On July 29th I operated, with the assistance of Drs. Gray and Bennett. Ether. The incision was made vertically, two and one-half inches downward from the end of the tenth rib. The gall-bladder was small, free from adhesions and very elastic, so that its fundus was easily brought into the wound. It contained bile and several rough, black stones varying in size from a pin-head to a pea. The bile was black, as thick as vaseline, so that it had to be scooped out with a spoon, and consisted for the most part of small, black, acicular crystals. There was upward of an ounce of this material. I sewed the fundus into the wound, and she recovered rapidly with a fistula which did not show any tendency to close. At night the flow of bile was great, drenching the dressings and running into the bed; during the day there was scarcely any. The stools were normal.

---

[1] Surgical Treatment of Typhlitis, page 11.

[2] Note on a Case of Cholecystotomy, Lancet, 1889, page 1294.

The failure of this fistula to close was due to the fact that I had sewed the mucous membrane to the skin, which was easily accomplished on account of the great elasticity of the bladder, whereas in other cases I united it to the cut edges of the peritoneum and transversalis fascia, and found that they closed spontaneously.

A year after the primary operation the fistula still remained open. On June 2, 1892, I made an attempt to close it by dissecting up the edges of the mucous membrane and sewing the freshened surfaces together. It held for three days, the viscus gradually becoming distended, until there was an immense gush of bile and the fistula was re-established. This was suggestive of an obstruction in the ducts, but the stools continued normal. Three weeks later I opened the original wound and dissected most of the gall-bladder away from the abdominal wall, leaving only a small portion adherent. After sewing the inverted mucous membrane, I united the peritoneum over it with a Lembert suture and sewed the abdominal wound tightly. It never reopened.

Since the removal of the contents of the gall-bladder, now two years, she has gained much in flesh, has lost her sallow color, and has had neither colic nor fever.

CASE III. Multiple gall-stones; contracted liver; resection of rib; recovery.

Frank S., age thirty-five, single, painter, American. Admitted to St. Margaret's Hospital August 25, 1891. He had been a soldier in the United States Army, but was mustered out on account of frequently recurring attacks of colic. Since 1883 he has had from two to six attacks every year; generally became jaundiced just before each attack; had found that large doses of Epsom salts tended to keep the attacks away, and always shortened them. He was a muscular, spare man, with high color, and had been a drinker.

The question of diagnosis in this case was important, He had had no attacks for six months previously, and had no physical evidence of gall-stones. He had been under the care of Dr. Walter, of Leavenworth, and his post physician, both of whom had made a diagnosis of gall-stones. The possibility of the colic being due to lead was directly suggested by the man's occupation. The fact that he had changed his occupation, and for six months had no attacks, gave it some color. The history of a well-marked jaundice preceding the attacks, and their comparatively short duration, seemed to help out the diagnosis.

Granting the hepatic origin of the attacks, were there any stones remaining in the sac? The patient insisted that there were. He dreaded another attack; and at his earnest solicitation I operated August 28, 1891. Ether. Drs. Schauffler and Porter were present.

A vertical incision was used, three inches long from the end of the tenth rib downward. He had a long, narrow chest, and his liver was tucked up under the ribs so far that it was impossible to get the gall-bladder down to the edge of the ribs. I was obliged to enlarge the wound upward and to resect the ninth rib, taking out about one and one-half inches to get the fundus into the wound. Moreover, the pitch of the lower surface of the liver was much greater than usual and the bladder placed well under it, so that it was necessary to push up the lower edge and partly rotate the liver in order to see it. On opening the gall-bladder, I removed eight irregularly angular stones of a bright-yellow color. With difficulty I sewed the fundus into the peritoneum and fascia, between the ends of the resected rib. This wound suppurated around the stitches. I believe the great tension upon them was the cause. Bile flowed freely from the fistula and continued for about five weeks, when the fistula closed, and has never reopened. He has remained in excellent health up to the present time.

CASE IV. Multiple stones in the ducts (?); recovery.

Mary D., aged twenty-nine, American, four children. Entered St. Margaret's Hospital March 15, 1892. For two years past has had attacks of colic, lasting from two to seven days; is often jaundiced, and has taken a great deal of morphine, under the direction of her medical attendant, Dr. Drake. The attacks recur every two to four weeks, and are accompanied by fever. I saw her during one of the attacks. The symptoms were typical. Physical examination showed nothing beyond a very marked tenderness over the region of the gall-bladder. She was a large, stout, fleshy woman, with a white, pasty skin and a thick, rigid abdominal wall.

On March 19, 1892, I operated, with the assistance of Dr. Bennett. Ether. The same vertical incision was used as in the preceding cases. There were many tough adhesions about the neck of the gall-bladder, but the fundus was free. This I opened, and found one small stone. On passing the finger along the cystic duct, however, I felt a large stone in the adherent mass, and opened the duct from the outside after failing to dilate a stricture from the interior of the viscus. I removed the stone with forceps, and then found several more lying along the cystic and common ducts, the latter seeming much dilated. The stones extended beyond the reach of the finger so as to necessitate another incision in the abdominal wall at right angles to the first and parallel to the edge of the ribs. This admitted the whole of my hand inside the abdomen. I removed eleven large, brown, faceted stones from a dilated pouch, the largest was three-quarters of an inch in diameter. The line of stones extended beyond the middle line of the body, but in what they were contained — whether in the common duct, or whether they were encysted in a pocket into which they had escaped — I was unable to ascertain on account of the adhesions which had matted the parts together into an unrecognizable mass.

The slits in the duct were closed with catgut as well as the great depth of the wound permitted. I sewed a fold of the omentum along the adhesions below and the peritoneum above, to act as a shield in case an extravasation of bile took place. I also put in a drainage-tube with its lower end close to the slits in the duct. The fundus of the bladder I stitched to the edges of the abdominal wound.

The operation was difficult, long and tedious, and the patient suffered from some shock after it. She rallied, quickly, however, but vomited at intervals for a week. Bile flowed freely from the drainage-tube and from the wound on the day following the operation, but caused no trouble. The wound healed rapidly, leaving a fistula, which closed in about six weeks. Before this happened, however, she had an attack of colic similar to those which she had before the operation, but milder in character. After leaving the hospital, which she did on the first of May, she had several of these discouraging attacks. Just before an attack the wound would reopen under tension, and an immense amount of bile was discharged. There was much flatulence.

The attacks seemed to be occasioned either by taking indigestible food or making unusual exertion. Was there a stone left behind? I believed that the colic was occasioned in some way by the filling of the gall-bladder, and the stricture at its neck associated with the loss of the bile from the intestine. Pepsine and hydrochloric acid seemed to relieve her immensely, and the attacks soon ceased. She has had no attacks during the past eighteen months, has gained thirty-five pounds, and seems to be in perfect physical condition.

Case V. Impacted gall-stone, with severe and prolonged vomiting; death from acute œdema of lungs due to ether (?).

Miss M., age forty-five, single, Irish. Was first seen in consultation with Dr. E. S. Ramsay, July 19, 1892. She had been sick three months. The attack began with pain over the right hypochondriac region, not especially suggestive of hepatic colic, and three weeks' later a tumor could be felt over the region of the gall-bladder. There was no history of previous colic, jaundice or vomiting. A diagnosis of gall-stones had been made by Dr. Ramsay, and under the use of anodynes and hot applications the tumor slowly disappeared. The patient seemed to improve rapidly until the last of June, when she began to vomit, and developed a painful area in the epigastrium, just to the right of the middle line. The pain radiated along the left edge of the ribs and into the left shoulder — was paroxysmal in character, not increased by food. The vomiting and pain had steadily increased up to the time when I saw her, and she had lost much flesh and strength. She had been seen twice during the previous week by another consultant, who was said to have expressed the opinion that she had cancer of the stomach.

She was a large, fleshy woman, but very weak, and showed plainly the effects of twenty days of vomiting. Her respiration was short and rather quick, her pulse 90, and only fair in character. There was marked tenderness over the area of the gall-bladder and the epigastrium, but nothing like a tumor could now be felt anywhere in this region. She had no cachexia. Her urine and heart were both examined, but nothing abnormal was detected. Her lungs were not examined. An impacted gall-stone was diagnosed and operation advised.

On July 21st I operated, Dr. Ramsay assisting. Ether was given by Dr. Bennett, who has given ether for me in upwards of two hundred capital operations, and always skilfully. I wish to mention this especially on account of its connection with what follows.

The incision was made in the middle line of the epigastrium. The viscera were adherent to each other and to the abdominal wall by old firm adhesions which seemed most dense toward the region of the bile-ducts, and through which low down a mass of gall-stones could be indistinctly felt. I could detect nothing abnormal, however, about the stomach, other than the adhesions at the pyloric end. I attempted to reach the gall-bladder through the adherent viscera, but it proved so difficult and large vessels were so numerous that I quickly abandoned the attempt and made a second incision directly over the fundus of the gall-bladder. The adhesions were here more recent, and the gall-bladder was reached with little difficulty. I removed five brown stones, the size of peas, from the bladder and four more impacted in the cystic duct, which dilated easily under the finger. This was fortunate, for it would have been impossible to have opened the duct laterally, without the expenditure of much time. The work up to this point had been necessarily slow, partly on account of the very deep wound and partly on account of the proximity of the large vessels in the adherent mass, which rendered rapid work dangerous. No accident happened, however, and she had lost but little blood. During the operation, it had been noted that her pulse was rising, and after the first thirty minutes, was upward of 120, but strong and of good character. Digitalin (gr. $\frac{1}{100}$) and strychnine (gr. $\frac{1}{50}$) were administered at two separate times. The respiration had been excellent, except that on one or two occasions when tension had been made on the adhesions in the middle line, the breathing stopped for a moment but immediately began again on relaxing the tension. The mass of adhesions was evidently attached to the diaphragm. When ready to close up the abdominal wound, the patient had been under the anæsthetic one hour, four ounces of ether had been used in a Clover's inhaler, and the anæsthetic had been temporarily removed for several minutes, when her respiration suddenly became labored and pumping, her face cyanosed and her pulse indistinguishable. Bubbling râles could be plainly heard in the chest at every breath, and frothy mucus flowed from her mouth. She became quickly conscious in the struggle for breath. Fresh air and nitrate of amyl relieved her temporarily. Her pulse became much fuller and stronger, but she remained cyanosed and the frothy mucus still bubbled from her mouth, the respiration still being shallow and pumping. The operation was rapidly completed without further anæsthetic, and the patient put to bed. For two hours she remained cyanosed, her respiration short and jerky, her chest bubbling, her pulse rapid and rather tense. She then sank rapidly, and died cyanosed two and one-half hours after the operation. Neither the cold, clammy, pallid skin of shock nor the pale restlessness of an internal hæmorrhage were present.

I afterwards learned that she had had at least two similar attacks of so-called "capillary bronchitis with hypostatic congestion and œdema" of the lungs, which had barely disappeared two weeks before the operation, the time when her lungs were last examined. No worse subject for ether could have been found.

◆

REVIEW OF A SUMMER'S WORK IN GYNÆCOLOGY AT THE BOSTON CITY HOSPITAL.[1]

BY JOHN G. BLAKE, M.D.

In reviewing the summer's work in Ward S, a few words outside of the regular tabulated results may not be out of place. These remarks may be considered in the light of conclusions by the writer upon subjects treated up to date. While they contain nothing absolutely new, they at least enable him to revise previous opinions. And first a few words concerning

ALEXANDER'S OPERATION.

This has been performed by the reader eighteen times during the summer, usually at the City Hospital. The results, in all but two cases, were successful. In one, the ligaments appeared to be in a state of fatty degeneration. That on the left side broke off so easily that it was not deemed expedient to undertake shortening the one on the right. In the other, there was so much gluing together of the parts from old peritonitis, that it was impossible to draw the ligaments out on either side. A third case, at St. Elizabeth's, had a ligament on the left side no larger than a knitting-needle, while that on the right was rather above normal size. There was no difficulty in finding them, and the union was perfect in every case. Not a drop of pus formed in connection with any of these operations, which shows that antisepsis was carefully attended to. All proved perfect surgical successes; and therapeutically they were equally so, relieving completely the pain and pressure which called for their performance.

---

[1] Read before the Obstetrical Society of Boston, October 11, 1893.

The question of permanence of relief, is often raised by those who have not done the operation, or who for any other reason are opposed to it. Pregnancy is quoted as entirely destroying the benefit acquired. In three cases, to my personal knowledge, and by careful examination, the position of the uterus remained unaffected by childbirth. Two were my own operations, and a third, operated upon in Lowell, had the same result. Dr. Davenport, in the Boston *Medical and Surgical Journal*, Drs. Johnson, Kingman, Conant, Burrage, and others whom we all know, say the same. If it were necessary, the writer could obtain a mass of absolutely incontrovertible testimony on this point. So it may be considered settled, that Alexander's operation neither prevents pregnancy, nor is impaired by that condition. On the other hand, the permanent emancipation of woman from dependence upon pessaries, is to my mind ample justification for the operation in cases of chronic displacement. Its simplicity, comparative freedom from serious results, and short period of confinement to bed, are large elements in its favor.

DILATING AND CURETTING.

This comparatively new substitute for the old, tedious and unsatisfactory treatment, by laminaria tents and repeated applications of iodine and acids, has been done sixty times without any unpleasant result to the patient. It has been resorted to in chronic endometritis, with or without catarrhal discharge; in prolonged metrorrhagia — narrowing or bending of the uterine canal, causing sterility or severe dysmenorrhœa; catarrhal salpingitis, where prolonged drainage was required; and ovarian pain independent of organic change. In cases of subinvolution it was also tried; and whenever it became necessary to explore the endometrium, it was found to be the quickest and safest means. Other conditions of the uterus, like hyperplasia, and granulations, are familiar to all, and need not be enumerated. I am prepared to speak very favorably of the results in many of the above conditions, while but moderate success attended others. For instance, in a case of chronic endometritis with endocervical discharge, a single operation will often diminish the size of the organ and absolutely stop the discharge, leaving a healthy normal uterus, and a cervix almost virginal in appearance, shape and size. I have seen this result so often that it is easy to foretell it. On the other hand, in the relaxed, flabby, or leaky uterus, the best results after dilating, followed the application of a mixture of Churchill's iodine and carbolic acid, or Monsell's styptic, to the endometrium, instead of packing with iodoform gauze. It must be borne in mind, that the condition is often only a symptom of a state of constitutional debility, and that local should be associated with general treatment. Acting upon this hint will often save disappointment. The same remark will apply to all cases of pelvic inflammation of long standing, which are usually associated with marked debility and anæmia — the result of pain and confinement to bed. Finally, it may be necessary to repeat the operation after an interval of two weeks or more.

In several cases I have seen marked benefit follow a repetition of the dilating, without or with the gauze packing, where a severe form of chronic enlargement of the uterus existed; or persistent salpingitis, in which long-continued drainage might be of advantage. The operation may be considered in the light of a very safe time-saver, since it enables one to accomplish in a few weeks what in old times would have taken months.

In cases of sepsis following labor or miscarriage which were treated in Ward S, and of which we had fourteen during the summer, the results were not always successful. Two terminated fatally from lung complications and septic pneumonia. This was after the utmost care in treatment of the endometrium combined with active general treatment, including the use of salines. In both, the tubercular diathesis was well marked. From observation extending over many years of general practice, I have reached the conclusion that there is marked susceptibility to this form of sepsis, where the diathesis exists. I should not, because of this, modify to any degree the thoroughness of treatment, but would not feel the same confidence in its result. On the whole, the success attending the method has been gratifying, and justifies the remark of Dr. Richardson, that "if we cannot always prevent the disease, we may often cure it."

The cases of pelvic abscess were eight in number and yielded to incision and drainage through the vagina. One, transferred from the medical department, where it had been admitted by mistake, was an exception. Here the abscess had burst into the rectum, establishing a fistulous opening. This closed after a time of careful, constant drainage, but the original abscess cavity showed little tendency to contract. The subject was a wretchedly poor one for treatment; a confirmed inebriate, anæmic and flabby, without strength to set up reparative action. At the expiration of my term of service, my advice was that she be transferred to the surgical side for removal of diseased pelvic tissue by laparotomy, as soon as her condition justified. Dr. Burrill removed the left tube and ovary; but the patient died three days after. Another case, treated at St. Elizabeth's by suprapubic incision, contained nearly a pint of fetid pus, got well rapidly. Two cases of chronic inflammation of tubes and ovaries, were transferred to the surgical service and the diseased tissues removed successfully. These were the only ones, which in my opinion justified resort to laparotomy. The number is certainly small in view of the frequency of the operation in these days, and the number and character of cases treated.

We become more conservative as we advance in years, and are loth to give up old and tried methods for those more dangerous and brilliant. Hence we prolong our efforts on the old lines, with a success that is gratifying. Even the younger and more enthusiastic laparotomists are beginning to pause and consider, whether milder means, longer continued, may not after all be the best treatment in many forms of chronic pelvic inflammations. I dislike to be classed as a fogy, but will not the experience of the older men of this Society bear me out, when I say, that many of the conditions for which laparotomy has been done of late years would have yielded to patient, persevering, non-operative treatment? Dr. William Goodell, in the *Medical News* of December 9th, takes the same conservative view.

In the matter of malignant disease of the pelvis, the number was twelve. None of the cases were suitable for radical operations, with one exception. When the body as well as the cervix was involved, and it was reasonably sure that the disease had affected the pelvic glands and uterine appendages, the diseased tissue within reach was removed by curettes, scissors, actual cautery, and acids. By careful after-treatment, the disease can be kept in subjection, and immunity from pain and hæmorrhage assured. Life may be made endurable for a considerable time — from one to three years. On the whole, I cannot see that this is not as satisfactory as the results following more radical measures. When Dr. Chadwick says that all his vaginal hysterectomies died within a year, and Matthew Mann states that none were living at the end of five years, it seems scarcely worth while to go through so much for such doubtful gain. I am quite convinced that the day is not far distant, when surgeons in the light of their experience with malignant breasts, will be satisfied to leave the treatment of advanced malignant disease of the uterus, to palliative measures alone.

One case had the disease at the fundus, with no indications at the cervix; uterus enlarged, with only slight local symptoms calling for treatment; but rapidly running down, and with marked cachexia. The patient was not treated locally farther than to explore and ascertain the nature and extent of the disease. She was put upon supporting and alleviating treatment, sent home, and is still living.

A very rare form of epithelial disease of the vulva, invading to some extent the vaginal walls, was sent in by Dr. Edward Reynolds. There seemed to be no infection of the pelvic glands. The disease was thoroughly removed and but little deformity of the parts resulted. Time alone will determine whether the disease returns.

As will be seen, I have commented briefly on some of the operative cases; and while there is nothing very new in the report of such a service, there is confirmation of the success of old methods, which, to the older members at least, may afford satisfaction.

The following are the tabulated results prepared by Dr. S. E. Courtney, my very efficient senior house-officer, with the records of two cases which seemed of special interest to him:

Case I. A. R., single, twenty-three years of age. Dysmenorrhœa since the establishment of menstruation. Examination showed the cervix to be acutely anteflexed, with stenosis of internal os and some endocervicitis. Extremely nervous. The uterine canal was dilated, curetted and packed with iodoform gauze. The gauze was removed from the uterus on the sixth day, and the patient discharged on the tenth day. Four months after operation the patient reports that she has no dysmenorrhœa, and has almost entirely recovered from the previously existing nervous symptoms.

Case II. A young married woman; always suffered from dysmenorrhœa. She became subject to epileptic seizures immediately after her marriage. These attacks often numbered twelve a day, and had continued for six months. In order to straighten and enlarge the uterine canal, it was thoroughly dilated and packed with iodoform gauze. After the usual period had elapsed, the gauze was removed. Subsequent examination some weeks after, with a view to inserting a stem-pessary, showed that the uterine canal freely admitted a large-size sound, and did not seem to present more than the ordinary curve of a virginal uterus. Patient has not had an epileptic seizure since the operation, and has steadily improved in health and strength. She has menstruated once since the operation was performed, with but slight pain. In view of the fact that the epileptic seizures apparently resulted from an aggravation of the dysmenorrhœa resulting from marriage, it is only reasonable to hope that the result will be permanent.

Boston City Hospital.

Gynæcological Operations by Dr. John G. Blake, during his Five Months' Service.

Dilating and Curetting, 60 cases.
Endometritis, endocervicitis, salpingitis, etc. 43
Stenosis — Sterility 12
Anteflexion of cervix 5
Two cases of salpingitis transferred to Surgical Department for laparotomy; tubes and ovaries removed; discharged well.

Operation on Lacerated Cervix, 19 cases.

Operation on Lacerated Perineum, 18 cases.
One operation had to be repeated.
Cervix and perineum on same patient 8

Alexander's Operation, 18 cases.
Right ligament not found in two cases.
Ligaments small and adhering in the ring in one case, failure.
Ligaments undergoing fatty degeneration in one case, failure.
The most satisfactory result was an Alexander and perineum operation for complete prolapse of the uterus.
Sixteen discharged well.

Septicæmia, 14 cases.
Six died and eight were discharged well.

Cancer, 12 cases.
Two died, nine relieved, and one, sarcoma of vulva, discharged well.

Pelvic Abscess, aspirated and drained by tube per vagina, 8 cases.
Three discharged well and five relieved.

Vulvo-Vaginal Abscess, 7 cases.
All discharged well.

Cystoceles, 5 cases.
All failures in as much as stitches gave way.

Fibroids, 5 cases.
Removed in two cases only.

Pelvic Hæmatoceles, 3 cases.
One died and two relieved.

Uræmia of Pregnancy, 3 cases.
All died.

Clinical Department.

A PERSONAL EXPERIENCE WITH SMALL-POX.

BY H. WARREN WHITE, M.D.

Thirteen years ago, amidst the pleasantest memories of my life, there happened an event which in comparison was like a horrible nightmare.

After graduation in June, 1880, I had the good fortune to spend a year abroad. I had enjoyed immensely the sights and sounds of Berlin, Dresden and Vienna. I had been up the Rhine and down the Danube, as I had never expected to do. My dreams of European travel had become happy realities; and at last I had spent some months in Paris, the most enjoyable experience of them all.

Here I had applied myself to medical studies more thoroughly than elsewhere. I had taken courses and clinics with Jaccoud, Charcot, Fournier, Parrot and Latteux. The remembrance of those days is delightful. I enjoyed and profited much during that winter of 1880–81. But amidst that success and happiness I was to have a Waterloo indeed!

During the last week in February, while making a hospital visit in a children's hospital with Professor Parrot, I remember for the first time in my experience seeing three or four cases of variola that for some reason had been isolated and cared for in a distant wing of the hospital. It was nearly noon at the end of a long visit. I had only a roll and a bowl of chocolate for breakfast those mornings, and was already feeling the need of my breakfast with a fork, as they call it. Before entering these apartments Parrot turned to the fifteen or twenty students and asked us if we were vaccinated, for if we were not, he would not advise us to continue the visit. Three or four turned back, but I went in with the others; for it occurred to me *I* had no need to fear this contagion. I had been successfully vaccinated when a baby and again when about fifteen years old; and an attempt at revaccination when in the last year in the medical school had been unsuccessful. I considered myself to have immunity from the disease, although this last time referred to I was vaccinated by a fellow-student with virus which I have since suspected was inert.

The cases under Parrot's care were all children; his prognosis very grave. Their appearance was *sickening;* and the stench-laden atmosphere I had good reason to remember again in about two weeks. This peculiar odor, once thoroughly appreciated, I believe can never be forgotten. It is like nothing else.

This exposure to variola was a positive one, occurring but once and lasting not over fifteen minutes. I handled neither patient nor anything in the room, but simply inhaled this heavily-charged atmosphere while tired and in a hungry condition. This was the first part of the last week in February. My medical course ended with the month of February; and so promptly on March 1st, I left Paris at 7 A. M., and ate dinner at the Bedford Hotel, London, at 6.30 P. M. of the same day. I felt particularly well; and while crossing the English Channel I was not in the least seasick, although the passage that day was more than ordinarily rough.

I came to London on Tuesday, settled quickly in my new quarters, arranged to attend a surgical clinic of Lister's; and Friday made my first visit with him at King's College Hospital. On Saturday I felt unusually tired and weak, and Saturday night was in alternate fever, sweats and chills. It was about ten days now since my exposure, which occasion had wholly passed from my mind. Sunday the 6th, was quite sick; a miserable feeling throat; sore and lame all over; something like an approaching tonsillitis, to which I had ever been very liable. Hoping to improve by going out, I rode to Bloomsbury Chapel. Did not enjoy my trip out; nor the sermon, although pronounced by good judges to be a most excellent one. My headache increased, with dizzy, giddy sensations. Glad to get back to the hotel and stay in the rest of the day. In the afternoon I noticed an erythema on the back of my hands and wrists, which increased. Complete anorexia. Temperature 101½°. In bed I felt better; and although my sleep was disturbed and uneasy, I worried through the night without calling for help.

Monday morning I was much worse; could not possibly suffer more backache and headache; tried to sit up; vomited. Temperature 104°. Erythema on hands and face, chest and abdomen now very marked. Called the landlord; and he, frightened at my condition, called his physician, Dr. Hall. In a careful, deliberate fashion he diagnosed scarlet fever as the trouble we had to deal with. He called my attention to the fact that a hotel was no place to be sick in (I should have known better, of course). Said I must go at once to the London Fever Hospital; that it would take all day to get an ambulance, and that the law forbade using a public cab. It was "*only* a mile away," and I must walk! Somehow — I never remembered just how — I hastily packed and locked my luggage, carelessly dressed, and walked (with Dr. Hall's help) through the streets to the hospital. He dropped me at the door, and I dropped after I got inside. Was given a private room and special nurse, in honor of my youth and profession. Temperature after entrance 105°. Dr. Smith, of the staff, diagnosed scarlet fever. The fact that I had never had it and that it was very prevalent just then in London made it seem quite likely. Although variola later became very common in the city, just yet it had not become epidemic.

Tuesday. Still sore-throat, headache and high fever. The rash did not act typically, and some doubts were expressed as to its being scarlet fever. It had faded instead of increasing. Some one suggested variola. That day I remember how aggravating and unnecessary the noises of a hospital seemed to me. People talked incessantly; dishes rattled; doors slammed; ward trucks squeaked excruciatingly, and the wheels rattled miserably. I vowed, if I got well, I'd buy some lubricating oil and rubber tires, and present them to this hospital. I would tell them how much a poor devil suffered from noises which could be prevented.

Wednesday morning, before light, I detected about myself that odor which was unmistakable. I recognized the flavor of two weeks ago. I could not wait for daylight. I called the nurse, and told her I had no doubt now what I had, and to inform the house-officer at once that I had small-pox. She hastened away without a word. I put my hand to my face, and felt what seemed like a lot of bird-shot just under the skin of the forehead along the edge of my hair. The house-officer came at once, and confirmed my diagnosis. You can scarcely guess what chagrin, confusion and distress I caused in that hospital; and to make matters worse they had to wait all day long till evening for the small-pox ambulance to come for me. They would have got rid of me before, but they did not dare to use their own ambulance. I remember that ride very well. Their small-pox ambulance was constructed something like an American hearse. The patient was wrapped in blankets, shoved in, and the doors shut. It was like attending your own funeral. Lying in there and easily looking out the glass sides at the happy, healthy people walking the sidewalks, made me feel extremely miserable and unfortunate.

Thus I entered Highgate Small-Pox Hospital on the evening of Wednesday, March 9th, an unwelcome encumbrance. The first night there, I believe, was the most terrible in my whole experience. I arrived late, and was put into the centre of a long ward with twenty or thirty others. A howling snow-storm outside. There were large ventilators over each bed (like those in dissecting-rooms), and they were so wide open I felt the snow sift in upon my face during the night. The patient in the bed to my right was in a howling delirium all night long, but quieted down and died about daylight. Another died across the room, three beds away, on my left. There were no screens to put around them. There were only a few private rooms, and those were occupied by women. They changed my bed to the end of the room next day, where, by turning to the wall, I could avoid seeing the misery around me. There was no attention worth calling nursing, as good nurses would not accept such a position. The nourishment dealt around was thick slabs of bread and butter and a bowl of tea. My mouth and throat were very sore, and I could not eat anything like this. After much begging I got some milk. For three days after that I had a wild delirium, more, I expect, from the excitement and shock of my experience than from the intensity of the disease, though the attending doctor said I was very sick and was part of the time in a camisole. My face was swollen and painful, and my fever ran high. I would not stay in bed. Was continually trying to extinguish imaginary fires, rescuing myself and bedding from the blaze. Once they found me with a handkerchief tied tightly around my neck, and I asked for a short stick to thrust under it and twist it to strangle myself. All such fine plans were prevented, and full doses of chloral and bromide taken after much persuasion. Some dim recollection of all this I have still — the most horrible remembrance of my life.

I saw myself for the first time on the following Monday (clothed in my right mind). Nobody would recognize me. It appeared as if my face had been burnt with steam or powder. I would not know myself. I feebly asked the doctor if this was a case of varioloid. I remember how he laughed. I tried to laugh, but it hurt me too much. I looked at my chart, which he showed me — "Discrete variola *vera*." This I felt had been the true article sure enough. There was a fee of four guineas, I found out, due the hospital for all this elegant entertainment; and I got the landlord to advance the same on the strength of my luggage still in his possession.

Tuesday, Dr. Smith, of the London Fever Hospital, sent me some oranges, grapes and flowers; but my mouth was too sore to eat the fruit, and somebody stole my flowers.

I went into the convalescent ward on March 16th. My face, itching unbearably, was relieved on application of carbolized vaseline. My companions here were very dull and stupid. The weather outside was stormy most of the time, the epidemic increased, and the hospital was crowded to the doors. Diet: boiled mutton and ale, t. i. d. Later I used to make the rounds with Dr. Goude (as my strength improved). I remember one remarkable case of hæmorrhagic small-pox in an old man. This man entered strongly pitted. It was his third attack. His skin was purplish. He was bleeding from every orifice of his body — mouth, nose, ears, bladder, rectum and stomach — and very conscious of his serious condition. He never broke out fairly before he bled to death. Deaths occurred daily. The mortality of confluent cases was nearly fifty per cent.; of the discrete cases, six per cent. It was very dull and lonesome to me; and it was too sickening for me to have much interest in it all, though the doctor did all he could for me. The horror and distress of a severe confluent case must be seen to be appreciated, — the phlegmonous face, swollen beyond possibility of recognition, swollen so that the eyes cannot be opened; the tongue protruding, so much swollen it cannot be held in the mouth; the fœtid breath, drawn with great difficulty and much noise. Happily such patients are comatose, muttering or groaning in a typhoid-like condition, finally getting exhausted and giving up the struggle, or wonderfully living on, day after day, without nourishment, and finally recovering (in some cases most miraculously), but carrying the scars of the terrible struggle as long as they live. I was particularly sorry to lose the night nurse, who had been very kind to me. She was found to drink the brandy ordered for the patients. I knew before that she had been drinking by the odor; but I was not surprised, considering what a place that was to work in. There was often in the night a confusion of howls from the long ward. Poor lunatics! I could scarcely believe that a few days before I was as delirious and making as much confusion as any of them. Many hundred patients passed through that course and graduated into the convalescent wards while the epidemic raged; but many others went the way to the dead-house.

On March 22d I took dinner once more like a civilized being, this being down-stairs with Dr. Goude, in his private apartments. I told him how poorly his patients were being nursed. He seemed to be much surprised and shocked to hear of it. I never knew if it was changed, or if it could have been; and in writing this I fully realize how much easier it is to point out defects than to remedy them.

On March 23d, after a thorough carbolic bath and baking of my clothes (letters sent out were thus baked), I was given my liberty once more. Although too weak to walk then, in about a week I was thoroughly convalescent. Always anæmic, I was extremely so for a month afterwards; my breath short and pulse rapid on the least exertion. I lost ten pounds. The only special treatment I received was sedatives for nervous symptoms; cold, wet cloths to the face, and carbolic ointments later; ice for the throat; and stimulants freely during convalescence.

I went later to the London Fever Hospital, and gave them £1. 1*s.* for their trouble (I hope they oiled the truck-wheels), and paid £3. 8*s.* 6*d.* to the landlord to cleanse my rooms at the Bedford and fumigate them properly, a nice little sum of between eight and nine guineas in all for my rather unusual *clinical* experience.

I could not help learning a few things about variola during this vivid experience which may be interesting just now:

(1) The feeble protection of old vaccinations.

(2) Importance of successful re-vaccination.

(3) That a previous attack or vaccination give about equal protection.

(4) "Varioloid" is not only a foolish, but a dangerous superstition.

(5) The intense virulence of variola.

(6) The long incubation.

(7) Difficulty of diagnosis.

(8) Rapidity of the disease and its stages.

(9) The very general eruption on inner mucous and serous membranes, alimentary tract from mouth to anus, trachea, bronchi, urethra, vagina, conjunctiva.

(10) Horror of the disease because of the isolation necessary, the pain and odor and delirium, and the poor nursing generally.

REPORT OF TWO PREGNANCIES FOLLOWING A LAPAROTOMY.[1]

BY N. F. CHANDLER, M.D., MEDFORD, MASS.

October 11, 1892, I was called to see Mrs. G., who gave me the following history: Age thirty-six. Family history not remarkable. Up to the time of her marriage, in 1880, she considered herself well, though not specially strong. About a year later, or in 1881, she began to have trouble which led her to consult Dr. C. M. Green. She was under his care until the fall of 1883, when she went to Dr. John Homans, who performed laparotomy November 21st, removing a cyst of the broad ligament. For four years after the operation her general condition was not good. She could not ride or walk any distance; even slight exertion caused fatigue. The catamenia were irregular, seldom more than three weeks apart, profuse but without much pain. In 1887 she began to improve in health; and in the latter part of that year she became pregnant. Before a diagnosis of pregnancy could be made a mucous polypus was removed from the cervix by Dr. C. M. Green, April 27, 1888. During this pregnancy, which was ended by miscarriage between the fourth and fifth months, her condition was apparently normal. She had the usual morning sickness, but nothing more. She had little or no unusual discomfort, and her general health steadily improved. So far as I have been able to learn, the cause of the miscarriage could not be explained, though the patient thought she had done more walking than usual, and felt that that may have been the cause. After the miscarriage her health was better than before; but even then she was not very strong, though she suffered from no particular ailment. If she became overtired or run down she was likely to have stomach trouble — food causing some distress and occasional vomiting. During June and July, 1892, she was not as well as usual.

---

[1] Read by invitation before the Obstetrical Society of Boston, October 14, 1893.

From August 1st to the 8th, she was unwell as usual; and this proved to be the last regular period before a very trying pregnancy, though on August 28th she began to have some irregular flowing, which continued at intervals until September 14th, when an examination made by Dr. C. M. Green led to the discovery and removal of a cervical mucous polypus, after which the flowing soon ceased.

Three weeks after her last regular period she began to be troubled with nausea and vomiting, which soon became so bad as to interfere with her taking and retaining proper nourishment. She found she was losing flesh and strength and on October 10th I was called to see her. At this time she was fairly well nourished, though rather anæmic. Physical examination showed nothing remarkable. Temperature was normal and remained so all the time. Urine examined at that time, and frequently during the pregnancy, was always found to be normal. Bowels were constipated. Uterus could not be felt above the symphisis. At this time nausea was constant, and she was able to retain very little nourishment. After October 12th she was kept in bed, trying different articles of diet and various medicines to overcome the vomiting. We met with little success, however, and she continued to lose flesh and strength, though not as rapidly as one would have expected considering the small amount of nourishment she was able to retain.

On November 20th she was seen by Dr. Green, and a diagnosis of pregnancy was made. A few days later all vomiting ceased, and she was able to retain food without discomfort. Thinking the miscarriage five years previous may have been due to adhesions, resulting from the laparotomy, preventing the uterus from rising as it naturally would, the patient was kept in bed until January 1, 1893, or until the end of the fifth month. After this she was up and about her room, but did not go down stairs until March 15th. At this time she was in a very good condition, having gained rapidly as soon as she was able to retain her food. She continued to take excellent care of herself, avoiding any exertion, going over the stairs only once a day and occasionally walking out on the veranda.

On the morning of April 2d I was called in haste to see her. I found her suffering from frequent severe abdominal pains, and with each pain the uterus could be felt to contract. Vaginal examination showed the uterus to be high in the pelvis, the cervix not taken up and the os not dilated. Fœtal heart distinctly heard on the left side. Sufficient morphine was given to check the pain at that time; but during the next two days the pains would return as soon as the effect of the morphine would wear off, and more had to be taken. April 5th she was free from pain, but nausea and vomiting were more troublesome than ever. She was not able to retain any food, and suffered constantly from nausea, whether taking food or not.

This condition of things persisting, in spite of efforts made to check it, Dr. Green was asked to see the case again April 10th. He found the uterus low in the pelvis, the head presenting, os admitting finger-tip. He believed we had better delay any operative interference for the present, in the meantime trying rectal feeding, and keeping close watch of the case.

On April 25th, or at the end of the eighth month, the mother's condition was such that further delay was thought unadvisable in the interest of both mother and child. Ether was given, and Dr. Green did manual dilatation, turning the child and delivering without any great difficulty and in a short space of time. After the mother had recovered from the ether there was no more vomiting, and her convalescence was uninterrupted. The child, a girl, appeared to be in very good condition when born, and did very well for twenty-four or thirty-six hours, when it began to have convulsions; and it died on the third day.

The points of special interest in this case, as they occur to me, are, the history of two pregnancies after an operation which changed the condition of the ligaments which hold the uterus in place, and probably left it less free to rise above the brim of the pelvis; the coincidence of a cervical mucous polypus appearing early in each pregnancy; and the obstinate vomiting which came on as soon as there was any unusual pressure in the cavity of the pelvis, and remained until that pressure was removed.

◆

Medical Progress.

REPORT ON DISEASES OF THE NERVOUS SYSTEM.

BY PHILIP COOMBS KNAPP, A.M., M.D.

(Concluded from No. 3, page 65.)

CEREBRAL INFANTILE DIPLEGIA.

Freud[10] unites under the above heading four types of cerebral disease: (1) General rigidity of cerebral origin (Little's disease); (2) Paraplegic rigidity (spasmodic tabes dorsalis of children); (3) Double spastic hemiplegia; (4) Congenital general chorea and double athetosis. General rigidity of cerebral origin has two fundamental characters: the lower extremities are much more affected than the upper, and the phenomena of contracture exceed those of paralysis. It is also distinguished by a slowing and diminution of the cerebral influx on the co-ordinated actions of standing, walking and articulate speech, and by a varying degree of mental impairment. Strabismus is common; atrophy is absent; convulsions are frequent soon after birth, but they do not continue. The affection remains stationary with a tendency to improvement. Many writers consider double hemiplegia as closely allied to this, but others make a sharp distinction. Paraplegic rigidity, once thought to be purely of spinal origin, is shown, by the occurrence of strabismus and mental impairment, to be allied to general rigidity, but to be of a less severe type. Both of them are regarded by Freud as related and connected by many transition forms. The general form may improve until there is only a trace of rigidity in the arms, when the case resembles the paraplegic form. In other respects they are very much alike. In the general form there may be more or less paralysis, or a facial paresis, which forms a link with the cases of double spastic hemiplegia where paralysis predominates, and these transition cases are much more often seen. Cases of diplegia may also show transitions toward paraplegic rigidity. To produce double hemiplegic intra-cerebral or deep bilateral lesions are necessary, but superficial lesions, especially near the median fissure suffice for general or paraplegic rigidity; and the meningeal hæmorrhages of difficult labor afford precisely the lesions required. Congenital chorea and double athetosis may be classed with the cerebral diplegias, for in ordinary spastic hemiplegia it is not unusual to see similar motor troubles develop after paralysis, post-hemiplegic chorea. In other cases the chorea is manifest from the first, choreic hemiparesis. If this be the case in hemiplegia it must also be the case in double hemiplegia. Chorea and athetosis are also found in cases of rigidity. Consequently Freud would class them all under the one head of cerebral diplegia. Difficult labor is an important etiological factor in all four forms, premature birth only in the cases of general or paraplegic rigidity. Rigidity may also follow acute infectious diseases. Freud rejects classifications of the causes, and thinks it by no means easy to say, in cases where the symptoms do not manifest themselves until a year or two after birth, that the trouble was not of congenital origin. Many children are born before term or after difficult labor, but they have not diplegia, hence there must be a predisposing factor beside the accidental factor of traumatism. In syphilitic cases this factor may be regarded as the fragility of the blood-vessels, hence it is not illogical to suppose a similar state of the vessels in debilitated or cachectic children. It is a curious and unexplained fact that epilepsy is common in double hemiplegia and spastic hemiplegia, but extremely rare in general rigidity and athetosis.

---

[10] Revue neurologique, 30 April, 1893.

EPILEPSY.

Hohn[11] regards as epileptic cases of sudden and periodic losses of consciousness, to which are generally joined convulsions of a definite type, without any notable modification of the central nervous system visible to the naked eye. In three cases which he has studied microscopically, he found an increase of the cells of the neuroglia, a thickening of their ramifications, an absorption of the intercellular substance, a considerable growth of new vessels and a weakening of the nervous net-work. As a rule these changes are seen chiefly on the lateral face of the convolutions. In one case he noted a colloid degeneration of the ganglion cells, evidently connected with death during an attack. The insula and the gyri recti and fornicati were most affected. In the internal capsule was seen a degeneration of the fibres coming from the hemispheres, especially the motor fibres. In the pons, medulla and cord the pyramidal fibres were partly degenerated. Epileptic attacks *may* be explained by an irritation of the cortex alone, but a generalization of the attack demands that the bulbar and spinal fibres be equally involved. Hohn believes that the attack itself is due to a vaso-motor process, in the course of which venous stasis with acute œdema is produced in the central nervous system.

Fournier[12] recognizes as occurring in syphilis a form of epilepsy very different from what is ordinarily termed syphilitic epilepsy, or rather the epileptic form of cerebral syphilis. This form of epilepsy appears as an isolated symptom, without any other general or cerebral phenomena, and it continues under this form without association with other marked phenomena. It lasts a long time, it is neither cured nor checked by antisyphilitic remedies, but it is relieved, although not cured, by the bromides. True syphilitic epilepsy, on the contrary, is associated with other cerebral phenomena, rapidly assumes the symptoms of a specific encephalopathy, progresses more or less rapidly toward a cure or toward a fatal termination, and is very often benefited by antisyphilitic remedies. He cites a case in which, twenty years after infection, at the age of forty-five, epilepsy developed and continued without other complication for eleven years. Antisyphilitic treatment was useless, but bromides checked the frequency of the attacks, and was the only thing that did any good. In this form of epilepsy the invasion is sudden, unexpected and spontaneous; it comes on in full health, without prodromes or apparent cause. It usually begins with an attack of *grand mal*, but later *grand* and *petit mal* may be associated. The attacks of *grand mal* are like those of ordinary epilepsy, but they are not very frequent, the attacks of *petit mal* are much more frequent and may increase in frequency, even replacing the attacks of *grand mal*. This form of epilepsy occurs in the tertiary stages of syphilis. Fournier thinks it due to syphilis on account of the clear previous history, the advanced age at which the convulsions begin, by the absence of any other cause, and by the occasional co-existence of true syphilitic accidents. It differs from syphilitic epilepsy in that it is never partial, never is associated with other cerebral symptoms, lasts for years and never yields to antisyphilitic treatment. It is derived from syphilis, but, like tabes, it has not the nature or the essence of a syphilitic manifestation. Hence Fournier would call it "parasyphilitic epilepsy." Mendel's investigations, showing that epilepsy is not very infrequent after thirty in non-syphilitic subjects, make it doubtful whether Fournier's cases are really to be regarded as a special type.

Epilepsia tarda. — It is a well-recognized fact that the great majority of cases of epilepsy begin before the age of twenty, and a number of years ago Delany classed cases beginning after the age of thirty as "*epilepsia tarda.*" Mendel,[13] after a careful exclusion of all cases simulating epilepsy, has studied 904 cases coming under his own observation. Contrary to the statements of Reynolds and Nothnagel, he found the male sex more disposed to the disease, 555 of his cases occurring in men. The largest number of cases begin between the ages of ten and fifteen, and over two-thirds, 623, before the age of twenty. From the age of twenty the frequency of epilepsy becomes distinctly less, but in the decade from thirty to forty no less than 99 cases began, so that Mendel justly takes exception to regarding the onset of epilepsy during that period as particularly remarkable, and only for the cases which begin after the age of forty would he admit the term "epilepsia tarda." After the age of forty epilepsy becomes much less frequent, only 53 cases beginning after that age, and only three cases) one man and two women) occurring after the age of sixty, the man being sixty-one, and the women sixty-two and sixty-three. Mendel's figures agree with the statements of Bennett and Gowers that epilepsia tarda is commoner in men, 38 cases occurring after the age of forty in men, and 15 in women; 6.8 per cent. of all cases of epilepsy in men may be classed as epilepsia tarda, and 4.3 per cent. of all cases in women. Delany found hereditary taint in one-half of the cases occurring after the age of thirty. Mendel accepts this view, for in one-fourth of his cases, where the history of any hereditary taint was hard to be obtained, owing to the social condition and the advanced age of the patients, he found clear evidence of such a taint. The direct exciting causes of epilepsia tarda seem to be the same as those of epilepsy of early life, fright and trauma playing distinct parts. In all Mendel's cases syphilis was excluded; hence he disputes Seeligmüller's claim that syphilis is to be suspected in all cases of epilepsy occurring after the age of twenty. Arthritis, which Charcot and Delany thought had some relation to epilepsia tarda, was never observed. Neither pregnancy nor the menopause seem to have much influence upon epilepsia tarda. In a part of the cases the attacks increase in frequency and severity, and the mental faculties deteriorate, just as in the epilepsy of earlier life; but in general the course is milder and not so progressive, and the mental faculties suffer less. The various psychical equivalents, and mental disturbances preceding or following the attacks, or occurring during the intervals, are not infrequently observed, and insistent ideas may be associated with the affection, but this is less common than in the epilepsy of early life. The prognosis and treatment do not differ materially from the prognosis and treatment in ordinary epilepsy.

---

[11] Nordisk. medic. Arkiv, No. 15, 1893.

[12] Revue neurologique, 30 November, 1893.

[13] Deutsche medicinische Wochenschrift, 9 November, 1893.

INFECTIOUS NATURE OF CHOREA.

Pianese[14] has undertaken an elaborate and thorough study of the infectious nature of chorea, and has come to some very important conclusions, which follow:

(1) From the cord of a young girl, who died of an attack of ordinary chorea of a grave and generalized type, he succeeded in isolating a bacillus 2 to 4 μ long and $\frac{1}{4}$ to $\frac{1}{2}$ μ wide, deprived of ciliæ, and endowed with slow movements. It grows on the ordinary culture media, and takes a characteristic aspect on gelatine. It is sporific, and grows well between 18° and 38° C.; it dies at 60° C. and — 5° C.; it resists rapid dessication for seven days, action of light for thirteen hours.

(2) Inoculations of pure cultures in animals (dogs, rabbits, guinea-pigs) give positive results when practised in the anterior chamber of the eye, along the nerve sheaths and under the cerebral dura; they are negative if made into the subcutaneous connective tissue, the great visceral cavities or the blood-vessels.

(3) When the inoculations have given positive results the animals have presented a trembling, either general or limited to certain muscular groups (the muscles of the back or shoulder by preference); they become apathetic, timid, frightened at trifles, and they utter piercing cries when the spine is roughly touched. Ordinarily these phenomena appear twenty-four hours after inoculation. At first they are slight, but they increase; contracture develops, walking becomes more and more difficult, and death ensues at the end of five days. Dogs and rabbits inoculated along the sciatic have presented for twenty or thirty days a general trembling, with contracture and emaciation, and then have almost completely recovered.

(4) The organs of the animals who died from these inoculations were also tested; the brain, cord and nerves have always given cultures, but the liver, spleen, etc., have produced nothing.

(5) Inoculations of cultures sterilized in boiling water and in other ways have given the following results on animals; no febrile reaction either immediately after the injection or during the whole time that the animal remained alive; some phenomena resembling those which were presented by animals inoculated with pure cultures; apathy and some weakness for a few days, and then progressive emaciation leading to death after a period of time which varied with the size of the animal.

(6) The bacilli probably travel in the organism of the animals experimented on through the lymphatics.

(7) On a bacteriological examination, bacilli were found only in the cord of choreic cases, and only in the brain, cord and nerves of animals experimented on.

(8) The results of the histological examination in a case of chorea were as follows: marked hyperæmia of the central nervous substance, with numerous punctate hæmorrhages; little foci of inflammation, very limited, peri-vascular, and disseminated in a variable fashion; slight ependymal myelitis; beginning degeneration of the columns of Goll; in the lumbar cord, cellular infiltration in the gray horns, chiefly the anterior; the muscles were fissured, and showed waxy degeneration; marked hyperæmia of the liver and spleen; intracapsular hæmorrhages, cloudy swelling and necrosis of epithelium of the renal tubules; the lungs were dotted with hæmorrhages, and there was some pigment formation. In animals inoculated with pure cultures he found hyperæmia of the whole central nervous substance; pigmentary infiltration of the cells of the anterior and posterior horns of the cord; marked hyperæmia of the spleen; a high degree of hyperæmia of the liver, with very small spots of necrosis; cloudy swelling and necrosis of epithelium of the renal tubules. In animals inoculated with sterile cultures he found the same alteration of the ganglion cells of the cord; a little hyperæmia of the central nervous substance; degeneration, chiefly fatty, of the endothelium of the vessels of the liver; cloudy swelling, vacuolization and necrosis of epithelium of the renal tubules.

In this connection, it will be remembered that Dana,[15] in a case of chorea, found a diplococcus in the deep layers of the pia and the superficial layers of the cerebral cortex.

---

[14] La natura infettiva della corea del Sydenham. Instituto d'anatomia patologica della R. Universita di Napoli, 1893.

[15] See this Journal, 2 November, 1893, vol. cxxix, p. 448.

Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Meeting October 14, 1893, the President, Dr. Charles M. Green, in the chair.

Dr. J. G. Blake presented a

REVIEW OF A SUMMER'S WORK IN GYNÆCOLOGY AT THE BOSTON CITY HOSPITAL.[1]

In closing, he said he wished to make three points: first, that Alexander's operation did not interfere with pregnancy in any way; second, the value of the conservative as opposed to the radical operation in cancer of the uterus; third, the value of dilatation and drainage as opposed to laparotomy in catarrhal disease of the tubes.

Dr. F. H. Davenport said that in regard to the question of the influence of the Alexander operation on pregnancy, he had had no opportunity in his own cases to judge. There were two effects to be feared: one, the termination of pregnancy before full term; the other, the question of the position of the uterus during pregnancy or after its termination. With regard to the first, some statistics of value had been published by a writer on the Continent, which showed that the Alexander operation had very little tendency to interrupt pregnancy, while ventro-fixation, which has been advised as a preferable operation in these cases, did favor abortion. As regards the effect of pregnancy on the subsequent position of the uterus, he had not seen any statements. Within a few days, however, he had seen a woman who had been operated on in the early summer for prolapse of the uterus by the combined operation of perineorrhaphy and Alexander's, who was two or three months pregnant, and in whom the uterus was so prolapsed as to lie half over the vulva. He replaced it in the knee-chest position, and held it back by a pessary. It was not surprising that this should have occurred, for it has been his experience that in not a few cases it is at least six months before the soreness and tenderness about the incision disappears, which seems to show that the ligaments are often as long as that in becoming firmly adherent in their new position. In the present case, pregnancy supervening so soon after the operation, they would be very apt to stretch. As regards the operative treatment of cancer, the question of ultimate results is still so uncertain that very little of value can be deduced from statistics in favor of one operative procedure or another. Within a day or two, Dr. Davenport had seen three statements by German writers as to the per cent. of ultimate cures after operative treatment, which varied from five per cent. to forty per cent., showing either that they had different ideas as to what a definite cure is, or that they restricted their figures to one class of cases. As long as such uncertainty exists in the prognosis it is wise to give the patient every possible chance. Therefore he would advise a radical operation in all cases except the absolutely hopeless, feeling that even if the disease did return, it was robbed of so many disagreeable features that the patient's lot was preferable.

Dr. Davenport said that in his experience, when cancer returned after the removal of the whole organ, it came back in the broad ligaments, and did not ulcerate through into the vagina. It was therefore unaccompanied by the hæmorrhage and foul discharge which is so distressing both to the patient and her friends, and her condition was very much better than if it had been left alone. He was also convinced that there was less pain.

Dr. Geo. Haven has recently seen a case of pregnancy following Alexander's operation. The cervix was almost outside the vulva, but the case went on to full term and was delivered without complication. After convalescence he found the uterus subinvoluted, but not badly retroverted, and he thinks that she will soon be in good condition. As to relief of epilepsy, spoken of in one case reported by Dr. Blake, he has seen it stated that almost any operation is often curative for a year or so, but the epilepsy is almost sure to return. He agrees with Dr. Davenport in preferring the radical operation for cancer, preferably the supra-pubic one.

Dr. Edward Reynolds has had charge of some six cases of pregnancy referred to him because they had previously had an Alexander operation performed. All went on normally, and in all the uterus returned after the labor to the normal position, so that he would not have known that any operation had been performed. As to dilating and packing, he is of the opinion that good results are obtained when the tubes are straight and there is but one collection of fluid; whereas, if they are tortuous and there is more than one collection of fluid, this operation is a failure. As to cancer of the uterus, the disease is so short and disagreeable that he thought patients would run any risk of escaping by a radical operation, which he would perform as early as possible, especially if the disease was at the fundus.

Dr. G. Haven said in a case he reported the other night the fundus and cervix were involved, and not the vagina. Here radical measures were very effective, while palliative ones would have been of no avail.

Dr. John Homans said that in his experience there was little or no pain on recurrence of the disease after a radical operation, while after palliative measures the pain was as marked as ever; and he mentioned two cases which illustrated this.

Dr. Sinclair spoke of a case where the uterus was removed for cancer. Here a recurrence took place, with great tendency to hæmorrhage, which could be restrained. There was, however, no pain.

Dr. Davenport stated that this had also been his experience. With a recurrence after a radical operation there was absence of ulceration and discharge, no odor, rarely hæmorrhage, and much less pain.

Dr. Charles M. Green: I confess that I am yet to be convinced of the wisdom of performing the operation for shortening the round ligaments during the child-bearing period. I have always supposed that the uterus was intended to be a movable organ, free to accommodate itself to a full or empty bladder or rectum, and free to rise and become an abdominal organ in pregnancy. If pregnancy ensues in a uterus raised and held by the Alexander-Adams operation, one of four things must happen:

(1) The uterus will be firmly held and prevented from rising, and miscarriage will occur. It is known that this sometimes happens, although probably less frequently than after ventro-fixation.

(2) The uterus will rise and pull away the shortened ligaments from their stitched attachment to the

---

[1] See page 89 of the Journal.

pillars of the ring. This event would probably not occur if the ligament had been carefully stitched, unless pregnancy ensued very shortly after operation.

(3) The round ligament will stretch as the uterus rises. If the ligament does stretch, what assurance is there that after the lying-in month the uterus will be held in the position to which it was drawn by the Alexander operation? What assurance that the patient will be any better off, in respect to the position of her uterus, than she was before the operation?

(4) The round ligament, which is made up in part of muscular fibres from the thin, superficial, muscular coat of the uterus, will partake with the uterus in the muscular hyperplasia which normally occurs in the first half of pregnancy. If this muscular hyperplasia, this physiological elongation of the round ligament can be shown to take place, then we may expect that the ligament will involute with the uterus, shorten, and, after the lying-in period is over, hold the uterus where it was before pregnancy.

In the absence of positive information on these points, it seems to me that we need the evidence, not of three cases, nor of six, but of many times that number. When it can be shown by a considerable series of cases, observed for some months after the puerperal period, that miscarriage rarely occurs after and in consequence of the Alexander operation, and that the uterus remains in essentially its normal position after puerperal convalescence, my preconceived objections to this operation will disappear; until then I must regard it as unphilosophical from an obstetrical point of view.

DR. BLAKE, in closing, said that he restricted his operations for drainage to cases of catarrhal salpingitis. As regards cancer, in the early stages, he himself had no doubt of the value of hysterectomy; whereas, if the disease had extended, there was no gain to be had by removal of the uterus, and life was endangered by the operation. He preferred the palliative operation in this case, and not to endanger life.

DR. N. F. CHANDLER read by invitation

A REPORT OF TWO PREGNANCIES FOLLOWING A LAPAROTOMY.[2]

DR. GREEN said that it was an interesting coincidence in this case that in both pregnancies a cervical mucous polypus should have developed, and that the patient should never have had a similar affection at other times. He was not aware that these glandular polypi had any particular relation to pregnancy: they are found in all ages, even in old women. The most interesting feature in the case was the extreme nausea, vomiting and emaciation towards the close of the second pregnancy, and the explanation of these symptoms. When miscarriage occurred between the fourth and fifth months of the first pregnancy, it was thought at the time that the accident was due to adhesions, consequent on the laparotomy for removal of a cyst of the broad ligament, which adhesions prevented the uterus from rising. With this theory in view, the patient was kept very quiet, and much of the time in bed, during the second pregnancy. When, however, the early nausea and vomiting had disappeared, and the uterus had risen above the site of the supposed adhesions, it was hoped that all would go well. When nausea and vomiting supervened later in pregnancy, both Dr. Chandler and Dr. Green were at a loss to account for the symptoms. Great attention had been paid to diet and hygiene, and there was no fault with the kidneys. Finally, it was found that the fœtal head had descended low into the pelvis, apparently because the tension of the abdominal wall, made more rigid by the unyielding cicatrix, afforded more resistance to the enlarging uterus than the girdle of contact at the pelvic brim. The head descended, according to Dr. Green's recollection, a month or six weeks earlier than usual, and it seemed to Dr. Green that the aggravated nausea and vomiting were attributable to the pressure of the head on the cervical and pelvic nerves. It was well known that nausea in the early months was often due to pressure of the enlarged pregnant uterus while it was still a pelvic organ, and that the symptom disappeared when the uterus rose into the abdominal cavity. By analogy, therefore, it seemed reasonable that in a susceptible patient the same symptom might be caused by a premature descent of the head.

DR. J. HOMANS said that the cyst in this case weighed a pound, and was the size of an orange. The tube was long, measuring seven inches; that and the ovary were removed. There were no adhesions, and nothing remarkable about the operation.

DR. EDWARD REYNOLDS suggested that the partial dilatation of the os was a cause of the vomiting.

DR. GREEN presented an obstetric-case blank, which he had prepared as a convenience in recording cases at the bedside. The blank is similar to the one in use at the Boston Lying-in Hospital, some changes having been made to adapt it to the requirements of private practice.

. . . . Para. Age, Color,
Birthplace of F. Occupation,
Birthplace of M. General condition,
Last ctm., Quickening, Labor expected,
Preceding pregnancies and labors,

Labor began, First visit,
Presentation and position, Cervix, Os uteri,
Fœtal heart { rate, location, Maternal P., T.,
1st stage ended, Membranes ruptured,
2d stage ended, Pulse, Temperature,
3d stage ended, Pulse, Hæmorrhage,
Placenta and membranes, Length of funis,
Perinæum Duration of labor,
Child's name,
Sex, Weight, Length,
Left patient, Pulse, Condition,

The first blank line is intended for the name and address of the husband, the second for the wife's name. Below are spaces for recording the birthplace of both parents, the occupation of the father, and the name and sex of the child: all of these data are needed for the report required by law to be made to the city registrar. There is purposely room for but brief notes on the face of the blank; but on the back may be recorded any points of particular interest in the labor or convalescence. The stereotyped plate for printing these blanks is with Mr. George H. Ellis, 141 Franklin Street, who will furnish the blanks for the cost of printing.

---

[2] See page 93 of the Journal.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, JANUARY 25, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

AVOIDABLE RESULTS AND ESSENTIAL PRECAUTIONS IN VACCINATION.

During the present season, there has been a large amount of vaccination done throughout this State and reports have come to us from numerous quarters concerning the prevalence of vaccine disease, especially among school-children, and the results.

First, the vaccine which has been used is the cowpox virus obtained from some of the many establishments that now guarantee to physicians a supply of pure animal vaccine. The use of the humanized or Jennerian virus seems to be almost a thing of the past. Nevertheless a few physicians still prefer the humanized virus, one remove from the cow, using for vaccine material the clear lymph of a healthy child, taken about the seventh day; and it has been affirmed that this virus acts more mildly than the animal vaccine, while being equally efficacious in conferring immunity.

With regard to the results of vaccinations, the vaccine disease seems in most cases to have run a fairly typical course, occasionally being of rather severe character. The unusual number of cases of marked general vaccinia eruption is to be accounted for by the unusual number of cases of vaccinia now in the community, and in proportion to the total number of children undergoing vaccination at one time is not probably at all increased. In one school in the vicinity of Boston there were about a hundred children successfully vaccinated (primary vaccination); of this number fifty per cent. continued their attendance at school without any interruption; twenty-five per cent. were obliged to absent themselves from school for a few days only, while the other twenty-five per cent. were confined to their homes for more than a week.

A physician living in one of the cities on the coast writes us that in his locality there have been an unusual number of severe cases of vaccine disease. He has never before seen so many "bad arms," and some children have been very sick. All the physicians in that vicinity have used virus obtained from the —— Vaccinal Institute. He has observed from the twelfth day intense inflammatory œdema develop around the point of vaccination, then lymphangitis and cellulitis, fever and other general symptoms of a septicæmic character, finally an extensive cutaneous necrosis in the region of the vaccination. In one instance (in which about the whole city was interested) he despaired of the life of his patient; fortunately the child is now recovering, but with a large slough at the point of vaccination. He believes that in this, as in other similar but not so violent cases, there was a complication of erysipelas due to the introduction of the streptococcus by scratching. Other physicians in the same locality have had cases of a similar nature, and it has been believed that the vaccine obtained on a certain occasion from —— farm was of a particularly virulent nature. The cellulitis, erysipelas or lymphangitis which have caused such dire alarm and opposition to vaccination are to be explained by the same principles as under any other surgical operations; some contamination of the wound by micro-organisms. In vaccination the physician has not a complete control of the whole chain of asepsis; he must trust to the honesty and cleanliness of the vaccine establishment, which should be above suspicion.

Our correspondent writes that the ivory points in those packages were stained *red*, as if from admixture of blood; this certainly indicates that sufficient care was not taken in charging the points.

These facts show that the owners of vaccine establishments have a responsibility to physicians and to the public of which they cannot be too mindful. They are expected to furnish vaccine of unexceptionable quality; obtained from healthy heifers, at just the right time, and under conditions of perfect cleanliness and asepsis. The lymph which is furnished, should be clear lymph, not lymph and blood or pus.

Physicians, too, have a responsibility in every case of vaccination, and this little operation should not be performed in a hasty and slovenly manner. Though antiseptics may not be used during the operation, as likely to interfere with the result which is sought, yet vaccination should be performed with perfectly clean instruments, and aseptically. The scarification may be made with the ivory points themselves, or with a fresh needle for each case, which in addition may be passed through an alcohol flame. Some physicians wisely make a practice of washing the arm before vaccination. All should do so. The same point should never be used on two patients: we fear this has been done, though very exceptionally.

What shall be done with the vaccinated arm? Some apply immediately after the operation a little isinglass plaster over the abraded surface, the vaccine being allowed to dry in, and the plaster having previously been dipped in boiling water. The piece of plaster is taken off next day, and the arm covered with some antiseptic dressing, such as carbolic gauze. This might be expected to be sufficient to protect the vaccine sore from extraneous germs, the gauze being renewed every day. The dried lymph may be covered by aseptic gauze or cotton glued to the arm at the edge with collodion.

We know physicians who take these precautions every time they perform vaccination. It would probably be better that all should. The vaccinated person is provided with a roll of antiseptic gauze for daily dressings, according to the strict directions of the physician. In this way, the danger that foreign microbes (staphylococci, streptococci, etc.) may enter the solutions of continuity caused by the vaccine disease, and thus add to this disease the evils of microbian associations — and we well know how much in some diseases, as diphtheria, the original virulence is intensified by such associations — this danger, we repeat, is thus likely to be reduced to a minimum.

It might be better that vaccine farms should be established and managed by the State, the points being sold at cost or furnished free. Such a proposition is at present under consideration in this State. Where there is a good State Board of Health, a proper supervision for such a farm or farms already exists.

◆

THE ARMY MEDICAL SCHOOL AT WASHINGTON.

It is always easy to find some matter of special interest in the Report of the Surgeon-General. This year, one of the first subjects to attract attention is the Army Medical School authorized by a General Order of June 24, 1893. Its object is the further instruction of newly-appointed medical officers. Severe as the ordeal of the Army Examining Board may be, the successful candidate has still much to learn before he is fitted to thoroughly perform his duties. In the words of the Report, "Certain of these duties are more important than the clinical treatment of individual cases of disease and injury, because the efficiency of a command may depend upon their proper performance."

The number of questions of practical sanitation on which the medical officers of the army must be well informed are numerous, — matters of site and soil; of ventilation, heating and drainage; of sewerage and the disposal of garbage; of water-supply; of food, slaughtering and storage; of disinfectants; of bacteria and ptomaines. Few recent graduates of our medical schools can be supposed to have thorough knowledge of such subjects, and it is to furnish such post-graduate instruction, as it would be called in civil life, that the Army Medical School is established.

The school is situated at Washington, and its course of instruction will extend over four months, beginning annually on the first day of November. The faculty consists of a president, who will deliver lectures on the duties of medical officers in peace and war; a professor of military surgery, including the care and transportation of the wounded; a professor of military hygiene, including practical instruction in the examination of water, air, food and clothing from the sanitary point of view; and a professor of clinical and sanitary microscopy, including bacteriology and urinology. Truly, the young army surgeon will not find any encouragement to idleness in the first four months of his service.

One of the companies of instruction of the Hospital Corps is also stationed at Washington, and its presence there is of value in connection with the work of the school. The Army Medical Museum and the library of the Surgeon-General's Office cannot fail to be also of service. The direct value of such instruction will be evident at once to any one familiar with the experiences of the late war.

The question naturally arises whether the medical schools of the country furnish to civilians equal opportunities for becoming skilled sanitarians.

There is also a suggestion for the volunteer forces, for it is hinted that the medical departments of two States were not so fully prepared for actual work when the emergency arose as they should have been.

◆

MEDICAL NOTES.

INFLUENZA AMONG THE PINE RIDGE INDIANS. — The influenza has been epidemic and exceedingly fatal among the Indians at the Pine Ridge Agency during the last month. The Indians are poorly protected against the cold weather, and are often sick but a day or so before they die.

A NARROW ESCAPE FROM BURIAL ALIVE. — A town councillor of Burton-on-Trent in England had a narrow escape from burial alive last week. At the very last moment, during the committal service in the cemetery, a friend detected what he thought was a sign of life. On examination the man was found to be still breathing, and was carried home.

DELEGATES TO THE INTERNATIONAL SANITARY CONFERENCE. — Dr. Edward O. Shakspeare of Philadelphia, Dr. Stephen Smith of New York and Dr. Preston H. Bailhache of the Marine Hospital, are the delegates appointed by the President to represent the United States at the international sanitary conference which meets in Paris to-day.

THE QUARCENTENARY OF PARACELSUS. — The four-hundredth anniversary of the birth of the famous Theophrastus Paracelsus von Hohenheim, at one time Professor of Medicine at Basle, was celebrated the 26th of last November by the villagers of his native place, Maria-Einsiedeln in Switzerland.

THE HUSBAND'S LIABILITY FOR THE WIFE'S MEDICAL EXPENSES. — The Supreme Court of California recently ruled that where the husband is liable for his wife's support, the wife's estate cannot be charged for medical survices, medicines and nursing which he secured for her in her last sickness, but that he alone is liable for them.

TYPHOID FEVER ON A WARSHIP. — A warship is a rather unusual place for an epidemic of typhoid fever to occur in; but over thirty of the crew of the British warship *Canada*, have been sent to the hospitals at Bermuda or Barbadoes. The admiral has requested that the vessel be ordered home at once before the whole crew gives out. It would be interesting, and in such a case probably not difficult, to trace the infection. So far no explanation has been published.

Small-Pox on a New York Steamer. — The Ward-line steamer *Seguranca*, which sailed a fortnight ago from New York, has been quarantined at Vera Cruz with twenty-two cases of small-pox on board. It is thought that the disease was brought on board at Havana by some steerage passengers.

"Variolin" Again. — The use of "variolin" for the internal administration of vaccination has been sanctioned, it is said, in Brooklyn by the principals of some of the public schools, who have accepted certificates of treatment by this means as a substitute for the required certificate of vaccination.

A Four Years' Course at the National Medical College. — At a meeting of the Faculty of the Medical Department of Columbian University, of Washington, D. C., held on April 11, 1893, it was unanimously agreed to make a four-year course of study necessary before graduation. This measure went into operation at the beginning of the present session of 1893–94. Each of the four courses covers seven months of lectures.

BOSTON AND NEW ENGLAND.

The New Crematory at Boston. — There have been already six bodies cremated at the new crematory at Forest Hills this year, and several engagements are made for the next week or two. The possibility of being cremated in New England has apparently increased the interest in this means of disposal of the dead.

Small-Pox in Boston. — During the week ending at noon on Wednesday, January 24th, there were four new cases of small-pox. There have been no deaths during the week, although one of the last patients, a woman, is critically ill. There are now in the hospital fifteen patients, five of whom are convalescing. Since the first case on October 30th there have been thirty-six cases and seven deaths.

Deaths at Boston Fires. — The records of the Boston Fire Department show that there were twenty-six deaths at fires in 1893. Only one of those was of a fireman, a ladderman who was crushed between his truck and an electric-light pole while on the way to a fire.

Small-Pox in Massachusetts. — There have been reported to the State Board of Health since the 21st of last September, when the first case occurred, nineteen cases of small-pox from places outside of Boston. Of these seven occurred in Lowell, four in Holyoke, two each in Worcester and Methuen, and one each in Somerville, Brookline, Marlborough and Yarmouth.

Vaccination at Newton. — The free vaccination stations in Newton were reopened for three days last week; and 729 persons were vaccinated, which is about twice as many as previously registered.

The Newton Hospital. — At the annual meeting of the Corporation of the Newton Cottage Hospital, held last week, it was unanimously voted to change the name of the institution and corporation from Newton Cottage Hospital to the Newton Hospital. The annual reports showed an increase of thirty-two per cent. in the number of patients during the past year, and that the new wards for contagious diseases had not been vacant at any time during the year. A nurses' home has also been completed.

Diphtheria at Calais, Vt. — So many cases of diphtheria have occurred at Calais, Vt., the last ten days that three of the schools have been closed for the present.

Diphtheria in Granby, Conn. — There is a considerable epidemic of diphtheria at present in Granby, Conn., so that the county health-officer has ordered the schools closed.

Small-Pox in Winsted, Conn. — Several cases of small-pox, some fatal, have occurred the last week at Winsted, Conn.

The New Hampshire State Insane Asylum. — The annual report of the Superintendent of the New Hampshire State Insane Asylum shows that during 1893 there were 248 men and 60 women under treatment in the hospital. The mortality rate during the year was 7.2 per cent. The percentage of recoveries, based upon the number of cases admitted, and excluding all recoveries from opium or alcohol habits, was 25.30 per cent.

NEW YORK.

Mortality. — During the week ending January 20th the number of deaths reported in this city was 888, as against 929 the previous week, which latter mortality was 103 less than the average of the corresponding weeks for the past five years. The deaths from influenza were 18, which was an increase of 3 over the week ending January 13th; but the deaths from pneumonia, 150, were 16 less. There were 6 deaths from small-pox, against 3 the previous week, and there was a slight increase in the mortality from diphtheria and typhoid fever.

Annual Meeting New York County Medical Association. — The annual meeting of the New York County Medical Association was held on January 15th, and the attendance was the largest in the history of the Association, about 300 members being present. The report of the Corresponding and Statistical Secretary, Dr. A. D. Ruggles, showed that during the past year 121 new members had been elected, and that the Association had lost 14 members by death and 27 from other causes. The total membership is now 951. The following officers were elected: President, Dr. S. B. Wylie McLeod (re-elected); Vice-

President, Dr. Augustus D. Ruggles; Recording Secretary, Dr. P. Brynberg Porter (re-elected); Corresponding and Statistical Secretary, Dr. Wm. W. Van Arsdale; Treasurer, Dr. John H. Hinton (re-elected); Member of the Executive Committee, Dr. John Blake White.

Outbreak of Small-Pox at Charity Hospital. — A serious outbreak of small-pox has occurred at Charity Hospital, and the history of it is of more than ordinary interest. On January 9th, Dr. Henry M. Silver, Demonstrator of Anatomy at Bellevue Hospital Medical College, was about to give a lecture before a class of students at that college, and on removing the cloth from the subject on which he was to give his demonstration in the anatomical room adjoining the amphitheatre, he was astounded to find the corpse covered with the pustules of small-pox. He at once notified the Bureau of Contagious Diseases; the building was disinfected, and about 125 students were vaccinated. On inquiry, it was found that the body which had recently been received from Charity Hospital was that of Louis Schmidt, sixty-three years of age. It seems that in the latter part of December Schmidt was taken from a lodging-house in East Broadway to Gouverneur Hospital, suffering from malignant syphilis. Whether small-pox had also developed at this time has not transpired; but, at all events, the latter disease was not diagnosticated by the physicians in charge, and on December 26th he was sent to the reception ward of Bellevue Hospital. Here the examining physicians confirmed the diagnosis of syphilis, and on the following day he was sent to Charity Hospital and admitted to the syphilitic wards. The man continued to grow worse, and on January 2d he died. It still being believed that he had suffered only from syphilis, the body was removed to the city morgue, where it was kept for nearly a week, that friends might have the opportunity of claiming it. Then it was taken to Bellevue College and placed among the subjects for dissection; and it was not until January 9th, as mentioned, that the real cause of death was discovered by Dr. Silver. The correctness of his diagnosis has now been abundantly attested. On January 16th three cases of small-pox developed in the male wards of Charity Hospital, and the patients were at once sent to North Brother Island. That evening Dr. Doty, Chief Inspector for Contagious Diseases, sent four of his corps to Charity Hospital, who vaccinated over eight hundred persons — patients, physicians, nurses and servants — and the whole institution was placed in strict quarantine. On January 18th seven additional cases of small-pox developed, and among those attacked with the disease was the warden of the hospital, Mr. Roberts. They were all removed to the hospital for contagious diseases on North Brother Island. On the same day a case of small-pox was reported at the Florence Mission for Fallen Women on Bleecker Street, and an investigation showed that the patient, a young woman twenty-two years of age, had recently been discharged from the work-house on Blackwell's Island. While serving a term of imprisonment there she had been detailed as a scrub-woman in Charity Hospital, and it was while she was engaged in cleaning the ward where Schmidt was lying that she contracted the disease. The Florence Mission, which has about thirty inmates, has also been placed in quarantine for three weeks.

◆

Miscellany.

TO ABOLISH THE OFFICE OF CORONER.

The following is an abstract of recommendations contained in the memorial of the select committee of the Medico-Legal Society of New York, addressed to the Legislature of the State and dated January 10, 1894:

> Your memorialists, after duly considering the premises, unanimously recommend to your honorable body that you amend the existing statutes, regulating the powers, duties, and compensation of coroners
>
> (*a*) By creating a new officer to be styled "Medical Examiner," as in Massachusetts and Connecticut, or "County Physician," as in New Jersey, who shall be authorized to conduct inquests or examinations in all cases where death has occurred by violence, or there is reason to suspect that the same is due to other than natural causes, having charge of all autopsies and all questions on the medical side of the inquiry, without a jury before a competent court, or before the coroner as a judicial officer, if retained after the plan adopted in Connecticut.
>
> (*b*) That said medical examiner be appointed by the county judges of each county, except New York, and by the Chief Justice of the Court of Common Pleas in that county, and only physicians skilled in their profession, of at least five years' practice, to be eligible to such appointment, and so far as possible without reference to partisan political considerations.
>
> (*c*) That only persons learned in the law shall be eligible to the office of coroner, and that if the inquiry is conducted before the coroner, he shall have charge judicially of all legal questions, and that the hearing, inquest, and proceedings shall be the same as if before the Police Magistrate in the City of New York or other cities of over 100,000 inhabitants, and before Justices of the Peace in all counties of the State except New York and King's Counties.

Clark Bell, *Chairman*, Theodore H. Tyndale,
Charles G. Garrison, Wyatt Johnson, M.D.,
Abram H. Bailey, H. W. Mitchell, M.D.,
Moritz Ellinger.

◆

CHOLERA.

It may be interesting to our readers to read some extracts from a letter from Constantinople written last December. The letter is not from a physician, but from a person having such opportunities for accurate observation as to entitle his account to the readiest acceptance:

"Cholera is said to be increasing. I pity the poor, especially the natives, for they have no protection from the municipal doctors, who seize them on the slightest pretence. One man was reported to be ailing a little. The municipal doctor came, said it was cholera, covered him all over with chloride of lime, wrapped him in a cloth, then smeared that with tar, then injected a solution of phenic acid behind his ears and into his nose. The priest was called, was sprayed with a solution of phenic acid till his robe was soaked with it, and his beard and hair; then he was told to say the prayers for the dying. Then the man was carried off to the cholera hospital; and the next day word came that he was dead and buried.

"A few days ago, a *hamal* (porter) who had too heavy a load stopped to rest on the bridge — put off his load, put his hands to his sides and gave a groan. Naturally, he looked a little pale. In a moment a crowd gathered; then the police came and carried him to the cholera hospital, in spite of his protestations that it was his heavy load, that he was not sick. In due time his friends heard that he was dead and buried.

"The poor people are frightened, and try to conceal themselves if they are really sick. Doctors generally are having an easy time, for no one likes to have a doctor seen entering his house."

◆

SIR JAMES SIMPSON'S EARLY EXPERIMENTS WITH CHLOROFORM.

Sir James Simpson's daughter has written in the January *Century* an interesting account of the introduction of chloroform in England, and of her father's early experiments in narcotic and anæsthetic drugs. She says:

"Round the table in the well-known dining-room in Dean Terrace it was his custom every evening to have an anæsthetic *séance* with Drs. Keith and Duncan. Each had a glass or saucer from which to inhale the various substances under trial. On the evening of November 4, 1847, on returning home after a weary day's labor, Dr. Simpson and his two friends sat down to their somewhat hazardous work. Having inhaled several substances without effect, it occurred to Dr. Simpson to try a small bottle of chloroform which he had had, he wrote, 'for several days in the house before trying it, as, after seeing it such a heavy and unvolatile-like liquid, I despaired of it, and went on dreaming about others.'

"The tumblers were newly charged, and the inhalers resumed their vocation. Immediately an unwonted hilarity seized the party, which became bright-eyed and very loquacious. Suddenly there was a talk of sounds being heard like those of a cotton-mill; a moment more, then all was quiet; and then a crash. On awakening, Dr. Simpson's first perception was mental: 'This is far stronger and better than ether.' His second was to note that he was prostrate on the floor, and that among the friends about him there was confusion. Hearing a noise, he turned and saw Dr. Duncan beneath a chair; his jaw had dropped, his eyes were staring, his head was bent half under him. He was quite unconscious, and snoring in a most determined manner. More noise still and much motion, and then his eyes overtook Dr. Keith's feet and legs making valorous efforts to overturn the table."

The interest in these experiments was not confined to the master of the house. The butler experimented also — only on the cook. On one occasion, finding some chloric ether in aërated water, he gave a glass of it to the cook, who, drinking it hastily, fell down unconscious. The butler rushed into the dining-room, saying, "For God's sake, sir, come down! I've pushioned the cook." After the woman was restored to consciousness the man was chary and contemptuous of any other concoction, and to the end repeated stubbornly his sentiment, "Chlory's the thing."

Correspondence.

FOUR YEARS' COURSE AT RUSH MEDICAL COLLEGE.

Rush Medical College,
Medical Department of Lake Forest University.
Chicago, January 16, 1894.

Mr. Editor: — My attention was called yesterday to the editorial note following the notice of the four years' course established by this college, published in your last issue.

Replying to your queries, I would say that the required annual course in Rush Medical College is eight months.

Regarding the facilities for completing a four years' course in three years, — there is no possible way whereby any under-graduate could do this; but graduates in pharmacy and dentistry, on account of their previous studies, we think would be well qualified to enter the second year in the Medical College; or graduates from dental colleges or pharmaceutical colleges requiring three full years of study, would be qualified to enter the third year of the Medical College.

Regarding graduates in arts and sciences, — we believe that they would be able to acquire as much information in the second and third years in the college as the ordinary graduate from a high school would be able to acquire in the first, second and third years; therefore, it seems to us only just to allow them this privilege. The fourth year will be the same for all; and it appears to us that it will encourage young men who wish to study medicine to make a better preliminary preparation. The schedules for recitations and lectures to these classes are so arranged that the hours do not conflict.

Hoping that this fully answers the questions which arose in your mind, I am, Yours very truly,

E. Fletcher Ingals, *Registrar.*

RECORD OF MORTALITY

For the Week ending Saturday, January 13, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Typhoid fever.	Diphtheria and croup.	Measles.
New York	1,891,306	929	365	17.28	24.96	1.32	9.00	3.48
Chicago	1,438,000	426	152	13.57	11.73	1.84	6.67	.69
Philadelphia	1,115,562	570	161	6.84	21.96	1.08	3.06	.36
Brooklyn	978,394	330	112	9.30	20.70	1.80	4.50	.30
St. Louis	560,000	—	—	—	—	—	—	—
Boston	487,397	248	67	8.80	35.60	.40	5.20	—
Baltimore	500,000	—	—	—	—	—	—	—
Washington	308,431	119	30	10.32	19 78	2.58	6.02	—
Cincinnati	305,000	123	42	9.72	17.82	4.05	5.67	—
Cleveland	290,000	63	22	15.70	10.99	3.04	7.85	—
Pittsburg	263,709	—	—	—	—	—	—	—
Milwaukee	250,000	86	39	17.40	17.40	1.16	8.12	5.80
Nashville	87,754	29	7	3.45	17.25	—	3.45	—
Charleston	65,165	39	10	2.56	7.68	—	—	—
Portland	40,000	17	1	5.88	17.64	5.88	—	—
Worcester	96,217	46	18	13.02	21.70	—	6.34	2.17
Fall River	87,411	34	19	14.70	29.40	—	11.76	—
Lowell	87,191	44	15	24.97	24.97	9.08	—	—
Cambridge	77,100	29	11	10.35	27.60	—	3.45	—
Lynn	62,656	13	—	7.69	23.07	—	—	—
Springfield	48,684	14	3	—	28 56	—	—	—
Lawrence	48,355	20	2	—	15.00	—	—	—
New Bedford	45,886	23	7	8.70	21 75	4.35	—	—
Holyoke	41,278	—	—	—		—	—	—
Salem	32,233	16	6	12.50	37.50	—	12.50	—
Brockton	32,140	8	1	—	12.50	—	—	—
Haverhill	31,396	12	5	—	8.33	—	—	—
Chelsea	30,264	12	5	—	41.65	—	—	—
Malden	29,394	16	3	18.75	25.00	—	12.50	—
Newton	27,556	6	0	—	16.66	—	—	—
Fitchburg	27,146	—	—	—	—	—	—	—
Taunton	26,972	26	6	7.70	23.10	—	—	—
Gloucester	26,688	7	2	14.28	14.28	14.28	—	—
Waltham	22,058	8	0	—	37.50	—	—	—
Quincy	19,642	7	2	14.28	—	—	—	—
Pittsfield	18,802	2	0	—	50.00	—	—	—
Everett	16,585	10	4	30.00	10.00	—	—	—
Northampton	16,331	7	1	—	12.84	—	—	—
Newburyport	14,073	5	0		—	—	—	—
Amesbury	10,920	3	1	16.66	—	—	—	—

Deaths reported 3,383: under five years of age 1,126; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 408, acute lung diseases 714, consumption 364, diphtheria and croup 190, typhoid fever 44, measles 41, scarlet fever 38, diarrhœal diseases 29, cerebro-spinal meningitis 24, whooping-cough 16, small-pox 13, erysipelas 7, malarial fever 4.

From scarlet fever New York 9, Chicago 7, Philadelphia 6, Boston 4, Somerville 3, Cambridge and Amesbury 2 each, Brooklyn, Cleveland, Milwaukee, Taunton and Everett 1 each. From diarrhœal diseases New York 11, Chicago and Philadelphia 4 each, Brooklyn 3, Worcester and Lowell 2 each, Milwaukee, Charleston and Fall River 1 each. From cerebro-spinal meningitis New York 4, Chicago and Lowell 3 each, Cleveland, Pittsfield and Everett 2 each, Philadelphia, Brooklyn, Washington, Worcester, Lynn, New Bedford, Chelsea and Quincy 1 each. From whooping-cough Chicago 6, New York and Brooklyn 3 each, Philadelphia, Boston, Lowell and Taunton 1 each. From small-pox Chicago 8, New York 3, Boston and Lowell 1 each. From erysipelas New York 3, Chicago, Boston, Washington and Malden 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,327,846, for the week ending December 30th, the death-rate was 22.6. Deaths reported 4,481: acute diseases of the respiratory organs (London) 516, whooping-cough 150, diphtheria 101, measles 85, fever 51, scarlet fever 49, diarrhœa 38, small-pox (Birmingham 5, Bristol and Bradford 3 each, Nottingham and Oldham 1 each) 13.

The death-rates ranged from 15.6 in Preston to 49.3 in Plymouth; Birmingham 21.3. Bolton 20.0, Brighton 27.0, Croydon 20.1, Huddersfield 19 2, Leeds 20.6, Leicester 16.7, Liverpool 26.3, London 23.3, Manchester 24.9, Newcastle-on-Tyne 20.4, Norwich 20.5, Portsmouth 17.1, Sheffield 20.0.

In the thirty-three greater towns of England and Wales with an estimated population of 10,327,846, for the week ending January 6th, the death-rate was 22.8. Deaths reported 4,567; acute diseases of the respiratory organs (London) 566, whooping-cough 166, measles 102, diphtheria 89, scarlet fever 50, fever 43, diarrhœa 32, small-pox (Birmingham 6, Bradford 3, London and Oldham 2 each) 13.

The death-rates ranged from 11.2 in Halifax to 40.3 in Plymouth; Birmingham 24.7, Bolton 16.7, Croydon 15.8, Gateshead 19.0, Hull 23.5, Leeds 16.9, Leicester 15.2, Liverpool 26.0, London 24.5, Manchester 22.6, Newcastle-on-Tyne 19.1, Nottingham 23.3, Portsmouth 17.7, Salford 22.5, Sheffield 17 9, West Ham 25.8.

METEOROLOGICAL RECORD,

For the week ending January 13, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S.. 7	29.95	36	40	32	91	61	76	W.	W.	8	10	O.	C.	.03
M.. 8	30.28	28	32	24	68	62	65	W.	W.	12	15	C.	C.	
T.. 9	30.36	26	30	21	73	50	62	W.	N.W.	6	7	C.	O.	
W. 10	30.20	22	27	18	70	92	81	N.W.	N.W.	8	9	O.	N.	.08
T..11	29.80	23	32	14	92	95	94	N.W.	S.	6	7	O.	O.	.08
F..12	29.68	18	26	10	50	49	50	N.W.	N.W.	20	32	C.	C.	.08
S..13	29.97	13	24	2	50	38	44	N.W.	N.W.	25	15	C.	C.	
☞	30.03		70	17			67							.27

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 13, 1894, TO JANUARY 19, 1894.

Leave of absence for one month, on surgeon's certificate of disability, is hereby granted to MAJOR EDWARD B. MOSELEY, surgeon, U. S. A.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JANUARY 20, 1894.

CLEMENT BIDDLE, surgeon, detached from duty, Marine Rendezvous, Philadelphia, Pa., and await orders, Rendezvous closed.

E. P. STONE, passed assistant surgeon, detached from Marine Rendezvous, Boston, Mass., and continue on special duty in Boston, Mass.

T. A. BERRYHILL, passed assistant surgeon, authorized to take a course of instruction at the Naval Hospital, Brooklyn, N. Y.

F. J. MILLS BROWNE, medical director, retired, granted two months' leave with permission to go abroad.

SOCIETY NOTICES.

NEW YORK STATE MEDICAL ASSOCIATION, FIFTH DISTRICT BRANCH. — The tenth annual meeting of the Fifth District Branch of the New York State Medical Association will be held in Brooklyn, on Tuesday, May 22, 1894. All Fellows desiring to read papers will please notify

E. H. SQUIBB, M.D., *Secretary*, P. O. Box 760, Brooklyn.

MEDICAL SOCIETY OF THE STATE OF NEW YORK. — The eighty-eighth annual meeting of the Medical Society of the State of New York will be held in the City Hall at Albany, on Tuesday, Wednesday and Thursday, February 6th, 7th and 8th. The anniversary address by the President will be given Wednesday evening, February 7th, at 8 P. M. in the Senate Chamber. The annual dinner at the Delavan House at 9.30 P. M.

HERMAN BENDELL, M.D., *President.*
FREDERIC C. CURTIS, M.D., *Secretary*, Albany.

APPOINTMENT.

EDWARD JACOB FORSTER, M.D., of Boston, has been appointed Medical Director on the staff of Brigadier-General Bridges.

RECENT DEATH.

J. G. NAVA, M.D., died in New Orleans, La., January 15th, aged sixty years. He was born in Cuba and after graduating from the University of Havana studied dentistry in Philadelphia. He then studied medicine in Paris where he received his degree in 1859. Returning to Cuba he became active in the struggle for the independence of the island and at the close of the war against Spain was obliged to leave the country as a price was set upon his head. He escaped to New Orleans where he has since lived. He was editor of *La Libertad*, a French and Spanish paper published in the interest of Cuban freedom. He was a member of the Academie des Sciences of Paris.

BOOKS AND PAMPHLETS RECEIVED.

The Nerve Theory of Menstruation. By Christopher Martin, M.B., Edin., F.R.C.S., Eng. London. 1893.

The Harvard University Catalogue, 1893–94. Cambridge, Mass.: Published by Harvard University. 1893.

A New Pathology and Treatment of Nervous Catarrh. By Seth Scott Bishop, M.D., Chicago. Reprint. 1893.

Concerning Posture. A New Holder for Sims Speculum. By B. H. Daggett, M.D., Buffalo, N. Y. Reprints. 1893.

Current Fallacies about "Nervous Prostration." Traumatic Neuroses in Court. By Dr. L. Bremer, St. Louis, Mo. Reprints. 1893.

Transactions of the Medical Association of the State of Missouri at the Thirty-sixth Annual Session held at Sedalia, Mo., May, 1893.

The Bacteriological Examination of Water and the Information it has Furnished. By Percy Frankland, Ph.D., B.Sc. (Lond.), F.R.S. Reprint. 1894.

Proceedings of the American Microscopical Society, issued quarterly, Sixteenth Annual Meeting held at Madison, Wis., August 14, 1893. Vol. XV. Washington, D. C.; Judd & Detroeiler. 1893.

Syllabus of Lectures on the Practice of Surgery arranged in Conformity with the American Text-book of Surgery. By N. Senn, M.D., Ph.D., LL.D., Chicago. Philadelphia: W. B. Saunders. 1894.

The After-Treatment of Cases of Abdominal Section. By Christopher Martin, M.B. (Edin.), F.R.C.S. (Eng.), Surgeon to the Birmingham and Midland Hospital for Women. London: Simpkin, Marshall, Hamilton Kent & Co. 1894.

The Physiology of Death from Traumatic Fever; A Study in Abdominal Surgery. By John D. Malcolm, M.B., C.M., Fellow of the Royal College of Surgeons of Edinburgh; Surgeon to the Samaritan Free Hospital. London: J. & A. Churchill. 1893.

Twelfth Annual Report of the State Board of Health of New York for 1892. Thirteenth Annual Report of the State Board of Health of New York for 1893. Maps to accompany the Thirteenth Annual Report of the State Board of Health of New York for 1893.

Original Articles.

OVARIOTOMY FOR NERVOUS DISEASE.[1]

BY ROBERT T. EDES, M.D.

I do not wish to undervalue by a thought the triumphs of that branch of our art which has made such enormous strides within the last three decades. I look upon the introduction of the principles of antisepsis or asepsis in surgery, as the only step forward at all comparable to the discovery of anæsthesia. But there may be, as has been often remarked, some disadvantages connected with the freedom from great risk; and the fact that an operation may be done with much less immediate danger to life than it would have caused twenty years ago, seems to be to some extent looked upon as a sufficient reason for doing it. I have been credibly informed that the removal of the normal ovaries is not a very difficult nor, with a reasonable degree of cleanliness, a very dangerous operation; and the history of its popularity is likely to be of greater interest to the psychologist than to the scientific surgeon who prides himself upon the knowledge and skill involved in or obtained by his operations, rather than upon the mere number of incisions or the array of specimens he can display, like the scalps hanging in the wigwam of the Indian brave.

I trust that the time has passed when normal ovariotomy can decently be urged upon a patient by a surgeon who has simply a desire to "make a record"; but I think that there is still some room for testimony as to the ultimate value of the operation from a standpoint other than that of the surgeon, who is likely to lose sight of the patient as soon as the wound has healed.

I do not pretend now to be an unprejudiced witness, though I was more nearly so a couple of years ago; but I have made up my mind decidedly as to the expediency and justifiability of removing ovaries not seriously diseased for the relief of nervous symptoms not immediately dependent upon them, and among these latter I include the so-called ovarian neuralgia or pain in the ovarian region. I have not, however, in the cases mentioned in this paper, with two exceptions, the interest of having advised either for or against the operation.

It may be admitted, moreover, that my field of observation has not been such as to furnish material for impartial statistics, since, of course, the favorable cases do not demand further treatment. I have taken some pains, however, to follow the history of a number of patients who have undergone the operation, and who have either before or afterwards been inmates of the Adams Nervine Asylum; and a few histories not immediately connected therewith.

Case I. Miss ——, physician, age forty (more or less). No signs of menopause. Had herself never suspected any disease of the pelvic organs. For some years worked very hard and anxiously, starting a dispensary and carrying it on under trying circumstances. She had been unfortunate in her domestic relations, having experienced losses, and ill-treatment of a very aggravated character. In the early summer of 1892, which was very hot, she remained at work until she went into the country to take care of a patient. There she began to lose health, and finally had a severe fit of some kind, which seems to have been opisthotonic and was attributed by her partly to the strychnine that she was taking as a tonic. It is quite as likely, however, to have been hysterical.

In September she returned to the city, her life being considered in danger; and after three weeks in a private hospital and a consultation of several physicians, one at least of whom was far from an enthusiastic advocate of the operation in general, it was decided to remove the ovaries as a last resort. They were said to have been diseased, but I have no description of any lesion except that a cyst was mentioned. She had also a fibroid, which was not removed. She had had pains in her head and back and a defect in her vision so great as to have been spoken of as blindness. A careful ophthalmological examination revealed no visible changes. These symptoms are said to have improved after the operation, which, in a purely surgical point of view, was eminently successful. She recovered rapidly from its immediate effect, but was depressed, and her sight did not return to any useful extent.

Early in December she came under my observation. Her general condition seemed pretty fair. She had a good appetite, with only occasionally dyspeptic symptoms and usually constipation. She had at times severe pain in the back of the neck, but not often severe headache. At times attacks of "going off," in which she became bewildered and more or less delirious. On one occasion she said hundreds of little imps were saying, "Suicide, suicide," to her. Her mental condition was distinctly childish, and her attention directed almost exclusively to the history of her case, which she kept going over and over with great minuteness. Vision was much impaired. At one time she said she saw only one-half of the objects at which she was looking; but as it appeared on a little closer examination that, at one moment, the side on which she saw was opposed to that which was visible the next, the symptom lost the significance which it might otherwise have had as indicating localized cerebral disease. This mental condition grew no better, but she became more suspicious. She jumped out of a window and broke her arm, and was removed to an insane hospital, where she now is.

In a word, this case is evidently one of severe nervous break-down of the hysterical type, in which the operation, however well meant, has had no beneficial effect whatever.

Case II. Mrs. ——, teacher of music, age thirty. No children. Severe dysmenorrhœa since girlhood. In October, 1890, both ovaries were removed, there being a cyst of the right and adhesions of the left. She improved up to the next February, but entered the asylum in July, remaining until the subsequent June. During this time she gained about seventeen pounds in weight. She menstruated at irregular intervals, and with much suffering, though, as she states, less than she had experienced before. She complained chiefly of weakness, and inability to make any exertion without feeling it greatly. There was no mental affection. She has been heard from at various times, nearly up to the present, as having made no essential improvement.

Case III. Miss ——, age twenty. Was in the asylum in 1881 with severe hysteria and ovarian pain. Was operated on two or three years later. The operation was considered a success surgically, and "so far as nerves were concerned." Became a morphinist. Died two or three years ago.

---

[1] Read (in part) to the Dorchester Medical Club and to the Roxbury Society for Medical Improvement.

Case IV. Mrs. ——. In asylum in 1881. Soon after went to a private hospital, where she was operated on. She afterwards brought a suit against the hospital and against the surgeon. Presumably, the surgeon, at least, would not be willing to give a very favorable opinion as to state of her mind from the side of morality.

Case V. Mrs. ——, age thirty-four. At asylum in 1884. Moody soon after operated on. Ovaries not diseased, but badly prolapsed. Is said to have been "in a wretched state of health ever since, a chronic nervous invalid."

Case VI. Miss ——, age thirty. Was in the asylum in 1887. Was operated on a few years later. Was an invalid until she died of an overdose of cocaine. The ovaries were normal. The autopsy revealed nothing abnormal in any part of the body.

Case VII. Mrs. ——. In asylum in 1888. Operated on later. Recent information represents her as a confirmed invalid.

Case VIII. Miss ——, age thirty-seven. Was sick twelve years, "though no one knew it." In asylum in 1889. Had been operated on two months previously, the cirrhosed ovaries and a cyst of the broad ligament having been removed. Acted strangely all the time she was in the asylum. The records show a long list of hypnotics and nervines. Has since grown fleshy, but by no means strong. Still (1892) suffers *pain in region of right ovary.* In December, 1893, she was said to have been very much better during the preceding six or eight months. Has done considerable work.

Case IX. Miss ——, age twenty-nine. Dysmenorrhœa. Both ovaries, "without pathological change," were removed together with the tubes. Came to the asylum to recover from the effects. Took a great deal of morphine. Her physician writes in 1892: "She has gained slowly but steadily for two years. If she gains as much during the next year as she has done during the last, she will be pretty comfortable." She now (1893) has the old menstrual pain twice a month, requiring morphine, and "menstruates occasionally, wasting as much as those who flow the most."

Case X. Miss ——, age twenty-nine. Was in the asylum in 1882 and 1883. After an absence of nine months she returned to the same, minus her ovaries. The ovaries were enlarged and imbedded in inflammatory exudation. Nervous and hysterical, saying that she had a misplaced womb. Pains in back and bladder. Menstruated. For several years was unable to work, but at last accounts was teaching in the South.

Case XI. Mrs. ——, age forty. In the asylum in 1884. Overwork, neurasthenia, irregular menstruation, dysmenorrhœa. "Both ovaries were removed in 1885. They were much enlarged and badly diseased. The results of the operation were good, and she has since been in a fair condition of health. For the past five years she has had charge of the management of some kind of institution for ladies."

Case XII. Miss ——, age twenty-seven. Was in the asylum in 1888, nervously prostrated, with no organic trouble. In 1892, having had her ovaries (which were cystic, hard and adherent) removed two years previously, she applied for readmission having been of late profoundly neurasthenic and losing flesh rapidly. In 1893 her "symptoms had somewhat diminished in intensity by operation, but the character of them had not been changed, except that the abdominal pain of which she complained so bitterly is now a factor of little importance."

Case XIII. In 1892 application was made for the admission of a married woman, age thirty-four, with neurasthenia and adynamia for more than a year. Her uterine appendages were extirpated a little more than two years before, with "improvement in some directions."

Case XIV. Another applicant (married, age forty-three) has lately had her ovaries removed, and is now suffering from the shock of the operation.

Case XV. Another application from a patient who had had the uterus and ovaries removed. Was probably in a condition of incipient melancholia.

Case XVI. Mrs. ——, age thirty-seven. Was at the asylum in 1888, a few months after having had her ovaries and tubes removed. There had been a long history of pelvic inflammation, and the organs were diseased and adherent. She never fully recovered from the nervous shock, but some of the symptoms were slightly relieved by the operation. At the time of her entry, her physician stated that she had been suffering many of the ills of the change of life. She herself said in September that she had had pelvic peritonitis three times since April.

Case XVII. Miss ——, age thirty-three. Was in the asylum in 1890, with neurasthenia, depression, headache, spinal tenderness and too frequent but scanty menstruation. Her cystic ovaries were removed; and her physician states that she is not much improved as to her neurasthenia, perhaps a little. Certain local symptoms are better.

Case XVIII. Miss ——, age thirty. Never well since seven. Lost eyesight at that time. Diphtheria with paralysis at the age of fourteen. A cyst of one ovary removed four years ago, the other ovary one year ago. Uterus stitched to the abdominal wall. She now enters the asylum for neurasthenia, and has made little, if any, improvement.

Case XIX. Mrs. ——, age forty. Invalid for nine years. Nervous at menstrual epochs. Apparently some metritis. Discharged from Adams Nervine Asylum somewhat benefited. After remaining in bed for more than three years longer, her healthy ovaries were removed. "She made an uneventful recovery from the operation; and since then she has been a well woman," doing her own work, making calls and so on.

Case XX. Miss ——, age twenty-nine. Severe dysmenorrhœa and hysteria. Dilatation of cervix without relief. Remained in the Adams Asylum over ten months. Upon her own decision both ovaries were removed on November 2d. They showed some degree of cystic degeneration. There was no local trouble afterward; but she fell into a condition of "stuporous melancholia," and died on November 9th. The autopsy showed absolutely nothing abnormal.[2]

CASES NOT OPERATED ON.

Case A. Mrs. ——. Four children. An anxious mother, nervous, with profuse menstruation amounting nearly to menorrhagia. She was seen by a physician (who now figures as Case I on my list), who, with another lady called in consultation, was anxious for the operation. Mrs. ——, at my request, visited another well-known surgeon, who, without absolutely declining the operation, spoke so doubtfully of its probable benefits that she concluded to wait. In the mean time circumstances having prevented anything from being done immediately, nothing was done at all. She now for some reason or other, perhaps from a dearth of medical attendance, for a portion of which I was responsible, is very much better, and retains all her pelvic viscera.

---

[2] Since the MS. of the above left my hands, another case has applied, both of whose diseased ovaries were removed in October or November. "She does not rally from the operation . . . and in my opinion a few weeks of rest and freedom from care will enable her again to become self supporting." Would that our experience enabled us to share in her physician's hopeful view!

Case B. Miss ——, age thirty-six. Chronic intestinal catarrh for eight years. Abdominal neuralgia for six years. Tingling, numbness, and pain all over body, but especially in extremities. At the urgent request of the patient and somewhat against his own judgment, an abdominal incision was made by a well-known gynæcologist; and nothing wrong being found, with praiseworthy self-denial, he declined to remove anything. The moral effect boasted of in these cases did not ensue; but a new anxiety was added to the former symptoms, that is, that adhesions might have taken place which were the cause of the additional pains, now constantly located in the neighborhood of the incision, which she was willing to have repeated on the chance of relief.

Case C. Mrs. ——, age thirty-one. Two children. Has suffered much at the hands of the general practitioner and gynæcologist. Entered the asylum with severe abdominal pains. A tumor of a Fallopian tube had been diagnosticated and an operation planned. In the absence of the first surgeon, and (on account of fever) the operation being considered urgent, it was done by another. Nothing whatever was found in the tube. The second surgeon told me that he thought it more probable that there had been an accumulation of serum which had escaped into the abdominal cavity (there having been no gush from the uterus) than that the first surgeon had been mistaken in his diagnosis. This is a point on which there appears to me to be room for two opinions. After recovery from this operation the pains remained as before. A year after much better.

These cases were collected with the object of throwing light upon this operation solely from a neurological point of view. The removal of the pelvic organs for surgical reasons is an entirely different matter, although, of course, there may be cases which involve both. I believe that in these the surgical considerations should predominate; and in proportion as nervous symptoms can be clearly shown to depend upon definite lesions of a character which are not likely to recover without an operation, just so increases the justifiability thereof. Unfortunately, we cannot say so much for the prospect of a cure. There are two, possibly more, cases in this list of this character (Nos. X and XVI). For others, where the ovaries are healthy, or nearly so, as far as can be ascertained without removing them, the operation finds but little support from this series, which is to be regarded, however, as consisting of illustrations rather than as making an important addition to statistics already perhaps sufficiently numerous and decisive. The list of five thus marked furnishes the only complete and decisive recovery apparently due to the operation (No. XIX), one invalid still suffering from dysmenorrhœa, one death from cocaine, one death from the operation, and one case of apparently hopeless insanity. The nine cases in the second and third columns give eight invalids, one of whom is able to do a little work, and one teaching after some further years of invalidism.

It would have been easy to add dozens if not hundreds of cases from the literature of the last few years; but the truth is not to be sought in the reports of operations called "successful" because the wound has closed without unfavorable local conditions. Then, indeed, they do appear in a more favorable guise, being discharged perhaps as "needing only rest and feeding" to complete the cure, until they are again found in the beds of hospital after hospital or doomed for years, if not for life, to the reclining-chair of the chronic invalid.

SUMMARY OF CASES OPERATED ON.

Cases.	Normal. Slightly Cystic.	Cystic and Indurated.	Old Inflammatory Adhesions.	Unknown.	Results.
1	×				Insane.
2		×			Chronic invalid. Menstruated with pain (two years ago).
3				×	Died after some years of invalidism of chronic morphia, pulmonary tuberculosis, and necrosis of spine from an accident.
4				×	?
5		×			Chronic invalid.
6	×				Chronic invalid. Death by cocaine.
7				×	Chronic invalid.
8		×			Chronic invalid.
9	×				Invalid. Improving slowly. Menstruates with pain.
10			×		Invalid some years. Now teaching.
11				×	Fair health.
12		×			Invalid. Does some work.
13				×	Invalid.
14				×	Invalid.
15				×	Melancholia?
16			×		Invalid.
17		×			Invalid.
18		×			Invalid.
19	×				Well woman.
20	×				Died a week after operation.

◆

REMARKS ON DIPHTHERIA.[1]

BY J. H. McCOLLOM, M.D., BOSTON.

The marked prevalence of diphtheria in this city is sufficient reason for an investigation of the prevalence of mild cases of the disease, which are not recognized, and which, therefore, become sources of infection. It is a well-recognized fact that a mild case of any infectious disease is a greater source of danger to the public health than the severer cases. There are many instances in which the local manifestations of diphtheria are so slight that it is impossible to arrive at a positive diagnosis without a bacteriological investigation.

Since 1878, when there were 1,370 cases, the frequency of the disease has varied from 1,814 cases in 1889 to 831 cases in 1891. The greatest number of cases reported was in 1889, when the number reached 1,814, with 564 deaths. The smallest number of cases was in 1891, when the number was 831, with 232 deaths. Last year, 1892, the number of cases was considerably greater, being 1,353, with 414 deaths. The percentage of deaths to the number of reported cases since 1878 has ranged from 35.7 to 26.44. For the decade from 1883 to 1892, the average percentage to the number of cases has been 29.42.

---

[1] Read at the meeting of the Boston Society for Medical Observation, November 6, 1893.

An analysis of twenty-five of the principal causes of death in this city for 1892 shows that diphtheria is the seventh on the list; and this comparative frequency, with certain slight variations, has existed for the past ten years. In other words, diphtheria causes more deaths than any of the other infectious diseases. For the last ten years, ending with 1892, the percentage of deaths from this disease to the total mortality has ranged from 5.50 in 1889 to 2.19 in 1891, with an average for the same period of 3.82. A study of the cases reported, by months, for the past five years shows that in the summer months, during vacation time, there is a marked diminution in the frequency of the disease as compared with term time. An analysis of the ratio of cases of diphtheria to the thousand of population in each ward of the city, for the five years from 1888 to 1892, shows that neither elevation above mean low water nor a crowded condition of a locality are important factors in causing the prevalence of the disease.

In view of the fact that diphtheria is so much more prevalent when the public schools are in session, and also that situation with reference to tide level and a crowded condition of a locality do not have any marked influence on the frequency of the disease, it is evident that contagion from the mild and unrecognized attacks is a potent factor in causing its spread.

With a view of discovering the actual number of mild cases, Professor H. C. Ernst has instituted a series of bacteriological investigations. It is now universally conceded that the Klebs-Löffler bacillus is the cause of diphtheria, and that by suitable methods of observation it can always be demonstrated by a microscopical examination of cultures from the false membrane found on mucous surfaces. The importance of these investigations, not only to the well-being of the public, but also to the advancement of medical science, cannot be overestimated. The investigation of severe cases of sore throat has been carried on in a great many instances; but the investigation of mild cases, such as are more likely to occur in private practice, has not been conducted to any considerable extent. While it may be said that a bacillus morphologically similar to the Klebs-Löffler bacillus has been found in the throats of persons apparently well, yet this bacillus cannot materially affect the correctness of the diagnosis any more than can the Deneke cheese spirillum affect the accuracy of bacteriological examinations in cases of cholera, for it is now generally conceded by the best observers that this bacillus is an attenuated form of the Klebs-Löffler bacillus, and differs from it only in virulence.

The case which is to be used in the investigations offered you by the Bacteriological Department of the Harvard Medical School contains two test-tubes partially filled with blood-serum, two platinum needles, two cover-glasses and labels. The tubes are to be inoculated at the bedside of the patient by taking a small portion of the false membrane on the point of one of the platinum needles and making one distinct streak on the right of the culture medium, one in the centre, and one on the left. The object of this is to get the necessary amount of dilution, so that the streak on the left may have distinct colonies, which may be easily isolated for the purpose of microscopical examination. A small portion of the membrane should also be placed in the centre of one of the cover-glasses. The other cover-glass should be placed upon it, and the two rubbed together for a few moments, in order to render the layer as thin as possible. The cover-glasses should then be separated and allowed to dry in the air for a few minutes. They should then be placed with their smeared sides together, put in the paper box in the case, which, with the inoculated tubes, should be sent to the laboratory, where the tubes will be placed in the incubator for twenty-four hours. At the end of that time, if the inoculation has been successful, a growth having the form of minute, rounded colonies, or of larger white colonies, will be evident.

Cover-glasses are made from these growths by staining with Löffler's solution; and these, together with the cover-glasses prepared at the bedside of the patient, stained in a similar manner, are examined by the microscope. If the Klebs-Löffler bacillus is found it is evident that the case is one of diphtheria, and the requisite treatment can be adopted and the proper amount of isolation enforced. If, on the other hand, small, round organisms, known as cocci, are seen under the microscope, it is evident that the patient is suffering from tonsillitis or from some other form of non-infectious throat disease. To those of us who have so many times been in doubt regarding the nature of the disease of the throat in mild cases, these bacteriological investigations will be of great value. If it were possible to carry out these investigations in the public schools, while we might not hope to absolutely stamp out the diphtheria, it is perfectly evident to any one who has studied the subject that the disease would be diminished in frequency to a marked degree.

A second object of this investigation, which is in a measure dependent upon the first, is to show how many cases there are of diphtheria associated with scarlet fever. This is of interest not only from a scientific point of view, but also is of importance regarding prognosis and treatment. A similar remark is true regarding diphtheria and measles. In many cases it is absolutely impossible, without a bacteriological investigation, to say definitely that a false membrane appearing in the throat in the course of scarlet fever and of measles is caused by the presence of the Klebs-Löffler bacillus, or is due to some change caused by the poison of scarlet fever and of measles.

A third object, although not directly connected with mild cases of sore throat, but of great scientific interest, is to show whether the false membrane that is observed in cases of puerperal septicæmia is a true diphtheritic membrane, or whether it is caused by other organisms.

In Bulletin No. 4 of the Harvard Medical School Association, in an extremely valuable article on diphtheria, Dr. A. L. Mason says that of the 759 cases admitted to the City Hospital from July, 1890, to January, 1893, 113 cases of non-diphtheritic tonsillitis and laryngitis were sent to the City Hospital as diphtheria, or about 15 per cent. It must be borne in mind, however, that these were severe cases, in which the diagnosis, although difficult and in many cases impossible without a bacteriological examination, do not present such a difficult problem as do the milder cases, which, as a rule, are not sent to the hospital. This is only another argument in support of the importance of the proposed investigation which has been explained in detail.

Abbott, in 1891, published the result of his bacteriological investigations in 53 cases of mild sore throat. Of these 53 patients, 9 were found to be suffering from acute pharyngitis, 14 from acute follicular tonsillitis, 8 from ordinary post-nasal catarrh, 2 from simple enlarged tonsils, 15 from chronic pharyngitis, 1 from sub-acute laryngitis, 1 from chronic laryngitis, 1 from rhinitis, and 2 from an affection of the tonsils and pharynx. In only 4 of the 53 cases was an organism found that resembled the Klebs-Löffler bacillus. This investigation is of great interest as showing that the pseudo-diphtheritic bacillus is not a great source of error.

A word might be said regarding the degree of isolation in a case of diphtheria. Although the disease is contagious to a certain extent, it is not nearly so contagious as scarlet fever and small-pox in the unvaccinated. Actual contact with the patient or with the discharges from the mouth and nose are necessary in order to contract diphtheria. Provided that a person does not enter the room of the patient, or does not come in contact with clothing, linen and more particularly handkerchiefs soiled by the discharges, there is very little danger of contracting the disease. Dr. Mason says, in the article to which allusion has been made, that of the twenty-three cases admitted to the diphtheria ward and recorded as doubtful, although isolation was only limited, not one of the number contracted the disease.

In the Philadelphia ***Medical News*** of December 10, 1892, Wyatt Johnston, of Montreal, has suggested a ready method for the diagnosis of diphtheria. It consists in boiling an egg hard, and then chipping off a small portion of the shell, which, of course, lays bare the albuminous portion of the egg. This exposed surface can then be inoculated with a portion of the false membrane from the throat. The egg can then be inverted in an ordinary egg-glass and put in a warm place over night. If the inoculation has been successful there will be a growth on the exposed surface of the egg, which can be examined by the usual methods. The only objection to this method is the fact that the sterilization cannot be so effective as when tubes of blood-serum, properly prepared, are used; but this remark is not intended to militate in the slightest degree against the value of this device in those cases where it is impossible to obtain other culture media.

The bacillus of diphtheria may retain its vitality for months. Recent experiments prove that the dried diphtheritic membrane in small fragments has retained its vitality for nine weeks, and in larger fragments for from twelve to fourteen weeks. Welch and Abbott, from their investigations, have found that the thermal death-point of this organism is 58° C., 138° F. Löffler previously found that this bacillus did not survive exposure half an hour to 60° C.

With regard to the use of disinfectants, the experiments of Boer prove that in bouillon cultures of the diphtheria bacillus twenty-four hours old, after an exposure of two hours in a solution of carbolic acid, one part to three hundred, this organism was killed. Recent experiments show that a solution of the mercuric chloride, one part to a thousand, and an exposure for half an hour, caused the death of this organism.

It has been attempted in this brief paper to outline the method of this investigation, and also to call the attention of the members of this Society to its importance. As the number of cases examined thus far has been small, no definite results have been reached, except in individual instances.

◆

A CASE OF MULTIPLE RUPTURE OF INTERNAL ORGANS PRODUCED BY A FALL.[1]

BY W. T. COUNCILMAN, M.D.,

Pathologist to the Boston City Hospital; Shattuck Professor Pathological Anatomy, Harvard University.

The patient, a laborer, was brought into the hospital for injuries sustained in a fall from a roof. There had been a very severe snow-storm and the man had been engaged in cleaning off the snow from a roof. He fell to the ground, bringing with him a large amount of snow. The height of the roof was somewhat under twenty-five feet. No previous history could be obtained from the men who brought him in. On physical examination the pulse was weak and somewhat fluttering. Pupils of equal size. Knee-jerk increased. The man was very noisy and hyperæsthetic. No definite external bruise could be seen, and no localized tenderness was made out. A few hours later the man became quiet and unconscious. The next day the patient was still unconscious; the diagnosis was made of right meningeal hæmorrhage, and a button of bone taken out. There was a considerable escape of clear, watery fluid from the opening. No hæmorrhage to be made out. The pulse was very weak at the time of operation, and numerous subcutaneous injections of brandy and digitalis were given. The pulse became somewhat stronger. Later the pulse gradually grew weaker, respiration became slower and slower, and death took place at 6.30 P. M., thirty hours after the injury. After death information was obtained from a friend of the man that he had been previously subject to periods of insanity, which in some cases were of a violent character.

AUTOPSY (TWENTY-FOUR HOURS AFTER DEATH).

The body is that of a large, strongly-built, muscular man. On the right side of the head there is a crescentic-shaped incision, commencing close behind the left ear and extending upwards and forwards, terminating over upper portion of the frontal bone. On the posterior surface of the thorax on the right side there is a large, subcutaneous hæmorrhage, evidently due to contusion. No evidence of injury elsewhere.

In the right side of the skull, corresponding to the incision through the scalp, there is a round opening with smooth edges, the anterior portion of which is one centimetre posterior to the middle meningeal artery. The dura at this point has been opened. The calvarium smooth. No evidence of fracture. The dura is thickened and slightly adherent to calvarium. The thickening is more marked on the right side. On the inner surface of the dura, on the right side, there is a slight membranous formation, which can easily be stripped off, and in which numerous small hæmorrhages are seen and points of brownish pigmentation. There are several foci of softening on the right side of the brain. These are more marked in the temporal region than elsewhere. The largest of these is in the first temporal convolution. It is three centimetres long, with irregular edges and quite superficial. The base is smooth and firm. The edges are yellow and sharply defined. At no place does the loss of substance extend more than three millimetres into the brain. There are similar but smaller losses of substance in the second and third temporal convolutions, and a very small one in the angular gyrus just above the fissure of Sylvius. There is also an area which is yellowish and slightly softened in the anterior central convolution opposite the second frontal involving a portion of the cortex one centimetre in diameter. The pia is of ordinary thickness, easily stripped off. The vessels at base of brain and throughout brain, perfectly normal. No pathological condition is made out within the brain itself. The base of skull shows no change. The ears and drum membranes perfectly intact.

---

[1] A contribution to the forthcoming Medical and Surgical Report of the Boston City Hospital.

The subcutaneous fat is slightly developed; muscles red. The peritoneum is smooth, and its entire posterior surface is elevated by an extensive hæmorrhage beneath it, giving to it a dark, almost black color.

Liver and spleen free from adhesions. Diaphragm on right side at lower margin of fourth rib; on left, at fifth intercostal space.

Both lungs are voluminous; the left free from adhesions. The pleura smooth. The entire posterior portion of left lung and the entire lower lobe are intensely congested and show numerous areas of hæmorrhage, which in part are small and circumscribed and in part form large irregular areas which are evidently due to confluence of the smaller. These areas are somewhat similar to areas of broncho-pneumonia, and are in connection with the bronchi. The blood-vessels of the lung are normal. In the bronchi there is a small amount of mucus mixed with blood. In addition to the areas of hæmorrhage, the entire lung is somewhat œdematous. The most congested portion of the lower lobe floats in water. The parietal pleura along the vertebræ is congested, and there is an infiltration of blood beneath it.

The right lung shows a few old and tolerably firm adhesions, which are most marked along the lateral surface of the lung. Almost the entire sub-pleural tissue of the wall of the thorax on this side is infiltrated with blood. This is most marked along the posterior surface, and extends from this around the apex of the thorax and down to the diaphragm, gradually becoming less in extent. There is no blood within the pleural cavity. The entire right lung is heavy and voluminous. The entire lower lobe, especially the posterior portion, is dark and hæmorrhagic. In one or two places the pleura is slightly elevated, apparently from hæmorrhage beneath it. Over the entire lung the pleura is perfectly smooth, with the exception of the places corresponding to the attachment of the old adhesions, and shows no rent or fissure. A section through the posterior surface of the lower lobe shows an extensive, irregular cavity filled with blood. The cavity is six centimetres long, and represents a long, irregular fissure of the lung, with lateral fissures radiating out from it. In several places it is immediately beneath the pleura, and the pleura in this place is separated from the lung by a mass of blood-clot which communicates with the cavity. The cavity contains about fifty cubic centimetres of dark, clotted blood. The wall of the cavity, though irregular, is comparatively smooth. It does not represent a definite loss of substance in the lung; and on removing the coagulated blood contained within it, the walls of the cavity come into perfect apposition. The hæmorrhage here extends over the entire posterior part of the lower lobe. The lung is solid and sinks in water. Elsewhere there are smaller and more circumscribed hæmorrhages. The vessels of the lung are normal. No single, large vessel can be traced into the cavity. The cavity connects with the bronchi in several places. Elsewhere in the lung there is a slight amount of œdema.

Both layers of pericardium smooth. On the left ventricle, just at the juncture of the ventricle with the auricle, there is a large ecchymosis beneath the pericardium. The heart of ordinary size and weight. Firmly contracted. All of the valves of the heart normal. Coronary arteries normal. In the left side of the heart there is a firm mural thrombus two centimetres in diameter, which is attached to the auricle and the mitral valve at its ring of insertion. It is attached just above the middle of the aortic segment of the valve. On removal of the thrombus, it is found attached to a fissure in the endocardium of the auricle, which commences in the auricle just above the valve and extends downward into the valve. This fissure is one centimetre in length, and corresponds to the situation of the sub-pericardial hæmorrhage. The papillary muscle corresponding to this place also shows small fissures at the insertion of the cordæ tendinæ, with hæmorrhagic infiltration of the myocardium about them. These fissures are covered with a thrombus. The aorta is smooth.

The intestines are somewhat distended with gas, and are hyperæmic. The mucous membrane of the entire intestinal canal normal.

The entire posterior peritoneum is elevated by an extensive hæmorrhagic infiltration beneath it. This infiltration is more marked in the lower portion of the peritoneal cavity extending into the pelvis, and is more on the right than on the left side.

The spleen of normal size and consistency.

The liver large, rather pale and anæmic. The peritoneal surface smooth, the lobules visible. The gall-bladder contains rather thin, yellowish bile; the bile-ducts open.

Pancreas and adrenal glands normal.

The right kidney has an extensive hæmorrhagic infiltration around it. Its capsule is loose, and elevated by the hæmorrhage. There are numerous irregular fissures on both sides of the kidney; and in the middle there is a large fissure with an interval of one to two millimetres between the edges, which is filled with coagulated blood. Most of the fissures do not extend into the kidney for a distance of more than one to five millimetres, and none of them communicate with the pelvis. On section, there is a hæmorrhagic infiltration in the neighborhood of the fissures. Elsewhere the kidney is pale. About the left kidney there is also an extensive hæmorrhagic infiltration of the perirenal tissue. The surface of left kidney is smooth and free from adhesions. The capsule of the left kidney is slightly elevated above the surface. On section, the entire organ is distinctly congested, and blood can be pressed from the cut surface everywhere. The renal artery is occluded by a thrombus which extends up to the aorta. The renal vein is also thrombosed.

Both adrenal glands are imbedded in the hæmorrhagic infiltrated tissue. The pancreas shows no change. The urinary bladder and genitalia are normal.

The most careful examination showed no fracture of the walls of the thorax nor of the pelvis nor vertebræ. No fractured bone could be found in any portion of the body.

ANATOMICAL DIAGNOSIS.

Traumatic rupture of the right lung, heart and kidney. Pulmonary hæmorrhage from rupture. Thrombosis of heart. Sub-pleural, sub-peritoneal hæmorrhage from rupture. Embolus of left renal artery. Thrombosis of renal vein. Hæmorrhagic infarction of left kidney. Operation wound in scalp and skull. Old areas of softening in brain. Chronic pachymeningitis.

This case is in many respects an exceedingly interesting one. Although there are many cases reported of rupture of the lung and other internal organs without injury of external parts which would correspond with them, I have found no case in which the injuries of the viscera were so extensive. Most of the cases of rupture of the lung without injury of the thorax which have been reported have been due to direct violence applied to the wall of the thorax. The most frequent cases are those in which a wheel has passed over the thorax, or in which the thorax has received a violent blow. Cases have also been reported in military surgery of injury to the lung, sometimes followed by gangrene, from the effect produced by a spent cannon-ball striking the thorax. In all of these cases it has been assumed that the thorax was in a condition of extreme distention at the time of the injury, and the glottis firmly closed.

The man in this case fell from a height of less than twenty-five feet, bringing a lot of snow down with him. It could not be ascertained whether the contusion of the thorax was due to his having fallen on a projecting body. It is interesting to see that the rupture of the lung had been produced without any injury to the pleura over it. The hæmorrhagic infiltration extended over the rupture to the base of the lung, and from here on all sides, still beneath the pleura. There was no blood at all in the thoracic cavity. A close examination failed to show the rupture of any large vessel in the lung.

It is hardly possible to conceive that there should have been a rupture of one of the pulmonary vessels which had caused the destruction of the lung tissue. The case would have been more easily explained had there been numerous adhesions between the chest wall and the lung, but the adhesions in this case were almost entirely wanting. It is still more difficult to explain the rupture of the endocardium, and I have not been able to find the report of an analogous case in the entire literature. It is hardly possible to conceive of such a sudden increase of intra-thoracic pressure combined with intra-cardiac pressure which could produce such an injury. It would be more easily accounted for by a diminished intra-thoracic pressure combined with an increased intra-cardial. There was an entire absence of any disease of the valve or of the endocardium which would have made the liability of injury greater. The blood-vessels in the body everywhere were normal.

When we think of the anatomical structure and the situation of the organs in the thorax, it is difficult to understand how, in such an elastic tissue as the lung, an injury could take place as the effect of indirect violence. A consolidated lung is, of course, easily torn, because, owing to the inability of the lung to collapse, any violence applied to it only acts on a small portion of the tissue at a time. But here there was no evidence of there having been any previous consolidation. How the injury of the heart took place we have no means of knowing.

The rupture of the kidney is more easily understood, and cases are not uncommon of rupture of the kidney which have resulted from various forms of external injury. I know of one case in which a man fell from the roof of an omnibus, and, striking on the right shoulder, rupture of both liver and kidney took place. It is probable that the thrombus of the left renal vein was due to the injury of the tissues around the vein produced by the infiltrated blood. The embolus which plugged up the artery on the same side had evidently come from the thrombus in the left heart. That infarction of the kidney should have taken place after closure of both renal artery and vein is a direct confirmation of Litten's experiment. In Conheim's explanation of infarction after the closure of an artery, he assumes that the blood in the infarcted territory comes from a backward flow from the veins. Litten afterwards showed that the infarction took place when both vein and artery were tied, the blood entering into the tissue from the anastomosing vessels of the capsule and from the vessels along the course of the ureter. No infarction followed the ligation of the artery and vein when the capsule was stripped from the kidney and the ureter tied.

◆

A REVIEW OF NINETY-TWO CASES OF DISEASES OF THE HEART OBSERVED IN THE OUT-PATIENT DEPARTMENT OF THE BOSTON CITY HOSPITAL.[1]

BY HENRY JACKSON, M.D.,
Physician to Out-Patients.

Many cases present themselves for diagnosis and treatment in an out-patient clinic with symptoms suggestive of some disturbance of the circulation, as dyspnœa, cough, œdema, or inability to work, in whom the diagnosis may be more or less difficult. Many of the difficulties may be removed if the physician directs his attention to a careful consideration of the size of the heart, to the relative proportion of the cavities and the muscular tissues of the heart, to its regularity of action and force, rather than to the presence or absence of endocardial murmurs. Again, many cases are found to have some disease of the heart, more often valvular, but occasionally of the substance of the heart which present no symptoms of such trouble, and in which a careful examination of the history may not elicit any symptom suggestive of cardiac trouble. As a matter of fact, a valvular lesion in itself gives rise to no untoward symptoms, causes no inconvenience to the individual, until as a result of the pathological change, of the incompetency of the affected valve, the heart becomes so dilated and the muscular tissues so weakened that it is no longer capable of supplying the system with properly oxygenated blood. During the stage of compensatory hypertrophy, as long as the defect in the valve is overcome by the increase in the muscular force, the disease is not suspected by the patient, and a diagnosis of the condition is made only by chance. Practically, from a therapeutic standpoint we do not treat the valvular lesion, but can help our patient only in so far as we are able to assist the heart to overcome the difficulties dependent upon the defect of the valve.

---

[1] A contribution to the forthcoming Medical and Surgical Report of the Boston City Hospital.

Clinically, disease of the heart may be divided into three essential classes: valvular, dilatation and hypertrophy, functional. Aside from the cases of dilatation or hypertrophy of the heart dependent upon valvular lesions, many cases are observed in which it is difficult and often impossible to determine the etiology during life. From some cause or other the muscular substance becomes weakened, and secondarily there follows a gradual enlargement of the cavities, with diminution in the thickness of the walls. The dilatation may be dependent upon fatty degeneration, fatty overgrowth (infiltration), some disease of the myocardium dependent upon obstruction of the coronary arteries, or may be met with as the result af prolonged overwork or alcoholic abuse. Again, the enlargement may be dependent upon arterio-sclerosis or renal disease.

The nomenclature of these various conditions is unsatisfactory; it cannot be based upon a probable pathological process, as in most cases this cannot be determined during life. In hospital records such cases are often entered as "Cardiac" or "Heart," etc.; and many death-certificates signed "Heart failure" might be more properly characterized as dilatation of the heart. It seems to me that the term "parietal disease of the heart," suggested by Dr. W. W. Gannett in a paper read before the Clinical Section of the Suffolk District Medical Society in March, 1893, is applicable to a large number of such cases. It expresses tersely and exactly the condition of the heart without committing one to an opinion as to the cause of the difficulty.

During two services of four months each, the one in the summer and the other in the spring, 92 cases were seen in which the heart was principally or only at fault as a cause of the symptoms complained of.

In 48 cases no valvular lesion was found as a factor in the production of the heart trouble; and these may, I think, be properly classified as "parietal disease of the heart." In these cases the diagnosis of some disease of the muscular substance of the heart was based upon a modification of the size of the heart, together with more or less disturbance in its action, as determined by enfeebled action, increase of rate, irregularity in rate or rhythm, or intermittency. Undoubtedly, in a certain proportion of these cases post-mortem examination would show some valvular disease. Further, in certain cases a first sound that I describe as short and valvular, would by some observers be considered as accompanied by a murmur; but in none of the cases was there a murmur defined in character, or localized with sufficient accuracy to warrant the diagnosis of a specific valvular lesion.

Five of the cases were classified as functional. In all the symptoms were palpitation and pain in the cardiac region; one, a man, said he "was afraid to work on account of his heart." In three, excess in tea, and in two, excess in tobacco, was assigned as the cause of the trouble. Two were young men of eighteen, and three young women. In all these cases physical examination showed a rapidity of action, but no modification in the size of the heart or in the strength of the pulsations. The diagnosis of "functional disease" may here, as in so many other cases, be merely a mask to cover our ignorance as to some hitherto unexplained pathological change; but at the present time we can only assume some disturbance of the nerves regulating the action of the heart, as we have no evidence of any other pathological condition. In 39 cases there was some valvular defect.

The large proportion of cases of some heart trouble which present no evidence of valvular lesion shows us the importance of a careful consideration of the diseases of the parietes of the heart; a classification of the symptoms presented by such cases is interesting; and a uniform nomenclature, if obtainable, is certainly desirable.

FORTY-EIGHT CASES OF PARIETAL DISEASE OF THE HEART.

Thirty-six were men, ten were women, and two boys (aged respectively six and ten years). One of the boys had just recovered from diphtheria, and came in with a complaint of pain in the chest and palpitation. Examination showed an enlargement of the heart; the apex was outside the line of the nipple; the pulmonic second sound was accentuated; there was a slight soft systolic murmur, not transmitted, heard at the base. Here a diagnosis of fatty degeneration might be with propriety considered. The other boy, ten years of age, complained of loss of flesh, general debility and poor appetite; he had never been strong. Examination showed an enlargement of the heart; the apex was just within the line of the nipple, and the action was violent. Though no murmur was present, congenital deformity was suspected, though impossible of diagnosis. The age of the other cases was as follows:

9 cases, 30 to 40 years.
13 cases, 40 to 50 years.
7 cases, 50 to 60 years.
10 cases, 60 to 70 years.
5 cases, 70 to 80 years.

Where noted, the symptoms which caused the patients to apply for relief had existed for the following periods:

12 cases, 3 to 4 years.
9 cases, 1 to 2 years.
7 cases, several weeks.
9 cases, several months.
2 cases, 10 and 14 years respectively.

Seven cases were seen which presented no symptoms referable to the heart, but came in on account of some general disease; as one for herpes zoster, a second on account of a mastoid abscess, a third for some trouble with the eyes.

The symptoms complained of were as follows:

16 cases, pain in the chest, sometimes referred to the region of the heart, more often not localized.
22 cases, dyspnœa or shortness of breath.
7 cases, cough.
8 cases, palpitation.
4 cases, dizziness.
4 cases, general weakness.
2 cases, sudden attacks of faintness.
7 cases, œdema.

The most frequent and prominent symptoms were dyspnœa and distress, or sharply-defined pain in the chest, symptoms which in many instances have existed for a long time, and often prevented the patients from doing their usual work. In none of the cases was œdema a marked feature, and in only a very few was albumen noted as present in the urine. In a few of the cases palpitation was given as the essential symptom which caused the patient to seek for advice.

Etiology. — In 23 cases no definite cause could be assigned for the condition of the heart. In 10 the confession was made of excess in alcohol, and it is probable that a good many more had used alcohol in large quantities, as patients are not inclined to make this admission to a house-officer. Seven patients had acute or chronic rheumatism. An examination of the age of the patients shows that all of them were in middle life, or past that period.

Physical Examination of the Heart. — In all the heart was enlarged, and the apex seen or heard, or both, outside of the line of the nipple. In one case the area of cardiac dulness extended two inches to the left of the line of the nipple. Irregularity of the action of the heart was noted in 13 cases, and irregularity with intermittency in 8 cases. In 7 cases rapidity alone was noted, while in 14 cases the only abnormal auscultatory sign was a marked feebleness of the pulsations, with a short valvular sound at the apex instead of the booming sound usually heard with the first sound at this place. I give a few typical cases:

Case I. Man, fifty-three years of age. Complained of pain in the right chest. Dyspnœa for three or four years. Had been addicted to the abuse of alcohol. The heart was enlarged, irregular in force and rate, and the sounds were weak.

Case II. Man, forty years of age. Complained of vertigo, slight dyspnœa on exertion, general malaise; was unable to work. Symptoms have existed for about a year. No cause could be assigned for his trouble. Heart was enlarged one-half inch to the left of the nipple line; the apex was seen and felt just beneath the nipple. Action of the heart occasionally irregular; first sound short, faint and valvular.

Case III. Woman, forty years of age, a seamstress. She had noticed shortness of breath and palpitation for two years, which had interfered with work. No cause could be assigned for the trouble. There was slight enlargement of the heart; its action was very irregular in rate and rhythm. There was slight œdema of the legs; no albumen was found in the urine. It is possible that in this case there may have been a stenosis of the mitral valve, but the absence of any history of rheumatism or any abnormal sounds at the mitral valve renders the diagnosis at least doubtful.

THIRTY-NINE CASES OF VALVULAR LESIONS OF THE HEART.

Men, 26 cases; women, 10 cases; children, seven to ten years of age, 3 cases. The duration of the symptoms, when noted, was as follows:

5 cases, several weeks.
10 cases, several months.
4 cases, a year or more.
6 cases, 2 to 3 years.
5 cases, several years.
2 cases, 8 and 15 years respectively.

In 7 cases no symptoms were presented suggestive of any cardiac trouble. One case came in on account of gonorrhœa; another, who complained only of pain in the lumbar region, had a mitral regurgitation, with an enlarged heart in which hypertrophy was the essential factor in forming the increase of size. Fifteen years ago, when a boy, he had acute articular rheumatism.

In some of the cases the symptoms which brought the patients to the clinic had been noticed only for a few weeks; others who engaged in hard labor had suffered more or less for many years.

The symptoms complained of were these:

7 cases, a sense of pain or distress in the cardiac region.
15 cases, dyspnœa.
7 cases, cough.
4 cases, dizziness.
2 cases, œdema.

It is extremely interesting to note the ability to work as an index of the effect of the cardiac lesion on the individual. Only seven had given up their work on account of dyspnœa or shortness of breath; while, as stated, seven made no mention of symptoms suggestive of any cardiac disease. Only two of the men were engaged in light work, the others being day-laborers, or otherwise employed at hard, manual labor. Several of the patients who had marked valvular defects with great increase in the size of the heart were actively employed in hard labor. One case is especially noteworthy, that of a blacksmith, twenty-five years of age. He complained of dyspnœa on exertion, and a considerable swelling of the body and extremities which had existed for several months. He had acute articular rheumatism two years before he was seen at the out-patient department. Physical examination showed pallor and cyanosis; the heart was enlarged two inches to the left of the nipple; there was a loud double murmur at the base, a systolic murmur at the apex and in the tricuspid area. He came to the out-patient department for several months; and during all this time continued to support his family as a blacksmith.

Such an analysis of cases shows us very vividly that because a man has valvular heart-disease he is by no means to be considered incapable of working, and may live in comfort for many years, as in several instances the rheumatism which appeared to be the etiological factor of the disease had occurred many years before the patients were seen at the clinic.

Etiology. — In 14 cases no cause assigned; in 16 cases, acute articular rheumatism; in 7 cases, chronic rheumatism.

A boy of ten years was seen who had never had rheumatism or any acute infectious disease. He came in on account of epistaxis, but the mother said that he had never been "rugged." There was great enlargement of the heart, with violent action and a pre-systolic and systolic murmur.

The following forms of valvular lesion were seen:

16 cases, mitral regurgitation.
9 cases, mitral obstruction and regurgitation.
1 case, mitral obstruction.
6 cases, aortic obstruction and regurgitation.
4 cases, aortic and mitral regurgitation.
1 case, aortic and tricuspid regurgitation.
1 case, aortic regurgitation.
1 case, aortic stenosis and mitral regurgitation.
1 case, aortic stenosis.

The Faculty of the Medico-Chirurgical College of Philadelphia has created three new clinical chairs, namely, genito-urinary surgery, orthopedic surgery and otology. These, together with the vacancy in the chair of clinical medicine, will be filled permanently at the end of the present session.

A BLOODLESS OPERATION FOR HÆMORRHOIDS.

BY THOMAS H. MANLEY, M.D.,
Visiting Surgeon to Harlem Hospital, New York.

As hæmorrhoidal diseases of the rectum and anus are very common, and very often lead to very grave disturbances of the whole system, any line of treatment which will relieve or wholly subdue them, without any serious inconvenience or involving danger to life, will be welcomed by the profession.

At the beginning, it may be well to consider for a moment what we understand by the term "hæmorrhoids." From the etymology of the word we expect to find blood-tumors; but, in strict truth, in very many cases of so-called hæmorrhoids or piles the vascular system is totally devoid of any implication whatever; the small neoplastic formations which present themselves along the base, annular rim or roof of the anus and rectum, being histologically purely adenoid, papillomatous or vegetative. It is important that the anatomical distinction be made clear in this instance; for the treatment about to be commended applies especially, and almost solely, to those anal tumors which are, or were, entirely dependent on a diseased condition of the hæmorrhoidal veins, in other words, those which are of a veinous origin only.

Another important question arises with respect to the relative frequency of these anal varices, designated piles. Are anal varices, dilatation of the veins or those tumor-like formations, either internal or external to the external sphincter, essentially a pathological condition? and, as such, in all cases, does it require active, radical measures for its abolition?

Very naturally, our course will be determined largely, in those cases, by a definite answer to this question.

If piles are all superfluous, neoplastic excrescences, then there can be no question as to our course in all cases.

During the past five years, I have made an examination of a very considerable number of supposed healthy recta on the living; and, in the dead-house, have carefully inspected under good light a large number on the cadaver. It was found that in both more than fifty per cent. had veinous varices of the rectum. In many of the living, in whom varices of large calibre were numerous and extremely turgid, they never in their lives suffered from piles in any form, that they were aware of. Therefore, it seems to me that the hæmorrhoidal dilatation in man is rather a physiologically degenerative condition, which, in late life, is a source of no inconvenience, but which, at middle age, is often attended by or associated with such complications as to render it a distinct pathological lesion.

This view is further supported by the fact that cutting out, injecting or ligating off sundry hæmorrhoidal masses will not in all cases cure the disease. The varicose state of the upper rectal vessels remains, and nothing is wanted to promote their return but the exciting circumstances which caused their irritation in the beginning.

COMPLICATED HÆMORRHOIDS.

Diseased hæmorrhoids may be divided into three principal classes: (1) inflamed hæmorrhoids, (2) ulcerating hæmorrhoids, (3) bleeding hæmorrhoids.

Besides, we say internal or external, according as they are without, or outside the external sphincter, or internal to it.

When internal medication has not succeeded, and, when palliative, topical applications have failed to afford permanent relief in chronic hæmorrhoids, in their radical treatment by the *bloodless* operation the majority may be cured, or at any rate greatly relieved.

THE ADVANTAGES OF THE BLOODLESS OVER OTHER SURGICAL MEASURES IN TREATMENT.

(1) The operation may be performed with a less number of assistants, and is very simple in its technique.

(2) As there is no division of the tissues, the dangers of infection, of abscess, ulceration and fistula are eliminated.

(3) There is no danger from the immediate loss of blood during operation or of serious secondary hæmorrhage.

In all cases, the evening before operation the patient should have the colon well cleared of all fæcal matter by a brisk purgative.

In the morning, when everything is in readiness, the patient should be given from two to four ounces of whiskey, the quantity to be gauged according to previous habits, its effects, etc. After having cleansed, shaved and scrubbed the integuments over the ischiorectal fossa, we are prepared for the first step in the operation, which is, effective *cocainization*, hypodermically applied. Local analgesia, when practicable, is much more preferable to pulmonary anæsthetics. Our patient is more manageable, and there is no spurting of the fæces over the operative field during manipulation.

Cocainization complete, the next and most vital step is complete and thorough *anal dilatation.* Without this being efficiently carried out, all else is a failure; but, to be painless and safe, it must be gradual and steady, or we shall rupture the muscle and leave our patient incontinent. In chronic, old cases, wherein, owing to malnutrition and interstitial changes in the sphincter, it has parted with its elasticity, laceration is very easy if we do not exercise caution.

Thorough anal dilatation accomplishes two purposes of great importance: First, it opens widely the anal portal, and so paralyzes the levator-ani that the lower fourth of the rectum — that part always implicated in hæmorrhoids — prolapses through the open vent, when it can be most minutely inspected and radically treated. This, however, is of minor importance compared with the profound effects which dilatation produces on the rectal disease. It is not material whether the hæmorrhoids belong to the inflamed, intensely itchy or irritable type; this stretching exercises a most salutary influence on them.

The third step, in simple hæmorrhoids, will be the separate treatment of each tumor by forcible pressure-massage. Before this is commenced, the entire cluster should be wiped clean and dry, and be then freely mopped with the cocaine solution. Now each hæmorrhoid is separately seized, close to its base, firmly between the tip of the thumb, index and middle fingers; first, put on a moderate but full stretch; then twisted; and finally so completely crushed that it is reduced to a pulp, and none of the investing tunics remain except the mucous membrane and its under stratum of fibrous tissue. When this has been completed the entire mass is again pressed up inside the sphincter, a suppository of opium introduced, a pad and bandage applied, when the patient is returned to bed. An active but painless inflammation follows, and, as a rule, within two or three weeks absorption and atrophy have so reduced the vascular masses that nothing now remains but their shrunken, diminutive stems.

The ulcerative and hæmorrhagic varieties, along with cocainization and dilatation, must have superadded a special therapy appropriate to each.

Since January of this year, 1893, 32 cases of hæmorrhoidal disease have come under my care, in the hospital and outside. Many have come to me who feared anæsthetics, and others who were averse to having any cutting operation performed. In all, the permanent results have been eminently satisfactory; and from what previous experience I have had with this procedure, there is no reason to believe that the cures will not be as durable as those effected by other more sanguinary measures, which are not without danger in themselves, and are sometimes followed by the most lamentable consequences.

Of my latest series of cases, 17 were men and but 15 women. Fourteen were cases of simple, chronically inflamed hæmorrhoids, nine ulcerating and itchy, and nine bleeding. Four of the female cases were of the bleeding variety. Of the ulcerating type, in six of them there was a well-marked tubercular cachexia.

◆

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

J. C. MUNRO, M.D., SECRETARY.

Regular Meeting, Monday, November 6, 1893, **Dr. Charles P. Putnam** in the chair.

Dr. J. B. McCollom read a paper entitled,

SOME REMARKS ON DIPHTHERIA.[1]

Dr. Mason: The interesting paper of Dr. McCollom deals with a subject which is practical and important to every one who is practising medicine. The bacteriological investigations seem to have left the matter in such a position that to-day no one is justified in making a diagnosis in a doubtful case of sore throat without cultures. The difficulty of an off-hand clinical diagnosis by inspection is obvious. In former years mistakes were very often make, and they are still made, as is evident from the number of cases that come to diphtheria wards, which, after a day or two, by the application of this method, are shown not to be diphtheria. In October, perhaps a dozen cases entered our ward at the City Hospital which turned out to be pharyngitis, tonsillitis or stomatitis, all sent to the hospital as diphtheria. The inspection of such cases always raises a doubt with regard to the diagnosis, which may not be determined for a day or two, and the question of isolation becomes important. In the hospital now building there will be facilities for isolating considerable numbers of doubtful cases, so that they will run no risk of contracting further disease. But fortunately, as Dr. McCollom remarked, these milder sore throats seldom become diphtheria. It is a rare thing for such a case to contract diphtheria, even when in the presence of a considerable number of malignant cases. Such patients are sent away as soon as possible, either into another ward or away from the hospital. That, however, cannot be done until suitable cultures are made, a matter of a day or two. Occasionally, from some fault of the technique or some mistake or other, the bacilli of diphtheria are not found at the first examination, but are found subsequently. Therefore, it is best to have more than one culture made in cases in which the result is negative before sending such patients away from the hospital. This involves the stay of a few days, and by that time the patients are probably well enough to go out. From the clinical standpoint, the experiments at the City Hospital have been of great value, not only in separating these classes of non-diphtheritic sore throats from true diphtheria, but also in differentiating the mixed throats, the cases of scarlatina in which diphtheria exists from those in which no diphtheria exists.

With the disappearance of the visible membrane in the throat diphtheria does not end; that is, the bacilli may be found for a considerable length of time, and it is a question whether patients whose throats have cleared up and who present no discharge from the nose — nothing to indicate continuance of the disease — are to be regarded as well and sent home, or whether they should be retained for a longer time. The Klebs-Löffler bacillus may be found for an indefinite time in the secretions of the nose and pharynx. The longest period that I have observed is three weeks after the membrane had disappeared. The child was apparently well, the symptoms had gone, the appetite was good, the patient was becoming ruddy, and yet the specific bacillus persisted for three weeks. With our present knowledge, it does not seem proper to send patients in that condition away from the hospital or into another ward; therefore they are retained until the Klebs-Löffler bacillus is absent from the secretions of the nose and of the pharynx. I believe that this organism may persist for a much longer time than three weeks. Perhaps Dr. Williams has more knowledge on that subject than I have, but I think I have read of a case in which some fifty days elapsed before these organisms entirely disappeared. Fortunately, these cases are few, and we do not have to crowd our wards with patients requiring such a length of time for convalescence. It may be doubted whether these late bacilli are not of the modified form, to which Dr. McCollom referred, which are not active conveyers of the poison. Although every one is now upon the alert in the examination of throats, it does not seem probable that in the near future differentiation with this great degree of care will be the general practice. In the lower parts of the city I suppose that bacteriological cultures are not practicable, unless, indeed, this very excellent scheme which Dr. Ernst wishes to inaugurate can be carried out by the majority of physicians practising all over the city.

Dr. Williams: I am sure we have all been very much interested in Dr. McCollom's paper, and it is certainly very important that this question should be spoken of repeatedly. Very much has been said and done about cholera, and comparatively little said about diphtheria, a disease which is always with us and very fatal in its character. A good deal is now being done but there is more still to do. It seems as if the disease were transmitted from patient to patient directly in the majority of cases. Many of the cases which come to the City Hospital give a history of having been in the same house with diphtheria or having had a brother or a sister ill with the disease recently. Sometimes, of course, we do not get a history of exposure; but it is rather significant that we do in so many cases get a history of direct exposure. The question of bacteriological examinations interests me very much. I believe I was the first to use that method of diagnosis in this community, and its importance will soon be generally recognized. As regards the mild cases of which Dr. McCollom speaks, they are especially dangerous to their neighbors, because their true character is often not realized and therefore proper precautions are not taken. It is not unusual to find mild cases that to the unaided eye do not present the ordinary symptoms or appearances of diphtheria (in fact the throat may look normal), but that are shown by bacteriological examination to be diphtheria.

---

[1] See page 107 of the Journal.

I recall one case which two physicians saw, and said there was nothing in the throat. It seemed to me there was a slightly suspicious spot; I did not call it membrane. There was not much redness; it was nothing like as angry a throat as you get in mild tonsillitis, but cultures showed the presence of the bacilli, and the case proved to be one of diphtheria. I think it is very important that examinations should be made where there is the slightest symptom connected with the throat among those who have been about a patient with diphtheria. It is not necessary to wait until you get symptoms of severe tonsillitis, or follicular tonsillitis, or something very distressing; but it is well to be on one's guard, for sometimes you find bacilli when you least expect to — at least, that has been my experience several times.

As regards the detection of these bacilli, I think in some cases, especially early in the disease, when you have chiefly the bacilli of diphtheria, and these are not obscured by other organisms which develop later, they may frequently be detected without cultures. In such cases it is very easy to take a cotton swab, and, after brushing it over the throat, rub it on a cover-glass, dry, and stain with Löffler's blue solution and examine under the microscope. In many cases one can find the bacilli in a few minutes. When you find them, this method of examination is of importance; when you do not, it has comparatively little weight; that is, you cannot exclude diphtheria by means of this preliminary examination. Of course, one should not rely upon this alone; cultures should be made as well.

As regards the method of carrying the bacilli. This contrivance which I have in my hand is very simple. Here is a small stick with a bit of cotton around the end. The cotton end is brushed over the suspicious places in the throat, and the stick is then placed in a strong test-tube, which is stopped with sterilized cotton. To prevent the specimen from drying, a small piece of cotton moistened with water may be placed above the stopper, and the tube may then be closed with a cork to prevent evaporation. This contrivance, which has, of course, been previously sterilized, answers very well to carry the swab to the laboratory where cultures can be made.

As regards the length of time during which the bacilli may persist in the throat, I have in mind several cases, some of which I have already reported. In one case they persisted about six weeks, in another about two months, and in another nearly three months. The last case is interesting because the patient left the hospital and some weeks later had hoarseness; and on examining the throat a membrane was seen in the larynx, and the bacilli were readily found, so that in some cases the bacilli may exist in the throat a long time. Isolation should not be terminated, although the throat may look perfectly normal, until the bacteriological examination fails to show the dangerous bacilli. This may sometimes be weeks after the throat has been clear of membrane.

Not infrequently you find diphtheria coincident with other diseases. This is especially the case with scarlet fever. In measles you sometimes find diphtheritic membrane, and it is well to remember that in typhoid fever you may in some cases also find membrane in the throat in which the diphtheria bacilli are present. Patients, of course, may get diphtheria or scarlet fever if placed near those ill with either of these diseases. Diphtheria does sometimes occur in patients who have had tonsillitis or some membranous affection of the throat, and who have been exposed to diphtheria. I have seen some cases of this kind. I think the tradition that cases of tonsillitis do not acquire diphtheria has exceptions; it simply means that that has not been observed; and I think, with the more modern means at command, we shall be enabled to detect more cases of this sort.

Dr. Sprague, of Providence: I have been very much interested in the paper of this evening, and certainly the subject is one in which we are all interested. My studies at the present time are more in the line of diseases of the ear and throat, and I do not see many cases of diphtheria; but I meet cases in which at the time it is impossible to make the diagnosis. In Providence our board of health has been in the habit of making the diagnosis of diphtheria by the death-certificate and of scarlet fever by desquamation; but within a few months or a year, they have been going into the bacteriological examination, systematizing things, making the work more thorough. I think that the ground has been very ably covered by the reader and by the discussion, and that little remains to be said.

Dr. F. C. Shattuck: Like everybody else, I suppose, I hailed with great joy the announcement of a method which would enable us to distinguish diphtheria from other throat affections, because I have always felt it to be one of the most difficult diagnoses in medicine, to determine in certain cases whether diphtheria existed or not. Of late years I have not seen many cases of diphtheria. When I had a dispensary district I saw an immense deal of it. Last winter I saw a child with a suspicious throat. I had Dr. Stone make cultures; the Klebs-Löffler bacillus was found and the case was treated accordingly. A few weeks later another child in the same family came down with a throat which clinically, macroscopically, was certainly diphtheria. There was false membrane on the tonsils and spreading up on the soft palate. At my request Dr. Stone made cultures of this case. His first result was negative. He made a second examination which was also negative. I treated the case, however, exactly as if it were one of diphtheria, and I must say that I should not feel safe in following any other course at present. I do not feel sure that this method has been practised long enough, or that we know enough about it to warrant us in treating throats which look like diphtheria to the naked eye in any other way than as if they were diphtheria. When a new method of diagnosis is announced, just as when a new drug is brought forward, I think the tendency of the profession is to be too enthusiastic at first. Perhaps I show my ignorance in speaking as I do; but I should not feel satisfied in my own family or in any family to remove restrictions and to allow a patient to go about who had a throat which clinically was diphtheria, although the bacteriological examination was negative. I shall be very much interested to see what ultimately comes out of this. If we have a sure means of differentiation it will be an immense boon. But a new terror is added to life in the fact that patients sometimes for fifty days after naked-eye manifestations have vanished, have the bacillus in their mouths and noses or throats, and consequently may transmit the disease to others. In the nose there are so many hiding places for bacilli that I cannot see how a simple little swabbing, with negative culture results, can make us sure of their absence.

Dr. Mason: With regard to Dr. Shattuck's remarks it has struck me too that some cases do not present the Klebs-Löffler bacillus when they should do so according to the appearances, and that has seemed to me to be due rather to faulty technique or to some mistake than to the fact that these bacilli might not be found perhaps by more prolonged search. Such a case came under my observation not long ago in which a patient had membrane in the throat — not very much, but there was laryngeal stenosis and tracheotomy was required. It was evidently a case of tracheal diphtheria, but the bacilli were not found at the first examination. So I think that such negative results are only of value from that point of view; they are negative, but they do not prove that the subjects do not have diphtheria.

Dr. Shattuck: I do not see how greater care could have been taken in this case. A thoroughly competent man was selected who was perfectly familiar with the appearances of the bacilli and their manner of growth, and at my solicitation he made two examinations with the greatest care, the results of both of which were negative.

Dr. Williams: I think what Dr. Shattuck said is very suggestive. It is a point which has been in my mind, and in fact in a paper which I read last June before the Massachusetts Medical Society, I said that the cultures were not infallible. I do not think they are to be absolutely and entirely relied upon. I think it is possible to have some slip so that you do not get a growth of the bacilli, but our ability now to detect diphtheria early is very much greater than it used to be, and this method is certainly a great step in advance, and will render much service. I had a case within a few days where examinations were made with great care with negative results. The patient died, and no bacilli were found in any of the parts about the throat, tonsils or anywhere, except in the little chink between the vocal cords. The trachea was taken out and cut open with carefully sterilized scissors, and a small drop of purulent matter about the size of a pin's head was found; cultures were made, and the bacilli developed. I recall a case in which a child had measles, and coughed up large pieces of membrane. It seemed to me to be a case of diphtheria; and I held to that diagnosis, which was based on a preliminary examination, in which the bacilli were found, although I was told that the bacilli were not found in the cultures. Another specimen was obtained and another culture made, and no bacilli found: then another specimen was taken from the throat and examined directly in the way I have referred to for making the preliminary examination, and the bacilli were perfectly evident. The cases that Dr. Councilman and I studied together last year included some which came from two institutions of the city where there are a considerable number of children; and in these institutions there happened to be during a period of about six weeks cases of diphtheria alone, cases of membranous throats without the bacilli, cases of scarlet fever alone, and cases of scarlet fever with diphtheria. Similar conditions must, I think, favor the development of these two diseases. Let me repeat: it is well to bear in mind the possibility of failure to find the bacilli by the method of culture. Corrosive sublimate which is often used as a local application inhibits the growth of the bacilli; one part in thousands will inhibit the growth of the bacilli, prevent their growing at all on the culture media; but a pretty large proportion of the corrosive sublimate is not sufficient to kill the bacilli. While speaking of corrosive sublimate I should like to say that it does not seem to me a very serviceable agent as a local application; it is very irritating even in a dilute solution if used persistently. When applied in the strength of 1 to 2,000 or even 1 to 500 it does not seem to have much effect in stopping the growth of the bacilli and the spread of the membrane. I have tried treating one part of the throat with corrosive sublimate in pretty strong solution, and not treating other portions; and the parts treated with corrosive sublimate did not do as well as the parts not treated. I am very sure that corrosive sublimate as a local application may do harm locally as well as cause poisoning; but I understand from the Secretary of the Society that the question of treatment is not so much before the meeting as that of diagnosis, so I will not enlarge upon the treatment of diphtheria.

◆

THE NEW YORK NEUROLOGICAL SOCIETY.

Stated Meetings, held at the New York Academy of Medicine, Tuesday evenings, December 5, 1893, and January 2, 1894, Dr. M. Allen Starr, President, in the chair.

GLIO-SARCOMA OF THE BASAL GANGLIA.

Dr. Frederick Peterson presented a specimen of glio-sarcoma of the basal ganglion. The case was that of a man aged fifty years, who had been in excellent health, with the exception of occasional attacks of vertigo and slight headache, until June 8, 1893, when he fell to the floor in his office. He had a general convulsion, and was unconscious ten hours. In two weeks he was well enough to return to his office from his home in New Jersey, and to continue at work for five days, when headache and malaise kept him at home. Four weeks after his first convulsion he had five or six more of short duration, and rather left-sided in character. At this time he presented the following symptoms: left hemiparesis and hemianæsthesia, left hemianopsia, tendency to somnolence, pupils equal and small, sometimes delirious, great frontal headache, pulse 52 to 60 per minute, respirations slow, slight optic neuritis. The diagnosis of sarcoma or glioma situated deep in the brain, so as to affect the posterior limb of the right internal capsule, was made. An operation was out of the question. The man was unconscious during the last three days of life. At the autopsy, made just five months after the first apparent onset of symptoms, a glio-sarcoma was found, about two inches in diameter, occupying the region of the basal ganglion, especally posteriorly, and projecting upwards into the right lateral ventricle and downwards somewhat into the right crus. It was not strictly demarcated, and there was some infiltration into the white matter of the brain, with here and there some areas of softened brain tissue. A secondary tumor, the size of an almond, was found attached to the dura mater on the right side, compressing the cortex in the region of the angular gyrus.

DR. ALFRED WIENER described a case of

SUBACUTE UNILATERAL BULBAR PALSY, WITH AUTOPSY.

The patient was a young man aged seventeen years. Family history negative with respect to any hereditary nervous trouble. Patient had always been in good health up to two years ago, when he was taken down with an attack of perityphlitis, from which he recovered after five weeks of illness. About two years ago last spring the glands on both sides of his neck in the region of the sterno-cleido-mastoid muscles began to enlarge. In the summer of the following year, 1892, an abscess formed in one of these glands and had to be opened. In August, 1892, the glands on the right side, together with a large portion of the sterno-cleido-mastoid muscle, were excised. Those on the left side were removed the following month, and were found to be of tubercular nature. The patient rapidly recovered, and nothing was noticed in the way of any disturbance of the parts which might have been involved in the operation. In November, 1891, it was discovered that the patient's tongue deviated to the right side, and shortly after this he experienced some difficulty in swallowing. He soon became hoarse, and coughed with difficulty, and within a space of ten days the patient developed a complete unilateral palsy of the right side of his tongue, soft palate, pharynx and right recurrent laryngeal nerve. There was no disturbance of his respiratory or cardiac organs, or other condition present which should have called attention to an affection of any other cranial or spinal nerves excepting the ninth, tenth, eleventh and twelfth. The symptoms remained stationary for a time; then the patient began to grow very much weaker; and suddenly, on March 26, 1893, he had an attack of respiratory failure. From this he partially recovered, and then continued in a condition of slight respiratory difficulty. He could hardly speak above a whisper. He had excessive salivation. On April 11th he could barely protrude his tongue beyond the edge of his teeth. His lips remained normal, and could be brought into perfect apposition. The palate and pharynx on the left side remained normal. On April 20th he had another attack of respiratory failure, which proved fatal.

The autopsy, made six hours after death, revealed that the motor cortex, internal capsule, crura cerebri and pons were normal. The nucleus of the twelfth nerve on the right side was much diseased, while on the left side it was diseased to a slight degree. The nuclei of the ninth, tenth and eleventh nerves were slightly affected, a little more on the right side than on the left. The respiratory bundle appeared to be completely degenerated on the right side, while on the left, in the region of the hypoglossal nucleus, its lower and anterior portions were diseased. In the region of the ninth nerve a few fibres were affected. The intramedullary roots of the ninth vagus, vago-accessorium and hypoglossal nerves were less prominent on the right side than on the left. Otherwise, everything appeared to be perfectly normal up to the exit of the first cervical nerve in the spinal cord. As regards the nature of the lesion, no tubercle were found, as had been expected, nor were tubercle bacilli found on microscopical examination. There was simply an atrophy of the ganglion cells and fibres motor in function.

From a careful consideration of the preceding case and autopsy, Dr. Wiener drew the following conclusions:

(1) That the region of the hypoglossal nucleus gives origin to nerve-fibres which supply the tongue, palate, pharynx and larynx on one side of the body.

(2) The column of nerve-fibres known as the respiratory bundle consists of fibres from the glosso-pharyngeal, vagus and vago-accessorium nerves; and the lower and anterior portion of this column probably serves as the locality for the vagus and vago-accessorium fibres.

(3) That the glosso-pharyngeal nerve seems to control the reflexes of nausea and gagging in the soft palate and pharynx, and also to send some of the motor filaments to the pharyngeal muscles. These latter filaments take their origin in the hypoglossal nucleus, and ascend in the respiratory column to the nucleus proper, and then make their exit with the glosso-pharyngeal nerve.

(4) That the soft palate muscles are not innervated by fibres from the seventh nerve.

THE PONS-MEDULLA FLOCCULUS TRIANGLE AS A TUMOR SITE, WITH PATHOLOGICAL FINDINGS.

DR. ROBERT SAFFORD NEWTON read a paper on this subject, which he illustrated by the following case:

Female, aged twenty-eight years. She entered St. Mary's Hospital July 10, 1893, complaining of a constant headache for a fortnight, with morning vomiting and sickness for seven days. No history of any trauma; no specific history; family history negative. Two days after admission she was examined, and apart from a silly manner and a slight drawling in her speech, she presented no symptoms. On July 20th the patient became weak and fell to the floor. She muttered to herself during the night, and moaned about her head. The pain appeared to be diffuse. She was dull and stupid. Her speech was prolonged and tedious. At this time there was no defect of the cranial nerves. Pulse 45 per minute. She had a shuffling walk, with some tendency to go to the right. The superficial reflexes were present; the knee-jerk was increased on the right side. On July 22d the patient became quite deaf. The headache was very violent, keeping her awake. July 24th, patient very feeble; deafness marked, especially in the left ear; no tenderness nor discharge. The patient stated that she could not see well, but the ophthalmoscope showed no marked lesions. Upon standing up, she was projected to the right very forcibly. The movement at each trial was accompanied by a look of fear, paling of the face, dilatation of the pupils and bathing of the surface in cold perspiration.

From this time on the patient failed rapidly. The sight became worse; the patient grew petulant and childish; her appetite remained fairly good. Nystagmus was present for one day only. The external rectus was also temporarily affected. She had a transient facial tic. The sense of smell was present to the last. Optic neuritis first appeared in the right eye, then in the left, and rapidly went on into total blindness. She also became totally deaf. Her taste sense was not appreciably affected, although she occasionally complained of a hot, scalding feeling in the back of the tongue and palate. Her pulse was slow from the beginning; towards the last it dropped as low as 10, 12 and 14 beats per minute, and three days before her death it dropped to 6 beats per minute. There was no anæsthesia nor implication of the pain, temperature, tactile or muscular senses. She never had any convulsive seizures or paralytic attacks. The weakness steadily progressed; there was loss of control of the sphincters; the respirations became slow, and gradually ceased. Just before her death she was still able to distinguish between whiskey and milk.

The autopsy was made ten hours after death. Upon removing the brain, an enormous tumor with a central projection was found on the left side. The swelling was somewhat triangular; its apex was under the thalamus and geniculate body, its base crowding the cerebellum off from the medulla, and its side line not quite reaching the middle of the pons. In the central pons region was a projecting mass, shaped like a thumb. The bulk of the growth was a cyst. The left half of the pons was much softened, and the medulla and cerebellum were flattened. The olfactory nerve was intact. The optic nerve was swollen on the left side. The third and fourth nerves were intact. The fifth and sixth also seemed to have remained unchanged. The seventh nerve was on one side of the growth, the eighth on the other. The nuclei of the ninth, tenth and eleventh nerves were pushed aside by the change in position of the floor of the medulla. The nucleus of the twelfth nerve was entangled in the growth. The cyst began at the margin of the fourth ventricle by a blocking of the channel of communication between the lateral cisternæ of the ventricle and the cavity of the arachnoid.

SYRINGO-MYELIA: CENTRAL GLIOMA OF THE SPINAL CORD, WITH SPONTANEOUS CENTRAL HÆMORRHAGE.

Dr. Charles L. Dana read a paper on this subject, and narrated the history of the following case:

The patient was a man who had a central gliomatous tumor in the lower part of the dorsal region of the spinal cord. This tumor progressed slowly for two or three years, causing, during that time, the symptoms of a transverse myelitis chiefly, although the presence of a spinal tumor was suspected. Among other symptoms there was anæsthesia of the right leg extending up to the twelfth dorsal spine, and involving touch, temperature and pain sensations. Anæsthesia involved to a lesser extent the left leg. Just before the man's death a large hæmorrhage occurred, which was confined to the centre of the spinal cord and which caused exquisite pain; the man, in fact, dying from exhaustion. Upon post-mortem examination a large central hæmorrhage, destroying nearly every particle of the spinal cord at the level of the seventh dorsal segment was found. This hæmorrhage extended up and down for a distance of about three inches. Around the hæmorrhage and above it were evidences of a gliomatous infiltration involving nearly the whole of the transverse area of the cord at that level. Very striking secondary degenerations, ascending and descending, were found. The case was one of glioma of the spinal cord, without there being any cavity formed. Although clinically, and in one sense, pathologically, it would be a case of syringo-myelia, yet that name cannot strictly be applied to it.

In commenting on this case, Dr. Dana referred to the question of the existence or the non-existence of a pain tract, and the advisability of our searching for it. The psychologists seem to have come to the conclusion that pain is not a sensation, but a form of feeling; that it is not to be classed with the sensations of touch or temperature or heat; that it does not have peripheral end organs and that there are no nerves in existence which on irritation alone produce pain; that there is no such thing as a pain tract; that in attempting to locate such a tract we are pursuing a will-o'-wisp. Dr. Dana said that after a very careful study of this question he has been converted to the psychologist's view. If we claim that there is a special tract for pain, we can just as well claim that there is one for hunger and various other sensations. If there is a special tract for any of the common subjective sensations, there must be a special tract for all.

Dr. B. Sachs said that in former days he held to the view that pain was nothing more than an intensification of the ordinary tactile sense; and in the majority of cases we meet with such an explanation would hold good, and under such conditions we would not look for any special pain tracts. The clinical facts that have been brought out with regard to syringo-myelia, however, do not bear out that theory. Touch and temperature sense may remain normal, whereas the pain sense is entirely lost. The psychologists' view of this question is one that is rather difficult to reconcile with the clinical facts we have obtained from syringo-myelia. On the other hand, this disease is very destructive and irregular in its course, and for this reason is rather an unsafe guide for us to go by in trying to determine physiological functions.

Dr. C. A. Herter said that several years ago he hemisected the spinal cord of a monkey in the mid-dorsal region; he was unable to find in that case any evidence of a loss of sensibility to pain either on the same side as the lesion or on the opposite side. He also performed this experiment on an opossum, with a like result. Mott, in his experiments, cut the antero-lateral ascending tract and was unable to find any evidence of loss of sensibility to pain. The results of experiments on animals, of course, cannot be applied directly to man. The subject brought up by Dr. Dana is an interesting one, and up to the present time we have not enough cases on hand to base any definite conclusions upon.

Dr. Landon Carter Gray said that in our present state of knowledge as regards the exact functions of the various columns of the cord — the columns of Burdach and Goll and the so-called column of Gowers — and the uncertainty that exists as to the exact demarcation of the latter, we can arrive at no definite conclusions as to the location of the pain tracts. So far as clinical evidence goes, there certainly is such a thing as a pain sense. In hysteria the tactile sense may be preserved, while the pain sense is entirely lost.

Dr. Starr said we must admit the existence of pain sensations and of a centripetal pain tract. That tract must necessarily go in through the posterior nerve roots, because we have painful sensations of a hallucinatory character in locomotor ataxia. It must extend for a distance in the central gray matter of the cord. We have now on record over seventy cases of syringo-myelia, with autopsies. In these cases there is a decided loss of pain in a certain limb. If the affected limb is an arm, then the cavity in the cord is in the cervical region, and the pain sense is preserved in the body and legs. Therefore these sensations, though they may pass for a little distance in the central gray matter of the cord, afterward pass into the white columns. The central gray matter contains numerous cells, each of which sends its fibres into the antero-lateral columns and these pass upwards. While it is by no means positive that the antero-lateral columns transmit sensations of pain, all the facts seem to point to the correctness of that theory. The column of Lissauer, to which one of the speakers referred, can have nothing to do with the transmission of pain sensations. It consists only of short fibres, does not increase in size from below upward and cannot transmit impulses upwards for any great distance. The sense of hunger is by no means analogous to the sense of pain, as Dr. Dana intimated. We must distinguish between a common sensation and a special sensation.

In conclusion, Dr. Starr referred to a case reported by Edinger, with autopsy, in which the lesion was found in the parietal region on one side, and in which the symptoms were chiefly those of intense pain radiating in the opposite side of the body. Edinger described it as a case of central lesion, with sense of pain.

Dr. Dana then closed the discussion. He said that his views regarding the non-existence of a pain tract were only arrived at after a long and thorough study of the subject. When we come to mix up pain sense and touch sense and heat sense, etc., we are showing a mental confusion that is unworthy of advanced neurologists. Pain and touch are entirely different. Pain is a subjective or common sensation. Touch is objective. Pain is much more closely allied to hunger than it is to touch. Pain is not a special sensation, but a modification of it. We may have a painful pricked wound, etc., but we do not have a simple sensation of pain. It is always combined with something else. If we can get rid of the idea that we must keep on hunting for a pain tract, it will save much exertion and many futile experiments on monkeys and men.

A CASE OF INFANTILE, CEREBRAL, SPASTIC DIPLEGIA.

Dr. F. Peterson presented the fresh brain in this case. The patient was a female infant, aged twenty months, with congenital diplegia; that is, spastic paralysis of all four extremities. The child was subject to convulsions, had enormously exaggerated knee-jerks and ankle-clonus. Its head was exceedingly small. At the autopsy, the skull-bones were found to be considerably thickened, and all the sutures and fontanelles closed and united. The dura was very thick. There was no increased amount of sub-dural fluid. Over each hemisphere, a large group of convolutions, including especially the motor area, were found wanting. The vacuum caused by this atrophy was filled partly by sub-dural fluid and partly by the bulging of each ventricle. There was no internal hydrocephalus. There was no communication between the ventricles and the exterior of the hemispheres. A microscopical examination of the spinal cord showed degeneration and atrophy in the lateral columns.

DEAFNESS DUE TO A FOOT-BALL INJURY.

Dr. J. Leonard Corning narrated the history of the following case: The patient was a young man aged eighteen years, who received a severe kick directly over the right ear while engaged in a game of foot-ball. He was first seen by Dr. David Webster, who, upon careful examination, found that there was total deafness on the right side; aërial and bone conduction were suspended. There was no trouble of the middle ear, and the drum was in perfect condition. There was slight bleeding of the external ear. There was no evidence of fracture. The case was then referred to Dr. Corning, who applied to the ear a rapidly interrupting faradic current, which was allowed to pass through the ear about ten minutes, when the hearing was so far restored that the patient could hear the watch at a distance of six inches. Before making the application, the external meatus was plugged with absorbent cotton moistened in salt solution. A severe tinnitus which existed with the deafness was also relieved. Dr. Corning said he had no idea what the lesion was, or why improvement followed the use of the current; it was employed simply as an empirical measure. The young man's hearing is now entirely restored. There was no suspicion of hysteria. The visual field was not tested.

Dr. David Webster said he supposed the deafness was due to concussion either of the auditory nerve or of the labyrinth, of which he has seen cases reported. Temporary blindness has been produced by a sudden blow on the brow, without ophthalmoscopic or other lesion. Most of those cases, however, are due to fracture of the base of the skull, involving the optic foramen and producing nerve atrophy. He has never seen another case similar to the one narrated by Dr. Corning.

Dr. Starr suggested that the case might have been one of traumatic hysteria or concussion of the auditory nerve. In consultation with Dr. Jacoby he recently saw a case of total deafness in both ears, of central origin, in which a temporary improvement in the hearing was produced by the use of a strong galvanic current, about six milliampères, which is a strong current for the acoustic nerve.

Dr. Ralph L. Parsons reported

A CASE OF ACROMEGALY.

The patient was a man aged thirty-six years. Family history negative. Never had venereal disease nor used alcoholic stimulants. He was in good health until eighteen years ago, when he had an attack of malarial fever. From this he recovered, and has had no recurrence since. Ten years ago he was told that he stooped and carried his head to one side. Eight years ago he began to suffer from a pain in the back of his head. This came on mostly at night, and not oftener than once a week. Subsequently the headaches occurred more by day than at night. Latterly they have increased in frequency and duration, and have often been excruciating in character. The pain was usually most severe at the occiput, but would also involve the left parietal and frontal regions; the right side of the head was unaffected. About six years ago his attention was first called to the large size of his hands. He then for the first time perceived that they were of extraordinary size. He does not know for how long a time this increase in size has been taking place. He cannot say whether they have increased in size during the past six years.

A careful examination of the patient was made in October last, with the following result: Weight, 227 pounds. No pronounced symptoms of organic disease. Hair rather coarse, but natural in condition; left ear slightly thickened; forehead retreating; superciliary ridges quite prominent; no exopthalmos; malar bones rather prominent; cheeks appear rather sunken; nose broad and full at the nostrils; lips normal; tongue decidedly enlarged, obstructing free articulation; alveolar processes normal; teeth not separated; chin elongated; head inclined strongly and habitually to the left side and forwards. The hands were large and spade-like, the right hand being decidedly the larger. The soft tissues of the hands and fingers were firm and resilient, as though infiltrated by an elastic substance; they did not pit on pressure. Wrists rather large; arms normal. Thorax and pelvis normal. The feet were large, but perhaps not more so than in the case of many men of his weight. The patient has perspired very freely for the past ten years; of late the perspiration has been decidedly offensive. Besides the headaches already referred to, the patient also complained of pain in the left ear and eye, the latter coming on after reading or using the eye in a strong light. He does not think his eyesight has become impaired. Appetite and thirst excessive. No marked mental symptoms.

On the 21st of October last, by advice of Dr. Starr, the patient began the use of thyroid extract, five drops three times daily. The dose was gradually increased until he received fifteen drops three times daily. With the exception of tonic baths, general hygienic measures and a regulation of the diet, no other treatment was given. At the present time the patient reports that he is feeling decidedly better. He is more cheerful, and his headaches have been relieved to a very great extent. They have not, however, entirely disappeared. There seems to be no change in the dimensions of the hands. His weight has increased rather than diminished. There has been a great improvement in the subjective symptoms, but there is still a reasonable doubt whether this improvement is due to the direct action of the medicine or to the patient's mental status, induced by the fact that something is being done for his relief.

Dr. Corning was inclined to think that the improvement in the condition of the patient was due to the medication employed, rather than to the mere fact that something was being done for him. Such patients, he thought, are usually not of a very imaginative turn of mind.

Dr. Starr said he was somewhat responsible for the use of the thyroid extract in the case narrated by Dr. Parsons. There was nothing original in the suggestion, as this method of treatment has been pursued in England in a number of cases of acromegaly. It is purely empirical. The supposed lesion of acromegaly is an increase in the size of the pituitary body. It is questionable whether it is in any way related to the thyroid gland. The eye symptoms in Dr. Parsons's case interested him, because in two other cases of acromegaly coming under his observation there was a concentric diminution of the visual field, and in one hemianopsia; the latter symptom is quite common, and is probably due to pressure on the chiasm by the enlarged pituitary body. In one case of acromegaly seen at St. Luke's Hospital last spring the patient died of pneumonia, and at the autopsy the pituitary body was found to be normal. There was nothing to account for the peculiar growth of the bones.

Dr. Parsons, in reply to Dr. Webster, said it is generally supposed that there is a sort of relationship between acromegaly and myxœdema; whether this belief is well founded, or what that relationship is, he does not know. While his patient was not of an imaginative turn of mind, still he was hopeful; and that element would influence his mental state and perhaps even improve his physical condition.

ERGOT IN THE TREATMENT OF PERIODIC NEURALGIAS.

Dr. William H. Thomson read a paper on this subject, in which he gave the histories of a number of cases of severe periodic neuralgias in which the symptoms were promptly relieved by the use of ergot in large doses. In all of these cases the disease was of long standing, and the usual remedies had been employed without avail. Dr. Thomson said his method of administering the ergot in migraine was as follows: The fluid extract of the drug is employed, combined with an equal quantity of elixir of cinchona, to obviate its tendency to cause nausea. Two drachms of this mixture is to be taken in water as soon as the premonitory symptoms of the headache are noticed, and the patient is advised to lie down and keep very quiet. If, after an hour, the headache continues, a second similar dose is taken, and then a third in another hour if necessary. As nausea is such a general accompaniment of this affection, it is provided that if either of the doses be vomited, it should then be taken in an enema of two ounces of water. This medication, the speaker said, rarely fails to arrest the attacks, even in long-standing cases, and with a preventative course of intestinal antisepsis in the intervals, the relief from the malady has often proved permanent.

The following is the history of one of the cases reported by Dr. Thomson. The patient was a young man who suffered from headaches beginning at the occiput and extending to the temples; they generally came on about 11 A. M. daily, and gradually grew worse until they reached their acme about 4 o'clock in the afternoon, after which they subsided, without, however, entirely disappearing. His physician failed to check their increasing severity, although on one occasion he administered thirty-grain doses of chloral with thirty grains of potassium bromide every two hours for two doses, with little more effect than a slight drowsiness being produced. The next day, the patient becoming maniacal from the pain, sixty-five grains of chloral, sixty of bromide and thirty of antipyrin were given within two hours. This caused a profuse sweating and moderate sleep. The third day a consultant was called, who recommended that quinine and Warburg's tincture (which had been tried at the beginning of the treatment) should be resumed in large doses. Accordingly, sixty grains of quinine and two ounces of Warburg's tincture were given in twenty-four hours, with even worse afternoon paroxyms of pain than before. The next day the bromide, antipyrin and chloral were resumed, but no great relief was obtained. At this time he was seen by Dr. Thomson, who recommended drachm doses of fluid extract of ergot every hour for three doses, combining the first two doses with ten grains of quinine, and if his stomach rejected either of the doses, that the medicine be given per rectum. Soon after taking the first dose, the patient experienced a good deal of relief; the second dose was vomited, whereupon it was given per rectum, and this was soon followed by a complete subsidence of the pain, with profuse perspiration. This medication was repeated for three successive days, with final cure of the headaches. The second ten grains of quinine produced decided symptoms of cinchonism.

Dr. Joseph Collins said that he has recently had occasion to try ergot in several cases. In one case the patient had been given huge doses of Warburg's tincture, quinine, bromide, and potassium iodide without any benefit. He was then given drachm doses of ergot, and a marvellous improvement at once followed. This was three months ago, and the man has had no return of the symptoms since. In another case the patient was a lady, aged forty years, who had long been under treatment for migraine, the pain being of a boring character and very difficult to relieve. In this case the value of ergot in the treatment of this affection was discovered accidentally; it was given to check a menorrhagia, and at the same time it relieved the headaches.

Dr. Thomson, in reply to a question, said our present knowledge is not definite enough to form any idea as to how ergot acts in these cases. He simply gave it as an empirical remedy. Furthermore, his paper refers entirely to neuralgias that are definitely periodical. These are usually very severe, and entirely different from the ordinary intermittent headaches. He referred to the fact that quinine, even in small doses, when it is combined with ergot, appears to produce cinchonism much more quickly than when given alone. In only one of the cases reported was there any antecedent history of malarial infection; in that case the patient simply gave the history of having resided in a malarious district. Very likely there was a malarious element in the other cases, of which the nervous symptoms were the only manifestations. Dr. Thomson also referred to the fact that intercostal neuralgia is often accompanied by sciatica; also the occurrence of sciatica after pleurisy. The latter combination he has noticed in about twenty cases.

◆

Recent Literature.

Lectures and Essays on Fevers and Diphtheria, 1849 to 1879. By Sir William Jenner, Bart., K.C.B., etc. New York: Macmillan & Co. 1893.

The papers which go to make up this volume were originally published during the thirty years between 1849 and 1879 in various journals and in the transactions of societies, and are now collected together for the first time by the author.

The most interesting and important of these papers are those early ones, published first in 1849–50–51, on the identity or non-identity of typhoid and typhus fever, and on the four febrile processes — typhus, typhoid, relapsing fever and febricula — at that time still commonly comfounded in England under the term continued fever. Jenner's name is associated with the solution of this question in England, as were those of Louis and Valleix in France, and those of Gerhard, Jackson, Stillé and Shattuck in this country. He followed the others at a considerably later period, and was preceded in his own country by Stewart of Edinburgh. Still, when Jenner did put his hand to the subject, his arguments were based upon a large and careful experience, and he treated it in a thorough and masterly manner, which finally forced the conviction of his contemporaries. It is well that these papers should be brought together in this form, that they may be made accessible to the present generation, who can thus realize how slowly a scientific truth which is to-day accepted as almost self-evident, won its way.

The well-known and excellent address delivered in 1879 before the Midland Medical Society at Birmingham, on the treatment of typhoid fever, is another of these contributions. Another series is formed by the Gulstonian Lectures for 1853, before the College of Physicians of London, on the acute specific diseases. The remaining pages are devoted to two lectures delivered in 1861 on diphtheria, and a clinical lecture delivered in 1875 on croup.

On Contractions of the Fingers and on "Hammer-Toe." By William Adams, F.R.C.S., Eng., Consulting Surgeon to the Great Northern Hospital, etc. Second edition; 154 pages with eight plates and thirty-one wood engravings. London: J. W. A. Churchill. 1892.

This work comprises four essays, the first of which describes the deformity known as Dupuytren's contraction, the second and third "hammer-toe," and the last a method to remove or relieve depressed cicatrices. The first edition was published in 1879; the text has now been somewhat altered and new illustrations added. There is a *résumé* of the work done in England and America during the past ten years; and the description of "hammer-toe," with its treatment, has been introduced. The chapter describing the treatment of depressed cicatrices appeared in the first edition in almost the same form as now. The present edition, in addition to the above, includes results and observations of the past ten years, collected not only in the writer's individual practice but also from the work of other surgeons. The book is well arranged and has a good index. It is a well-written and interesting treatise; and the excellent illustrations add much to its value.

Essentials of Minor Surgery, Bandaging, and Venereal Diseases. By Edward Martin, A.M., M.D., Clinical Professor of Genito-Urinary Diseases, Instructor in Operative Surgery, etc., University of Pennsylvania, etc. Second edition, revised and enlarged, with 78 illustrations. Philadelphia: W. B. Saunders. 1893.

This little work, which is already well known, is one volume in the series known to medical students as the Saunders Question Compends; and treats of bandaging, certain details relating to minor surgical work, and venereal diseases. The present volume is a second edition, and has been revised to date. The illustrations show many changes; and those relating to bandaging are entirely new, the method used in the "American Text-Book of Surgery" being followed. The value of the volume has been much increased by its revision; and it contains much, in a very concise form, of interest to the practitioner and student.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, FEBRUARY 1, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

DIPHTHERITIC PARALYSIS.

Diphtheritic paralysis generally manifests itself from eight to fifteen days after recovery from the local symptoms, though it may be delayed to a later period; in very exceptional cases it has been observed during the first week. This paralysis exists in one-third of the grave cases, according to Roger's statistics; it is not a rare sequel of benign diphtheria. The onset is generally slow and insidious. There is first only a little *hesitation* of the motor functions; deglutition, walking and other movements become more and more difficult.

The place of election of the paralysis is the velum pendulum, where it generally begins, and where it sometimes remains localized. A slight pallor, a little slowing of the pulse, are the only disturbances of the general state which are then noted. The reflux of liquid aliments by the nares indicates the impediment to deglutition. Extension of the paralysis to the pharynx generally supervenes, and the food can only be swallowed after repeated attempts, which soon fatigue the patient, and sometimes result in the refusal to take nourishment. Loss of voice testifies to paralysis of the larynx. The muscles of the eyes, of the neck, of the trunk, of the upper and lower extremities, of the rectum and bladder, even the special senses, are taken in the more complete forms of paralysis. More rarely the paralysis will attack the lower limbs before affecting the larynx and the tongue; and in a few cases it has been known to begin with the arms, then invade the soft palate and œsophagus, to attack finally the lower extremities.

It is a common experience to see troubles of vision supervene which are attributed to a fault of accommodation. The sight is enfeebled in different degrees, which may vary from slight amblyopia to complete blindness; there is hypermetropia, mydriasis, and, if but one eye is affected, inequality of the pupils. Almost all of the eye-muscles may be affected in turn.

The lower extremities generally begin to be paretic when these ocular troubles exist. The paralysis of the legs generally assumes the form of an incomplete paraplegia. It is announced by formication and numbness in the legs. Walking becomes uncertain; the patient has an incomplete perception of the ground under his feet, and finds it especially difficult to go up and down stairs, or walk in the dark. A peculiarity of this form of paralysis is that the loss of motility in the feet and legs is never complete; the patients can move along by dragging or sliding their feet. When they are confined to their bed the lower limbs still preserve considerable power of movement, but without energy or much certainty. Jaccoud calls it an ataxy of movement, rather than paralysis. These ataxic symptoms, in conjunction with the abolition of the patellar reflex and the eye troubles, may give rise to a form of pseudo-tabes. Contracture is very rare. The affected muscles present the ordinary reaction of degeneration; there is augmentation of the galvanic and diminution of the faradic contractility.

With regard to the condition of the hands, these become awkward and clumsy; patients drop or upset objects which they attempt to handle; tremblings resembling the tremors of paralysis agitans are frequently present. The muscular enfeeblement may be so great that the patient cannot feed himself. Paralysis of the face is a rare phenomenon. Bourges,[1] who has written a very complete description of the diphtheritic paralysis, and from whom we have here borrowed, gives a graphic account of cases which he has witnessed when the syndrome of labio-glosso-laryngeal paralysis was perfectly reproduced; the tongue, lips, cheeks, larynx being simultaneously affected.

Troubles of the sensibility are very frequent in diphtheritic paralysis, and almost always have to do with the regions affected with akinesic troubles. The ordinary alteration of sensibility is anæsthesia; exceptionally there is hyperæthesia which manifests itself in the lower limbs by numbness and formication, and generally precedes the akinesis. Frequently the anæsthesia when it exists does not extend above the knees and elbows, but it may be general. It is sometimes accompanied with analgesia so complete that (Bourges says) cutting operations have been performed without ether. The anæsthesia may affect the lips, tongue and cheeks, and in rare cases the special senses, hearing, smell and taste have been abolished. The speech is often hesitating, stammering.

A capital fact in diphtheritic paralysis, says this same writer, and one that distinguishes it from all other paralyses by peripheral neuritis, is that there is no muscular atrophy; the paralyzed limbs always retain their normal aspect and volume.

In very rare instances, the velum pendulum is not affected, and the disease is located in one muscular group or region without affecting other groups or other parts. Such are the cases where the paralysis has taken the paraplegic or hemiplegic form, where it is limited to the eye muscles, to an arm, a leg, a hand, etc. Cases complicated with diaphragmatic paralysis are especially dangerous.

---

[1] H. Bourges: La Diphthérie, Paris, [illegible].

In the localized and partial form, the paralytic accidents may be transient, and disappear in a few days. When the paralysis is general, its course is slow, lasting sometimes weeks and even months. Diphtheritic paralysis generally terminates in recovery (eight times out of ten, according to Bourges). In favorable cases, the power of movement reappears first in the lower limbs, then in the throat, then in the arms and hands, the trunk, the viscera and the eyes. Generally, the organs to be first paralyzed are the first to get well, but there is no fixed rule even here, and it often happens that the velum pendulum is the first part to be affected, and the last to resume its functions.

We have said nothing about those forms of infectious paralysis in which the heart and respiratory muscles are affected. These varieties are much more grave, for death then occurs often from syncope or asphyxia.

These paralytic results of diphtheria have been reproduced in animals in the experiments of Roux and Yersin.

◆

THE ACTION OF PERMANGANATE OF POTASSIUM IN RENDERING MORPHIA INERT.

AT a meeting of the medical and surgical staff of the West Side German Clinic, 42d Street, New York, Dr. William Moor, one of the physicians to the clinic, recently gave a demonstration on his own person of the efficacy of permanganate of potassium as an antidote for morphia. Against the earnest protestations of those present, he swallowed three grains of sulphate of morphia in solution, and immediately afterwards he drank a solution of four grains of the permanganate in four ounces of water. He was carefully watched, but none of the ordinary effects of morphia on the system were observed, and he has since stated that he experienced no ill effect whatever from the poisonous dose taken.

Dr. Moor, who has made a special study of therapeutics and toxicology, is twenty-eight years of age, and an Austrian by birth. He studied two years in Berlin and one in Paris, and is a graduate of the College of Physicians and Surgeons, New York. He states that previous to the demonstration mentioned he had experimented with rabbits, and also on his own person. He at first took an eighth of a grain of morphia, then a quarter of a grain, then half a grain, and finally three-quarters of a grain; and when he took permanganate of potassium afterwards there was no apparent toxic effect from the morphia.

In his demonstration at the German Clinic he would have been perfectly willing, he says, to take six grains of morphia, instead of three. Morphine, or any of the salts of opium, he claims, is immediately rendered harmless by contact with the permanganate. The antidote at once seeks the poison, passing by the other substances in the stomach. The soluble salt is acted upon by the permanganate 75,000 times more quickly than albumen, and several thousand times more quickly than peptone. Of course, the antidote should be administered as promptly as possible after the morphia is taken.

Since this demonstration it has been claimed that the honor of the discovery is really due to Dr. William Condy, of London, and that Dr. J. B. Mitchell and other writers have referred to the efficacy of permanganate of potassium as an antidote; but, at all events, it is certainly true that its action in this regard has never been generally recognized by the profession. Lacerda recommended permanganate as an antidote to serpents' poison. Experiments indicate that it destroys the constitution of such poisons when brought into direct contact with them, but, when introduced into the general system, does not control their action.

Dr. Moor is now engaged in making a series of experiments to test the power of the permanganate as an antidote against strychnia, cocaine and other poisons. In the case of the first named, its action is said to be much slower than upon morphia.

Morphia is well known to be a powerful reducing agent, and it is doubtless by oxidation that the permanganate acts. As with serpent poison, so with morphia, it is undoubtedly essential that the permanganate should enter into direct contact with it. After the morphia has been absorbed the permanganate can have no action upon it. This physiologico-chemical restriction necessarily limits very much any value as an antidote which it may be proved that it possesses. Really, as we have already hinted, the most surprising thing about this incident which has attracted much attention in the daily press, is the fact that the action upon each other of two substances whose properties are so well known as are those of morphia and permanganate, should not long since have been accurately determined and described and been generally recognized. As a matter of fact, the usual therapeutic text-books and toxicologies are silent on this subject.

◆

MEDICAL NOTES.

HONORS TO DR. BILLINGS. — Dr. Billings, Surgeon-General of the United States Army, has been elected an honorary member of the Royal Academy of Medicine of Belgium, and also a member of the International Statistical Institute, whose headquarters are at Rome.

PHYSICIANS IN THE VIRGINIA LEGISLATURE. — It is a little unusual to find physicians actively engaged in politics; but there are eight physicians in the present legislature of Virginia. Seven of them are Fellows of the State Medical Society.

APPOINTMENT TO THE CHAIR OF MIDWIFERY IN GLASGOW. — Dr. Murdoch Cameron has been appointed to the chair of Midwifery in the University of Glasgow.

EIGHT INSANE PATIENTS BURNED TO DEATH. — The building on the Boone County (Iowa) Poor Farm used as an insane asylum was burned to the ground

January 23d, and eight of the nine inmates were burned to death. Four of the patients were locked in their rooms, and could not have escaped even if they had tried. The others were not intelligent enough to try, and were surrounded by fire before help could reach them.

The Lettsomian Lectures. — The Lettsomian Lectures this year are now being given by Mr. Frederic Treves, F.R.C.S., who has chosen "Peritonitis" as his subject.

"The Grand Old Man" of Medicine. — The *Medical Press and Circular* gives a new title to the Autocrat of the Breakfast Table in the following bit of news. It would lead its readers, however, to infer by analogy that Sir Spencer Wells had written the poems of Thomas Hood.

"The 'Grand Old Man' of Medicine seems to be Dr. Oliver Wendell Holmes. The College Club, of Boston, recently gave a reception in his honor, and about five hundred persons were presented to him. He received them as he sat 'in a laurel-decorated chair under a bower of palms.' During the course of the proceedings Dr. Holmes recited 'The Last Leaf,' 'Dorothy Q.,' and 'The Chambered Nautilus,' all of which must have been intently listened to. Truly, we have no one in this country, of similar standing belonging to the profession, who could perform such a feat. Fancy Sir Spencer Wells, for example, reciting 'The Dream of Eugene Aram' at the *conversazione* of the Medical Society!"

The Harvard Medical Society of New York City. — At the meeting held on January 27th, the following officers for 1894 were elected: President, Reynold W. Wilcox, M.D.; Vice-President, Royal Whitman, M.D.; Secretary and Treasurer, Dillon Brown, M.D.; Executive Committee, J. Winken Brannan, M.D., Frank H. Daniels, M.D., and Howard Lilienthal, M.D.

BOSTON AND NEW ENGLAND.

Small-Pox in Boston. — During the week ending at noon, January 31st, there was one death from small-pox. No new cases have occurred.

A Bequest to the Children's Hospital of Boston. — The will of Mr. C. C. Gilbert, of Bridgewater, bequeaths the sum of $3,000 to the Children's Hospital of Boston.

Small-Pox in Massachusetts. — During the week ending at noon, January 31st, there were reported to the State Board of Health three cases of small-pox from places outside of Boston, one each from Lowell, Brookline and Worcester.

Salem Hospital Report. — During the year just closed there were treated in the Salem Hospital 318 patients: 178 medical, and 140 surgical. There were 153 males and 165 females.

Typhoid Fever at Lowell, Mass. — Since the first of the year, seventy-three cases of typhoid fever have been reported to the Board of Health in Lowell, and during the last week many new cases have occurred. The prevalence of the disease is ascribed to the use of Merrimac River water, since in two wards which are supplied with water from the driven wells in experimental operation, there is scarcely any typhoid. Those who are ill in these districts have been at work in quarters where the river water only is supplied.

Vaccination in Vermont. — The State Board of Health of Vermont, at its meeting in Burlington last week, voted to recommend a general vaccination throughout the State, in consequence of the prevalence of small-pox in Boston and New York and the signs of scattered infection in other New England places.

NEW YORK.

Red Light on Small-Pox. — It is announced that one of the small-pox pavilions at the Riverside Hospital on North Brother Island is to be fitted up with red-glass windows, and with red-glass globes for the lights used at night, in accordance with the alleged discovery that the skin of small-pox patients is extremely sensitive to the violet-colored rays of light, and that it is these which give rise to the pitting. The experiments which it is claimed demonstrated this fact was made by Dr. Lindholm and Finsen, in the City Hospital at Bergen, Norway, and was detailed in a recent article in this Journal (January 11, page 35). New York will therefore be the first city in this country to try the efficacy of the red light, which is the same as that used by photographers in developing sensitive plates.

Small-Pox on the Increase. — Small-pox seems to be on the increase, and several cases have recently been reported from charitable institutions in the city and on the islands, as well as at Charity Hospital, Blackwell's Island.

Diphtheria. — There has been a considerable increase in diphtheria this season as compared with last year. From the 1st of January to the 24th there were reported 767 cases as against 382 in the same period in 1893. The mortality is said to be about 33 per cent.

A Negress who knew Washington. — There recently died at the Colored Home and Hospital on First Avenue a negress by the name of Sullivan, at the extreme age of 107 years. The correctness of her age is said to be attested by a Bible in the possession of her son, who is now over 65 years old. The life of this ancient woman is quite an interesting one. She was the daughter of Philip Pickering, who fought under Gen. Francis Marion in the War of the Revolution. She was born a slave in the Carroll family, in 1785, and in later days often recalled a visit made with her master and mistress to General Washington, at Mount Vernon. By the dying request of her mistress, she was given her freedom, and she then removed to Washington. Here she entered the service of the Buchanan family, and on one occasion had the honor of waiting upon the guests at a banquet given to

La Fayette, who personally complimented her. She was married in Washington, and in 1829 removed to New York. One of her brothers fought under General Jackson at the battle of New Orleans, and when the latter became President, he gave him a position as assistant gardener at the White House.

Miscellany.

EXTERNAL INDICATIONS OF INHERITED LONGEVITY.

THE December meeting of the New York Academy of Medicine was devoted to a discussion of various factors influencing longevity, either directly or relatively. Dr. Morris, in speaking of the constitutional inheritance, said that in most cases the line of inheritance could be very fairly determined by the careful observation of certain external indications — as color, motions and measurements.

"One of the most certain indications of long or short life was the size of the head, for in the brain lay the great centre of power. A person with a head whose diameter at the thin portion of the temporal bones measured five and a half to six inches was almost sure to give a longevity on the father's side of seventy to ninety years or over. If the head measured in front from the external auditory canal to the naso-frontal suture as much as four and three-fourths or five inches, we might be almost sure of long life on the maternal side. A beard which was darker or redder than the hair, indicated inheritance from the paternal side; if it were lighter than the hair, the inheritance was probably from the maternal side."

THE NEW RATIONAL WAY TO SLEEP.

DR. WILHELM FISCHER, according to *La Médecine Moderne*, has recently completed some researches into the proper method of sleeping. He says that to sleep well, that is, to obtain the quickest and surest intellectual rest, a person should lie with the head low and the feet elevated at least to the horizontal. The ordinary method is entirely wrong. The difficulty in becoming used to this proper method of flushing the brain to rest is not so very great if one has patience to begin gradually. "Each fortnight the sleeper is to discard one pillow until he can sleep on a level." The time required for this is not stated. It must depend upon the number of pillows started with; and from the manner of mention this might be many dozen. But, to return to the directions; after being accustomed to the level position, the would-be-sleeper-*comme-il-faut* places his feet each night in a higher plane than his head, increasing the incline by adding the discarded pillows until finally he slumbers peacefully with his head on the mattress and his feet on many pillows.

This attitude has, he says, "a marvellously curative effect on many diseases, especially in nervous and anæmic patients; but its real and crowning triumph is in the treatment of varicose veins, hæmorrhoids, floating kidney, basic pulmonary disease and erotic dreams."

If this highly rational way of sleeping becomes as general as it should, we may expect to see a new style of bedsteads put upon the market built like the kangaroo, with long legs at the lower end.

THE PLEASURES AND REWARDS OF A PHYSICIAN'S LIFE.

IN his commencement address at Lafayette College last June, Dr. William W. Keen, of Philadelphia, gave the following picture of the pleasure and satisfaction of the busy physician, which we reprint at the request of another eminent professor:

"Sir Spencer Wells, as the net result of his first 1,000 ovariotomies added 20,000 years to human life; and so far has modern surgery surpassed this result that every thousand similar operations to-day adds not less than 30,000 years to human life! Think what one of these lives means, as the pale cheek regains its color, the feeble pulse its force, strength succeeds weakness, each day records a gain, and finally health is re-established. The tender father returns to his usual pursuits; the adored mother once more becomes the centre of loving care of her family; the beloved child is restored to the family circle with ruddy health, rescued from the valley of the shadow of death itself. The hushed voices, the soft tread of the sick-room have given place to the laughter of health; the mists of sorrow are driven away; the anxious alarms of disease have vanished. What, think you, can equal the joy of the physician, as he views this happy transformation? Who is a dearer, more cherished, more welcome friend than he? Who finds a warmer place by the fireside and in the very hearts of his patients? No one can adequately appreciate his profound joy, his daily delight, his deep gratitude to the 'Giver of every good and perfect gift.' Oh, my friends, it is a blessed profession, a divine calling, with a heavenly recompense on earth!"

THE SOLUTION OF THE NEGRO RAPE PROBLEM.

THE solution of the yearly more serious problem of negro rape in the South is a most difficult but important task. Lynching, with its attendant tortures, has proved as useless as it is atrocious.

In the November number of the *Virginia Medical Monthly*, Dr. Lydston strongly advised legal castration as a remedy; and he is supported in a more recent issue of the *Texas Medical Journal*, by Dr. Daniel. The quieting effect of this treatment upon each criminal would, of course, be efficient for that one man, but it is doubtful how far it would carry a deterrant warning to other negroes in the blinding heat of lust.

Dr. P. C. Remondino, in the January number of the *National Popular Review*, urges the adoption, not of expiatory laws, but of preventive legislation. It is not rational, he claims, to look upon the unbridled licentiousness of the negro as solely a racial trait. The negro child, especially the male, is subject to many nervous disorders from slight irritation, and this characteristic he carries with him to adult life. Accordingly, Dr. Remondino sees in the removal of "an irritating and ulster-proportioned prepuce" the efficient and gentle means of stopping the sexual crimes and improving the moral system of the negro race. He says:

"Although the male Jews are much given to unholy and unedifying carnal pursuits, and in that field make records only equalled by the great Nimrod as a hunter, still, we never hear of a Jewish rapist.

"From our observation and experiences in such cases, we feel fully warranted in suggesting the wholesale circumcision of the negro race as an efficient remedy in preventing the predisposition to indiscriminate raping so inherent in that race. We have seen this act as a valuable preventive measure in cases where an inordinate and unreasoning as well as morbid carnal desire threatened physical shipwreck: if in such cases the morbid appetite has been removed, or at least brought within manageable and natural bounds, we cannot see why it should not — at least in a certain beneficial degree — also affect the moral stamina of a race proverbial for the leathery consistency, inordinate redundancy, generous sebaceousness and general mental suggestiveness and hypnotizing influence of an unnecessary and rape, murder and lynching breeding prepuce. It would certainly be more humane for a State legislature to pass an act legalizing and enforcing circumcision as a preventive measure, just as it would enforce either vaccination or quarantine regulations, than to enact laws to castrate or eunuchise the accused after his infraction of the law."

◆

Correspondence.

THE PREVALENCE AND RECOGNITION OF SCABIES.

Boston, January 25, 1894.

Mr. Editor: In the Journal of September 16, 1886, a paper entitled "Clinical Notes on Scabies," by Dr. F. B. Greenough, was published, in which mention of the increased prevalence of the itch was made, and the suggestion offered that it might be well for boards of health to consider measures looking toward its control.

In the Journal of February 7, 1889, there appeared an article by Dr. J. C. White, on "The Increasing Prevalence of Scabies," which needs no comment.

Lastly, in the Journal of October 19, 1893, under the heading of "The Increasing Prevalence of the Itch," the statistics of Dr. Stelwagon, of Philadelphia, are quoted, as bearing upon this point.

Since the publication of Dr. White's and Dr. Greenough's papers, scabies has continued to present itself at the hospital clinics with great frequency, and often four or five new cases are recorded in a single morning. In private practice also it is in no sense a rarity, and instances of its occurrence in people of the best social class are not unusual. The importance of recognizing scabies cannot therefore be overlooked; and the conviction that a great deal of annoyance and suffering, as well as in some measure the propagation of the disease, might be avoided by prompt treatment, has led me to add my voice to those of my colleagues.

It is true that scabies, especially in a cleanly person, may sometimes offer much perplexity to the diagnostician; yet these cases are always in the minority, and even in them it is usually possible to decide the question by treatment.

The point to be borne in mind, it seems to me, is that in any itching affection, where marks from scratching or eczematous appearances are present to however slight a degree, the *possibility* of scabies should be entertained and excluded, before the patient is allowed to go on his way with a prescription for a mild antipruritic lotion, and perhaps a favorite tonic internally.

The frequent failure to recognize is undoubtedly due to the increased prevalence, and to the false presumption that scabies is almost unknown in cleanly people. Formerly, as Dr. White has stated, it was almost impossible to find sufficient material for class demonstration. For these reasons largely, this common affection is now frequently unrecognized, and apparently unsuspected, by practitioners of the highest medical attainments.

John T. Bowen, M.D.

METEOROLOGICAL RECORD,

For the week ending January 20, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..14	30.10	25	32	18	61	50	56	W.	E.	14	4	O.	C.	
M..15	30.10	36	45	28	69	77	73	S.W.	S.W.	14	20	O.	O.	
T..16	30.00	40	44	36	96	77	86	W.	N.	4	17	G.	O.	
W.17	30.68	22	27	18	62	56	59	N.	N.	14	14	C.	C.	
T..18	30.54	28	37	18	66	78	72	N.W.	S.W.	4	10	O.	O.	
F..19	30.42	36	42	30	87	84	86	W.	N.	10	14	O.	C.	.13
S..20	30.63	26	32	20	52	71	62	N.W.	N.E.	9	6	C.	C.	
☞	30.35		37	24			70							.39

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, January 20, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Typhoid fever.	Diphtheria and croup.	Scarlet fever.
New York . .	1,891,306	888	348	17.71	21.45	.60	9.46	.55
Chicago . . .	1,438,000	—	—	—	—	—	—	—
Philadelphia .	1,115,562	—	—	—	—	—	—	—
Brooklyn . .	978,394	380	143	11.44	31.46	.52	7.02	1.30
St. Louis . . .	560,000	—	—	—	—	—	—	—
Boston . . .	487,397	229	74	15.84	24.64	.44	8.80	1.76
Baltimore . .	500,000	—	—	—	—	—	—	—
Washington .	308,431	111	28	6.30	18.00	4.50	1.80	—
Cincinnati . .	305,000	119	43	7.65	27.20	3.40	2.55	—
Cleveland . .	290,000	95	32	18.90	23.10	4.20	6.30	4.20
Pittsburg . .	263,709	80	34	15.00	15.00	1.25	5.00	1.25
Milwaukee . .	250,000	73	46	9.59	16.44	—	1.37	1.37
Nashville . .	87,754	32	12	12.52	18.78	—	3.13	—
Charleston . .	65,165	34	7	—	5.88	—	—	—
Portland . . .	40,000	15	0	6.66	13.33	—	—	—
Worcester . .	96,217	36	13	18.90	30.58	—	15.12	—
Fall River . .	87,411	27	11	14.80	29.60	—	3.70	—
Lowell . . .	87,191	37	7	16.20	37.80	5.40	—	—
Cambridge . .	77,100	32	13	28.17	18.78	—	12.52	15.65
Lynn	62,656	15	3	—	26.66	—	—	—
Springfield . .	48,684	15	3	—	26.66	—	—	—
Lawrence . .	48,355	14	4	7.14	—	7.14	—	—
New Bedford .	45,886	28	14	17.85	17.85	—	3.57	3.57
Holyoke . . .	41,278	—	—	—	—	—	—	—
Salem	32,233	11	2	9.09	—	—	—	—
Brockton . .	32,140	—	—	—	—	—	—	—
Haverhill . .	31,396	8	3	—	12.50	—	—	—
Chelsea . . .	30,264	14	3	7.14	28.56	—	—	7.14
Malden . . .	29,394	7	2	—	14.28	—	—	—
Newton . . .	27,556	11	0	18.18	18.18	—	—	18.18
Fitchburg . .	27,146	5	3	—	20.00	—	—	—
Taunton . . .	26,972	10	1	—	20.00	—	—	—
Gloucester . .	26,688	2	1	—	—	—	—	—
Waltham . .	22,058	9	2	22.22	11.11	—	22.22	—
Quincy . . .	19,642	5	2	20.00	20.00	20.00	—	—
Pittsfield . .	18,802	2	1	—	—	—	—	—
Everett . . .	16,585	5	1	20.00	60.00	—	—	—
Northampton .	16,331	5	1	—	40.00	—	—	—
Newburyport .	14,073	2	1	—	—	—	—	—
Amesbury . .	10,920	4	1	25.00	25.00	—	—	25.00

Deaths reported 2,399: under five years of age 869; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 341, acute lung diseases 566, consumption 288, diphtheria and croup 163, measles 33, typhoid fever 29, scarlet fever 28, diarrhœal diseases 23, whooping-cough 21, cerebro-spinal meningitis 17, erysipelas 11, small-pox 11, malarial fever 5.

From measles New York 24, Milwaukee 4, Brooklyn 3, Boston and Nashville 1 each. From diarrhœal diseases New York 11, Fall River 3, Boston and New Bedford 2 each, Milwaukee, Portland and Salem 1 each. From whooping-cough New York 8, Pittsburg 5, Brooklyn 3, Boston and Cincinnati 2 each, Brookline 1. From cerebro-spinal meningitis New York 8, Cleveland 4, Brooklyn 2, Worcester, New Bedford and Everett 1 each. From small-pox New York 6, Boston 3, Lowell 2. From erysipelas New York 5, Boston 3, Brooklyn 2, Somerville 1. From malarial fever New York and Nashville 2 each, Pittsburg 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending January 13th, the death-rate was 28.6. Deaths reported 5,726; acute diseases of the respiratory organs (London) 762, whooping-cough 219, measles 108, diphtheria 78, scarlet fever 52, fever 47, diarrhœa 36, small-pox (Bradford 3, Birmingham 2, London, West Ham and Nottingham 1 each) 8.

The death-rates ranged from 19.5 in Gateshead to 60.2 in Norwich; Birmingham 31.6, Bradford 21.9, Cardiff 24.2, Halifax 23.0, Leeds 27.0, Liverpool 33.3, London 29.5, Manchester 30.8, Newcastle-on-Tyne 20.7, Plymouth 55.7, Sheffield 24.8.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 20, 1894, TO JANUARY 26, 1894.

First-Lieut. Euclid B. Frick, assistant surgeon, U. S. A., is relieved from duty at Fort Keogh, Montana, and ordered to Fort Townsend, Washington, for duty at that post, relieving **Captain Robert R. Ball**, assistant surgeon.

Captain Ball, on being relieved by **First-Lieut. Frick**, will report in person to the commanding officer, Fort Monroe, Virginia, for temporary duty.

First-Lieut. Madison M. Brewer, assistant surgeon, will, upon the arrival of **Captain Ball**, be relieved from temporary duty at Fort Monroe, Virginia, and will return to his proper station, Fort Riley, Kansas.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JANUARY 27, 1894.

J. L. Neilson, surgeon, from Naval Medical Examining Board and to Boston Navy Yard.

R. A. Marmion, surgeon, from Boston Navy Yard and to Smithsonian Institution.

C. U. Gravatt, surgeon, from Smithsonian Institution and to the "Dale."

E. H. Green, surgeon, from the "Dale" and to the "Marblehead."

A. C. H. Russell, passed assistant surgeon, ordered as member Naval Medical Examining Board.

T. A. Berryhill, passed assistant surgeon, ordered to duty at Naval Laboratory and Department of Instruction.

H. J. Babin, surgeon, ordered as member of Board of Inspection Survey.

F. L. DuBois, medical inspector, and **C. A. Siegfried**, surgeon, appointed delegates to the Eleventh International Medical Congress to be held at Rome, Italy, March 29 to April 5, 1894.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIVE WEEKS ENDING JANUARY 20, 1894.

Bailhache, P. H., surgeon. Detailed by the president as delegate to International Sanitary Conference in Paris, France. January 15, 1894.

Sawtelle, H. W., surgeon. Detailed as chairman, Board for physical examination of officers, Revenue Marine Service. January 19, 1894.

Austen, H. W., surgeon. To represent the service at International Medical Congress, Rome, Italy. December 16, 1893.

Stoner, G. W., surgeon. Granted leave of absence for seven days. December 22, 1893.

Irwin, Fairfax, surgeon. To proceed to St. Petersburg, Russia, for duty. December 28, 1893. To proceed to Paris, France, for temporary duty. January 16, 1894.

Carter, H. W., surgeon. To report at Bureau for temporary duty. December 17, 1893.

Banks, C. E., passed assistant surgeon. Detailed as recorder, Board for physical examination of officers, Revenue Marine Service. January 19, 1894.

Peckham, C. T., passed assistant surgeon. Granted leave of absence for seven days. January 6, 1894. Granted leave of absence for six days. January 11, 1894.

Glennan, A. H., passed assistant surgeon. Granted leave of absence for five days. December 20, 1893.

Brooks, S. D., passed assistant surgeon. To proceed to Sandusky, Ohio, as inspector. January 17, 1894.

White, J. H., passed assistant surgeon. Granted leave of absence for thirteen days from December 18, 1893.

—— ——, passed assistant surgeon. Granted leave of absence for thirteen days from December 18, 1893.

Williams, L. L., passed assistant surgeon. Granted leave of absence for fourteen days. January 17, 1894.

Bratton, W. D., passed assistant surgeon. To proceed to Wilmington, N. C., for duty. January 9, 1894.

Woodward, R. M., passed assistant surgeon. Granted leave of absence for ten days. December 18, 1893. Granted leave of absence for fourteen days. January 17, 1894.

Stoner, J. B., passed assistant surgeon. To proceed to Marshfield, Oregon, as inspector.

Guiteras, G. M., passed assistant surgeon. To proceed to New Orleans, La., for duty.

Perry, J. C., passed assistant surgeon. To proceed to Norfolk, Va., for temporary duty.

Young, G. B., assistant surgeon. Granted leave of absence for three days. January 1, 1894.

Brown, B. W., assistant surgeon. Granted leave of absence for thirty days. December 16, 1893.

Rosenau, M. J., assistant surgeon. To proceed to Evansville, Ind., for temporary duty. January 13, 1894.

Gardner, C. H., assistant surgeon. To proceed to San Francisco Quarantine for temporary duty. December 22, 1893.

Nydegger, J. A., assistant surgeon. Granted leave of absence for twenty-three days. December 20, 1893.

Oakley, J. H., assistant surgeon. Granted leave of absence for twenty-five days. December 20, 1893.

Norman, Seaton, assistant surgeon. Granted leave of absence for thirty days. January 15, 1894.

Prochazka, Emil, assistant surgeon. To proceed to Louisville, Ky., for duty. December 26, 1893.

SOCIETY NOTICES.

Boston Society for Medical Observation. — A regular meeting will be held at 19 Boylston Place, on Monday, February 5th, at 8 o'clock.

Dr. Charles M. Green: "Four Unusual Cases: (1) Imperforate Hymen, with Hæmatocolpos; (2) Cysts of the Vagina; (3) Recto-vulvar Fistula; (4) Salivation of Pregnancy."

Dr. J. E. Goldthwait: "Some Observations upon the Etiology and Treatment of Anterior Metatarsalgia."

John C. Munro, M.D., *Secretary*.

Massachusetts Medical Society, Suffolk District. — The Surgical Section will hold its regular monthly meeting at 19 Boylston Place, February 7, 1894, at 8 o'clock.

Dr. Gardner W. Allen: "A Case of Litholapaxy."

Dr. E. H. Bradford: "Investigations of Flat-Foot."

Dr. Otis K. Newell: "The Intermittent Rapid Dilatation of Urethral Stricture."

Charles L. Scudder, M.D., *Secretary*, 1 Marlborough St.

RECENT DEATHS.

Charles Colby Pike, M.D., M.M.S.S., died in Peabody, Mass., January 27th, aged forty-nine years. He was born in New London, N. H. During the war he served in the Eleventh New Hampshire Regiment and was severely wounded at Fredericksburg. After the war he went to Dartmouth College, graduating in the class of 1869.

George Torrey Grierson, M.D., M.M.S.S., died in Lowell, January 28th, aged twenty-five years.

BOOKS AND PAMPHLETS RECEIVED.

Dr. G. Zander's Medico-Mechanical Gymnastics; Its Method, Importance and Application. By Dr. Alfred Levertin. With a portrait of Dr. Zander, several explanatory illustrations and a map. Stockholm. 1893.

Liquor Sedans, Saw Palmetto, Damiana, Pichi and Stylosanthes Elatior; Their Uses in Nervous Diseases; Their Medico-Legal Relation; Epilogue. By John J. Caldwell, Neurologist, of Baltimore, Md. Reprint. 1894.

Descriptive Catalogue of the Anatomical and Pathological Specimens in the Museum of the Royal College of Surgeons of Edinburgh. By Charles W. Cathcart, Conservator, Fellow of the College. Vol. I. The Skeleton and Organs of Motion. Edinburgh: James Thin. 1893.

Climates of the United States in Colors. Popular edition of Denison's Charts, with additions. By Charles Denison, A.M., M.D., Denver, Colo., Professor of the Diseases of the Chest and of Climatology, Medical College, University of Denver; Ex-President of the American Climatological Association. Chicago: The W. T. Keener Co. 1894.

Lectures.

LECTURES ON SURGERY.

BY DAVID W. CHEEVER, M.D.,
Professor of Surgery in Harvard University.

XXIV.

DISEASES OF THE NOSE.

Epistaxis. — I will speak at once of the most common affection surgically that we have to treat in the nose, and that is epistaxis or nose-bleed. It comes from a variety of causes. In a certain proportion of cases it is wholesome and useful. It depletes very rapidly the venous sinuses at the base of the brain. There is a direct communication with the veins of the nose through the cribriform plate of the ethmoid and with the base of the brain; and in youth, in violent exercises, in persons who are plethoric, etc., moderate nose-bleeds frequently are useful, and if not excessive. need not excite anxiety. In old age, however, in elderly people, nose-bleed, when it amounts to anything, is frequently the sign of some congestion in the head which should warn us that the patient may be in danger of rupturing a vessel and having apoplexy. Nose-bleeds in old people are rather unfavorable signs as regards the prognosis of future life. Something is apt to take place after this warning is given; and we should be very careful about the diet and exercise of such patients. But nose-bleed only becomes injurious in younger subjects when they either are the subject of some other disease, a diseased condition of the blood or constitutional disease; or else when it becomes very frequently repeated, apparently from the state of anæmia, thinness of the blood and weakness of the walls of the veins. Typhoid fever, diseases which affect the blood, as purpura, or profound anæmia, are frequently associated with nose-bleed. Occasionally, as you know, it is merely vicarious, so to speak, occurring in the place of habitual discharges in other directions; especially the menstrual flow in the female is sometimes supplemented, or aborted, by the frequent occurrence of nose-bleed. So also, certain patients who have trouble about the rectum and bleed from piles, occasionally have this arrested, and then have epistaxis follow. This is not so severe, and should not be classed with those cases which are what is called true bleeders, where there is that peculiar constitution of the blood that it lacks the fibrinous sticky element, and cannot coagulate when thrown out from the vessels. These patients may bleed from any point: from the gums; mucous surfaces like the urethra, and sometimes from the skin, making a bloody exudation from the true skin. This is associated with a condition of the blood which is usually inherited. Such cases are not very frequent. They can hardly be classed as the ordinary accidents of nose-bleed. Any acute disease of the liver, which is going on to a fatal condition, is frequently followed by hæmorrhage; hæmorrhage by the nose and mouth and bowel is one of the common results. In typhoid fever, where the fever seems to expend itself and its force on the head and nervous system, bleeding from the head and nose seems to take the place of bleeding from Pyers' patches.

Ordinary nose-bleed need occasion no alarm. It is best arrested by keeping the patient in the upright position, applying cold, avoiding stooping over; sometimes it can be arrested by keeping the hands above the head a little while; frequently by the application of cold to the spine, or cold over the forehead, or cold, in the form of pieces of ice held in the mouth, where it will press against the palate process. These measures are simple ones and are generally sufficient. When they are not sufficient, frequently the putting of a small plug of lint in the nostril which is bleeding, especially if it is dusted over with a little dried persulphate of iron, succeeds. Syringing out the nose with cold water is sometimes effectual. These measures are enough for simple cases; but the cases which excite alarm are those where the bleeding goes on almost without stopping, but with remission, for, perhaps, an entire day. The patient becomes gradually quite feeble and exhausted. The respirations are very much impeded by the enormous clots that form in the nasal passages, and which temporarily arrest the bleeding; but it keeps breaking out. If the patient lies down from faintness, the blood goes on trickling slowly backwards and large quantities of blood run down the pharynx, and are swallowed. Then, after a while, the stomach being distended by clots rejects these; vomiting comes on and that starts the nose-bleed again. So in one of these bad cases, I suppose, if they went far enough, a fatal result might ensue; though usually they are stopped before that result is reached.

Simple measures are of no use in these forms; and the most thorough way to arrest the bleeding is by plugging the nose, the anterior and posterior nares as well. Each nostril is a separate cavity. It is rarely that bleeding occurs from more than one nostril at a time: and the bleeding nostril is plugged front and behind, and the plugs left in thirty-six to forty-eight hours. Some surgeons advise leaving them three or four days. The objection is that they soon become very foul and offensive, and provoke ulceration of the membrane covering the delicate bones inside the nose; and may, if kept in long enough, lead to caries of the bone, and a chronic state of ozæna with filthy discharge. It is always a delicate matter to decide the time when the plug shall be taken out in a bad case; but, as a rule, by forty-eight hours an attempt must be made to remove it carefully; and if bleeding occurs, a fresh plug may be put in, which is clean and aseptic, and may be left in considerably longer. It is perfectly easy to plug the anterior nares. To get a plug behind in the posterior nares is impossible without a guide. That guide must be a thread passed through the nostril, behind the soft palate, out of the mouth. The patient must open his mouth widely, a gag is put between the teeth, and the thread is carried through by a little instrument called Belocq's sound. The sound is threaded, passed through the nose, and the finger passed into the mouth catches the thread and draws it out, and the catheter is withdrawn; the other end is out of the nose. We have the location we wish to plug under control with this string. To the end which comes out of the mouth, must be fastened another double thread, and to this a small piece of lint or sponge, not too large. If a sponge, it will swell to a certain degree; but the lint will not swell. That must be tied with a double thread, and then passed into the mouth, and guided with the finger behind the palate, and pulled firmly into the posterior nares, so that it will not drop back into the throat. Another plug is put in front, and a string tied over it,

---

[1] These are unwritten lectures printed from the stenographers' reports. Verbal corrections are made in revision, but no rhetorical changes. They were delivered to the third and fourth classes as part of the regular course.

so that the two are pulled together. The cavity between is gradually filled by coagula, and bleeding is necessarily arrested. The use of the two strings on the back, where the plug is attached, is to leave one coming out of the mouth, which can be fastened around the ear, and which is a guide to the posterior plug. This is important, because in removing the posterior plug we wish to do it with as little excitement as possible, and if we have no guide, we are forced to take a catheter, or something of that kind, and put it in the nose and dislodge the plug, and catch it as it drops in the throat; whereas if we have a string guide, we cut the anterior string, take out the anterior plug, and pull on the string in the back of the mouth, and easily withdraw the plug. This may make the difference between starting the bleeding, and having to plug over again. To our surprise we see how much suffering is produced by this plugging in the first twenty-four hours. At first the patient is relieved of bleeding, and he can take nourishment and lie down and sleep; but he soon has pain in the nose and face and eyelids. All the parts about the cheek begin to have an œdematous swelling to a very marked degree; and the skin of the nose is largely distended by swelling, and the patient looks as if he had an attack of facial erysipelas coming on. This is due to the pressure of the plugs; and if they are left in too long, it may be followed by septic consequences and dangerous results. On taking out the plugs, the swelling slowly subsides, and the case is over.

A little rubber arrangement, which is very like what we call the colpeurynter used to dilate the cervical outlet, can be used. That can be flattened out and with a probe or director passed in until it projects into the posterior nares in the throat. When it has got fairly through the nostril, it can be blown up with air firmly, and it makes a sufficient air plug to the passage. Of course, it adapts itself perfectly to the shape of the nasal cavity, and makes a very ingenious and neat plug. When we have one of these it is easier to use and to remove than the more clumsy method of the sponge. In many cases we shall be called to a distance, to a case of nose-bleed, without these preparations, and we need not wait for Belocq's instrument; but with a good strong elastic catheter we can accomplish in a few moments the arrest of the hæmorrhage.

Deviations of the Septum of the Nose. — The septum is partly bony and partly cartilaginous. The cartilaginous part is thin and elastic, and covered with delicate mucous membrane and vessels and nerves. This frequently grows out of place, sometimes probably in consequence of a blow, and sometimes by a spontaneous deformity which pushes it to one side and gradually occludes one nostril. This condition leads to catarrh, retention of secretions on the side where the occlusion is, to change of the voice. When the disease goes on a little longer, and is not treated, changes take place in the septum itself; and as the young person grows older the septum thickens and grows out bony ridges and spurs which project on the occluded side and still more obstruct the nose. The septum can be broken and forced back into place in the early stages of the affection. It will not, however, stay there, but recoils just like a piece of birch bark. It can only be forced to stay back by cutting through it, and destroying its elasticity. In more severe cases it is often best to saw off a piece of the septum with a fine saw on the occluded side. The spurs are sawed off, and a piece of the septum sawed off. We may or may not go through. Sometimes we can succeed in sawing off the spurs without sawing through into the other side of the nose, sometimes not. If we saw through, a small permanent opening is left. If it is too small, it is sometimes accompanied by a whistling sound in breathing, which is annoying. If it is opened, it is better to make it of sufficient size, that the air may travel back and forth without making this sound.

The septum is the seat of ulcerations which used to be thought to be syphilitic. They frequently are tuberculous. The ulceration may go so far as to perforate the septum, and the patient has an opening through the septum which is frequently the size of a dime or lead pencil. It does not make any external deformity whatever. It does not make the nose of that peculiar shape that it does in syphilis, when the vomer is cast off by caries. There is an obstinate ulcer, with a little hole leading through. Local applications of various kinds, and constitutional treatment, are the best things that can be done. Usually granulations can be encouraged; and if the septum is not eaten through, the ulcer can be healed. If it is, the hole can be healed around the margin so that it will not expand, and the patient get along very comfortably. It is important to recognize the fact that many of these ulcerations are in perfectly innocent parties with regard to either primary or inherited syphilis; and that they are quite common in young and scrofulous subjects.

The cartilage will not stand any very violent applications. If you try to cauterize it, anything of that kind, you make the cartilage ulcerate and break down more. Cleanliness and mild antiseptics and constitutional treatment should be employed.

The turbinate bones grow out of place, grow exostoses, project into the passage and frequently obstruct the breathing. Portions are frequently cut away with benefit, and sometimes the trephine is used and the turbinate bones cut through, giving the patient much deeper breathing power. Since the use of the electric light and the rhinoscope to look into the nose, and the minute electric wire which can be heated as a cautery, it is easy to burn off portions of the delicate bones of the nose with safety and without much suffering. Ether is not necessary. In fact that is not desirable where the hot wire is used, because we are in danger of setting the ether on fire. Cocaine is all that is necessary to blunt the sensibility enough to do this sort of operation.

Foreign Bodies in the Nose. — In a child with trouble in the nose your first thought should be is there any possible foreign body concealed in the nose. Infants and children are very apt to put substances up in the nose, and those are generally of a character that cannot be got out easily; beans and peas and buttons are favorite objects. They are pushed up far enough to get beyond the inferior turbinate bone, and are there held; provoke constant discharge, and other signs of chronic ozæna, or polypus. The child is frequently brought to the doctor with the idea that it has polypus. Careful search will find something hard in the nose; and the nose sprayed with cocaine and made non-sensitive, the foreign body can be got out, and the case is speedily cured.

Polypi in the Nose. — Polypi in the nose are of two forms. The common form is a soft, gelatinous polypus which grows from the turbinate bones, and sometimes in extreme cases extends its growth up in little colonies of polypi which grow as high as the upper turbinate bone and even as high as the ethmoid. The ordinary soft polyp is attached to the inferior turbinate bone, floats or hangs in the nasal cavity, rises up and down with the movements of respiration. If the patient makes a forced expiration through the nose with the mouth shut the polypus can generally be brought into sight, and is seen lying as a white, soft, gelatinous-looking mass a little ways up the nasal cavity. Or when the patient inspires violently, it is drawn behind the turbinate bone and sometimes when it is large passes back of the posterior nares and hangs back into the throat. In extreme cases they protrude down the throat, and if the patient has the mouth held widely open and raises the palate by saying the word "ah" the polypus can be seen projecting in the throat behind the palatine arch.

The mucous polypus can be readily removed; but unfortunately this frequently does not permanently cure the affection. The tendency having been developed to their growth, others form. They are slow to form. They frequently do not show signs of returning for six months, but they are apt to come back. The neatest way to remove them is to locate them exactly by the aid of the mirror and remove by the snare or hot wire. If we have not this means, we can follow up the polyp and get hold of the stem and twist it off. It frequently brings away a little of the turbinate bone with it. This does no harm; and by removing the periosteum and root on which the polyp grows, that particular polyp is exterminated, and has no chance of starting again. We must not be satisfied with one search; but put the forceps throughout the nose, and frequently we succeed in extracting one large one, and two or three small ones. After a few days, when bleeding has subsided and the soreness gone, the nose can again be treated with cocaine, and investigated carefully with the lamp and mirror, to see if any others are left.

The signs of polyp are usually those of chronic catarrh and obstruction. They change in their shape and size; swell up with fluids and collapse again according to different states of the system; and where the patient has a slight cold and congestion, it increases the flow of blood to the mucous membranes and distends the polyp. A chronic catarrh running from the nose; accumulation of secretion; difficulty of breathing; snoring in the sleep, are signs of polypus. When enlarged they distend the nose, but must be of considerable size to do so.

On examination, the two sides of the nose do not correspond. In extreme cases the nasal bone becomes displaced to some degree as well as the cartilage, so that the nose is entirely flattened out on that side. Those are unusual cases.

Ordinary soft, gelatinous, nasal polypi then are usually removed by one of these methods. Subsequently the nasal cavity must be treated by injections of weak carbolic acid and by astringents. Quinine sometimes is very useful; and various agents to endeavor to prevent the return. The milder forms of spray are the best to use in this cavity. The nasal douche, which is merely a repetition of the fountain syringe, is no longer thought to be as desirable as it used to be. It is too violent, too forcible, has occasionally made trouble by distending the Eustachean tubes, and has brought on affections in the middle-ear by being too forcibly used. It is only in extreme cases of filthy ozæna, and where other measures will do no good at all, that the nasal douche is to be used. It is better to use the applications in the form of spray, applied both behind by the throat, and forward through the nose.

The person who has once had a mucous polypus must be on the lookout for others; and when the slightest signs present themselves, he should be inspected and the growths taken out, if possible. With the cautery the bases from which they grow, can be thoroughly destroyed; and, sometimes, after one or two operations, no more recur. Sometimes they recur after long intervals.

The other form is essentially a fibrous tumor, and is called sometimes the naso-pharyngeal polypus because it affects the posterior nares and the top of the pharynx. It grows sometimes from the edges around the nasal cavity, the little hollow of the pterygoid process; and sometimes about the posterior septum of the nose; and frequently, also, from what is called the occipito-sphenoid bone, the junction of the sphenoid and occipital at the true base of the skull. This, of course, is at the very top of the pharynx, and covered with mucous membrane; it is in a pouch at the top of the pharynx; and the fibrous tumor, we call the naso-pharyngeal polypus, frequently has its growth there. It obstructs the posterior nares; and in bad cases, can be seen from the mouth. It is not of uniform size; is generally pear-shaped, and has a stem and a large body. Occasionally the growths are broad and cover the whole of the occipito-sphenoid bone.

These growths most often occur in young subjects, during the period of about fifteen or sixteen to twenty-four or twenty-five years of age. They grow very slowly, and the patient first suspecting that he has chronic catarrh, finally becomes aware of something which obstructs the breathing. The surgeon, if he fails to see anything in ordinary inspection of the throat, can detect the trouble usually by passing a silver catheter, or elastic catheter on a wire, carefully curved, and gently through the nares down into the throat on one side; it will soon be found that the catheter strikes a prominent obstruction on one side, or the other, and the location of the trouble can be made out. With the electric lamp in the throat and the rhinoscope the tumor can be seen back of the palate. If we have not this means, we can diagnosticate by means of the finger. The patient's mouth widely open and the finger passed in, up behind the soft palate; with this we can explore both of the posterior nares. It is a disagreeable experience for the patient, but does not produce any harm, and only the sensation of momentarily choking, and perhaps a little bleeding. In that way we can locate the growth; determine its size; shape; attachment; and see on which side of the posterior nares and pharynx it lies.

Being there and increasing, it may go on to cause a fatal result; leading to trouble at the base of the brain; to destructive changes in the pharynx; finally hanging down as low as the epiglottis and back into the œsophagus, in marked cases; and obstructing swallowing, and endangering the patient from choking while breathing or swallowing. It is then evident that it is very important, as soon as the diagnosis is made, that this growth should be removed; and a great many ingenious modes have been used to do it. The simplest form is to attempt to snare it by the snare passed through the nares, or else up behind the soft palate. If a lucky case with good pedicle, this may sometimes be done. Nélaton found that the soft palate presented a barrier to the last one-half inch, which was in the way of getting the snare around. He devised the operation of splitting the soft palate, and passing a thread through either tip of the uvula; drawing it aside, and fastening it outside the mouth; and then you gain one-half inch or more of space by which you can get access to the posterior pharyngeal region. Then the polypus was removed by snare or forceps; and the soft palate was sewed up again.

It has been found, however, that most of the operations of this class, which merely snare off the polyp, do not prevent its subsequent re-formation; and that it is essential that the base should be reached and scraped away, and the periosteal layer under the mucous membrane, be scraped away, in order to insure against the recurrence; so that in order to get at this space other operations were devised. One was to cut a piece of bone out from the speno-maxillary fossa, turn the bone back, and expose the whole nasal cavity; this was Langenbeck's method.

Another was to saw across the top of the antrum, beneath the zygoma; split the palate process, after extracting one incisor tooth; depress and break down one superior maxillary bone; leaving it hinged on the pterygoid process; then pass the finger through this gap, push the septum to one side, and get ready access to the point you wish. That is the operation that I have done a number of times.

Whatever operation of this kind is done, after the polyp is scraped away and removed, the jaw is pushed back to place and wired, and the wound closes, and the bone unites, as a broken jaw does, and gives no subsequent trouble.

When it is borne in mind that before these operations were devised the only other alternative to destroy these large fibrous tumors was to excise the upper jaw, you see how much we have gained in the point of conservative surgery.

The prettiest operation of all was devised by M. Ollièr of Lyons. You would not suppose at first it would give the needed room, but it does. It consists in sawing down and depressing the nose. You make a cut from the centre of the forehead, down each side of the nose, to the point where the artery goes to the ala. Cut through the periosteum to the bone on each side. Having made that cut, you take a moderately narrow and quite flexible saw, lay it as flat as possible on the forehead, and saw down through the nasal bone, down to the cartilage; upset the nose and drop it down on the lips. The nasal cavity is fully exposed. The vomer and septum are in the way. They are flexible and can be pressed over; and you have the means of reaching to the growth of the polyp, which the finger will exactly do; and thus you can extract large polypi by forceps, or by scissors, or by seizing them and tearing them out; and subsequently you go in and scrape this cavity. In these cases it is well always to operate in the upright position; and when any sign of choking comes on, bring the patient's mouth well forward and drop the jaw until they expectorate. Half etherization is the best. Thorough etherization during the incision through the skin and sawing the bone; the patient partially awake through the remaining stages. Although they make a noise, they remember nothing which has occurred; and it is much safer to have the patient sufficiently awake to retain a little control over the epiglottis. Subsequently to this the nose is replaced. Two fine wire sutures are passed through the lower angle of the nasal bone, which hold the bone perfectly in place. These are brought out through the wound, and the wound nicely stitched. The wires must be left in two or three weeks; two weeks in the nose, and three in the jaw. The wires loosen and ulcerate; the bone decays a little around the holes, and, afterwards, untwisting them, they are drawn out with ease, and the sinus closes. Very little scar is left by this operation on the nose. There need be no fear that there will not be union. All the parts about the upper jaw and nose are so thoroughly supplied with vessels that they repair very great injuries, and always unite.

Malignant Forms of Growth in the Nose. — These are sometimes mistaken for the ordinary polypus. Soft cancerous growths occur on the mucous membrane of the septum low down, just inside the nasal cavity. The parts become obstructed and the patient thinks he has a polypus. On lifting the ala and looking at this growth, you find it is red and very vascular, with little tuberosities on it shaped like a strawberry, or raspberry. It bleeds on the slightest touch; occurs almost always in people of middle age; and it is essentially a soft and rapid growth of epithelioma.

This must be thoroughly removed. Usually it can be done by a very slight operation, by cutting around the ala and turning it up and then the septum and the growth may be cut away, the ala replaced and the only subsequent deformity is the little scar on the side of the ala. If that is not sufficient, exision of the structures inside, with portions of the jaw, must be done. It is not very common. I will call attention to the fact that polypus growing low down, in the elderly person, probably means cancerous growth. True polypi are never, I think, attached to the septum, but always to the turbinate bones. These malignant growths frequently start from the septum itself.

Abscess of the Septum. — Abscess of the septum is a very painful affection. You are familiar no doubt with what is called the little boil that forms within the tip of the nose. It is extremely painful, lasts five or six days, finally breaks and discharges inside the nose. It leaves no subsequent trouble.

There is another form which is more severe: abscess of the septum. It produces a curious deformity. It fills up the nostril completely, so that in seeing this patient first you would suppose the whole nose was filled with an enormous, red, malignant growth; but you find the duration of the disease is not more than a week, or ten days. The nose begins to swell; pain occurs; and this rapid ballooning out of the mucous membrane comes on, and the nostril is occluded. You find it is elastic to the touch.

The treatment is to make free incision and let out the pus, which is followed by speedy cure.

Making of a New Nose. — Artificial noses of *papier maché*, nicely colored and of a pattern to suit the taste of the wearer, are much better than any artificial nose made from the skin.

AN EPIDEMIC OF MUMPS. — An epidemic of mumps has recently occurred in an English village, in which 96 out of the 130 children in the village were taken ill. Many adults were also afflicted, but the number of patients was not so carefully recorded.

INFECTIOUS APPENDICITIS.[1]

BY ROBERT T. MORRIS, M.D., OF NEW YORK.

Gentlemen: — There is only one way to prevent deaths from appendicitis, and that is to prevent deaths from appendicitis. Do you not know how? I do. So do you. Then let us cast the killick right here, and allow the restless, changing tides of argument to swash by as they will.

We have lost enough brothers and sisters and sons and daughters unnecessarily from appendicitis. Do not fail to remember the word "unnecessarily," when you long for the "touch of the vanished hand and the sound of the voice that is still."

For ten years we swarmed about the subject of appendicitis, trying first one hole and then another in a hunt for rules for guidance; but each was too small and we left the dead outside of every hole that was deserted. Now we are at the right place at last. There is only one rule for guidance. You know what it is. Those who do not accept it must lose a few cases that they did not really intend to lose, and they must let many trusting patients suffer tedious convalescence and inconvenient exacerbation at a time when they would prefer to be engaged in affairs. The troubled families will be satisfied when it is explained to them that these cases seem to be peculiar in their character.

I am prepared to admit that in many of the smaller towns it is not "policy" to remove an infected appendix at the very outset of appendicitis. At first I was shocked to hear physicians say that it was better to let a case of appendicitis run its course without operation, on the ground that the comments of rivals and of neighbors would ruin their practice if they attempted to do the right thing promptly. This expression of sentiment was so general, however, that I could not doubt its importance. O human nature, how polypragmatical art thou!

Even in the large cities there are still to be found most excellent authorities who are not yet ready to have the infected appendix removed as soon as it is discovered. This is because they are too busy to get out into the field and think at a mark, or because they have not had an opportunity to see the results of the inch-and-a-half incision and week-and-a-half confinement in appendicitis cases. They are men who are familiar with logic and who are accustomed to analysis and to rational deduction; but they work from the wrong set of data, and they give us a masterly impressionist picture of strawberries among autumn leaves.

The sweet-oil and opium jugglers detained us for a while. Did you see the Hindoo jugglers on the Midway? They put a man into a basket and then poked around in the basket with a stick, and explained to the audience that the man was not there. After a while the man came out of the basket again. The sweet-oil and opium jugglers tucked away an infected appendix and told us that infection was not there. After a while the infection stalked out again.

Every general practitioner in this audience has in his *clientèle* patients who are supposed to have recovered from appendicitis under medical treatment; and yet the answers that most of these patients would give to my questions would cause surprise. The bacterium coli communis and the pyogenic streptococci and staphylococci do not leave when we shoo them off with poultices and opium and sweet-oil. They simply run and hide. I have removed a number of appendices in the presence of this class from patients who were believed by good authorities to be out of danger from relapses; and in all of the cases we have found destructive processes in progress. Sometimes the bacteria were slowly destroying the adenoid layer, which had swollen to the point of interference with its own vascular supply; sometimes proliferating endarteritis was insidiously and surely laying the way for gangrene of the appendix; sometimes tuberculosis had become engrafted upon the weakened and diseased tissues; and in every case we found appendices which were malevolent in disposition.

Not long ago I quoted my statistics to an old practitioner who asked, with a sly twinkle in his eye, how many of the patients would have recovered without operation. "I do not know," said I, "but some of them would have died, and that settles it." Some of them would have spent more time in bed with every relapse than they did after the inch-and-a-half incision had been made; and that settles that question. I would rather remove infected appendices at a thousand dollars apiece from uncomplicated cases, and have all of the patients recover, than to add up small bills for visits to patients who died without operation, or who are left to go through the whole performance of another relapse of appendicitis after my so-called services have been rendered.

There are many cases of simple catarrhal appendicitis when we fail to look at the appendices; but when we look at them, they are infectious, exudative cases. If there is anything in a name, there is disaster in the name "catarrhal appendicitis."

They have charged me with being sensational. Let us see about that. Small-pox causes protracted suffering and death; but many patients recover from this disease, although the recovered ones are left with defects, as a rule. We know how to prevent deaths and defects from small-pox; and they are consequently unnecessary. Is there anything sensational about that statement? No! Now, please substitute the word "appendicitis" for the word "small-pox," and note the effect. It is the combination of fact and date that makes us listen *cum arrectis auribus.* Twenty years from now the facts about appendicitis will ring with a different timbre. Physicians who have not seen the pretty modern operation for prompt removal of the infected appendix are apt to draw in imagination a faulty view of the subject. They should interrupt the patient who is reading his morning newspaper in bed on the second day after the operation, and have a chat with him.

Now, look at the patient upon whom we are about to operate. He has an abdominal scar five inches long, and a ventral hernia. He has had one dangerous relapse of appendicitis since he was operated upon; and the insurance companies will not risk more than three or four postage stamps upon him. Four years ago he had an attack of appendicitis; and his physician in consultation with a surgeon waited for pus to form. Then the pus was evacuated, the appendix was left among adhesions, and the patient recovered. Recovered! Mockery! The surgeon who did the work bungled it by leaving it half done; and he is responsible for the ventral hernia and for the risk to life that resulted from leaving an infected appendix baited and set in the iliac fossa. *I* was the surgeon who gave counsel and who did the work, at a time when there was excellent authority for doing it in that way. The family physician, like the other physicians upon whom I depend, would to-day be ashamed to call me to a case of appendicitis in which pus had formed.

---

[1] A lecture at the New York Post-Graduate Medical School, December 30, 1893.

This patient has given the usual history of slight exacerbation, of constipation and of little septic impressions since the time of his first acute attack. Three years ago he had a dangerous exacerbation, but was not where he could be operated upon.

The abdominal incision is now made; and I proceed to enucleate the appendix from a conglomerate mass of omentum, mesentery, colon, ileum, and adventitious tissue. The base of the appendix is ligated with fine eye silk, and the stump is buried with four Lembert sutures of catgut. On examination of the specimen, you observe that the muscular structure of the appendix is complete and hypertrophied. On inspection of the interior of the specimen, it is seen that the mucosa has disappeared and various tiny black or gray gangrenous spots are readily distinguished on the surface of the swollen and infiltrated adenoid layer.

We have had to learn three principal things in appendicitis within the past decade: (1) that appendicitis is very common, and that it simulates many kinds of abdominal disease; (2) that we must operate for removal of the appendix before pus has formed, if we would prevent deaths and hernia and uncomfortable complications; (3) that we do not need to make much of an incision, and that the operation is a neat and pretty one, instead of a thing to be dreaded in itself.

◆

Original Articles.

NOTES ON PHOSPHATURIA.[1]

BY PAUL THORNDIKE, M.D., BOSTON.

During the last three or four years the writer has had the care of a number of cases such as are often described and discussed in medical writings under the name of "phosphaturia." The perplexity which several of them caused him led to the collection of these notes from the meagre and unsatisfactory knowledge of the subject at our command; and it is the object of this paper merely to arrange these notes and present them to the Society in a way which it is hoped may prove of use.

Cases characterized by well-marked symptoms of digestive and nervous disturbance, perhaps also by neuralgic pains in the abdomen, back and loins, and associated with a more or less persistent phosphatic cloud in the urine, are the ones to which the writer refers. They are common enough to be familiar to us all, and are often severe enough to make serious inroads upon the patient's health. The patient comes to you complaining of a series of gastric symptoms: distress immediately after eating, heart-burn, eructations of gas, passage of flatus, constipation, and often of pretty severe colicky pain in the bowels. With these symptoms, more or less marked and pointing directly to fermentative changes going on in the stomach, are often associated extreme nervous irritability and sometimes indefinite but none the less annoying neuralgic pains in the back, loins and thighs. The urine is either alkaline in reaction and turbid from the cloud of precipitated phosphates, or is neutral or slightly alkaline in reaction, clear in color, and becomes cloudy when even very slightly heated. If the trouble has persisted for any length of time, there is emaciation to a greater or less degree, and due of course to the ingestion of an insufficient quantity of food which is not properly taken care of after it reaches the stomach. Let us consider the urine of such a case for a moment, and the causes which may bring about such a state of affairs.

The phosphoric acid excreted in the urine is derived from the oxidation of the waste albuminoid tissues of the body, and also directly from the food. It is excreted by the kidneys at the rate of about three grammes daily, in combination with various bases, notably potassium, sodium, calcium and magnesium. Of these phosphates, those of potassium and sodium are very soluble and so are never deposited as precipitates in the urine; but the earthy phosphates (of calcium and magnesium) being soluble only in acid solutions, are often deposited from alkaline or neutral urines, and appear as a milky cloud in the urine. So it is at once apparent that this appearance of a phosphatic cloud in the urine has not of necessity anything whatever to do with the amount of phosphoric acid which is being excreted in the urine, and which can be estimated only by carefully quantitative analyses of the urine of a patient whose diet on successive days is carefully regulated; but it is merely an indication of a lack of acidity of the urine.

Now, when urine loses its acidity it does so (*a*) either from the formation of ammonia due to the decomposition of urea, that is to say, because the urine spoils after its secretion by the kidneys, and either somewhere in the genito-urinary tract (dependent upon some local lesion of the organs through which it passes or upon dirty instruments introduced into those organs) or in the air after it has been voided; (*b*) or it loses its acidity from the constant presence in it of too great a quantity of alkaline material which is not the result of any process of decomposition, but is a fixed alkali excreted in the urine chiefly in the form of carbonates of sodium and potassium. It is with these latter urines, those which are neutral or alkaline from the more or less constant presence of a fixed alkali, that we are concerned to-night. These persistently alkaline urines seem to be associated with a series of digestive and nervous symptoms which are of frequent occurrence and are of enough clinical importance to demand recognition as a distinct malady. It is as descriptive of this condition that the term phosphaturia is so often used. It would seem then that it is not the amount of phosphoric acid eliminated by the kidneys, but the diminished acidity of the urine and its associated symptoms, which are of interest in this class of cases. Many explanations for this lack of acidity have been offered us.

Bence Jones thought that when the contents of the stomach were most acid, for example, in certain disturbances of digestion, the urine was least so, the one counterbalancing the other. This explanation hardly suffices, as it is surely evident that in such conditions of the stomach, the excess of acid is not withdrawn from the tissues and so kept out of the urine, but is formed by the changes going on in the stomach.

Dr. Roberts thought the alkalinity was the result of the increased addition to the blood of alkaline bases from the food; but as the appetite in the condition is much more apt to be bad than good, and as there is no evidence that food containing such alkaline bases is either eaten or absorbed in larger amounts than usual, this supposition does not seem of much value. What is true is that such urines contain a surplus of alkaline carbonates, as shown by analyses, and the alkalinity is most probably due to the constant and excessive elimination of these carbonates of potassium and sodium.

---

[1] Read at the meeting of Boston Society for Medical Improvement, November 27, 1893.

Ralfe says that this excessive elimination of carbonates may well be accounted for by three conditions:

(1) A general debility and its coincident feeble respiratory acts, leading to an accumulation of carbonic acid in the tissues. It is a noteworthy fact that in such conditions, for example, in patients convalescing from acute diseases, such urines are very frequently met with.

(2) A diminished secretion of bile, the frequent result of a duodenal catarrh produced by the irritation of the acid contents of the deranged stomach being poured into the duodenum. The bile being the chief secretion by which alkaline salts are excreted from the body, any diminution of its quantity gives rise to an accumulation of these carbonates in the blood, and therefore to a greater elimination of them by the kidneys.

(3) The acids formed by the fermentative changes which go on in the deranged stomach being of the fatty acid series, on entering the system are oxydized into carbonic acid and unite with the alkaline bases to form carbonates, which increase the alkalinity of the blood and of the urine.

That the excessive elimination of these carbonates and the consequent more or less persistent alkalinity of the urine may be explained entirely by such digestive troubles, is not probable, for there seem to be cases in which the phosphatic deposit is dependent solely upon nervous causes. In fact, cases of this sort are by no means uncommon. For example: Two or three years ago a middle-aged man living in Newfoundland, came to the writer complaining that for the last two years he had been suffering from frequent micturition and severe neuralgic pains in the abdomen and loins. He looked somewhat emaciated, and was nervous and depressed about himself and his personal affairs. There were no gastric symptoms, no venereal history, and a most careful examination revealed no lesion of the urethra or bladder. The urine was normal except for its lack of acidity and the almost constant presence of a phosphatic cloud. The man said that whenever he got into this nervous, worried condition, this same set of symptoms appeared. He was readily cured for the time being by a few hygienic suggestions, a tonic pill and some benzoate of soda. A second attack was brought on a year later by the excitement and worry he went through at the time of the great fire in St. Johns. The same treatment gave relief very quickly. This seems to be a purely nervous case, and such cases are common enough. The writer has seen several similar cases lasting often for months, in healthy but nervous men, after operations upon the penis and adjacent parts.

This deposit of phosphates has been studied by many eminent men, both clinicians and chemists, and has been found to occur in a great variety of diseases, for example, in acute brain diseases, acute mania, in pleurisies and pneumonias, in rheumatic fever towards the end of the attack, at certain periods of a typhoid fever, etc.; but the cases are rarely of much severity or duration, and practically take care of themselves, as the general nervous and physical condition improves under proper care. That is to say, if the local cause be removed — be it digestive or nervous — the so-called phosphaturia disappears, as a rule; although sometimes it has existed long enough to leave behind it a mild degree of inflammation of the bladder or urethra, which may prove annoying enough to demand local or systemic treatment.

There are, however, many of these cases in which the condition persists for months or years; the urine gradually increases in amount and the patient's condition becomes really very serious, the general debility and nervous depression becoming extreme and the anæmia and emaciation marked. The general mental and physical condition of these patients seems sometimes quite beyond any help which the physician can offer, and the cases are most trying ones to care for. It is when we come to a study of this class of cases that we find the greatest confusion of belief in the minds of medical men. As the disease advances it often presents a clinical picture so similar to that commonly met with in cases usually described under the name "diabetes insipidus," that confusion both as to the terms descriptive of these conditions and of the conditions themselves is a most natural result.

"Cases characterized by increased thirst and excessive discharge of a watery urine of low specific gravity, free from sugar and albumen are grouped together under the general designation of 'diabetes insipidus'" (Roberts); and therefore these cases should properly be included under that definition. Other terms often used in describing similar cases, are polyuria, diuresis, polydypsia, hydruria. These terms are often carelessly used in medical writings, without much reference to the relationship which exists between the water and the solid constituents of the urines in question.

Some writers, however, — notably Willis (who was the pioneer in this direction), Tessier and Ralfe, — are much more careful in their use of terms, and have made many attempts at classifying cases characterized or accompanied by excessive excretion of urine, according to the relationship existing between the solid and fluid constituents. For example, Willis calls the cases of excessive amount of a watery urine deficient in solids — hydruria; those of excessive amount with the urea diminished, anasoturia; and again those of excessive amount with excess of urea, azoturia. Several other similar classifications have been made, and among them one by Dr. Tessier, of Lyons, who describes a series of cases resembling diabetes mellitus in the thirst, emaciation, increased amount of urine, neuralgic pains, etc., but the urine, instead of containing sugar, had the phosphates so largely increased in amount that the daily excretion was often as high as fifteen or twenty grammes, instead of in the neighborhood of three grammes, as it should be. To these cases Tessier gave the name "phosphatic diabetes." Ralfe reports other similar cases. So these writers make a distinct class of the cases which eliminate phosphoric acid in excess.

The excessive elimination of phosphoric acid is undoubtedly a factor in some cases of polyuria. That it is not present in all such cases is, I believe, definitely proven by many analyses. Then, before we can recognize a definite disease characterized by this phosphaturia, we must know in what cases of polyuria it occurs, and must try to know the explanation of its presence. We do not know these things. Our knowledge of the part which phosphorus plays in the body, as well as our knowledge of its elimination in diseased conditions, is very small; although during the last twenty years good work has been done in this direction, both experimentally and clinically in Germany and England. Dr. Golding Bird associated some of his spinal cases, many of which were functional, with phosphaturia. Its presence has been noted in many cases of head-injury, in acute inflammations of the cerebral membranes, in acute attacks of mania, in anæmia (and especially in its pernicious forms). It occurs in cases of diabetes mellitus; and sometimes the sugar will disappear from the urine in such cases, and be replaced by phosphoric acid. The explanation of this undoubted fact may perhaps be that the sugar in the tissues changes to lactic acid, which attacks bone tissue and dissolves out the earthy phosphates. This is Benecke's theory, I believe. Others have been suggested for an explanation of phosphaturia when sugar is not present in the urine; for example, an increased metamorphosis of nervous tissue, the irritation of some co-ordinating chemical centre, the influence of a disturbed condition of the nervous system upon the general bodily nutrition.

That these cases of polyuria accompanied by an excessive elimination of phosphoric acid have been carefully and accurately reported, is beyond question, and therefore their existence may be taken as proven; and they represent the only class of cases which is entitled to the name phosphaturia. But these cases are extremely rare, and when they do occur, present no well-marked clinical picture which will distinguish them from other similar cases of polyuria unaccompanied by an excess of phosphoric-acid elimination. Such a case, then, can only be recognized by careful quantitative analyses of the urine; and the term phosphaturia will have little interest for most of us in a clinical sense, as we may never encounter such a case in the practice of a life-time. All that we know of such cases is that they do rarely occur, that they are generally associated with grave physical disorder, and that they usually accompany nervous disturbances in which the blood and general nutrition of the patient are in bad condition.

Of the treatment of these stubborn cases there is but little to say. Annoying symptoms must be treated as they arise, and every effort made to better the general condition of the patient by careful hygienic and dietetic suggestions and suitable tonics. Alcohol always increases the flow of urine, and should be avoided. The administration of phosphorus or its compounds seems of little avail as far as experience has taught us, for as Ralfe says, "There appears to be no lack of these constituents in the system; the difficulty seems rather to lie in the want of power of the tissues to retain them."

To recapitulate the points which these notes attempt to emphasize; we have considered two conditions, both of which are commonly discussed under the name phosphaturia:

(1) The less important class of cases of digestive or nervous origin, in which the phosphatic cloud in the urine is merely an indication of a lack of acidity in the urine, which in its turn is usually traceable to some derangement of the stomach and duodenum or to some temporary nervous cause. These cases have no right to the name phosphaturia, are usually of comparatively short duration, and are cured by the treatment of the local cause and the consequent improvement of the general condition of the patient, which may closely simulate the condition we commonly speak of as diabetes insipidus, and which should probably be classed as cases of this disease. The fact that some such cases are associated with an increased elimination of phosphoric-acid in the urine does not at present furnish sufficient evidence to justify our making a definite clinical condition of it and calling it phosphaturia, phosphatic diabetes or anything else. The term phosphaturia, then, although perfectly proper in a chemical sense, as descriptive of a urine which habitually contains too much phosphoric acid, has in the writer's belief no clinical significance in so far as there is no well-marked set of symptoms constantly occurring as an accompaniment of this sort of urine.

(2) The rare cases of severe type and long duration which closely simulate the condition we commonly speak of as diabetes insipidus, and to which Tessier gave the name phosphatic diabetes, probably because the condition occurs occasionally in a case of true sugar diabetes. These cases are so very uncommon, and present such variable groups of symptoms when they do occur, that it seems scarcely worth while to give the name phosphaturia to any definite clinical condition, although, used as descriptive of these rare cases when the urine habitually contains too much phosphoric acid, the term phosphaturia is a perfectly proper one.

Before closing, a few words relative to phosphatic calculi seem appropriate. In many of the long-continued cases, the alkaline urine is often accompanied by a more or less persistent deposit of earthy phosphates for a period covering many months. This deposit may be very considerable in amount; and such patients usually bring to you samples of it which they have collected from the urinary sediment. Yet primary phosphatic concretions are by no means common; and such cases often recover completely, with no further bad result than a vesical irritability which the presence of the phosphatic deposit in the urine has created. This may perhaps be accounted for by the fact that the deposit is usually a fine, powdery precipitate, non-crystalline in structure, and with very little tendency to form masses or concretions of any size. Certain it is, that most phosphatic calculi, the so-called fusible calculi, are of secondary formation, made up of mixed phosphates.

BIBLIOGRAPHY.

Willis. Urinary diseases and their treatment. London, 1838.
Prout. On the nature and treatment of stomach and urinary diseases. London, 1848.
Benecke. Zur Physiologie und Pathologie des Phosphors und Oxalsame Kalkes. 1850.
Boecker. Deutsche Klinik, No. 33–35, 1853.
Golding Bird. Urinary deposits. Fifth edition, 1857.
Edlessen. Ueber das Verhältuiss der Phosphorsäure zum stickstoff in urin. Centralblatt f. d. Med. Wissenschaft, 20 Juli, 1878.
Gæthgens. Ueber den Stoff wechsie eines Diabetikers verglichen mit dem eines Gesundes. Dissert., Dorpat, 1866.
Bence Jones. On the alkalescence of urine from fixed alkali in some cases of diseased stomach. Med. Chirurg. Transactions, vol. xxxv, p. 41.
M. Foster. Text-book of Physiology, 1878, p. 366.
Lehmus. Centralblatt für Kinderheilkunde, 1878, No. 19.
Zulzer. Centralblatt f. d. Med. Wissenschaft, 1876.
Tessier. Du Diabetè Phosphatique. Paris, 1877.
Ralfe. The Lancet, London, February 26, 1876.
Ralfe. Morbid urine. 1882.
Dickinson. Diseases of the kidneys. 1875.
Neubauer. Journal für pract. Chemie., lxvii, p. 65.
Vogel. Virchow's Hand. der Spec. Pathologie, Band vi, 2, p. 478.
Parkes. Composition of urine in health and disease.
Ziemssen. Article on diabetes. Cyclopædia.
Cadge. Article on phosphaturia. Quain's Dictionary of Medicine, 1893.

NATIONAL REGISTRATION A NECESSITY.[1]

BY SAMUEL W. ABBOTT, M.D., BOSTON.

IN the present paper it is my design to state briefly some of the reasons for the adoption of a system of registration of vital statistics in each one of the United States — such a system as now exists in nearly every enlightened nation, the United States as a whole forming a marked exception.

Dr. Curtis, in a very intelligent discussion of the general subject of vital statistics, says: "A full and accurate knowledge of the people in every community is an indispensable requisite for the successful administration of public affairs. Such knowledge is obtained by the public authorities, from two distinct sources. In the first place, the enumeration of the people, by which the population, the numbers, the ages, the abodes, the professions, etc., of the individuals composing it are ascertained, is effected by the taking of a census. In the second place, 'the movement of the population,' under which term are comprehended the births, marriages and deaths occurring yearly, is determined by registration."[2]

Dr. Ogle states the objects of registration as follows:[3] "(1) There are all the legal uses, where proof of death is required, such as the succession of property, payment of insurance monies after death, etc.; (2) there is the prevention of, or interference with murder, or foul play generally; (3) the provision of trustworthy data for the elaboration of statistics concerning health, disease and mortality."

The purposes of registration are manifold, and their importance emphasizes the necessity of having this department of statistical work conducted in the most thorough and intelligent manner.

It serves in the first place to facilitate the identification of individuals for the transmission of property and for the protection of life against crime.

Second, it affords data for the determination of life contingencies, which form the basis of life insurance. Sufficient importance has never been given to this use of the statistics of mortality in this country. The figures upon which this very great and important business (amounting to many millions in each year and affording protection reckoned even by billions) is founded, can only be obtained in this country from a very small portion of the people, having registration extending over a long period of years.

But, third, and most important of all, it furnishes to sanitary science, and to the medical profession in general, most valuable information regarding the public health.

With these facts in view it is a sad comment upon the civilization of a great nation, that sixty-five millions of people are to-day entirely without any general system of registration of vital statistics; that the birth-rate, the death-rate and the marriage-rate of this country as a whole, are absolutely unknown.

There is no information to be had, for example, as to the birth-rate or the death-rate of this great State of Illinois, within whose limits we are assembled, the third State of the Union in its population of more than four millions. We have absolutely no means of comparing the death-rate of Chicago with that of the rural population of the remainder of the State; since, while the former is known with some degree of certainty, the latter is unknown. There is no means of comparing the death-rates of any of the counties of the State (or of larger districts) with each other.

Of the foreign countries, most of the largest and enlightened nations of Europe have had registration of a more or less complete character for periods varying from a quarter to a half century or more. It is a matter of great importance in the study of nations that their conditions and circumstances may be compared with each other. But in this very important direction we, as a nation, have no possible means for making such a comparison. When individual States are considered, we find a little improvement. States embracing about twelve per cent. of the population of the whole country have fairly complete systems of registration; while other States, having about as many more inhabitants, have enacted adequate laws, but thus far the execution of these laws is not fully carried out.

What then is needed to introduce and perfect a thorough system of registration throughout the whole country from Maine to Oregon, and from the Gulf to the Great Lakes?

(1) The enactment of laws in every State providing for the registration of births, marriages and deaths. The more uniform such laws can be made with reference to the information to be obtained in individual certificates, the better.

(2) The cordial co-operation of the general government in providing a central authority for the collection and publication of the statistical material of the individual States. Possibly grants might be made to the younger States to facilitate the introduction of this very important work.

(3) The necessity of awakening the interest of the medical profession in this work and the need of their hearty co-operation in aiding it in every possible manner is apparent. To this end the raising of the standard of medical education will have a favorable effect. The teaching of vital statistics, as an essential part of medical and especially of sanitary education, should be urged.

(4) The placing of the work of registration in the hands of trained medical men, who should act as registrars. These should not only be medical men, but also men who are experts in the subject of vital statistics at least. This principle is recognized by all the foremost authorities in public hygiene. No one doubts for a moment the wisdom of the British government in entrusting the registration of England to such men as Dr. Farr and Dr. Ogle. And the same may also be said of the French and German governments. Due authority should be given to the registrars of States and of municipalities to examine the returns of death, carefully, and to institute inquiries in all doubtful cases, especially when the certificates are signed by unqualified practitioners.

(5) In addition to the foregoing considerations, a revision of the nomenclature and classification of diseases is demanded, which shall be in harmony with the progress of medical science. Such revision, whenever it shall be made, should be uniform throughout all countries having registration, in order to facilitate the international comparison of the results obtained by registration.[4]

While the accurate registration of all deaths embraced under the five general divisions or classes of disease is desirable, there is one class which has a peculiar interest to the sanitarian, and that is the group of infectious diseases, or those to which for a half-century the name "zymotic" has been applied. The diseases of this class, or at least a majority of them, are undoubtedly amenable to those preventive measures which constitute a large share of the work of sanitary authorities. Hence all such authorities must necessarily recognize the great importance of having a definite knowledge as to the mortality from infectious diseases from month to month, and from year to year. Such knowledge can only be had under a careful system of registration thoroughly carried out. To this class of diseases belong typhoid fever and phthisis,[6] diseases which destroy life during its most productive period, and hence involve a great economic loss to the population. The steady decline in the mortality from these diseases in cities and towns having such municipal sanitation as is required, is too well recognized to require lengthy comment here. But without a good system of registration the question of improvement or of retrogression could not be known with any degree of certainty.

---

[1] A paper read at the World's Congress of Hygiene, at Chicago, October 12, 1893.

[2] Buck's Hygiene, vol. ii, p. 302.

[3] Evidence before the Parliamentary Committee on Death Certification, June 3, 1893.

[4] See Transactions of the Massachusetts Medical Society, 1892.

Legislatures are slow to act when definite, tangible evidence or statements as to the actual results accomplished by sanitation are not to be had. Hence the importance of establishing such thorough and complete systems of registration as shall furnish the desired information.

The relation of the vital statistics of any community to the public-health administration of that community is very much like the relation which the counting-house of any commercial firm bears to its business. The business may be great or small; it may conduct commercial transactions over a very large extent of territory; it may own property, factories or mills in different manufacturing towns; it may employ large or small numbers of workmen; but, if it is desirable to obtain any definite information as to the extent or character of its operations, their success or failure, one must go to the counting-house or the business-office, where he can obtain full and accurate knowledge of the standing of the firm, of the amount of its business, and of its plans and methods. The assets and liabilities of the firm are here matters of record; and its journal and ledger, its daily, weekly, monthly and yearly balance-sheets tell us of the actual condition of its business.

Applying this illustration to the operations of a sanitary authority, the vital statistics of any community tell us its actual progress or retrogression in the excess of births over deaths, or, *vice versa*, of deaths over births. The changes, too, in the death-rates from preventable diseases both individually and collectively are instructive, as showing to a certain extent the results of thorough and efficient sanitary work. They constitute the sanitary barometer by which not only present conditions are known, but also with some degree of certainty, future conditions may be foretold.

Let the following facts serve as an illustration:

Upon a comparatively large river in my own State are some half-dozen manufacturing cities and towns. Let these cities and towns be represented as follows: A, the cities and small towns upon the upper portion of the stream (embracing 300,000 inhabitants); B and C, two larger cities upon the lower portion of the same stream; D, a smaller city near its mouth. The entire population upon the water-shed of this river is about a half-million inhabitants.

The State Board of Health collects information weekly from the cities and towns within the limits of the State, as to the mortality from infectious diseases, including the cities and towns upon this river. It is also authorized by law to examine all the water-supplies of the State, a work in which it is continually engaged. The statutes forbid that streams used as water-supplies shall be used for the discharge of sewage; but the river in question is exempted by law from the operation of this statute, and sewage goes into it without hindrance from A, B, C and D. Now B and C take the water of this river directly and without filtration for domestic use. Sewage from A enters the water-supply of B; sewage from A and B enters the water-supply of C. As might be expected under this condition of affairs, typhoid fever has become more than epidemic at B and C, the mortality from this cause bearing the following ratios for the twenty years (1871 to 1890): The typhoid death-rate of the State being taken as 100, that of B was 155, and that of C was 170, while in the last five years of this period the excess rate was still greater. Any slight prevalence of typhoid fever in the sewered portions of cities and towns included in A was pretty sure to be followed by a greatly increased prevalence in B and C.

Up to the fall of 1892 the water-supply of the small city D was not taken from the river, but from a spring upon its shore. During the dry season of 1892 this spring became inadequate, and the water-supply which was furnished by a private company was increased by extending a water pipe to the river and supplementing the supply directly from that source. In the frequent routine examinations of the water-supplies conducted by the State Board of Health, this fact became known to the board, in consequence of the immediate change in the quality of the water as shown by its analysis. Under these circumstances the board immediately warned the water company of the danger of using water from a constantly polluted stream into which the sewage of a population of several hundred thousand was discharged. The company took no notice of this communication, but continued pumping water from the river and distributing it to the inhabitants. What was the result? In less than two months an epidemic of typhoid fever attacked the population using this water, more severe in character than had been known in that city for a half-century. It so happened that this event occurred during or at the beginning of the session of the State legislature. The citizens were soon aroused to a sense of the danger of the situation. The mayor appealed to the legislature for such aid as proper legislation might afford; and while the franchises of water companies have usually been guarded with jealous care, in this instance the flagrant disregard of the admonition which had been given them and the consequent sickness and death of many citizens, which might have been avoided, had they not neglected the advice of an experienced authority which had thoroughly examined the whole situation, induced the legislature to give to the city the right to introduce an independent supply, and at the time of this writing (October, 1893) the city has, by an overwhelming majority, voted to take this action.

I have presented this illustration, not so much for the purpose of showing what might have been done in preventing sickness and loss of human life under circumstances of careful observation, followed by advice to a responsible corporation and an obedient following of such advice, but for the purpose of showing the usefulness of a careful system of vital statistics, embracing a weekly return from the cities and towns along the banks of this river, of the deaths and causes of death, by which a warning reaches the State Board of Health and may be by it transmitted to the local boards, of the existence of unusual prevalence of epidemic disease.

---

[6] By almost universal consent, phthisis should be included in the category of infectious diseases.

About a quarter of a century ago the death-rate of England was constantly higher than it is at the present day. It was noticed that this high death-rate was mainly in the large towns and cities. Sanitary works were introduced in these cities, embracing new water-supplies, systems of sewerage and disposal of refuse, etc., and very soon the death-rate was diminished in nearly every city in which such improvements had been introduced.[6]

Now the point which I desire to enforce, is not so much the fact of such improvement as a natural consequence of thorough sanitation, but the method by which this fact was ascertained. The foundation or basis upon which the general public movement for these improvements rested, and which justified their introduction, was the death-rate of the cities in question. The computation of this death-rate and the comparison of the mortality before and after the introduction of public sanitary improvements was made possible only by the existence throughout the whole country of a complete and accurate system of registration.

Again the possibility of conducting such valuable and instructive investigations as are presented in Dr. Longstaff's "Studies in Statistics," and in the older papers of Buchan and Mitchell, is only made certain by the existence of a system of registration.

In this connection I desire to call your attention to one class of causes of death which is more or less preventable, although not in the same sense and degree as the group of infectious diseases; I mean the class of deaths by violence. All measures which tend to ameliorate the condition of man, to lessen suffering, poverty and intemperance, to protect life and to make it more secure from danger, will thereby diminish the annual mortality from homicide, suicide and accident. In the State of Massachusetts, by a statute of 1885 the registration of this class of deaths was made much more thorough and complete than it had previously been. At a still earlier date (1877) the coroner system had been abolished as a useless relic of antiquity, and an entirely new method of inquiry was introduced, which was modelled after the better modes in operation in continental Europe.

The new plan of procedure provides for the separation of the medical from the legal duties connected with the investigation of deaths by violence, the former being entrusted to a corps of well-trained medical examiners, while the latter are performed by the district judges. The operation of this system for a period of fifteen years has been entirely satisfactory. It is at once more economical and far more efficient than the coroner system which it superseded, and no one at the present day desires to return to the old method.

I would therefore commend this mode of investigation, together with the improved system of registration which now constitutes a part of the general plan, as suited to the wants of any community comprising either a large or a small population.

To conclude, a thorough system of registration is not only a valuable auxiliary, but is a natural and essential department of the work of any general sanitary authority; and in every State where no provision is made for the collection, tabulation, and publication of the vital statistics of the population, measures should be taken with the least possible delay for the carrying out of this important public duty.

---

[6] Ninth Report of the Privy Council, England.

Clinical Department.

TWO CASES OF HYDRAMNION ASSOCIATED WITH ABDOMINAL DISTENTION IN THE FŒTUS.[1]

BY CHARLES W. TOWNSEND, M.D.

Cases of true hydramnion, where the distention is so great as to cause morbid symptoms and the premature expulsion of the fœtus, are comparatively rare. The causes of hydramnion are many; but one of the most common is stated to be a morbid condition of the fœtus resulting in mechanical disturbances of the placental or umbilical circulation. Barton Cooke-Hirst, in "The American System of Obstetrics," says: "That increased internal pressure within the umbilical vein will give rise to a transudation through the amnion, has been abundantly proved by Sallinger. . . . It may be generally stated, therefore, that any condition of the fœtus that will raise the blood-pressure in the umbilical vein, thus increasing the blood-pressure in the placenta, may give rise to hydramnion." The two cases of hydramnion I am about to relate appear to belong to this class. Hirst instances, among other morbid changes in the fœtus, cirrhotic livers, and tumors which obstruct the umbilical circulation.

The maternal histories in my cases are very much alike. Both were patients of the Lying-in Hospital; both were uncomfortably distended at the seventh and eighth month, so as to be as large or larger than at full term; and both gave birth prematurely (one at seven and one-half months, the other at eight months). A description of the labor of one of these cases will do for both.

Mrs. S., a primipara in the out-patient department, seven and one-half months pregnant, was seen November 20, 1887. The abdomen was very large, and tense as a drum. On external palpation no fœtal parts could be felt. The fœtal heart was heard faintly. By vaginal examination the fœtal head was felt above the brim, and ballottement could very easily be obtained. When the membranes were ruptured a large quantity of water came away, and the rush of water was so great after the birth of the child, which speedily followed, that it flooded the bed down to the foot, pouring over the edge and flowing along the floor. The labor previous to this had been a tedious one, lasting thirty-two hours. The child lived only forty-five minutes.

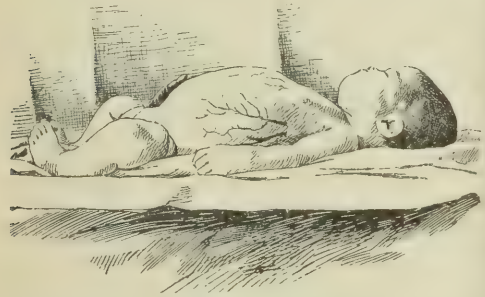
In the second case the mother was a multipara. Here the child lived nearly an hour. Both the infants were females, the sex which largely preponderates in cases of hydramnion. The mothers in both cases made good recoveries. In both babies the abdomen was much distended, causing in the second case a delay in the extraction of the body. I obtained an autopsy in each case.

---

[1] Read before the Obstetrical Society of Boston, November 11, 1893.

Case I. Autopsy of seven and one-half months' female fœtus, weight three pounds. Circumference of head, eleven inches; of chest, nine and one-quarter inches; of abdomen, eleven inches. Abdomen much distended, the skin tense and shining. Abdominal cavity contained a drachm of clear serum. Liver much enlarged, extending below the level of the umbilicus on the right side and as far as the umbilicus in the median line; much distended with blood. Other organs normal.

Case II. Autopsy of eight months' female fœtus, weight nine and one-half pounds. Circumference of head, thirteen and one-quarter inches; of chest, fourteen inches; of abdomen, seventeen and one-half inches. The abdomen was very much distended with fluid — a fact which accounted for the weight of the child — its superficial veins being prominent, as may be seen by the accompanying photograph. On opening the abdomen considerable clear fluid flowed out, and there were found to be numerous adhesions among the abdominal viscera. The liver and spleen were normal. The fluid was not, however, the cause of all the distention, for a large sac was found full of fluid extending up out of the pelvis as high as the umbilicus. On closer examination this proved to be the vagina, much distended with urine, the uterus being borne on the summit of this large sac. I was unable to discover with a fine probe any external meatus or opening to the vagina, and it seemed probable that the bladder emptied into an occluded vagina. The bladder itself was slightly enlarged, but being more muscular than the vagina was able to resist the pressure of urine, while the vagina gave way. Dr. Whitney, to whom I showed the specimen, suggested this explanation.



The association of abnormal fœtal abdomens in these two cases of hydramnion would seem to be more than accidental. It is probable in each case that there was increased pressure in the umbilical vein with the resulting hydramnion.

◆

A CASE OF PUERPERAL SEPTICÆMIA.[1]

BY GEORGE HAVEN, M.D.

The following case of puerperal septicæmia is, I think, sufficiently interesting from a bacteriological standpoint to justify the time which I shall occupy in reporting it to this Society.

The patient was delivered at the Boston Lying-in Hospital. Dr. J. L. Morse has made cultures from the patches which were found in the vagina and on the cervix, and will speak of the result of his research after I have reported the case.

R. W., dissipated history, entered the hospital August 29, 1893, in labor, membranes ruptured. She had been examined before entrance by some unknown person. She was delivered after a very long second stage by high forceps and axis traction. Twelve hours after delivery she had a chill, and the temperature went up to 104°.

August 31st. Lochia was very foul. Dr. C. W. Townsend, in whose service the case was delivered, found the vagina covered with whitish-yellow deposits, which could not be scraped off. The uterus was washed out with corrosive and carbolic. The pulse was weak and rapid; pain and tenderness were present over the uterine area. Epsom salts were given until she had free movements. She also had brandy and egg-nogs.

I examined her on September 1st, when my turn of service began at the hospital. Condition about the same as at last examination. Dr. Morse removed sufficient of the membrane to make cultures. The uterus was washed out with corrosive and peroxide of hydrogen. An iodoform pencil was introduced into the cavity of the organ, and iodoform powder dusted into the vagina. She had at this time a diarrhœa, probably septic. Nourishment was pressed as much as possible. She was given champagne in place of brandy, as the former nauseated her.

September 2d, she was feeling slightly better. Her condition remained about the same up to the 9th of September, when she complained of pain over the uterus. A flaxseed poultice gave her some relief. There was a slight trace of albumen in the urine, also a few hyaline casts.

September 25th, she was much better.

September 27th, she had a very severe headache, which did not yield to treatment, and made me think there was a distinct renal element in the case. She was given digitalis and acetate of potash. The urine contained a large trace of albumin, as well as many granular and hyaline casts.

On September 28th she had a convulsion, and was comatose after it. She was given croton oil and a hot-air bath. A movement occurred about midnight, but the skin remained perfectly dry; and she died at 5.40 A. M., September 29th.

This was a case where, if the kidneys had remained normal, recovery would have been possible. As it was, she died of uræmia. The kidney lesion may possibly have been secondary to the septicæmia, but was probably present when she entered the hospital. The rapid and violent development of her septicæmia (twelve hours) makes it almost certain that she was septic when admitted.

◆

BACTERIOLOGICAL CULTURES FROM A CASE OF PUERPERAL SEPTICÆMIA.[1]

BY J. L. MORSE, M.D.

Before the employment of cultural methods for isolating micro-organisms, various observers found chains of micrococci in the tissues of women dead of puerperal fever. Mayrhofer, in 1865, was the first to publish such an observation, and was rapidly followed by others, among whom may be mentioned Rindfleisch, Recklinghausen, Klebs, Orth and Doléris.

---

[1] Read before the Obstetrical Society of Boston, November 11, 1893.

[1] Read before the Obstetrical Society of Boston, November 11, 1893.

Pasteur, in 1880, was the first to cultivate the streptococcus from the organs of women dead of puerperal fever. Similar results were obtained by Fränkel, Bumm, Winter and many others, so that at present there can be no doubt that the streptococcus pyogenes stands in a causal relation to a very large proportion of the fatal cases of puerperal disease. Widal found streptococci in nearly every case in which he performed an autopsy, and also demonstrated that the most divergent forms of puerperal affection, for example, endometritis, peritonitis, pyæmia and even phlegmasia alba dolens, could be traced to streptococcus infection.

Streptococci are not the sole cause, however, for organisms that lead to wound-infection elsewhere can also give rise to puerperal wound-infection. Brieger was the first to show that the staphylococcus could cause fatal puerperal fever, and his statements were soon verified. They, however, rarely cause the more severe forms, but are often combined with streptococci.

Krönig[1] has recently demonstrated that gonococci may occasionally be the cause of some of the milder cases of puerperal disease.

Von Franque,[2] in a recent article, reports a case of moderate severity, in which he found a pure culture of the colon bacillus in the uterus, unaccompanied by any other organism. A pure culture from this case readily killed guinea-pigs and rabbits. As far as I know, this is the first and only reported case of puerperal infection due to this bacillus. It is not to be surprised at, however, when we consider the proximity of the rectum and the frequency with which the colon bacillus is found in purulent affections of the abdomen, especially appendicitis.

It is probable that other organisms may cause the trouble, either alone or in combination, notably the bacillus proteus.

In the case in question a sterile swab was introduced into the interior of the uterus and another into the upper vagina under aseptic precautions. Cultures of both were made on Löffler's blood-serum mixture, and showed a pure growth of a short bacillus. Agar plates were made from each of these tubes, and showed a pure culture of colonies resembling in their growth the colon bacillus. This bacillus, when cultivated on the various media, corresponded in every way to the bacillus coli communis, that is, grew on nutrient gelatine without liquefaction and with the formation of a few gas-bubbles; formed gas in sugar agar, acidified and coagulated litmus milk; showed a profuse, moist, yellowish growth on potato; was motile in hanging drop of bouillon culture; and gave the indol reaction in Dunham's solution.

◆

A NOTE ON THE USE OF ICHTHYOL.[1]

BY A. D. SINCLAIR, M.D.

I wish to say a few words about the drug ichthyol, which has come to rather extensive use of late, especially in Germany, but not used as yet to any great extent in this country. Some observations, however, published from time to time in the journals, have given a favorable impression of its value in the treatment of various conditions of the system, local and constitutional.

Ichthyol is an exudation from strata of rocks in the Jura, which abound in fossil fishes. It is of a tarry consistency. Less than a dozen years ago this substance was brought to the notice of chemists in Hamburg, I think, who analyzed it. At all events, Professor Unna, the famous dermatologist of that city, was the first who brought it to the knowledge of the medical profession by the report of cases of certain cutaneous affections successfully treated by its use. This exposition led to further elaboration of the substance by the chemists, Cordes, Hermanin & Co., of Hamburg, who have made a variety of combinations of the original product with ammonium, sodium and zincum, each of which is supposed to possess — and some to my certain knowledge have — distinct influence therapeutically. Pills and capsules of the same are also made by them, and are beautiful specimens of pharmaceutical art. The liquid preparations of ichthyol exhale a strong sulphide-of-ammonium odor, which, however, soon passes off on exposure, and need not be, as some have written, prejudicial to its use as a drug to be used in one's consulting-room.

I shall now give in a few words my own experience of the use of ichthyol since I first had it brought to my notice in March, 1891, and will anticipate by stating that its most characteristic effects, when applied locally in certain affections of the pelvic viscera, are *anodyne and astringent.*

I have had many opportunities to test the value of ichthyol in congested states of the pelvic organs of women with various dilutions of the above-named preparations, but have arrived at a point where I think I find the best result from a fifty-per-cent. with glycerine. This strength of the drug has been used by me in numerous cases of recent and chronic congestions of the reproductive organs, as well as those of the vagina, urethra and rectum.

In prescribing ichthyol, the druggist will always dispense the sulpho-ichthyolate of ammonium, as this is the most known preparation. The combination with sodium I have not tested, but that with zinc is remarkably astringent, and its effects in certain conditions, to be arrived at by experience in the use of this medicament, are a little surprising. I have not had a single bad effect in the use of preparations of ichthyol, although I have applied them many hundreds of times. I therefore, from my experience of their effects in certain conditions in the practice of minor gynæcology, would recommend a trial to those who have never used them, and a more extended application by those who have already tried them.

I have in these short remarks confined myself to the use of ichthyol in congestive and chronic inflammatory states of the pelvic organs, but could say something favorable of it in the treatment of dyspepsia, chronic diarrhœa and erysipelas.

The Effects of Medical Legislation. — At the last meeting of the State Board of Medical Examiners of the State of Washington, held in Seattle, there were twenty-two applicants for a license to practise, of whom twelve failed to pass the required examination and were rejected. The Board now requires a general average of 75 per cent. on all branches. — *Medical News.*

---

[1] Read before the Obstetrical Society of Boston, November 11, 1893.

---

[1] Kronig: Centralbl. f. Gyn., 1893, 157.

[2] Von Franque: Zeit. f. Geb. u. Gyn., 1893, xxv, 277.

Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

REGULAR Meeting, November 11, 1893, the President, DR. CHARLES M. GREEN, in the chair.

DR. GEORGE HAVEN reported

A CASE OF PUERPERAL SEPTICÆMIA.[1]

DR. J. L. MORSE showed

BACTERIOLOGICAL CULTURES FROM THE ABOVE CASE.[2]

DR. EDWARD REYNOLDS said that he saw the case reported by Dr. Haven on the fifth day, for the first time, and was impressed with the fact that it was different from most cases of puerperal septicæmia.

DR. J. G. BLAKE thought that the great rapidity in the spread of the pseudo-membrane was very interesting.

DR. C. W. TOWNSEND said that he was astonished, on first examining the case, about twenty-four hours after labor, to find the whole vagina from the cervix to the vulva covered with an extensive pseudo-membrane. He had no doubt but that the patient, who had been leading a dissipated life, and who was unable to give a clear account of herself, had been in some way infected before entrance to the hospital.

DR. G. HAVEN said that the patient had recovered from the septicæmia, but died of renal disease. Whether this was induced by the sepsis he was unable to say.

DR. C. M. GREEN said that a number of septic cases at the Boston City Hospital have nephritis, although this lesion is also sometimes entirely absent.

DR. J. L. MORSE suggested that this nephritis, in septicæmia, was similar to the nephritis in scarlet fever. The only other case of puerperal septicæmia in which the colon bacillus was present, recovered.

DR. C. W. TOWNSEND reported

TWO CASES OF HYDRAMNION ASSOCIATED WITH ABDOMINAL DISTENTION IN THE FŒTUS.[3]

DR. J. G. BLAKE mentioned a case of enormous distention coming on suddenly. Notwithstanding this, the patient went on to full term, and gave birth (together with a great flood of water) to a living child.

DR. A. D. SINCLAIR had had a case of extreme hydramnion where the child was anencephalic, and he asked whether, in these cases, hydramnion was apt to occur.

DR. E. J. FORSTER had had but one case of anencephalus without hydramnion.

DR. EDWARD REYNOLDS had seen two cases without hydramnion.

DR. C. M. GREEN had seen one case without it, and he did not think there was any necessary connection between the two. Anything that interfered with the umbilical circulation, whether by disease of the liver or abdominal tumors of the fœtus, as in Dr. Townsend's cases, or by twisting or knotting of the cord, might cause hydramnion. The cause is sometimes to be found in disease of the placenta or decidual tissues. Oftentimes, however, it is difficult or impossible to find a cause. These points he had brought out in a paper on hydramnion read to the Society some ten years ago.

DR. TOWNSEND, in closing, said that it was difficult to draw an exact line between hydramnion and an amount of liquor increased within normal limit. Cases of true hydramnion, however, rarely went to full term on account of the extreme distention, and often gave rise to morbid symptoms. In both of his cases the association of abdominal distention in the fœtus, which might result in interference in the placental circulation, suggested strongly the origin of the hydramnion.

DR. A. D. SINCLAIR read

A NOTE ON THE USE OF ICHTHYOL.[4]

DR. J. G. BLAKE had recently used ichthyol, and considered it a valuable drug. In the vaginal pruritis of pregnancy he had used it with great relief, combined with lanolin; and he found it much better than strong solutions of cocaine. In the case he mentioned the mucous membrane of the vagina was very raw and painful. Carbolic acid, previously used in this case, had failed. One objection to ichthyol is its odor.

DR. SINCLAIR spoke of its use in the pruritis of diabetes. The form usually dispensed is the sulpho-ichthiolate of ammonium, and it is generally diluted fifty per cent. with glycerine. The zinc compound is much more astringent.

A RARE FORM OF THE HYMEN.

DR. F. W. DRAPER reported an instance of abnormally-formed hymen which had recently come under his observation. The subject of the anomaly was an unmarried woman, twenty-five years old. The hymen presented the following characteristics: From the middle point of the free edge of a moderately thick, crescentic, membranous curtain at the posterior segment of the ostium vaginæ there projected forward and upwards a thin band or bridge about one-sixteenth of an inch in diameter, composed of tissue that was quite elastic and not tense, and having its anterior insertion just below the meatus urinarius. This band divided the vaginal outlet into two symmetrical orifices, oval in shape, each of a size to admit the tip of the index finger. The vaginal canal, above this unusual curtain at its entrance, was entirely normal.

Dr. Draper remarked that the possessor of this peculiar arrangement of the hymen could offer it as very strong presumptive evidence of her chastity and virginity.

◆

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

J. T. BOWEN, M.D., SECRETARY.

REGULAR Meeting, Monday, November 13, 1893, the President, DR. C. F. FOLSOM, in the chair.

REMOVAL OF FOREIGN BODY FROM THE ANTERIOR CHAMBER OF THE EYE.

DR. G. HAY: I wish to speak briefly of a case of foreign body in the anterior chamber of the eye, which I removed recently with a magnet. The foreign body did not project from the cornea. It had passed into the anterior chamber, but the anterior extremity was lodged in the cornea, and just appeared on a level with the outer surface of the cornea: possibly it protruded slightly, but not enough to grasp it with forceps. The foreign body was a very narrow piece of iron, like the end of a needle, about one-tenth of an inch long. The inner end touched the iris, and it had been in the eye about two weeks when the man came to me. The history was that, while he was hammering, something struck the eye. Some one in the room remarked that there was blood in the eye. I suppose that the iris must have been wounded. When I saw him the blood had disappeared, and you saw this foreign body, the end of which was on a level with the outer surface of the cornea. I knew that an attempt to remove it by the point of the narrow knife would be dangerous, since one is liable to push the foreign body in, and might be obliged to do iridectomy, and might even then not be able to get the foreign body. While I was thinking how to remove it the man said: "Don't they sometimes use a magnet?" I had a magnet, which I prepared and carefully applied. At first it produced not the slightest result. The cornea was so tightly around the iron that it produced no effect. After two or three attempts, it occurred to me to cut with a very sharp-pointed knife where the bit of iron showed itself, in order to loosen it. I cut as carefully as I could on two opposite sides of the iron, and in so doing I noticed that the anterior chamber began to leak. This is what would be expected if I had attempted to pry it out; I should have opened the anterior chamber. It occurred to me that there would now be a better chance of pulling it out. I applied the magnet again, and it came out very readily.

---

[1] See page 140 of the Journal.

[2] See page 140 of the Journal.

[3] See page 139 of the Journal.

[4] See page 141 of the Journal.

The case did perfectly well. It is not a new case at all, and is only interesting on account of the way in which the piece of iron came out, and as an instance of a comparatively new method of treating an accident which formerly might have resulted disastrously.

Dr. M. H. Richardson showed a

LARGE DIFFUSE FIBROMA OF THE BREAST, WITH SPOT OF MEDULLARY CARCINOMA.

This specimen is interesting from the fact that it shows a cancerous degeneration in a large fibroma of the breast. I have frequently advised patients with a simple fibroma of the breast not to have any operation performed; that the tumor is not dangerous; that it simply interferes with the comfort of the patient from its size. I have never before seen a benign tumor of the breast which has taken on malignancy. In several cases of intracanalicular fibromata there have been suspicious spots found somewhere in the disease. This is the first case of its kind where there has been a marked malignancy both in gross appearances and history, and in the microscopic examination.

The patient, a woman of thirty-four, single, is a stitcher in a shoe shop. In her work the shoe is brought constantly against the upper part of the breast. Her attention was called to the breast for the first time last June. She felt a hardness there. There was no family tendency to cancer. She has always been well and strong. I found a large tumor occupying the whole left breast. In the lower and anterior quadrant the skin was distinctly infiltrated. The axilla contained several large glands. There was no evidence of internal metastasis. It was impossible to remove the breast without sacrificing all the skin over it. I took, in addition to the skin over the breast, a circular margin of about an inch in all directions. This method left an enormous wound to be filled by granulations. Without cutting away the breast, I carried the dissection along the edge of the pectoralis major and the anterior axillary border until the last of the glands had been dissected out. The breast and axilla, therefore, came away in one continuous mass. The operation was performed on Saturday — the day before yesterday — and thus far the patient is making very good progress.

It is always desirable in these operations to take a broad margin of skin. Recurrences in the scar always seem to me an evidence that not enough has been taken. The error in removing breasts generally consists in trying to shave the tumor too closely in order to get a first intention. The most important thing is to get the disease out, then we should, for the first time, think how we are going to close the wound.

EXCISION OF THE ELBOW-JOINT.

Dr. Richardson also described a case of chronic rheumatic arthritis of the left elbow, with excision of the joint, which was shown. The patient, a woman of forty-seven, had, seven years ago, pain in the right shoulder, supposed to be rheumatic. About five years ago the left arm began to trouble her. Six years ago she had some rheumatic trouble in the feet. There is no consumption in the family at all except one aunt. The pain has been so great in the left elbow during the last six years that she has been disabled most of the time. Finally, it was put up in plaster-of-Paris by the attending physician Dr. McCollester, of Waltham. The immobility resulted in some alleviation of pain, but not complete. Meantime the left elbow has become more or less anchylosed. On careful examination there was undue prominence on each side of the olecranon. This soft swelling did not seem to be tender. Movements of the elbow were extremely painful, especially extension. I have had this case under observation since the 10th of May of the present year. During this time there has been no improvement whatever in the subjective signs. The elbow has been almost entirely disabled and there has been a great deal of pain. After very careful deliberation I decided to try forcible extension to the movements of the joint. Five or six days ago, under ether, I broke up the adhesions and extended and flexed the elbow, and at the same time rotated the forearm. This was followed by a great deal of pain. Dr. Warren saw this case in consultation during the anæsthesia, and we both thought that there was probably a tubercular element in the disease. Whether tubercular or not, it seemed best to excise the joint, not only to relieve the pain, but to give a more useful joint than the one she had. The bones were excised on Saturday in the usual manner. I did not use any efforts at hæmostasis. I did not use the Esmarch bandage or tourniquet. It seems to me better to stop the hæmorrhage as we go in operations of this kind, because we thereby avoid in the best manner subsequent oozing and extension of flaps. Patient to-day is sitting up, and there is no pain.

Excision of the elbow is justifiable for simple anchylosis at a right angle, because after an excision the joint is more useful than a stiff elbow. It is also justifiable for pain. If there is any suspicion of tubercular process it seems to me that the operation should be performed as early as possible, and that it is not wise to wait until the bones have become extensively disorganized.

REGULAR Meeting, Monday, November 27, 1853.

NOTES ON PHOSPHATURIA.[2]

DR. PAUL THORNDIKE presented a paper with the above title.

DR. E. S. WOOD: I am very glad to have been able to hear Dr. Thorndike's paper. I thoroughly agree with him that the first class of cases to which he referred, the milder cases of phosphaturia, really is not entitled to the term phosphaturia. It is not the condition of things which at all affects the quantity of the phosphoric acid eliminated, but simply the precipitation of the earthy phosphates due to a change in the reaction of the urine, and a good deal of distinction should be made between the temporary and permanent condition. As we know, temporary phosphaturia is physiological and not pathological. It is of very frequent occurrence in the urine of perfectly healthy persons after the ingestion of a good deal of vegetable food or vegetable salts. The permanent condition, however, which results in the permanent alkalinity of the urine by a fixed alkali is dependent upon just the conditions which Dr. Thorndike has mentioned, disturbances of digestion, nervous disturbances; and such cases used to be treated sometimes by the antacids simply for the purpose of changing the character of the reaction of the urine, an erroneous treatment, unless with the idea of giving the mineral-acid tonics, which prove generally of very excellent service, but not by virtue of their antacid effect, only by virtue of their tonic effect. The quantity of the earthy phosphates which may be precipitated from the urine under such circumstances may be made to vary a good deal with the character of the food. Lime salts and waters containing lime will prevent, to a certain extent, large quantities of earthy phosphates in the urine, for the reason that chalk when united with phosphoric acid in the alimentary canal will pass through without being absorbed. The form Dr. Thorndike has spoken of under the head of phosphoric diabetes I was glad to hear him mention because those cases are in my experience exceedingly rare, and it is, I think, largely on account of their rarity that they cannot be classified under any special set of clinical conditions. In all my experience in urinary analysis I have never met with but one case of what should be considered, I think, true phosphaturia, or what has been spoken of as phosphatic diabetes. This term was given by Tessier, I think, because it had sometimes alternated with the saccharine diabetes; and the explanation was given which Dr. Thorndike has mentioned. That class of cases is always characterized by polyuria and polydypsia, with various symptoms referable to the nervous system and other organs in the body. One class of symptoms reported by Tessier was in the early stage of phthisis where there was an immense amount of earthy phosphates in the urine, with polyuria and polydypsia; the explanation is given by him that the earthy salts are derived largely at the expense of the pulmonary tissue. I have tried to find similar cases, and have received the co-operation of a number of clinicians; but I have never been able to duplicate any of Tessier's cases. I have never in early phthisis been able to find a polyuria with a large excess of earthy phosphates. The only case of true phosphaturia which I have met with since I have been connected with the Medical School was in the case of a gentleman whose urine I had examined from time to time for a good many years; and in 1879 a large number of analyses of his urine showed this condition. I never saw the patient himself, and do not know the symptoms. February 25, 1879, my record shows four quarts of urine passed in twenty-four hours, containing 9.6 grammes of phosphoric acid, the average being 3 to 3.5 grammes. The urine on March 7th was 3,500 c.c.; between three and four quarts on four successive days; and the amount of phosphoric acid on the 12th of March was 7.4 grammes, and the amount of urine 3,700 c. c.; no albumen and no casts. There was a little evidence of some irritation about the prostatic region which was easily explained by the age of the patient. That condition lasted but a comparatively short time, perhaps two months, and then disappeared. The polyuria continued, but the phosphoric acid fell to its normal quantity. A year or two later examination showed, instead of phosphaturia, decided oxaluria; large quantities of calcic oxalate were found in the sediment, and albumen and casts appeared later. Those have continued, and the condition of the urine at the present time is that of chronic nephritis of the interstitial type, which must have begun somewhere in 1879 or 1880. That is the only case in which I have ever been able to find those large quantities of phosphoric acid in the urine, with polyuria and polydypsia, where it was not due to the ingestion of phosphoric acid or phosphates.

One class of Tessier's cases is given as a purely nervous disease; and he considers that the nervous tissues which are rich in phosphorus are undergoing an unduly rapid metabolism, which accounts for the excess of the earthy phosphates in the urine. In all of these cases the excess of phosphoric acid is in the form of the earthy phosphates, and not in the form of the alkaline phosphates.

DR. R. T. EDES: I was rather glad to find from the remarks of Dr. Thorndike and Dr. Wood that the notion of the relation of phosphates to the disintegration of the nervous tissue has been exploded. There used to be a good many stories in the books. One of them is quoted by Dr. Holmes in one of his non-medical works, to the effect that a clergyman used to pass a large quantity of phosphates every Monday morning; that probably had more to do with the Sunday dinner than with the sacred exercises in which he participated. A number of years ago I made some observations on myself, taking some days when I was as lazy as I could be, and others when I was busy; and I could not see anything decisive in the quantitative changes.

DR. THORNDIKE: In protesting against the use of the term phosphaturia, I only meant to find fault with it as descriptive of a well-marked clinical condition, such as one commonly reads of in books, and might be led to suppose occurred as commonly as albuminuria, for example. I did not mean to say that there was no such thing as true phosphaturia, of course.

A HOSPITAL WHILE YOU WAIT. — The Metropolitan Asylums Board of London, to provide for the rapidly increasing number of fever patients, recently had a hospital built in nine weeks, with wards all complete and with accommodation for 400 patients, 40 "charge" nurses, 50 assistant nurses and 76 female servants, every hygienic and sanitary appliance, corridors, kitchens and consulting-rooms.

---

[2] See page 134 of the Journal.

THE BOSTON
Medical and Surgical Journal.

THURSDAY, FEBRUARY 8, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

THE CONTAGIUM VIVUM OF VACCINE AND OF SMALL-POX.

Some recent investigations undertaken to ascertain the nature of the germs of vaccine, by Buttersack, at the Imperial Hygienic Institute of Berlin, were detailed by him at a meeting (December 15, 1893) of the Society of the Physicians to the Charité, and are of interest.[1]

All pathologists are agreed that the specific microbes of vaccine must exist in the clear lymph of the vesicle, and that these micro-organisms are the agents of the vaccinal infection .The experiments of Straus, Chambon and Menard (1890) have proved that the lymph when filtered through a plaster filter loses entirely its properties,[2] so that its virulence is due to the figured elements which it contains. Various bacteria have, it is true, been found in the vesicles and pustules of vaccinia (bacterium termo, proteus vulgaris, staphylococcus pyogenes aureus, cereus albus, etc., also peculiar cocci discovered by Hallier, Quist, Voigt, Garré, and others), but none have yet been proved to possess the peculiar properties of vaccine.

Buttersack bases his investigations on the assumption that the real germs are in the lymph of the vesicles, but are *invisible*, and that any microbes hitherto found there are simply accidental, unessential, or accessory. The vaccinal lymph is clear and transparent; the elements which it contains must then have the same index of refraction as the liquid itself. If this were otherwise, the lymph would be turbid, and the more so the greater the number of elements in it not translucent. Now, in order that microscopic elements may remain thus invisible in lymph, whose index of refraction is about 1.34, it suffices that the difference of their indices of refraction from that of the liquid which contains them shall be 0.1 or a little more. This difference is inappreciable to ordinary sight, especially if the observer is looking through the microscope, and the object is unknown. Even for an object that is known and not of microscopic dimensions, a difference of index equal to 0.05 between it and the liquid in which it exists, assures its complete invisibility.

It is, then, because both the liquid and the germs refract alike that the latter are invisible in the lymph To render visible the germs, it would be necessary to examine preparations of lymph in a medium with refractive index widely different from the ordinary. The air, whose index of refraction is one, can be utilized for this examination, and in slides of dried lymph examined without any refractive medium but the air, a method already employed by Koch to reveal the cilia of certain bacteria that do not stain, Buttersack has been able to detect a certain number of formed elements. To test the value of this mode of mounting, Buttersack first tried it on blood globules and certain bacteria of known species. All these bodies appeared in these preparations with contours incomparably more clear and well-defined than when seen in water.

The germs of vaccine, according to this authority, are not merely distinguished by their peculiarity of refraction; they are also very small, and have little tendency to aggregation in masses. Vaccinal lymph, as is well known, remains active under great dilution. The vaccinal corpuscle, moreover, seems to have different chemical properties from those ascribed to other known germs, and this explains the failure of attempts to stain it. In short, this germ is presumed to be small, pale, and unsusceptible of staining.

Buttersack has studied the lymph of the vesicles of children, recently vaccinated. This lymph, taken when perfectly clear and dried on the cover-glass, is gently washed in water and fixed to the glass slide with a couple of drops of wax and examined by means of apochromatic objectives. In these conditions, Buttersack has seen corpuscles in great number, very small, pale, always of equal size, sometimes grouped in chains. In continuing the examination, he perceived an extremely fine network constituted by pale filaments. These could always be followed to a considerable extent, and contained in their meshes an abundance of the little corpuscles above described. These filaments were preponderant in pustules, growing and completely developed, while the corpuscles preponderated in pustules in process of retrocession.

Buttersack's investigations have included one hundred vaccinated children, and always gave the same results. The slides invariably contained corpuscles and filaments in varying proportions. Control experiments were made with dried fluid obtained from phlyctenæ in different stages, from the pustules of acne, from various transudations and exudations, from normal lymph, but there was entire absence of the characteristic vaccine corpuscles and filaments.

From the point of view of culture, there was not much to expect of the ordinary media which have thus far proved refractory under the manipulations of other experimenters. Buttersack has attempted preferably the culture of the germs in the living animal. He introduces under the skin of a calf a capillary tube filled with vaccine lymph. At the end of three or four days there appears at the site of inoculation an intense infiltration, the liquid of which contains filaments. This liquid by inoculation in other animals and in children, gives rise to typical vaccine vesicles. Buttersack anticipates the objection that these filaments may be nothing but fibrine. The vaccine filaments are everywhere of uniform thickness; not so with fibrine filaments. Moreover, the former cross and intercross with a clearly defined angle, and without fusing together, in this respect markedly differing from fibrine. Fibrine takes certain staining fluids; the vaccine filaments do not.

---

[1] Deutsche Med. Woch., No. 51, 1893; Médecine Moderne.
[2] Charcot: Traité de Médicine, t. ii, p. 177.

Lastly, the elements of vaccine undergo a certain biological process of development, as Buttersack's experiments show. The principal of these experiments consisted in the introduction of sporiferous lymph in a deep cutaneous wound of the forearm; six hours afterwards he found several isolated filaments in the serum of the wound; at the end of twelve hours, they were much more abundant; twenty-four hours after, the complete network was formed, and on the third day spores luxuriated, and became predominant.

Hence, then, the constant presence of these elements on vaccinal lymph, their absence in other affections, their biological evolution in harmony with the clinical syndrome, lastly, their transmission by inoculation tend to prove their importance in the act of vaccination.

It remains to be established whether these elements exist also in small-pox. Some researches undertaken on some small-pox patients at three different towns, incline Buttersack to believe that they do. In recent cases, he has observed the filaments, and in advanced cases the spores accumulated in the pustule and in the lymph of the neighboring cutaneous region. The variolous substance inoculated in calves, furnished the same infiltration with the same filaments and spores as when ordinary vaccine lymph was the infectant material.

A fuller, illustrated report, of these observations will be issued in an early publication of the Imperial Hygienic Institute. In this connection our readers will recall the report of the work done in this direction by the late Dr. S. C. Martin, of Brookline, published in this JOURNAL, December 14, 1893.

◆

PROPOSED LEGISLATION CONCERNING CAPITAL PUNISHMENT IN OHIO.

THE Ohio Legislature is to have under consideration this session a bill to substitute physiological experimentation for capital punishment, or rather to make the criminal subject first to experiment and then to execution. The proposed bill, which is offered as an amendment to the present act dealing with capital punishment, provides:

(1) "That all persons sentenced to death by any court having jurisdiction in the State of Ohio, shall be held as subjects for experimental research; that such experiments shall be conducted in the interests of science and society, and shall be regulated by approved rules of humane treatment to avoid all unnecessary pain; that in the preparation for such experiments, where pain would be occasioned, anæsthetics shall be administered to the extent of complete insensibility to pain, and during the progress of the experiment narcotics shall be judiciously used to allay any pain, and the condemned person shall not be maltreated in any way; that after the conclusion of such experiments the criminal shall be again anæsthetized and put to death while in a deep sleep and entirely insensible to pain; that the executioner shall be an expert physiologist duly appointed and authorized by the State, and that such appointments to execute and conduct such experiments shall be vested in the Governor, and shall consist of one executioner and five assistant physiologists, with a like number of deputies, who shall hold their office for the term of good behavior, except upon proof of incompetency; and no one so appointed shall be removed without sufficient cause, which shall be left to the discretion of the Governor, and that all appointments to fill vacancies caused by death, resignation or removal, shall be made as prescribed in the foregoing.

(2) "All executions of the death penalty, according to the provisions of this bill, shall take place within a building provided for that purpose, and so constructed as to safely and comfortably lodge all capital criminals until the completion of the execution; that such criminals shall be in the custody of a warden or deputy warden and board of managers, who shall provide for their safe and comfortable keeping; that the execution of the sentence shall commence on the day fixed by the judge passing the sentence, unless a suspension of execution be ordered by the Supreme Court or two judges thereof.

(3) "That no one shall be present at experiments and executions except the warden or deputy warden in charge of the prisoner, the executioner, assistants, and deputies, and those who have duly qualified themselves to comprehend the experimental work; that such qualifications shall be determined by a board of examiners, who shall issue a certificate which shall admit the holder to witness the experiments and executions; that at the conclusion of each execution a written report shall be required of the body of physiologists which shall contain a correct account of the result of the experiment and execution, and that such a report shall be made within thirty days from the infliction of death, and recorded in the archives of the institute."

It has often been suggested, with some degree of reason, that criminals condemned to death be allowed reprieve on the condition of subjecting themselves to experiment; but certainly to pass a law that such persons shall be used for vivisection and then executed even while still under anæsthesia, is as far beyond all bounds of legitimate action as it is abhorrent to the sense of humanity.

Before the same Legislature we understand another bill has been introduced, prohibiting the performance of circumcision. Are these proposals to be classified under tragedy or under comedy?

◆

MEDICAL NOTES.

SOME VACCINATION STATISTICS. — The official report of the epidemic of small-pox which occurred in the borough of Halifax, Nova Scotia, between the middle of March, 1892, and the end of September, 1893, shows that there were 513 patients admitted to the hospital, 44 of whom died, a mortality of 8.5 per cent. The *vaccinated* cases numbered 425, with 8 deaths, or 1.8 per cent. mortality; the *unvaccinated*, 88, with 36 deaths, or 40.9 per cent. mortality. There were two cases in revaccinated persons, one having been "revaccinated inefficiently five years ago," the other "revaccinated thirty-four years ago."

To Perpetuate Dr. Blanche's Memory. — The City of Paris has changed the name of the Rue des Fontes to Rue Blanche, in honor of Dr. Antoine Emil Blanche.

A Gift for a Virginia Hospital. — The Sheltering Arms Hospital at Charlestown, W. V., has received a gift of seventeen thousand dollars from the widow of Ex-Governor Olden of New Jersey.

Deaths from Carbolic Acid in England. — Between February, 1892, and November, 1893, there were two hundred and thirty deaths in England due to taking carbolic acid. One hundred and seventy-four of them were suicidal.

Examination for the Marine-Hospital Service. — A board of medical officers will meet, Monday, April 16, 1894, in Washington, D. C., for the purpose of examining candidates for appointment to the grade of Assistant Surgeon, in the Marine-Hospital Service. For further information address the Supervising Surgeon-General, U. S. Marine-Hospital Service, Washington, D. C.

Chemistry and Reading Notices.—Our esteemed contemporary *The Lancet* has started a department of Analytical Records, which to Americans who are supposed not to have a very keen medico-ethical sense seems very strange. It has equipped a laboratory, and everything is grist to the scientific mill therein. We find *The Lancet* publishing analyses of champagne, lager-beer, bon-bons, cigarettes, malt, wine, tea, gin, etc. Curiously enough everything analyzed and reported upon is found to be good; so that the state of mind of *The Lancet's* chemist is very suggestive of that described in Genesis at the end of creative work. — *New York Medical Record.*

BOSTON AND NEW ENGLAND.

Small-Pox in Boston. — Two new cases of small-pox have been reported to the Board of Health during the week ending at noon February 7th. There have been no deaths. There are at present nine patients in the hospital, all of whom are doing well.

Acute Infectious Diseases in Boston. — During the week ending at noon February 7th, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: scarlet fever, 47; diphtheria, 41; measles, 7.

The Public Health Committee of the Legislature. — The Public Health Committee of the Massachusetts Legislature for the present session consists of Senators E. B. Harvey, M.D., of Worcester County, E. G. Frothingham, of Essex County, E. A. Besson, of Essex County, and Representatives Crane, of Somerville, Tuttle, of Boston, Mahoney, of Boston, Johnson, of Lynn, Harvey, of Springfield, Fisk, of Dennis, Goodell, of Brookfield, and Marsh, of Hanover. It gave a hearing yesterday upon two proposed measures — one a bill to provide for medical registration, and the other for the State ownership of vaccine farms.

The Lyman Prize. — The Lyman Prize established for graduates of the Boston City Hospital, of not more than three years' standing, by Mrs. George H. Lyman, in memory of her husband, Dr. George Hinckley Lyman, who was a member of the medical staff of the hospital for many years, has been awarded this year, in two equal parts of $150 each, to Dr. John Lovett Morse, of Boston, for an essay entitled, "A Bacteriological Study of Four Hundred Cases of Inflammation of the Throat in Diphtheria and Scarlet Fever, with Special Reference to Pathogenesis," and to Dr. Arthur Howard Wentworth, of Boston, for an essay entitled, "A Study of the Blood in Early Life." The usual prize is $150, but no prize was awarded last year.

A Bequest to a New Haven Hospital. — The will of Mr. Andrew L. Kidson of New Haven, Conn., bequeaths five thousand dollars to the General Hospital Society of New Haven.

The Board of Medical Examiners, M. V. M. — By a recent order of the Commander-in-Chief, the Board of Medical Examiners, M. V. M., is now constituted as follows: Lieut-Colonel Freeman C. Hersey, Medical Director Second Brigade, President; Lieut-Colonel Edward J. Forster, Medical Director First Brigade; Major Otis H. Marion, Surgeon First Regiment Infantry, Recorder. Brigadier-General Herbert L. Burrell and Major Charles C. Foster are relieved from further duty on the Board by the same order.

The Alleged Deaths from Vaccination in Lowell. — The two deaths in Lowell week before last which were reported in the daily papers with much heading as due to vaccination, were due to other causes. From official sources we learn that the death returns gave "tonsillitis" and "bronchitis" as the causes. The several cases of "bad arms" which came to notice were "considered due not to impure vaccine, but to the introduction of foreign micro-organisms by faulty technique."

NEW YORK.

Insanity Statistics. — The annual report of the State Board of Charities, submitted to the legislature February 1st, shows a total increase in the number of insane in the institutions of the State from October 1, 1880, to October 1, 1893, of 8,842. The increase in population from 1880 to 1892 was 28 per cent., while the increase of the insane in the institutions was 83 per cent. A part of this increase, it is stated, may be accounted for by the greatly increased accommodations, by means of which many insane had been taken from their homes to institutions. Besides, the better care of the chronic insane has doubtless considerably prolonged their lives. Still, the Board believes that the increase is not wholly accounted for by these causes. The number of patients in the various State hospitals for the insane on October 1, 1892, was 7,484; the number of admissions during the year ending September 30, 1893, was 2,586, and the total number under care during the year, 10,070, as against 9,435 the preceding year. The number of insane in the county and city poorhouses and asylums of the State, exclusive of New York and Kings Counties, October 1, 1893, was 610, as against 857 October 1, 1892. The number of admissions to the asylums of New York City during the year ending September 1, 1893, was 1,699, as against 1,592 admitted the previous year. Overcrowding still continues in the asylums of New York. The one on Blackwell's Island, with a capacity for 1,110, has 1,762 inmates, and that on Ward's Island, with a capacity of 1,620, has 2,349 inmates Other buildings however are to be fitted up on Ward's Island which will accommodate 1,200, and thus relieve the overcrowding in these institutions.

Mortality. — The general health of the city, as indicated by the mortality reports, continues very fair for the mid-winter season. During the week ending February 3d, there were 848 deaths. Of these, 13 were from influenza, a decrease of six from the preceding week. The contagious diseases in general, however, show some increase, and the deaths from measles amounted to 28. Diphtheria continues to be the most prevalent and serious, and shows a mortality of 58 for the week. The deaths from scarlet fever numbered 20. During the week an unusually large number of births were reported, 1,137. As a rule, a large number of births are left unrecorded by physicians and midwives, and of late the Board of Health has been making a house-to-house canvass of the city in order to ascertain approximately the number of births which occurred in 1893.

Miscellany.

CREMATION IN PARIS.[1]

In November, 1887, a law was passed allowing the French citizen to dispose of his dead by cremation instead of burial, if he so chooses. All such cremation is carried on under the control of the Board of Health and under the surveillance of the municipal authorities, who issue permits for incineration only upon a written request from the legal representative of the family, accompanied by a certificate of the cause of death from the attending physician and the consent of a sworn medical official appointed to verify the cause of death in such cases. The ashes after cremation may not be placed, even temporarily, in any but regular places of sepulture.

At the present time Paris is the only French city possessing a cremation establishment. Previous to the law of 1887 she had obtained the permission of the government to build a crematory to dispose of the human remains from the medical and anatomical schools; and this plant served for the first incinerations.

The law prescribes most minutely the details of the procedure and the preparation of the body. The ashes are placed in an urn paid for by the family. If the urn is to be placed in a private tomb, it may be of any design; but if it is to be put in the municipal columbarium, it must have the following dimensions: height 28 centimetres, length 48 centimetres, width 28 centimetres. Urns containing funeral ashes may not be made part of any monument, but may be buried if the grave is marked by a stone.

The charge for cremation varies according to the convoy, the services being free. The cost runs from 50 to 250 francs. The expense of private cremations has been much reduced by the fact that the city is obliged to maintain a cremation furnace in constant operation day and night, in order to dispose of the remains of the 2,000 bodies annually received from the dissecting-rooms. There is only one columbarium, which contains 354 cases.

The statistics of cremation in Paris up to the first of last November are as follows:

	Incinerations at request of family.	Remains of bodies from hospitals, etc.	Embryos under four months.
1889	49	483	217
1890	121	2,188	1,079
1891	134	2,369	1,238
1892	159	2,389	1,426
1893, to October 31st,	150	1,985	1,194
	613	9,414	5,154

In spite of the advantages from a sanitary point of view, and of the ease and cheapness of procuring service, cremation has won favor but slowly in Paris, and even more slowly in the rest of France. The government has done much to extend the use of incineration, but with very little effect. Two facts have especial bearing on this: the publicity attending cremation and the religious repugnance of a Roman Catholic people.

WHAT "MENTAL CURE" IS.

In a recently published volume entitled "*The Philosophy of Mental Healing*," the author, Mr. L. K. Whipple, gives the following definition of what mental healing is in the minds of those devoted to that science:

"Mind is the intelligence of the body. Mind thinks; its thought is registered on the body in physical element. The thought is a model of the idea; the body and its conditions are a constructed copy of the model. When the model changes the copy correspondingly changes. This rule holds good with regard to every part of the system, but is especially true of the most finely constructed parts, because these are subjected to the quickest changes. In the finest nerve mechanism important changes frequently occur instantaneously, while in the coarser structure of bone, cartilage and ligament they take place more slowly. The instant the mental cause ceases its disturbing vibrations, nature begins natural restorative activity in every part of the physical system; this is as certain as that water will run down hill. . . . When these truths are intelligently comprehended the fact becomes evident that disease — whatever its name or nature — must originate in some mental activity afterwards registered in the body, where that mode of action is outwardly expressed. Knowledge of this fact is the key to accurate diagnostication, and a sure guide to adequate mental therapeutics. . . . Thorough knowledge of the natural laws of human existence, based upon intelligent understanding of the fundamental principles of spiritual life, each thinking mind has power to reverse every wrong mode of action, and to establish right conditions. Exercise of this power in removing disease is a legitimate mental cure. Its nature is metaphysical.

---

[1] La Médecine Moderne, 1893, 103.

◆

OBITUARY.

MEMORIAL OF HOWLAND HOLMES, A.M., M.D., OF LEXINGTON, MASS.

AT a meeting of the Middlesex East District Medical Society held at Wakefield, Mass., January 24, 1894, the following memorial and resolution was presented and adopted:

The members of this Association desire to place upon record their high appreciation of the life, character, personal and professional worth of our late associate-fellow, Howland Holmes, A.M., M.D., of Lexington, Mass., whose sudden death has brought grief to us all.

Dr. Holmes was born in Halifax, Plymouth County, January 16, 1815, and was a lineal descendant on his mother's side from John Alden, the Pilgrim, and on his father's side from John Holmes, who was in Plymouth in 1632. He was fitted for college at Bridgewater, Mass., and Exeter, N. H., and took his degree of A.B. from Harvard in 1843, A.M. in 1846, and that of M.D. in 1848. Dr. Holmes was made an associate member of this Society soon after its organization, and so long as he lived was a constant and interested attendant upon its meetings, endeavoring always to contribute his full share to their interest and profit.

From this time forward his genial presence will be sadly missed. He closed a long, a useful, an honest, and an honorable life in a moment. The swift-winged messenger of death met him while returning to his home from one of his accustomed errands of mercy. That messenger came to him unheralded, and in a twinkling he left us and was gone.

We tender our heartfelt sympathy to his afflicted family in this great trouble, and point them to the consolation to be derived from the knowledge of his long and useful life, and that he was spared the mental and physical infirmities of old age.

Dr. Holmes was distinguished in a marked degree for his clearness of perception, the firmness of his convictions, his courage in expressing them, and his geniality of manner. He was highly social in his nature, and, aside from his own domestic circle, enjoyed the society of none more than that of his professional brethren. We knew him long and knew him well.

J. M. HARLOW,
W. S. BROWN, *Committee.*
J. S. CLARK,

◆

THERAPEUTIC NOTES.

THREE CORYZA PRESCRIPTIONS.— In a recent discussion before one of the Parisian medical societies, the three following prescriptions were given, as having been found of value. M. Grellety advised the free use of this powder, especially in the early stages:

℞	Betol	2.5 grammes	
	Menthol	0.25 grammes	
	Cocaine	0.50 grammes	
	Powdered burnt coffee . . .	1.5 grammes	M.

M. Huchard recommended a snuff containing less cocaine:

℞	Bismuthii subnitratis . . .	15 grammes	
	Camphoræ	5 grammes	
	Cocainæ hydrochloratis . . .	0.05 grammes	M.

M. Julien preferred an ointment to a dry powder:

℞	Vaseline	30 grammes	
	Acidi. borai	5 grammes	
	Menthol	.05 to 20 grammes	M.

A REMEDY FOR TRIGEMINAL NEURALGIA. — Nægely[1] recommends the following method for quieting the paroxysms of trigeminal neuralgia, hemicrania, globus hystericus. The great horns of the hyoid bone are pressed by the two thumbs of the patient or physician up against the larynx for a minute or ninety seconds. While he cannot give an explanation of the action, he has found it effective in many cases.

GASTRIC NEURASTHENIA.— Rummo and Braccini[2] recommend the following combination of the zinc salts in acute neurasthenia, especially when attended by gastric symptoms:

℞	Zinci phosphidi	0.1 gramme
	Zinci bromidi	1.0 "
	Quininæ bromohydrat. . . .	1.5 "
	Ext. nucis vomicæ	0.15 "

Misce. Ft. pil., No. xxx. Sig. One three times a day.

ALBUMINURIA AND PHOSPHATURIA. — In a communication to the Académie de Médecine, M. Robin gave the following outline of treatment for cases of phosphatic albuminuria: The first point, in importance, is to combat the nutritive disturbances, and the batabolism which leads to an undue elimination of phosphorus. Following this the attention should be given to preventing the destruction of the blood globules and to controlling the albuminuria. The hygienic treatment consists in moderate exercise, massage and complete intellectual rest. The diet should contain, above all else, vegetables, rich in phosphorus and potassium, as beans and lentils; white flour and sugars which retard oxidation are contraindicated. Beef, mutton and shell-fish are allowable, but meats rich in gelatine, and fish are to be forbidden. As medicinal treatment the following are especially commended for the nutritive troubles: arseniate of soda, cod liver oil, the golycero-phosphates, hypophosphites, sulphate of quinine. Iron, arsenic and strychnine combat the destruction of the blood globules; while gallic acid, and the iodo-tannic preparations give good results in controlling the albuminuria.

◆

Correspondence.

THE EXPERIENCE OF TWO WOMEN PHYSICIANS WITH SMALL-POX.

BOSTON, February 3, 1894.

MR. EDITOR: — Dr. White's personal experience with small-pox, related in the Boston *Medical and Surgical Journal* recently (January 24, 1894), recalls our own vivid acquaintance with the same disease.

In the summer of 1870, we were visiting hospitals in Paris, being, with Dr. Mary Putnam Jacobi, the only medical women there. We were in good health, and full of enthusiasm about our work, but were also intensely interested in the Franco-Prussian War, which was then in progress. Since the 7th of August, Paris had been declared in a state of siege, and its bombardment was only a question of time.

Small-pox was epidemic in the city, the mortality from the disease averaging about four hundred deaths a week. There seemed to be no public or private precautions taken against its spread, and no special hospitals devoted to the care of its victims. A personal friend of the family with whom we boarded, died of confluent small-pox, and his friends watched with him several nights before his decease.

---

[1] Mercredi Medicale, 1893, No. 51.
[2] Semaine Medicale, 1893, 51.

He had a public funeral in one of the churches to which written invitations were sent, according to the custom there.

Naturally we were free from fear or apprehension of the disease, so that when we decided to follow the service of Dr. Hérard, in the old Hotel Dieu (the new one was not then ready for occupancy) the fact that one of his wards was devoted to small-pox, did not serve to deter us from our plans. We took the precaution to be vaccinated, however, for the first time since infancy. It was hot weather, and it was found months later that the virus had been kept some days, and was probably inert. At all events, the vaccinations did not take, and in consequence we considered ourselves safe from infection.

Our first visit with Dr. Hérard was September 2d. At the close of the regular visit we accompanied him to the small-pox ward, which contained twelve beds, all occupied. The instant we entered the ward, we noticed the peculiar musty, sickening odor, which seemed characteristic of the disease. That day there were no cases of unusual severity, but on later visits, we saw cases both confluent and hæmorrhagic, extremely repulsive to look at, with faces swollen beyond recognition. Stupor or delirium fortunately made these patients partly oblivious to their sufferings. Very little treatment seemed to be given, and in no cases were the faces protected in the slightest degree. Therefore all we gained, was some knowledge of the appearance of the disease in its successive stages.

We had decided to remain in Paris during the siege, under the protection of the American minister. The Republic had been proclaimed September 4th, the city was being provisioned, troops were arriving from the Provinces for the defence of Paris, and were being quartered on the inhabitants. We were well and anxious to stay, when on the 13th of September, there appeared in the papers a peculiarly strong appeal from General Trochu, the Military Governor of Paris, in which he implored all foreigners and those not absolutely needed, to leave the city at once, as the difficulty of providing food would be so great that "useless mouths" must go.

The following day we went to the American Embassy and were advised to leave the city that evening. Realizing that as soon as the city gates were closed, we should be cut off from communication with the outside world, we at last reluctantly resigned ourselves to going in the last train that would be allowed to leave the city. The Prussians were already in Versailles, and the shorter routes to England had been destroyed by blowing up the bridges. Therefore we were obliged to go by the way of Dieppe and Newhaven. Since we were allowed to carry only hand baggage with us, it became necessary to pack and store all our belongings. This, with other matters, kept us very busy during the hours that remained before our departure, so that, when we took our places in the crowded train at six o'clock, we were thoroughly tired out.

We reached Dieppe at one A. M., and drove to the boat in an omnibus. It was three hours before we started, and the wait was very tiresome. The boat was small and uncomfortable, and so overcrowded that it was impossible to find proper accommodation, so we were obliged to lie in cramped positions on seats next the outside rail on deck. The night was damp and raw, and we could not obtain extra coverings, so we alternated with cold and heat all through that wretched night. The passage took seven hours, nearly twice its usual time. We finally landed in Newhaven, about eleven A. M., with excruciating headaches, vertigo and fever, and aching all over. We secured comfortable seats in a compartment of the train in waiting, and bought some biscuit and fruit, as we felt unable to take a breakfast at the hotel near by.

London was reached in about two hours, and we drove at once to the hotel. We retired early, but were burning with fever or in profuse perspiration all night, while our headaches were constant and severe. We had no lumbar pain, however, but a bruised feeling all over. In the morning we wondered that we felt no better, but were inclined to attribute our discomfort to the fatigue and excitement of the few previous days. We felt that quiet and rest for a time would restore us to our wonted health. Neither of us suspected we might be suffering from premonitory symptoms of small-pox.

Throughout the day following our arrival, September 16th, we were never free from chilly sensations and high fever, with a sense of extreme prostration, headache, and complete anorexia. No relief followed the taking of hot baths, hot punch and Dover's powder; indeed, we felt even worse. The following day, all our symptoms became intensified. We remained in bed, and concluded we must be in for something serious.

Up to this time we had done what we could for ourselves, and kept our real condition as far as possible from our friends, but we knew they felt very anxious about us, and so we decided to call a physician.

Accordingly, a note was written to Miss Garrett, M.D. (now Mrs. Garrett-Anderson) the only woman physician in London. She was the only woman graduate of Apothecaries' Hall in London, the doors being closed to other women after she obtained her degree. Later she had taken a degree at the École de Médecine in Paris, being its first woman graduate. We already had a letter of introduction to her, which we enclosed in the note asking her to visit us professionally. She promptly responded to the call, and found us with temperatures of 104° and 105° respectively, with pulses to correspond, but reserved her diagnosis. Cooling draughts and quinine were prescribed, but with little relief.

The next day, September 18th, the temperature had lessened slightly, but the lassitude was still extreme, and there was a peculiar feeling all over, as if one were incased in india rubber half an inch thick. We were obliged to stay in bed all day, too wretched and miserable to care for anything. All through that night, the one who later had the most eruption complained of a peculiar taste in the mouth and throat, with considerable soreness, and both were conscious of an odor which for the first time made us think of "small-pox." The feeling of shot under the skin of the forehead was marked. We mentioned to each other our suspicions that we were suffering from small-pox, and anxiously waited for daylight to confirm the diagnosis. In the morning faces and parts of the body were seen to be covered with blotches like measles, and the fever and discomfort had moderated somewhat.

Naturally our friends were much alarmed, and thought of small-pox at once, as they knew it was in Paris. We persuaded them to keep away until after the doctor's visit. The moment she entered the door she exclaimed, "Why, is it possible you have the measles?" But as she approached nearer, she added, "Oh! I am afraid it is the small-pox." A close inspection proved the correctness of the diagnosis, and then we began to consider what we should do. At that time there was no good small-pox hospital in London, though one was built soon afterward. No hospital would take us, the hotel proprietor was in despair at having such a dreaded disease in his house, and naturally eager to get us away at once, while we were equally eager to depart, but in a quandary where to go. Miss Garrett was full of sympathy, and said she would see what could be done, and meanwhile would send us at once a nurse with directions about our care. Our friends were banished from our room, and all vaccinated as soon as possible.

An hour or two of waiting intervened, when a tap at the door was followed by the entrance of a good, motherly-looking nurse who had received instructions what to do for us. In a short time we were dressed and thickly veiled, put into a cab, and carried to a private house not far away, where we were put into comfortable beds in a large room on the top floor. The occupant of the house had been away on the Continent for some weeks, and the opportunity had been taken to have a house-cleaning. The two upper floors were thoroughly dismantled, with carpets up, so they were in the right condition for our reception. No one was on the floor with us but our good nurse. Antiseptic precautions were instituted at once.

With the exception of our banker, who had been a victim of the disease in Paris, our friends were not allowed to know of our whereabouts, although they were kept acquainted with our progress. We had the best of care, and every reason to be thankful at our good-fortune.

The partial remission of symptoms the day the eruption appeared, was of course, but temporary, and fever appeared with renewed energy that evening. The fever and restlessness caused by the discomfort and excessive itching was so great that the temperature rose again to 105° in one case, and continued at that height several successive days. The eruption rapidly extended over the body, and to the feet which were much swollen and painful. Sleeping-draughts were a necessity, and the feet were wrapped in soothing lotions, kept constantly wet. The other case was milder, though the temperature frequently rose to 104°.

Our room contained two large windows, which were kept open continually, but darkened by heavy curtains, while a constant fire was kept in the open fireplace for ventilation. A feeble light was supplied by a lighted candle placed behind a screen. In this way the light was kept from our faces, and the air was kept out by the manner in which they were treated. Our faces were bathed with a solution of aromatic vinegar, which allayed the itching, then glycerine applied with a soft brush, and finally a covering of soft linen with apertures for the eyes, nose and mouth. This process was repeated frequently, and undoubtedly was of benefit. Every day a large portable tub was wheeled into the room, and each in turn carefully lifted into it and bathed in tepid water containing oatmeal and a disinfectant. This was accomplished by squeezing the water from a sponge over the surface of the body, which was afterwards dried by patting gently with soft warm towels. Then we were wrapped in soft old linen sheets. This daily bath and change of linen was very cooling and refreshing, and added very materially to our comfort. It was supplemented by sponging surfaces where the eruption was thickest p. r. n.

All clothing, bed-linen, and towels were daily placed in a tub, and disinfected with Condy's solution before being sent to a special woman who did no other washing. All books and papers we handled until well, were either burned or disinfected by baking after we had used them. All letters we wrote when convalescent, were also baked before mailing them. No one contracted the disease from us, which was a comfort.

The papules on the face rapidly developed into vesicles, and those on the body followed more slowly. The burning and itching, especially in the face and feet, was intense, and the hands were kept tied up in linen to prevent scratching. The second week the eruption began to dry up, and the swelling and heat to subside.

Our treatment medically was quinine in an effervescing mixture with carbonate of ammonia, sedatives as needed, chiefly chloral or morphine, stimulants, and a nourishing diet. Milk was chiefly depended upon at first on account of the soreness of the mouth and throat. Neither case had trouble with the eyes. Indeed, it looked peculiar to see a clear circle around the eyes free from eruption, as if protected by glasses. The scalp was not so free from invasion, however, and later the hair fell out, but was rapidly renewed.

The milder case was confined to the bed about ten days after the eruption appeared, and the other two weeks, but was forced to return to bed again for three days on account of an unusually severe attack of pleurodynia contracted by sitting too near an open window the first day she sat up. The third week both began to drive out a little, and in three weeks we joined friends in Scotland. Strength returned rapidly; and on our return to London a fortnight or so later, our physician could hardly recognize us. The disease left no marks, only discolored spots that were noticeable for some months, and eventually disappeared entirely.

It was rather remarkable that we had the disease at the same time, the eruption making its appearance on both the same day. We considered it very fortunate, and it did much to keep up our spirits, as we were companions in misery. During convalescence we entertained ourselves by counting the crusts on each other's faces, one having over two hundred and fifty, the other not half as many.

E. F. P. and C. A. P.

METEOROLOGICAL RECORD,

For the week ending January 27, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..21	30.22	29	35	23	63	89	76	N.W.	N.W.	7	7	O.	O.	
M..22	30.06	41	50	32	87	55	71	W.	W.	12	13	C.	C.	
T..23	30.44	34	37	31	65	73	69	N.W.	S.E.	5	5	O.	C.	
W.24	30.10	44	56	32	96	91	94	E.	S.W.	16	28	O.	R.	.08
T..25	30.33	26	31	20	41	53	47	N.W.	N.W.	14	12	C.	C.	.34
F..26	30.54	26	32	19	52	68	60	N.W.	E.	10	21	T.	O.	
S..27	30.05	24	28	19	97	87	92	N.	N.W.	21	5	N.	O.	.80
☞														1.22

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week

RECORD OF MORTALITY

For the Week ending Saturday, January 27, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal Diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,891,306	842	340	15.48	22.20	1.20	.48	9.72
Chicago	1,438,000	327	124	15.60	13.20	1.20	—	6.60
Philadelphia	1,115,562	555	199	9.18	23.40	.54	2.52	4.14
Brooklyn	978,394	—	—	—	—	—	—	—
St. Louis	560,000	—	—	—	—	—	—	—
Boston	487,397	222	65	10.80	26.10	—	—	5.85
Baltimore	500,000	—	—	—	—	—	—	—
Washington	308,431	94	25	12.72	16.96	3.18	1.06	5.30
Cincinnati	305,000	108	—	12.88	22.08	4.60	4.60	2.76
Cleveland	290,000	81	35	8.61	18.45	1.23	1.23	3.69
Pittsburg	263,709	100	39	16.00	17.00	—	.40	.60
Milwaukee	250,000	87	36	20.23	13.09	1.19	2.38	8.33
Nashville	87,754	25	9	—	20.00	—	—	—
Charleston	65,165	25	8	4.00	12.00	—	4.00	—
Portland	40,000	23	5	8.70	4.35	—	4.35	—
Worcester	96,217	39	16	12.80	33.38	—	—	2.56
Fall River	87,411	53	19	7.56	18.90	5.67	—	—
Lowell	87,191	—	—	—	—	—	—	—
Cambridge	77,100	27	9	11.10	18.50	—	—	3.70
Lynn	62,656	17	1	5.88	23.52	—	—	—
Springfield	48,684	7	2	—	14.28	—	—	—
Lawrence	48,355	21	—	14.28	9.52	9.52	4.76	—
New Bedford	45,886	17	6	11.76	11.76	—	—	—
Holyoke	41,278	11	5	18.18	63.63	—	—	9.09
Salem	32,233	11	1	—	9.09	—	—	—
Brockton	32,140	15	3	6.66	33.33	—	—	6.66
Haverhill	31,396	11	4	9.09	27.27	—	—	—
Chelsea	30,264	16	6	18.75	25.00	6.25	—	—
Malden	29,394	7	2	14.28	14.28	—	—	—
Newton	27,556	8	2	25.00	—	—	—	12.50
Fitchburg	27,146	5	1	—	20.00	—	—	—
Taunton	26,972	16	3	6.25	37.50	—	—	—
Gloucester	26,688	10	1	—	—	—	—	—
Waltham	22,058	6	0	16.66	16.66	—	—	—
Quincy	19,642	2	0	—	—	—	—	—
Pittsfield	18,802	5	1	40.00	40.00	20.00	—	20.00
Everett	16,585	4	2	25.00	25.00	—	—	—
Northampton	16,331	3	1	—	33.33	—	—	—
Newburyport	14,073	6	0	—	16.66	—	—	—
Amesbury	10,920	2	1	50.00	—	—	—	50.00

Deaths reported 2,828: under five years of age 975; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 348, acute lung diseases 583, consumption 323, diphtheria and croup 171, typhoid fever 35, diarrhœal diseases 34, measles 31, scarlet fever 22, whooping-cough 19, cerebro-spinal meningitis 16, erysipelas 12, small-pox 6, malarial fever 2.

From measles New York 20, Milwaukee 4, Philadelphia 3, Chicago 2, Worcester and Fall River 1 each. From scarlet fever Boston 6, Chicago 5, New York 4, Pittsburg and Cambridge 2 each, New Bedford, Chelsea and Newton 1 each. From whooping-cough Pittsburgh 4, Boston and Washington 3 each, Philadelphia and Milwaukee 2 each, New York, Cincinnati, Cleveland, Somerville and Taunton 1 each. From cerebro-spinal meningitis Chicago and Worcester 3 each, New York, Philadelphia, Cleveland, Milwaukee, Portland, Lynn, New Bedford, Holyoke, Chelsea and Everett 1 each. From erysipelas Philadelphia 5, New York 4, Boston, Haverhill and Waltham 1 each. From small-pox Chicago 4, New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending January 20th, the death-rate was 23.2. Deaths reported 4,654; acute diseases of the respiratory organs (London) 547, whooping-cough 194, measles 84, diphtheria 74, scarlet fever 46, fever 43, diarrhœa 40, small-pox (Birmingham 6, Bradford 4, Bristol 3, West Ham, Leeds and Hull 1 each) 16.

The death-rates ranged from 15.2 in Halifax to 42.4 in Norwich; Birmingham 29.9, Bradford 22.1, Cardiff 21.4, Gateshead 18.4, Leeds 21.1, Leicester 15.7, Liverpool 26.0, London 23.7, Manchester 21.9, Newcastle-on-Tyne 20.7, Nottingham 18.7, Plymouth 38.0, Portsmouth 16.5, Sheffield 19.1, West Ham 21.0, Wolverhampton 24.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 27, 1894, TO FEBRUARY 2, 1894.

Colonel Joseph R. Smith and **Colonel Bernard J. D. Irwin**, assistant surgeon-generals, U. S. A., are detailed to represent the Medical Department of the Army at the Eleventh International Medical Congress to be held at Rome, Italy, March 29 to April 5, 1894, and will proceed to the place designated at the proper time.

Lieut.-Col. Francis L. Town, deputy surgeon-general, U. S. A., is relieved from duty at Fort Porter, New York, to take effect on the expiration of his present sick leave of absence and will report in person to the commanding general, Department of the Missouri, for temporary duty in the office of the medical director of that department.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING FEBRUARY 3, 1894.

T. H. **Streets**, surgeon, from U. S. S. "Bennington" and to U. S. S. "Detroit."

C. T. **Hibbett**, surgeon, from U. S. S. "Detroit" and to U. S. S. "Bennington."

J. W. **Ross**, surgeon, ordered to the U. S. Receiving-ship "Independence."

F. W. **Olcott**, passed assistant surgeon, ordered to the Naval Hospital, Brooklyn, N. Y.

L. W. **Spratling**, passed assistant surgeon, from Naval Hospital, New York, and wait orders.

SOCIETY NOTICE.

Boston Society for Medical Improvement. – A regular meeting of the Society will be held at the Medical Library, No. 19 Boylston Place, on Monday, February 12, 1894, at 8 o'clock, P. M.

Dr. H. L. Burrell: "The After-treatment of Appendicitis." Discussion opened by Drs. G. W. Gay and M. H. Richardson.

Dr. J. G. Mumford: "Compound Fractures." Discussion opened by Dr. A. T. Cabot.

Directly after the Secretary's report, Dr. W. T. Councilman will show a specimen of "Peritonitis Due to Embolism of the Mesenteric Artery."

Members are requested to show interesting cases and pathological specimens.

John T. Bowen, M.D., *Secretary.*

RECENT DEATHS.

Arthur Ravara, M.D., surgeon to the King of Portugal and to the San José Hospital of Lisbon, died recently from the rupture of an aortic aneurism while he was examining a patient preparatory to operation.

Paul Diday, M.D., one of the leading surgeons in France, died in Lyons, January 8th, aged eighty-three years. He had been a pupil of Dupuytren and was one of the founders of the *Lyon Médical*. He was the author of several books on syphilitic and venereal diseases.

BOOKS AND PAMPHLETS RECEIVED.

The Treatment of Diphtheria. By F. E. Waxham, M.D., Denver, Colo. Reprint. 1893.

How Shall We Make Our Homes Healthy? By Benjamin J. Portugaloff, M.D. Chicago. 1893.

Fifteenth Annual Report of the State Board of Lunacy and Charity of Massachusetts, January, 1894.

Mensuration in the Physical Diagnosis of Pulmonary Phthisis. By George A. Evans, M.D. Reprint. 1893.

Marine sanitäts ordnung, III Bände, Berlin, 1893. Ernst Siegfried Mittler und Sohn. Königliche Hofbuchhandlung.

Some Reasons for the Performance of Circumcision on all Male Infants. By Alex. L. Hodgdon, M.D. Reprint. 1893.

Report of the Kensington Hospital for Women (Non-Sectarian) from October 10, 1892, to October 9, 1893. Philadelphia. 1893.

The Successful Management of Inebriety Without Secrecy in Therapeutics. By C. H. Hughes, M.D., St. Louis. Reprint. 1894.

The Johns Hopkins Hospital Reports. Vol. III, Nos. 7, 8, 9. Report in Gynecology, II. Baltimore: The Johns Hopkins Press. 1894.

Venereal Memoranda, A Manual for the Student and Practitioner. By P. A. Morrow, A.M., M.D. New York: William Wood & Co. 1894.

Transactions of the American Association of Obstetricians and Gynecologists, Vol. VI, for the Year 1893. Philadelphia: Wm. J. Dornan. 1894.

The Modern Climatic Treatment of Invalids with Pulmonary Consumption in Southern California. By P. C. Remondino, M.D. Detroit: George S. Davis. 1893.

Announcement and Catalogue of the National Medical College, Medical Department of the Columbian University, Washington, D. C., for the Seventy-second Session. 1893–1894.

The Necessity of Special Institutions for the Consumptive Poor; The First Step Toward the Complete Eradication of Tuberculosis. By H. Longstreet Taylor, A.M., M.D., St. Paul. Reprint. 1893.

How to Use the Forceps, with an Introductory Account of the Female Pelvis and of the Mechanism of Delivery. By Henry G. Landis, A.M., M.D. Revised and enlarged by Charles H. Bushong, M.D. Illustrated. New York: E. B. Treat. 1894.

Autobiographical Sketches and Personal Recollections. By Geo. T. Angell, President of the American Humane Education Society, the Massachusetts Society for the Prevention of Cruelty to Animals. Boston: The American Humane Education Society. 1894.

A Practical Treatise on Nervous Exhaustion (Neurasthenia), Its Symptoms, Nature, Sequences, Treatment. By George M. Beard, A.M., M.D. Edited with notes and additions by A. D. Rockwell, A.M., M.D. Third edition, enlarged. New York: E. B. Treat. 1894.

Antiseptics in Midwifery. By Robert Bloxall, M.D., Cantab., M.R.C.P., Lond., Assistant Obstetric Physician to, and Lecturer on Practical Midwifery at the Middlesex Hospital; Formerly Physician to the General Lying-In and Samaritan Free Hospital. London: H. K. Lewis. 1894.

A Synopsis of Clinical Surgery during the Service of Samuel H. Pinkerton, M.D., Surgeon to the Holy Cross Hospital; by Franklin A. Meacham, A.B., M.D., Assistant Surgeon to the Holy Cross Hospital, Salt Lake City, Utah, for the Year 1892. Salt Lake City: Tribune Co. 1893.

The Technique of Post-Mortem Examination. By Ludwig Hektoen, M.D., Pathologist to the Cook County Hospital, Chicago; Professor of Pathologic Anatomy in the College of Physicians and Surgeons of Chicago. With forty-one illustrations. Chicago: The W. T. Keener Co. 1894.

Relation d'une Epidémic de Choléra étude clinique et Expérimentale. Par MM. A. Mairet, Professeur de clinique des maladies mentales et nerveuses, et F. J. Bosc, chef de clinique des maladies mentales et nerveuses a la Faculté de Médecine de Montpellier. Avec four Planches et eleven Tracés daus le Texte. Montpellier: Charles Boehm. 1893.

The Relations of Urinary Conditions to Gynecological Surgery. Report of Two Years' Work in Abdominal Surgery at the Kensington Hospital for Women, Philadelphia. Report of a Year's Work in Minor Gynecological Surgery in the Kensington Hospital for Women, Philadelphia. The Causation of the Diseases of Women. By Charles P. Noble, M.D., Philadelphia. Reprints. 1893.

A Clinical Text-book of Medical Diagnosis for Physicians and Students, Based on the most Recent Methods of Examination. By Oswald Vierordt, M.D., Professor of Medicine at the University of Heidelberg. Authorized translation with additions by Francis H. Stuart, A.M., M.D. Third revised edition with one hundred and seventy-eight illustrations, many of which are in colors. Philadelphia: W. B. Saunders. 1894.

Dissections Illustrated; A Graphic Hand-book for Students of Human Anatomy. By C. Gordon Brodie, F.C.R.S., Senior Demonstrator of Anatomy, Middlesex Hospital Medical School; Assistant Surgeon, Northwest London Hospital. With plates drawn and lithographed by Percy Highley. In four parts. Part I. The Upper Limb. With seventeen colored plates two-thirds natural size. Part II. The Lower Limb. With twenty colored plates two-thirds natural size and six diagrams. London and New York: Whittaker & Co. 1894.

Original Articles.

RECENT OBSERVATIONS ON THE FUNCTIONS OF THE THYROID GLAND; AND THE RELATION OF ITS ENLARGEMENT TO GRAVES'S DISEASE; ALSO REMARKS ON THE THERAPEUTIC USE OF SHEEP'S THYROIDS AND OF OTHER ORGANIC EXTRACTS.[1]

BY JAMES J. PUTNAM, M.D.,
Professor of Diseases of the Nervous System, Harvard Medical School.

THE object of this paper is to call attention to the present state of our knowledge as to some of the functions of the thyroid gland, and certain disturbances of nutrition due to its atrophy; and as to the relation of goitre to the nervous symptoms met with in Graves's disease and analogous states. I shall also speak of the therapeutic action of thyroid extracts in conditions other than myxœdema, and as to the use of some other organic extracts as therapeutic agents.

The dramatic history of the discovery of the relation of thyroid disease to myxœdema, cachexia strumiprivi, cretinism, and the so-called fœtal rickets, is now, in its broad outlines, familiar to every physician, so thoroughly has public attention been aroused by the developments of the past few years. As long ago as 1856, Schiff had noticed the fatal effect of thyroidectomy in dogs; and even earlier than this Sir Astley Cooper and one or two other physiologists had made a few experiments in the same line, with varying results. In 1856 Curling described a few cases of sporadic cretinism as occurring in England; and in 1871 Dr. Hilton Fagge described others, and noted that they were characterized by atrophy of the thyroid. In 1874 Sir William Gull read his paper on "The Cretinoid State in Women"; and two years later, Dr. Ord gave a full description of myxœdema, and christened the symptom complex with its present name. He also remarked on the clinical relationship between these cases and those which had been described by Curling and Fagge, and noted that the atrophy of the thyroid made a pathological bond between them.

In 1884 came the remarkable observations of Reverdin, of Geneva, and Kocher, of Berne, who found that the thyroidectomy with which their experience in the goitrous districts of Switzerland had made them familiar, was often followed by a strange cachexia. Kocher at first thought this to be due to laryngeal asphyxia, but Reverdin a few months later recognized it as essentially identical with myxœdema. The flood-gates of physiological research were then opened, and a mass of observations began to pour in, which I have no space even to summarize.[2] Dr. Felix Semon, recognizing the extreme interest of the new discoveries, at once proposed the appointment of a commission of inquiry from the Clinical Society of London, the report of whose labors, finally published as a separate volume in 1888, will always be referred to as a treasure-house of facts upon this subject.

Even before the publication of this report, came the scarcely less valuable review by our own colleagues, Drs. Hun and Prudden, based on one hundred and fifty cases, and giving the details of two thorough and important autopsies. Finally, in the winter of 1891–1892, Mr. Horsley, of London, whose name is identified with the best original research with regard to this matter, published in Virchow's *Denkschrift* and in the *British Medical Journal* (January, 1892), a comprehensive and masterly analysis of all the facts which were at our disposal up to that time, relating to the physiology of the thyroid.

Most of Horsley's conclusions have been confirmed by subsequent research; and it is now accepted by every one that the thyroid is an organ of immense importance for nutrition. A few of his views will, however, now bear revision; and a few important discoveries are to be added.

The history of the therapeutics of myxœdema was sketched anew by Dr. F. C. Shattuck at a recent meeting of the Medical Improvement Society; and I have nothing to add to his interesting remarks except to call attention to the fact that many cases of cretinism have been greatly benefited by thyroid feeding, even those where the disease had existed up to adult life. Two or three of these cases have been under the care of Dr. Osler,[3] of Baltimore, to whom we also owe an investigation into the frequency of sporadic cretinism in America, showing that it is a disease of rare occurrence among us.

It is probable that the thyroid is not, as Horsley thought it was, a hæmapoietic organ of real significance (Gibson [4] and others, and among recent observers, De Quervain [5]).

It is practically certain that the functions of the thyroid are not related to those of the spleen (De Quervain [6]). Later observations have indeed made it more and more probable that it is not safe to regard secondary enlargement of an organ following thyroidectomy as a sign of compensatory activity. This is especially important as regards the pituitary body, since this is probably or possibly related to the thyroid in function. It does frequently enlarge after removal of the thyroid and so does the thyroid sometimes enlarge after removal of the pituitary body; but Vassale and Sacchi,[7] who have been most successful experimenters with regard to the pituitary body, do not believe that the enlargement or the increase of colloid which accompanies it, necessarily means an increase of functional activity.

The interesting experiments by Breisacher [v. Horsley] with regard to the action of animal food in increasing the cachexia from removal of the thyroid have been confirmed, with slight modifications, by De Quervain,[8] in a very recent research.

This latter observer was unable to confirm the statement of Rogowitsch, Capobianco, and others [9] that constant demonstrable changes occur in the central nervous system after thyroidectomy.

It is not impossible that a repetition of the fatigue experiments of Professor Hodge, of Clarke University, would show that anatomical changes could be more easily induced in animals suffering from cachexia than in normal animals, and that, for this reason, anatomical changes would sometimes be present which at other times were not found. Piseuti [10] has recently observed the formation of small cavities, apparently of vascular origin, in the spinal cord of dogs who had survived thyroidectomy for a number of months.

---

[1] Read before the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society at the meeting, December 20th.

[2] See a review, with original observations, by Dr. F. P. Kinnicutt, New York Medical Record, xliv, p. 449.

[3] Transactions of the Association of American Physicians, 1893.

[4] British Medical Journal, 1893, i, p. 14.

[5] Virchow's Archiv, 1893, Bd. 133, Heft 3.

[6] See also Gley and other authors cited by him in the Arch. de Phys. n. et p., 1894, p. 207.

[7] Arch. Ital. de Biol., 1893, t. xviii, p. 385.

[8] Virchow's Archiv, 1893, Bd. 133, Heft 3.

[9] See a paper by the writer, on cases of myxœdema, etc., in the American Journal of Medical Sciences for September, 1893.

[10] Cited by Gley, Arch. de Phys. n. et p., 1894, p. 187.

The thyroid gland is found in all vertebrate animals.[11] It is formed by an invagination of the pharyngeal wall, and is believed by most embryologists to serve as a digestive gland, even in the lowest animals where it exists. I mention this point because a recent writer[12] has proposed the view that its functions are, in a broad sense, respiratory, and that this is indicated by its anatomical relations to the branchial clefts. It is supposed by him that its secretion in some way assists the oxygenation of the tissues. I am not able to say whether there is any real foundation for this theory or not, but Poehl[13] who has for several years been studying the chemistry and physiology of spermin, finds that this, too, has a powerful influence on oxidation, so that it is a constituent, not only of Brown-Séquard's testicular emulsion, but also of many glands and organs, and among them the thyroid.

The gland shows itself at an early period in the human embryo and, according to Horsley, it probably begins its secretory functions by the sixth or seventh month of fœtal life. It is not known upon what principle the efficiency of the secretion depends; and the fact that it remains active after it has passed through the walls of the stomach, as well as after precipitation by alcohol, has not as yet cleared up the mystery, though it indicates that the active principle is a sort of ferment. The adult gland is made up of spaces containing colloid material and lined with epithelium. It is, however, doubtful whether the colloid is more than a vehicle for some more active agent. Certainly its chemical structure may change somewhat without its efficiency being destroyed. It has been clearly shown that when the gland is injured[14] or undergoes such changes as are seen in Graves's disease and even in phthisis[15] there is a strong tendency to a modification of the gland-structure, with arborescent arrangement of the tissue, higher, cubical epithelium and without colloid.[16] Yet myxœdema does not necessarily or even usually come on under these circumstances.

We cannot say with confidence that the gland thus altered remains in all respects as efficient as before, but even a very small part of an altered goitre is enough to ward off cachexia of serious amount. A number of cases are on record, one of which was observed by myself, where goitre with nervous symptoms passed over into myxœdema. It is a curious fact that the outbreak of the myxœdema, in my case, was attended by an enlargement and hardening of the altered thyroid, and that these peculiarities diminished during improvement, and increased again during a relapse.

Greenfield,[17] who has recently studied the subject, regards this tendency of the gland to change its structure in Graves's disease as an evidence of increased glandular activity in that affection. But in view of the fact that a very similar, if not exactly the same change occurs as a result of injury and disease (phthisis) the assumption cannot be accepted as certain. The fact that this change occurs after removal of part of the gland (Halstead) suggests that it means increased activity, but in Canizzero's experiments the gland was injured but not mutilated, yet a similar change occurred.

Another fact, which is important in this same connection, is the following: It was at first thought that rabbits were less susceptible than the carnivorous animals to the bad effects of thyroidectomy; but the researches of Gley showed that their survival after operation was due to the fact that in these animals (and, as it seems, in many others as well), besides the main body of the gland, accessory glands or "glandules" are present which had commonly been overlooked when the main body of the gland was removed. The literature of the "glandules" is already a large one, and I will here refer to only one point concerning them. These glandules have an embryonic structure; and although they grow larger after removal of the thyroid and to some extent seem to ward off the threatening cachexia, yet their structure does not necessarily change to that of the adult gland.[18]

If this observation is correct, the statement which has been made that the embryonic nodules found even in the adult human thyroid (Wölfler) develop under certain conditions into a more highly differentiated structure, may need revision.

Although it has been proved that the myxœdematous cachexia does not occur after partial thyroidectomy, provided about one-quarter of the gland is left behind, yet it is not to be assumed that even this incomplete removal of the gland is of indifference as regards the nutrition of the organs and tissues of the body. This is a subject of practical interest, and some important experimental evidence has been brought forward in regard to it since Horsley's paper was written.

It has been found that the preservation of the glandules of Gley, though it usually prevents the worst forms of cachexia, does not prevent the gradual development of a series of changes affecting the bones, the skin, the ovaries, and many other organs, especially if the animals operated on are young (Hofmeister,[19] De Quervain). Gley and Rochon-Duvigneaud[20] have recently studied with care a series of changes occurring in the eye, under these same conditions. The practical question is this, To what extent must the thyroid be mutilated, or atrophied, or diseased before some of the nutritive effects due to lack of its influence begin to make their appearance? A partial answer to this question is perhaps furnished by the fact that there are disturbances in nutrition, not identical with myxœdema but presenting one or another symptom analogous to those met with in that disease, for which thyroid treatment seems to be useful. It is needless to say that this reasoning should be used only with caution, and that no positive conclusions can be drawn as to the real value of these preparations, either as means of treatment or as pointing to a deficiency of the normal thyroid secretion.

The first person to use the thyroid of animals for other affections than myxœdema, so far as I know, was Dr. Barron of Liverpool, who, noting the fact which must have impressed every one, that patients recovering from myxœdema frequently lose weight with extreme rapidity, the loss going even beyond the limit of health in some cases, suggested the employment of thyroids in ordinary obesity. I am not aware whether he has continued his investigations or not, but in a private letter, received in May, 1893, he stated that he had used the treatment in five cases, and in three of them with marked effect.

---

[11] See W. K. Brooks, Johns Hopkins Bulletin, May, 1893.

[12] Andriezen: British Medical Journal, 1893, ii, p. 678.

[13] Berl. Kl. W.schr. 1893, No. 36.

[14] Halstead and Welch: Discussion on Myxœdema, Transactions Association of American Physicians, 1893.
Canizzero: Deutsche Med. Woch., 1892, p. 184.

[15] Defaucamberge, cited by Horsley, loc. cit.

[16] Greenfield (British Medical Journal, December 9, 1893) says that the secretion in exophthalmic goitre sometimes becomes mucinoid in character. He assumes that the disappearance of the colloid is due to more active absorption accompanying active secretion.
Putnam: The Treatment of Graves's Disease by Thyroidectomy, Journal of Nervous and Mental Diseases, December, 1892.

[17] Greenfield: British Medical Journal, December 9, 1893. See also Stewart and Gibson: British Medical Journal, 1893, ii, p. 676.

[18] See discussion between Gley and Moussu, Comptes Rendus, Société de Biologie, 1893.

[19] Fortschritte der Med., 1892, p. 81.

[20] Arch. de Phys. n. et p., 1894, p. 101.

Acting on this suggestion, I have tried the same treatment in several cases during the past year, with the following results: One patient lost 33 pounds in three months, falling from 270 to 237, but here the influence of the treatment seemed to cease. When it was suspended for a month he regained seven pounds, which he again lost on resuming the treatment, but I have not been able to reduce his weight below 237 pounds even by giving fifteen grains of the thyroid daily. No change was made in his diet or habits. His general health showed a marked gain during the thyroid treatment.

A female patient, treated by Dr. Coggeshall, at the Boston Dispensary, lost 47 pounds in four months.

On the other hand, a female patient of my brother, Dr. C. P. Putnam, who weighed 240 pounds at the beginning of the treatment, after losing five pounds the first week, seemed to be no longer affected; and I have had three or four other patients in whom only a temporary loss of weight (up to fourteen pounds in one case), or none at all, has occurred. Possibly, larger doses might have had more effect.

It seems clear from the many experiments which have now been tried, that healthy persons are not so easily affected in an injurious way by the thyroid treatment, though certain symptoms, especially an increase in the pulse-rate, occur with considerable regularity.[21] It would seem that we do not yet know the conditions which make one person a suitable subject for this treatment and another not so. It will be interesting if it turns out that the loss of weight, even when it occurs, cannot be made to go on indefinitely.

Another therapeutic use of thyroid preparations is in the treatment of diseases of the skin, especially in psoriasis, eczema, and xeroderma. The first of these cases was brought forward by Dr. Byrom Bramwell at the annual meeting of the British Medical Association, August, 1893;[22] and the photographs which he there showed were very impressive. Unfortunately, one of these cases afterwards relapsed, and not all the more recent observers have been equally successful, even in their primary results. Dr. Hartley[23] obtained favorable effects, and Dr. Arthur T. Davis[24] likewise, while Talfourd Jones[25] experimented on a case of psoriasis, with the apparent result of making the disease spread. Lesley Phillips[26] obtained improvement in a case of xeroderma but none in three cases of psoriasis and one of eczema. It may turn out that the remedy is useful only in a certain class of these cases, or that it acts indirectly by exerting a psychical influence.

The history of therapeutics shows that new remedies sometimes have a mysteriously good effect. It is highly probable that these effects do not occur through mere coincidence, and are not wholly to be explained by the assumption that the most favorable results are the first to be made public. The researches of the past few years have taught us that psychical influences can be counted upon to affect the nutrition to a degree formerly not dreamed of, and the effects of the new remedies must be studied anew from this standpoint. It is noteworthy that eczema has been favorably influenced by hypnotism pure and simple, and that good results have followed injections of testicular fluid in eczema, leucoderma, icthyosis.[27] Eccles[28] has used spermin in similar cases with favorable effects.

Finally, Vermehren, of Copenhagen, has made an interesting series of experiments with thyroid preparation, in various conditions of impaired nutrition, with the special view of testing their action on some of the changes of old age.[29] He first treated three cases of myxœdema with thyroids, and gave also measured quantities of food, and followed the urea excretion. This increased in the course of the first five days in all three cases, finally reaching twice or three times the amount noted for the period before the experiments were begun. In one case it then remained at the maximal point during the continuance of the treatment, so long as the experiments lasted. In the other two cases it fell rapidly, after the first rise, but in one of these it rose again at a later time. A small part of this increased excretion of urea was found to be probably referable to an increased absorption from the intestine. The patients also lost fat largely, but the rate of loss was not estimated.

The non-myxœdematous patients experimented on were: (1) A boy of seven years, with fracture of the tibia; (2) a girl of seven, greatly emaciated and perhaps infected with tuberculosis; (3) a woman of twenty-eight, with chlorosis and gastric catarrh; (4) a man of fifty-two, but very old for his years, with chronic alcoholism; (5) a man of sixty, also old for his years, with chronic bronchitis; (6) a man of sixty-two, with varicose ulceration of the leg.

The study of the urinary excretion seemed to the author to warrant the conclusion that in the cases of the young persons the only positive effect of the thyroid treatment was a moderate diuresis, while with the elderly patients changes occurred like those seen in myxœdema, though to a less degree. It is obvious that more experiments are needed before this conclusion can be accepted as of general significance; but it is certain that slight degrees of myxœdema occurring in the period of involution are liable to be overlooked. I have recently observed and shown a patient[30] whose case was perfectly clear on close study, but whose appearance alone would not have attracted notice as abnormal. The case of an elderly gentleman recently described by Dr. F. C. Shattuck, is important in this connection, and not less so for illustrating the liability to the persistence of the ill-effects of thyroid medication, — when such effects occur at all — long after the treatment has been stopped.

THERAPEUTIC ACTION OF OTHER ORGANIC EXTRACTS.

It was impossible that the wonderful discoveries with regard to the effects of thyroid extracts in myxœdema should have failed to renew the interest in the use of the other organic extracts (of testicle, brain, spinal cord, etc.) suggested by Brown-Séquard and D'Arsonval,[31] by Babes,[32] and by Althaus.[33]

---

[21] See, among other papers, Greenfield's Bradshaw Lecture, British Medical Journal, December 9, 1893.

[22] British Medical Journal.

[23] Ibid., 1894, vol. ii, p. 764.

[24] Ibid., p. 474.

[25] Ibid., 1894, ii.

[26] Ibid., November, 1893.

[27] Monnet: Journal of Cutaneous and Genito-Urinary Diseases, vol. ix, 1893.

[28] British Medical Journal, 1893, vol. ii, 474.

[29] Stoffwechseluntersuchungen nach Behandlung mit Glandul. Thyroidea an Individuen mit u. ohne Myxœdema, Deutsche Med. Woch., 1894. See also, in this connection, Ord and White, British Medical Journal, July 29 and December 9, 1893.

[30] Boston Medical and Surgical Journal (Society for Medical Improvement), 1894.

The subject is large enough for a whole evening's discussion, and I cannot pretend to do it justice here. The many observers who have obtained good results from these remedies bring forward an astounding and impressive array of facts in support of their view. Poehl[34] shows that similar results may be obtained with his *spermin*, a definite compound obtained from the testicles and the ovaries, and from other glands as well, and adduces evidence that a part of these results are due to increased oxidation occurring under special conditions. It is obvious that all these observations are not to be treated with ridicule, and especially not from an *a priori* standpoint.

What one may and must say, however, is this, that the case for testiculine and cerebrine and myeline in neurasthenia and tabes, and the like, rests on a wholly different basis from that of the case for the use of thyroid in myxœdema. It is not as if we were attempting to cure by injections of spermatic fluid a series of clear and invariable results following castration, though this would be a highly interesting and important experiment. It is a much more difficult matter to decide whether the improvement which takes place in various diseases, even diseases characterized by gross structural changes, like locomotor ataxia, is due to the remedy which has been given.

Explain the fact as we may, the value of all but the clearest therapeutic experiments is enormously vitiated by the fact that mental influences which we cannot gauge are capable of profoundly affecting the result. The powerful phantom of suggestion stands behind the physician's chair, unseen both by him and by the patient, and the influence of the unwelcome intruder is often increased by the very efforts that are made to exorcise him. Althaus, the latest experimenter, recognizes this general fact, but thinks that his observations are free from suspicion on account of the intelligence and mental balance of his patients, and because no attempt was made to impress their imagination. But, the very use of this reasoning indicates a failure to grasp the true significance of the discoveries of the past few years as regards the relation of psychical influences to nutrition. It is not necessary that the patient's imagination should be impressed, in order that results may be produced due to what — for lack of a better name — we must call "suggestion." In hypnotic suggestion the imagination can hardly be said to enter as a factor at all; and even in the many forms of waking suggestion, there is often no conscious stimulation of the imagination. It is, of course, not always easy to say why one drug or treatment should have a markedly greater effect than another; but two causes suggest themselves as often effective. One is the influence of the physician's own feeling of hope or interest, which he may try in vain to conceal,[35] and by which the patient may easily be impressed without being himself aware of the fact; the other is the influence of an interest previously stored in the patient's mind by hearing or reading of the remedy or the method, but perhaps wholly forgotten so far as conscious memory is concerned. The phenomena of "crystal vision," and a host of kindred facts show how potent such "forgotten" cerebral impressions may continue to be. Within certain limits these influences would be all the more active if the patient was intelligent and a person of wide reading and quick instincts of observation.

The admissibility, to say the least, of this explanation of the action of injections of organic extracts is shown by the success which has attended the substitution, under certain precautions, of inert fluids for the testicular or nerve extracts. A large number of control experiments of this sort have been made by other observers,[36] and one or two by myself.

One general fact is noteworthy in connection with this branch of the subject, and that is that cures of tabes or locomotor ataxia are perhaps more numerous than any others except neurasthenia. It is, now, well known — in spite of Charcot's "Quand on guérira le tabes it fera chaud"[37] — that amelioration of some of the symptoms of locomotor ataxia has been brought about, here and there, by several different remedies, such as suspension, injections of phosphate of sodium, and by hypnotism (Moll) as well as by the organic extracts. Moreover, it was noticed long ago, by Westphal and his colleagues, that in cases when the lesions of tabes were combined with those of cerebral degeneration, the ataxia of motion was apt to be much less prominent than where the mental condition was sound. Finally, it is well known that the symptom of pain is pre-eminently susceptible to hypnotic and to waking suggestion; and that persons in a state of somnambulism exhibit an unusual fineness of muscular sense, or sense of position.

It is admissible, I think (though, of course, not obligatory), to read the significance of these facts as follows: that patients with locomotor ataxia are better subjects for psychical treatment than patients with many other analogous forms of disease, because (1) their pain is susceptible of relief in this way, and (2) the aggravation of their ataxia coming from misdirected conscious efforts can be relieved by influences which shunt out the consciousness of their disability in a measure. Perhaps the relief of these symptoms tends also towards a real nutritional improvement in the nerve-centres. Certainly, the reverse is often true, namely, that organic lesions are unfavorably affected by the influence of the symptoms to which they give rise.

Locomotor ataxia seems, again, to be one of those affections where the symptoms may subside in spite of the persistence of the lesions, provided (probably) that the disease is not actually progressing. The important case, with autopsy, by F. Schultze[38] published in 1882, affords strong evidence for this view.

My own experience with the testicular and cerebral extracts extended over about a year, during which time I used the injections in a good many cases, but only in nine or ten with a persistence to justify a use of them for clinical inferences. These cases comprise three of locomotor ataxia, and six of what I may call, with sufficient accuracy, neurasthenia. Besides these

---

[31] Arch. Physiol. norm. et path., for the past three years; Comptes Rendus Soc. de Biol.; British Medical Journal, June, 1893, etc.

[32] Constantin Paul, Soc. de Thérapeutique, Session of February 24, 1892.

[33] Lancet, December 2, 1893.

[34] Berl. klin. Woch., 1891 and 1893.

[35] The observations on "muscle-reading" should be borne in mind in this connection.

[36] Massalongo: Le Injezioni di Liquids Testic. di Brown-Séquard, etc., un Nuovo Capitolo di Therapeutica Suggestiva. Riforma Med., February, 1893.
Stockwell: Medical News, August 26, 1893.

[37] Quoted by Althaus, loc. cit.

[38] Zur Frage v.d. Heilbarkeit der Tabes, Arch. für Psych. u. N. heilk., vol. xii, p. 232.

I have the notes of the treatment of a case of chronic myelitis which Dr. Coggeshall kindly allows me to report with the rest. I have also, as a control experiment, treated, for about a month, a case of locomotor ataxia by the injection of a simple mixture of glycerine and water. During part of the time I used testicular fluid obtained from Paris through the kindness of Dr. Brown-Séquard, but the greater part of the extracts were made at the Pasteur Institute of New York. The habitual dose was about two or three grammes. In their most recent publications Brown-Séquard and D'Arsonval advocate a dose larger than this.

The summary of the results of my own experience is as follows: In one of the tabetic cases an apparent improvement was shown, not only in a most gratifying general gain (by relief from pains and increase in strength), but also by the apparent cure of one of the gastric crises. The subsequent history of this patient is, however, very significant. At a later period injections of glycerine and water seemed, also, to help him very much, but after this even testiculine failed to prevent a rapid prostration. Another tabetic patient who was treated with testiculine for about a year, with gain as regards relief of pain and general sense of well-being, was attacked with tubercular laryngitis towards the end of this period, and shortly afterward died. This is noteworthy because Dr. Brown-Séquard has claimed that tuberculosis also is favorably influenced by the remedy. The third patient thought his pain relieved, but there was no marked or permanent improvement in the course of two or three months of treatment.

In Dr. Coggeshall's case of chronic myelitis, the patient received three injections of three to four grammes each, of testiculine, every week, and at the end of seven weeks had gained greatly in every respect. In this case there was a history of syphilitic infection fifteen years before, and the final symptoms were of nine years' duration. Under the injections the improvement began at the end of two weeks. After five weeks of treatment there was a marked gain in power of muscular endurance, a gain of weight of four pounds, an increase of half an inch in the girth of the calves, and of one inch in the girth of the thighs. The grasp, as measured by the dynamometer, increased from 60 to 110. Unfortunately, even while the treatment was still in progress, the patient began to relapse, and had soon gone back nearly or quite to his earlier state.

As an offset to these cases, I will briefly report the case of tabes treated by injections of glycerine and water. The patient was a married woman about thirty years old, and there was reason to think that she had been inoculated with syphilis by her husband. The tabetic symptoms, which were of several years' standing, consisted in severe characteristic pains; ataxia of both arms and legs; Argyle-Robertson pupils, with irregularity in outline; loss of the knee-jerk; and impairment of control of the bladder. I had intended to treat her with testicular fluid, and gave one injection for that purpose. At the next visit, however, happening to be out of the fluid, and not wishing to disappoint her, I gave an injection of glycerine and water. At the next visit she was better, and so I thought I would continue the glycerine and water, *experimenti causâ.* This is now two months ago, and she has continued steadily to improve in most respects. The ataxia of the hands is no better, but the gait has improved so much that, whereas at first she had to bring a companion with her, she now comes alone. The pains, also, have left her, and in her general health and feeling there is a distinct gain.[39]

Of the six neurasthenic patients who remained under treatment long enough to make their histories of value, three were men, three women.

Of the men, one was a gentleman past middle life, eminent for scientific training and powers of observation, who had been for some little time in a nervously debilitated condition, owing to stress of work and other causes. The injections were begun by Brown-Séquard, and continued for a time by me, eventually by himself. The treatment was marked by steady improvement, and ended in complete recovery.

The second case was that of a typically neurasthenic patient, an intelligent physician, rather below middle life, and of good nutrition. The symptoms consisted mainly in an incapacity for application without great mental effort and distress, so that steady work, especially of a literary kind, was well-nigh impossible. Temporary improvement of a very marked sort occurred during the first week of the treatment, and recurred to some extent when the treatment was resumed after an interval of cessation. In the end, however, in spite of thorough and persistent efforts, no permanent benefit was obtained.

With both of these cases one interesting symptom showed itself a few times, when the treatment was first begun, namely, a tendency to erections on the night following the injections. This has been noted also by other observers, but is not regarded as due to the specific character of the fluid, and does not, it would seem, imply that the treatment is especially effective against impotence. In one case of this sort, of purely neurasthenic character, a few injections had no effect.

The third case was that of a young man in a typically neurasthenic state, with morbid fears and marked loss of endurance, due, apparently, to sunstroke. The improvement was steady, but as it had begun before the injections were used, under the influence of encouragement, electricity, etc., and continued after the cessation of the injections at the same rate as before, I did not feel that a large share of the result was to be ascribed to them.

The first of the female cases was that of a young girl with infrequent attacks of epilepsy, and great debility. The improvement during the use of the injections was very great, as regards the debility. The fits were too infrequent to warrant conclusions about them.

The second case was that of a lady past middle life, in a condition of slight mental deterioration of unknown origin. The use of the injections, which were faithfully given for many weeks, afforded her encouragement, but brought no real improvement.

The third patient was a woman with mild hysteria, or neurasthenia with hysteroid symptoms of sensory character. Not many injections were given, but after each one she felt distinctly better. In this case the gain was undoubted, but a similar gain and one equally great followed each of many applications of static electricity, and I was inclined to attribute it in both cases to the encouragement attendant on systematic treatment.

I do not maintain that these few observations are in the least conclusive in either direction; but while it is true that all which has been claimed for the organic extracts may have been claimed with justice, yet it should not be forgotten that the claims of hypnotism in similar lines are equally far-reaching, and that what hypnotic suggestion can accomplish it is also possible for waking suggestion to accomplish, under sufficiently favorable conditions.

---

[39] Some months have passed since this statement was written, but I have not seen the patient this winter, and do not know her later history.

I will now ask your attention to the consideration of another class of affections associated with diseases of the thyroid, those namely, of which Graves's disease may be taken as an extreme type.

This subject is not yet ripe enough for definite conclusions; and a discussion of the points involved, to be adequate, would necessarily be long. I shall therefore content myself with referring to a few prominent considerations.

In the first place, What is the probable relationship of goitre to the other symptoms of Graves's disease? The following answers, no one of which seem to me wholly satisfactory, have been offered in reply to this question:

(*a*) Graves's disease is made up of a collection of conditions, part of which are due to the irritation of nerves ramifying in the enlarged thyroid or lying near it, while part are due to an altered thyroid secretion, which acts as a poison. The cardiac symptoms may also be in part explained by disturbance of respiration, as in ordinary goitre.

(*b*) The whole symptom-complex of Graves's disease is of toxic origin, and due, directly or indirectly, to an increased amount of thyroid secretion or an alteration of its quality.

(*c*) Thyroid enlargement has no causal relation to the other symptoms of Graves's disease, but like them is due to a disturbance of the nervous system, the exact seat of which is unknown, but which probably consists mainly in a disturbance of some of the functions of the medulla-oblongata.

(*d*) Finally, the enlargement of the thyroid may be partly a cause, partly a symptom of the Graves's disease complex.

Without attempting to take a positive position in favor of either of these views I will call your attention to a few salient facts.

(1) Quite a large number of cases have now been published in which the partial removal of the enlarged thyroid has led to great improvement and even cure of Graves's disease. I have recently collected fifty-one cases of this sort, in all but a few of which, substantial improvement was obtained by operation. Since I made my collection still others have been reported.[40] At the same time, the results have not been uniformly good. A case which I have carefully followed was operated on by Dr. J. C. Warren nearly a year ago, and of late even the remnant of the thyroid has nearly disappeared. Nevertheless, the improvement in the patient's condition, though satisfactory in some respects, has not been marked by any permanent change in the exophthalmus or the tachycardia.

(2) Although typical Graves's disease is not common in goitrous districts, yet it is common for patients with ordinary goitre to suffer from some of the symptoms of Graves's disease, especially dyspnœa, palpitation and dysphagia. (Mueller,[41] Maude, Wette,[42] Schranz,[43] etc.) It is in fact for these symptoms that patients with goitre usually present themselves for operation, and it is not difficult to give a fairly satisfactory explanation (Wette) of the way in which the enlargement of the thyroid might lead to them. The following conditions are often met with: (*a*) Patients with large thyroids, without other symptoms of any kind; (*b*) patients with large thyroids and symptoms referable to the respiration and pulse. Occasionally slowing of the pulse is seen (Wette); (*c*) patients with these symptoms, and in addition, perhaps, exophthalmus and some general nervous disturbance; (*d*) the same, with the addition and other disturbances frequently met with in connection with Graves's disease.

(3) Some of the symptoms of Graves's disease are occasionally excited by some cause apparently wholly independent of the thyroid. This is true, for example, of exophthalmus, which seems to be sometimes due to disease in the nasal cavity and to sympathetic irritation.

(4) Graves's disease sometimes comes on with great rapidity under emotional excitement, so rapidly that it hardly seems possible that the thyroid secretion should have become increased, although it might have become altered in quality.

(5) There is no good reason for characterizing Graves's disease as a cachexia.

(6) The Graves's disease complex strongly suggests the symptoms met with in conditions of extreme excitement, as in fear or in anger, that is, it occurs as a quasi-physiological complex.

(7) Operations on goitres are sometimes followed by sudden death or by extreme disturbance of the heart and respiration; and no satisfactory explanation for this has yet been given, though several of great interest and importance have been suggested. One that has not been suggested, so far as I know, and which may be worth considering is, that if a large amount of thyroid secretion is poured out from the cut surface of the gland into an open wound it must be rapidly absorbed. Against this view, however, is the fact that these serious symptoms do not always occur.

(8) Improvement may be brought about in cases of Graves's disease by various influences, both general and reflex, tending to quiet a disturbed vascular excitement of the gland or of the heart.

(9) The symptoms of Graves's disease bear a certain resemblance to the nervous symptoms of the first stage of cachexia strumipriva. But this resemblance is not a close one, nor is the contrast which has been suggested as between myxœdema and Graves's disease, more than superficial.

(10) Although the histological characters of the enlarged gland in Graves's disease are altered, and the secretion of colloid is apparently deficient, yet the removal of the greater part of such a gland does not lead to myxœdema.

(11) On the other hand, myxœdema occasionally follows Graves's disease in the same patient, or the two diseases are seen in different members of the same family; and in the same family ordinary goitre may be met with.

We have no right to assume that goitre was the original cause of the symptoms which are cured through its removal.

The recent view that the symptoms of Graves's disease are due to excess of thyroid secretion, although supported by some evidence, has not been fully established, and is strongly controverted by a recent case in which the disease was cured by sheep thyroid taken by the stomach.[44]

---

[40] Mainly collected by Mœbius (Schmidt's Jahrb., 1893). See also Maude: Lancet, 1893, ii; Freiberg: Medical News, August 26, 1893.

[41] Deutsches Arch. für klin. Med., 1893.

[42] Arch. für klin. Chir., 1892, vol. 44.

[43] Ibid., 1866, vol. 34.

◆

THREE CASES OF SALPINGITIS OF UNUSUAL EXTENT.[1]

BY MAURICE H. RICHARDSON, M.D.

I. Double Pyo-Salpinx of Tubercular Origin; Removal; Recovery.
II. Double Pyo-Salpinx, Probably Tubercular; Removal; Local Peritonitis; Recovery.
III. Double Pyo-Salpinx of Septic Origin; Removal; Death.

The following cases are unusual because of the extraordinary size of the tubes. They are interesting also from their etiology. In the first case the question of diagnosis was a conspicuous feature; the tumors, from their size and apparent solidity, with their intimate connection with the uterus, having deceived every one who examined them. Apparently the growth was a lobulated fibroid. The diagnosis seemed so clear that a sound was not put into the uterus; yet it does not follow that because a uterine sound does not enter an abnormal distance that the uterus is not enlarged. In the second case the diagnosis was easy. The source of the trouble, however, was not so clear. It was impossible to exclude a tubercular element in this case. The possibility of an infection through the uterus was also considered. Whatever may have been the cause in this instance, the great size of the tubes, their outline and their situation made the case one of unusual interest. In the third case a history of a direct infection through the vagina and uterus made the etiology more positive. The methods used and their results justify certain conclusions of value to me in the future management of similar cases.

Case I. N. Q., aged twenty-four, single. Entered the Massachusetts General Hospital July 5, 1892. There was a family history of consumption. The patient has never been sick. One year ago she began to have pain in the back, which of late has been less severe than at the first. For some time she has noticed a swelling in the lower abdomen on the right side. Of late the pains have been referred to the thighs and have been sharp and shooting. Catamenia regular until last month, when they were absent. She had always had dysmenorrhœa. There has been a slight vaginal discharge. She has lost thirty pounds in weight in the last year. Her appetite is good. Urine normal. She is not confined to the bed.

Below the umbilicus the abdomen was enlarged, and contained a mass about the size of a six months' fœtus, with two prominent tumors. The mass of both tumors was somewhat to the right of the median line and was slightly tender and movable. The uterus moved with the movements of the tumor. The uterine sound was not passed. A large mass could be felt in the posterior cul-de-sac. She was examined by several of the staff, and the diagnosis of a uterine fibroid was made. This case was carefully studied until the 15th of July, when a median laparotomy was performed. As soon as the abdominal pressure was relieved by delivery of the tumors, both stood upright in the wound, presenting the very extraordinary appearance of two convoluted masses, perfectly symmetrical, attached one to each cornu of the uterus, like enormous spiral horns. Both tumors extended deep into the pelvis and were attached by adhesions so easily separated that the continuity of the tubal wall was not broken. The peritoneum was studded with miliary tubercles; — tubercular salpingitis was evident. The patient made an uninterrupted recovery. A small portion of the omentum was removed for microscopic examination.

Dr. Mallory's report is as follows: Nodules miliary tubercles. The tubes are eighteen and nineteen centimetres in length, circumference twenty-four centimetres each, weight *one and one-half pounds each.* Thin walls filled with thin, greenish-yellow pus; peritoneal surface studded with gray miliary tubercles.

The patient came to the hospital to have this operation performed so that she could get married. I dare say that she has carried out this intention. This case is an extraordinary one from the great size of the tumors, and is interesting from the difficulty met with in diagnosis and from the glaring error made by every one. The necessity for the operation was apparent, even with the incorrect diagnosis of fibroid. The shape of the tumors was characteristic of the large dilatations of the Fallopian tubes. The great lengthening of the tube which accompanies the increase in lumen gives a spiral shape to the tumor. This appearance was well marked in the other cases. As a rule the distal end of the tube becomes rounded and projects into the pelvis, where it becomes adherent. In the present instance the enormous double enlargement was so great that the pelvis could not hold the mass. The tumors were not so deeply attached and firmly adherent as in Cases II and III. Separation was therefore accomplished so easily that no fluid escaped.

Case II. Massachusetts General Hospital, August 26, 1893. Eunice G., aged twenty-six, married five years ago, has always been well. One miscarriage four years ago. Catamenia have been irregular, several periods having been missed without pregnancy. Four years ago, after being sick in bed with pain in the right side, the doctor lanced an abscess in the vagina. A year later a lump was noticed in the right side of the pelvis which has lasted ever since. Two weeks before entrance, she was taken with chills, fever and great general tenderness.

General condition poor; facies "peritoneal" and anxious. Marked swelling in the lower abdomen over right tube, with increased resistance and ill-defined dulness. Great tenderness at this point; whole abdomen somewhat tender. Constitutional symptoms severe. By vagina a bulging mass was felt on both sides of the uterus, which was firmly fixed in the centre.

The question of supra-pubic operation presented itself. The fluctuating tumor felt by the vagina invited drainage in that direction; but the unsatisfactory results that follow vaginal and rectal drainage in pelvic abscesses; the brilliant recoveries which take place after abdominal section, with the immobility and sharp definition of the tumor that presented in the abdomen, decided me to take the abdominal route.

In the extensive tubal disease found in this case abdominal section is much better than vaginal drainage, in my experience. Recovery is much more rapid and complete. Moreover the mortality is no greater, considering the complications that may attend the prolonged convalescence of the latter method, the insufficiency of the drainage at times, and the not infrequent involvement of the bladder. To have seen a few women slowly waste away and die after the failure of rectal and vaginal incisions, to have seen the greatly increased dangers and difficulties of the abdominal operation after the failure of the vaginal, to have watched the progress of intestinal, vesical and other fistulæ — to have seen a few of these deplorable conditions, makes one hesitate in adopting the so-called safe operation of dependent (always septic) drainage. Not that vaginal drainage should never be employed. It can do no harm when an abscess is clearly pointing, for, by the supra-pubic, rectum drainage will have to be established, and probably vaginal also. But in conditions in which complete extirpation of the dilated tubes and their contents is possible, there is no argument of weight in favor of the vaginal, much less the rectal incision.

---

[1] Read before the Obstetrical Society of Boston, December 9, 1893.

[44] Owen: British Medical Journal, 1893, ii, p. 1211.

On the 28th of August a median incision was made, with the patient in the Trendelenberg posture. The abdominal cavity was thoroughly protected from possible extravasations by means of gauze barriers. The right tube was found to be as large as two fists, and everywhere adherent. The whole tumor was freed from its adhesions and delivered from the abdominal wound. The uterine attachment was tied close to the uterus. On the left side, also, a tumor was found — not quite so large as the one in the right. In freeing the adhesions on this side the abscess was ruptured, and at least four ounces of what seemed to be pus escaped. In spite of every precaution, the intestines were somewhat contaminated by this fluid. The tube was delivered and tied near the uterus with silk. The contents of this tumor, like that of the right, seemed to be purulent. It was greenish-yellow and odorless, thick and tenacious. The intestines that presented were carefully wiped with sterile gauze; the abdominal wound was closed without drainage.

The patient's temperature rapidly fell to the normal line, and she improved very much. In the course of a few weeks, however, she began to get hectic. A mass could be felt both by vaginal and by abdominal palpation. I was on the point of incising the posterior cul-de-sac several times. Finally, however, there was an abundant discharge of pus with a small piece of gauze from the rectum. Through this spontaneous opening the finger could be introduced into an abscess cavity situated behind the uterus. The convalescence from this time was steady, and she is now in excellent condition.

The dangers by the intra-abdominal method of treatment in cases of this kind may be very great. Safety to the patient depends upon causes beyond the control of the surgeon, if he selects this route. It is beyond human skill in many cases of this kind — in which the tubes are enormously dilated and presumably adherent, to remove the tumor without rupturing it. Notwithstanding all precautions, the extravasated fluid will contaminate the peritoneum more or less on all sides. In spite of irrigation, of wiping out with gauze, of thorough disinfection — of every thing that we can do in those instances in which the fluid contains the more septic micro-organisms — the dangers of a general and fatal peritonitis are very great. In this case, the abdominal wound was closed. We knew nothing as to the septic or aseptic qualities of the fluid when the peritoneal cavity was sealed. We were very fortunate, therefore, that there was not a general septic peritonitis and death. The accidental presence of the gauze would have had nothing to do with the sepsis in the absence of a septic element pre-existing in the fluid, for I have often left gauze-padding much longer than this without symptoms. Unless we can demonstrate on the spot, by some of the rapid methods of staining micro-organisms, the absence of these bodies, we have no right at present to close the abdominal wound. We must give the patient the benefit of the doubt, and provide for drainage in every instance. Not that drainage is sure to prevent a general septic infection — it will not do this invariably; but if by means of tubes or of gauze, or of both, the toxic products of germs can be removed as fast as they form, the prospect of recovery is much better.

Case III. Sarah H., aged forty-five. Boston. Admitted to the hospital October 1, 1893. Menstruation regular, slightly painful, not profuse, for thirteen years. Married twenty-seven years ago. No children. Second marriage four years ago. No children. Pregnant once at nineteen, and some sharp instrument was used to produce abortion. Has never been free from pelvic trouble since. During the last twelve years has had various disorders — pneumonia, congestion of the lungs, nervous prostration, etc. Last summer a tumor was discovered in the left ovarian region. Six weeks before entrance to the hospital, while doing her housework, during her catamenia, pain to which she had been subject off and on for years, became worse than usual, and she had to go to bed. In the course of two days an ulcer broke in the womb, and thick, greenish matter escaped. Has been in bed ever since. There have been severe spells of vomiting, lasting a day at a time. Micturition has been frequent and difficult. Yesterday and to-day has had chills and fever for the first time.

Face pale and pasty; valvular disease of the heart; abdomen very fat, and somewhat tender all over, especially above pubes and to the left, where a round mass about the size of two fists or larger, dull on percussion, could be indistinctly felt. In addition to the tumor on the left, another could be felt less distinctly on the right; both were fluctuating, and seemed unattached to the abdominal wall.

At my first examination (without ether) it seemed to me that the operation would consist simply in incision and drainage, either through the abdominal parietes, to which the tumor on the left seemed then adherent, or through the vagina, or by both routes. As soon as the patient was etherized, however, the unattached condition of the tumor on the left and the presence of another on the right could be clearly demonstrated. I therefore made the median incision, the patient having been prepared for laparotomy. The right tube was enlarged to about the size of two fists, or a little smaller; it was adherent deep in the pelvis, but not attached anteriorly. The adhesions were separated carefully, and the whole mass was delivered without rupture. A ligature was applied cloes to the uterus; and the whole tumor removed. There was no escape of fluid during this procedure. The left tumor, which was considerably larger than the right, was next isolated, as far as possible, by separating the recent adhesions. The undelivered extremity of the tube, pointing downwards and forwards to the left of Douglas pouch, was so intimately adherent in the depths of the pelvis, that I found it impossible to separate the mass without rupture. There was a very large escape of foul fluid, apparently pus, which contaminated everything in the vicinity. All the intestines and the lower part of the abdomen were bathed in this fluid, in spite of all efforts, either by the interposition of gauze barriers or by rapid irrigation. The pelvis was cleaned as carefully as possible, by the use of both boiled water and sterile gauze. A small gauze drain was placed in the pelvis, and the incision was closed with silkworm-gut sutures. The operation was a very rapid one, but the amount of shock following was considerable. Her condition, however, which even before the operation was very serious, slowly improved. There was no vomiting.

On the following day there was moderate staining from the drain. The temperature and pulse steadily rose. Salines were given in drachm doses every hour. On Monday, the 9th, the bowels moved freely. Large quantities of gas also were passed. Her condition was very poor, and steadily getting worse. There was no pain in the abdomen — which was distended — and no vomiting. Her general condition was very bad. During the day she gradually failed, and died early on Tuesday morning.

This operation differed in no respect from that in the preceding case, except in that the patient soon showed evidences of septic absorption. Though a general peritonitis did not develop, yet there was sufficient poison in the localized peritonitis that did follow to produce a fatal septicæmia. An examination of the fluid showed the presence of the streptococcus pyogenes, with some of the less virulent micrococci.

This case shows the importance of early operation in some forms of salpingitis. While in the first case the symptoms were in no way so severe as would be expected in tubercular abscess, yet in the second there were more or less serious constitutional disturbances. But even in the second case there were no elements present which were likely to produce serious local or constitutional disturbance. In the third case, on the contrary, there was a mass of fluid likely at any moment to break into the peritoneal cavity, and so virulent in its micro-organisms that death followed in less than three days, through the local infection alone. Her extreme prostration undoubtedly opposed but feeble barriers to the septicæmia, and death in spite of free catharsis was probably due to a very moderate absorption.

It is an interesting question to differentiate these conditions, and it does not seem especially difficult to do so in the later stages. Unfortunately, in delayed cases, the prognosis is much more serious. It does not seem reasonable to allow tumors of the Fallopian tubes to attain such a size as these specimens show — no matter what the cause of the process may be. The operations for the removal of tumors may not be especially hard. They may present, of course, great difficulties; — their removal may even give rise to some of the gravest emergencies in surgical procedures. But the chief danger in the late operation lies in rupture of the dilated tube with unavoidable peritoneal infection. Though in none of the above cases were the adhesions impossible of separation, yet the tumor might have been so intimately attached that enucleation would have been out of the question. Not infrequently the bowel has been torn open in forcible attempts at separation. In early extirpations, most of the above dangers are avoided.

These cases certainly indicate a much earlier operation in salpingitis than was performed. If we can demonstrate, by bimanual palpation, the existence of tubal inflammation so extensive that there is no reasonable hope of cure, either by natural processes or by drainage through the uterus, then we ought to interfere surgically in every case in which there is no contra-indication in the condition of other viscera. Not only by the experience gained in these cases, but also by that met with in much less extensive forms of salpingitis, am I inclined to favor early interference when the tubes are distinctly diseased. I would not advocate so severe an operation as an abdominal section, however, unless the progress of the disease was distinctly unfavorable; unless the local evidence was marked; and unless, under palliative treatment, there was no distinct progress toward permanent disability. The results in my operations for this disease have all been, almost without exception, very gratifying when recovery has followed. In the third case reported, and in another similar one drained some years ago by abdominal section, death took place. All the others recovered. The number is not great, — probably not over fifteen or twenty. I would not be willing to say that the mortality is *nil;* still in cases that have not advanced to any great degree of local or general infection, I regard it as so inconsiderable that the outlook — not only for immediate, but for permanent cure — is very gratifying.

The prognosis in uncomplicated cases in which the tubes are not greatly enlarged and can be tied and removed without infecting the peritoneum, is very much like that after removing the appendix in the interval between attacks. The operation is very similar, and the danger of hæmorrhage or infection not unlike.

In all cases of pyo-salpinx, as well as in all cases of suppuration elsewhere in the abdominal cavity, excessive care is necessary in the evacuation of pus, or of what seems to be pus. In many instances the fluid contained in the Fallopian tube is sterile, but it is clearly impossible by the naked eye to tell whether a given fluid is septic or not. Our technique must be so carried out that all contamination shall be avoided as far as possible. In hospital as well as in private practice, it is extremely desirable to have slide preparations examined on the spot by an experienced bacteriologist, while the process of cleansing the abdominal cavity is going on; for the method of treating the wound depends upon the results of such examination. If no pathogenic bacteria can be found by such a method of rapid staining, for example, as that just described in the Journal of December 7th by Mr. Barney, irrigation may be dispensed with and the abdominal wound may safely be closed. If, on the other hand, the streptococcus or other pathogenic micrococci are present, or the fatal colon bacillus, we should make renewed efforts at cleansing and disinfection; we must not, under these circumstances, close the abdominal wound without providing free drainage, by the use of either gauze or a tube, or both.

Philadelphia Advertising. — A Philadelphia firm of truss-makers has sent out a circular to physicians offering commission in the following bold manner: "If you will send us your patients, we will reciprocate with a check by return mail."

A BACTERIOLOGICAL STUDY OF FOUR HUNDRED CASES OF INFLAMMATION OF THE THROAT, OCCURRING IN DIPHTHERIA AND SCARLET FEVER, WITH ESPECIAL REFERENCE TO PATHOGENESIS.[1]

BY JOHN LOVETT MORSE, A.M., M.D.

WE owe the first description of diphtheria to Bretonneau. He regarded the presence of a pseudo-membrane in the pharynx and upper air-passages as its characteristic feature. The infectious nature of the disease was first recognized in 1860 by Trousseau, who considered the local manifestations as comparatively unimportant. As the disease became more prevalent, more and more attention was directed to its clinical characteristics, and the presence of a pseudomembrane in the throat was again regarded as its diagnostic feature. It was noted, however, that the membrane varied in different cases. In some it was removed with difficulty and left a raw, bleeding surface; in others it proved to be a mere exudation, and left an intact surface after its removal. It was also found that a fibrinous exudation, taking the form of a membrane, anatomically indistinguishable from that found in diphtheria, could be produced in a number of ways, as by wounds and irritants of various sorts. This same pseudo-membrane was also found to be produced in other portions of the body by the same irritants. A pseudo-membrane was also noted in scarlet fever, measles and typhoid fever. The discovery of these facts resulted in great confusion and accurate diagnosis was impossible. Every man had his own standard and no one could prove whether he was right or wrong.

Much of the confusion arose from the fact that men failed to recognize that a diphtheritic inflammation is essentially an anatomical process and does not necessarily have any connection with the infectious disease, diphtheria. Any inflammation characterized by a fibrinous exudation forming a membrane on the inflamed surface is a diphtheritic inflammation, however it may be caused. The diphtheritic membrane is due to a combination of necrosis and inflammation with fibrinous exudation. The essential factor is a necrosis of the surface epithelium. This necrotic tissue supplies the fibrin ferment, and fibrin is formed from the serous exudation which comes in contact with the necrotic tissue. The membrane itself is found on microscopical examination to consist almost entirely of fibrin and of necrotic tissue which has undergone fibrinoid metamorphosis. The tissue beneath shows evidence of the most intense inflammation. It is infiltrated with inflammatory exudation, the blood-vessels are dilated and pus cells are found in the vessels and in the tissue. The necrosis is not limited to the surface but extends irregularly into the tissue below, often passing beneath the unchanged epithelial surface. It is here also accompanied by the formation of fibrin, the fibrin in the tissue below often connecting with that on the surface, causing this to adhere more strongly. Confusion has also arisen from the so-called diphtheroid affections of the throat. In these inflammations we may have masses of detritus, consisting of cast-off epithelium, mucus and masses of bacteria, collected on the surface of the mucous membrane and frequently extending into the follicles. These masses can be removed in more or less adherent flakes. Under the microscope they are often found to be composed almost entirely of mucus, epithelial and pus cells, and bacteria of various forms, which evidently find a favorable culture medium in the collections of mucus and cast-off epithelium. These deposits are sometimes accompanied by marked signs of local inflammation as well as by constitutional disturbance, due to the absorption of chemical products.

The discovery of bacteria and their relation to disease, however, offered a solution for the problem. After years of careful investigation by many observers the bacillus causing the disease was isolated and its pathognomonic character demonstrated. Klebs (1) in 1883 found that a bacillus, always the same morphologically, was constantly present in the pseudomembrane of cases of epidemic diphtheria. Löffler (2) in 1884 investigated the subject still further and found that this bacillus was pathogenic in certain animals, and produced, on inoculation, a pseudo-membrane on the surface inoculated. The whole subject has been carefully gone over by numerous investigators since that time, notably Löffler, Roux and Yersin (27), Babes (3), Welsh and Abbott (4). Pseudo-membranes, paralyses and organic lesions, similar to those in man, have been produced in animals by inoculation and a toxine has been isolated, which produces, when inoculated, the same results as the pure culture, with the exception of the pseudo-membrane (5, 6, 7). This toxine is probably due to a ferment produced in the membranes by the bacillus, which is absorbed and forms poisonous albumins and an organic acid in the body (7, 8). Hence we now consider only those pseudo-membranous inflammations as diphtheria, in which this bacillus, known as the Klebs-Löffler, is found. Therefore, no diagnosis can be made, which can be regarded as more than probable, without the bacteriological demonstration of this bacillus.

The Klebs-Löffler bacillus is a small organism not much larger than the tubercle bacillus. Its most striking feature, morphologically, is its variation in form and its irregularity in staining. The ends of the organism are frequently clubbed, sometimes one and sometimes both ends, and in most cases when stained it shows a series of clear spaces along with intensely stained particles. The form and size vary greatly under various circumstances. In different cases it appears in some much larger and more irregular than in others, and in the same preparation great irregularity may be seen. It grows readily on a variety of culture media and most readily on the modified blood serum first introduced by Löffler. When cultivated on potato it is much larger and more irregular in form than when grown on any other medium. The organism is pathogenic for a number of animals, especially for young cats and guinea-pigs. In guinea-pigs the most virulent form of the organism will produce death in from thirty-six to forty-eight hours. Like some other organisms, there is a marked difference in its virulence. While cultures from some cases will always produce death in thirty-six hours, in others death will not take place for several days; and in others, again, the animals may survive the primary inoculation, and afterwards die of paralysis after an interval of three or four days. Again, in still other cases, no results may follow the inoculation (9).

Numerous cases of pseudo-membranous inflammation of the throat are met with, however, which are due to other bacteria than the Klebs-Löffler bacillus. These cases are absolutely indistinguishable clinically from those due to the action of the Klebs-Löffler bacillus, and may be precisely the same anatomically. As a rule they are associated with streptococci, as is notably the case in scarlet fever and measles. Moreover, the Klebs-Löffler bacillus and the streptococcus are often found together or accompanied by staphylococci and other organisms. A differential diagnosis is only possible by a careful bacteriological examination. The futility of clinical conclusions has been shown by numerous investigators. In 1889, Prudden (10) investigated twenty-four fatal cases which had been diagnosed clinically as diphtheria. In several of these cases scarlet fever and measles were also found. The Klebs-Löffler bacillus was not found in one, but the streptococcus in all but two. Baginsky (11), in one hundred and fifty-four cases diagnosed clinically as diphtheria found the Klebs-Löffler absent in thirty-four. Martin (12), in two hundred suspected cases of diphtheria found no Klebs-Löffler in seventy-four. Park (13), in one hundred and fifty-nine cases of pseudo-membranous inflammation, found the diphtheritic bacillus in only fifty-four. In every one of the remainder streptococci were the most abundant bacteria, and often the only ones. Koplick (14) found the streptococcus alone in eleven cases of clinically pure fibrinous diphtheria. Janson (28), in one hundred cases of pseudo-membranous angina, met with the Klebs-Löffler bacillus in only sixty-three.

---

[1] A contribution, under direction of Dr. W. T. Councilman, from the Pathological Department to the forthcoming Medical and Surgical Report of the Boston City Hospital. Awarded one of the Lyman prizes for 1893.

As the prognosis, contagiousness, and hence the necessity for isolation, varies greatly with the form of bacteria present, the necessity of an accurate and early diagnosis is evident. This can only be obtained bacteriologically. By the examination of a cover-slip preparation, prepared directly from the throat, the presence of the diphtheritic bacillus may often be demonstrated immediately. This method is fortunately most valuable early in the disease (29) (15). The presence of the bacilli is positive evidence, their absence only negative, and in these cases further examination by means of cultures is necessary. In fact, it is advisable to examine all cases by cultures as well, which requires only twenty-four hours for the determination of the presence of the bacteria.

The main objects of my work have been to determine by the examination of a large number of cases, in which diphtheria had been diagnosed clinically, or at least strongly suspected: (*a*) the proportion in which the Klebs-Löffler bacillus was present; (*b*) whether or not, and if so, in what way, the prognosis was altered by its presence; (*c*) in what way the prognosis was altered by the presence of other organisms in combination with the Klebs-Löffler bacillus; (*d*) what these organisms were and how often they were found. During the course of my investigations many other points have come up which seem worthy of special note, particularly the results bearing on the length of time which the bacillus remains in the throat and nose after convalescence is established.

The method employed was essentially the same in all cases. Swabs are made by winding absorbent cotton tightly on the end of a piece of stiff wire five inches long. These are put in cotton stoppered test-tubes, and sterilized by dry heat. The swab is rubbed thoroughly over the throat, and put back in the test-tube. In the laboratory the swab is carefully rubbed over the surface of a slant tube of Löffler's blood serum mixture. A platinum loop is run over the surface of this tube, and then smeared on a second tube; this procedure is repeated on a third tube. The cultures are left in the thermostat at a temperature of 35° C. until the next day and then examined microscopically. The colonies on the third tube are usually discrete enough to admit of a differential diagnosis of the organisms present. The diagnosis has been made, as a rule, on morphological appearances, although in many cases the cultural peculiarities have been investigated and animals inoculated. In one series of twenty-five cases, which will be given in detail later, the various organisms were isolated in pure cultures and accurately differentiated on the various media. The blood serum was prepared according to Löffler's well-known formula, solidified slowly in the dry sterilizer at 75°–80° C., and then sterilized in Arnold steam sterilizer at 100° for one-half hour on three successive days. This method is much simpler than the one in ordinary use, saves all the media, and is entirely satisfactory in every way. The organisms grow as rapidly and as vigorously as on blood serum prepared by the old method. The time and trouble saved in this way is evident. Löffler's methylene blue solution was ordinarily employed in staining. Four hundred cases have been investigated in this routine way. All of them were examined after admission to the diphtheria ward of the City Hospital, or were cases in the scarlet fever ward whose throats were suspicious.

These cases, as a rule, come from the tenement-house districts in the thickly-populated portions of the city, the North End, about Dover Street, and South Boston. A few, however, come from the outlying districts, as Brighton and Roxbury. It is safe to say that a very large portion of them live in improper hygienic surroundings, and are in poor condition to resist so severe a disease as diphtheria. Moreover, many are not brought to the hospital until they are *in extremis*, and die within the first twenty-four hours. The proportion of adults is very small, only seventeen per cent. of the present series being over fifteen. All these factors have an important influence on the statistics and make the percentage of mortality appear far worse than it would in other circumstances.

DIPHTHERIA, SCARLET FEVER.

The presence of the Klebs-Löffler bacillus was demonstrated in two hundred and thirty-nine, that is, in sixty per cent. of all suspicious cases. There were three hundred and one cases in which scarlet fever was not present, not excluding, however, those cases in which it may have occurred earlier or later. Of these, the Klebs-Löffler bacillus was present in two hundred and seventeen, or seventy-two per cent. These results correspond pretty closely to those obtained by other investigators, Baginsky (1) having found the Klebs-Löffler bacillus in one hundred and twenty cases out of one hundred and fifty-four, or seventy-eight per cent.; Martin (12), in one hundred and twenty-six out of two hundred, or sixty-three per cent.; Park (13), in fifty-four out of one hundred and fifty-nine, or thirty-four per cent.; and Janson (28), in sixty-three out of one hundred, or sixty-three per cent.

One hundred and thirty-six of the four hundred cases examined died, giving a general mortality of thirty-four per cent. Of the two hundred and thirty-nine cases containing the Klebs-Löffler bacillus ninety-nine died, that is, forty-one per cent. Of the one hundred and sixty-one in which it was not present, thirty-seven died, or twenty-three per cent. The general mortality of the three hundred and one cases not complicated with scarlet fever was thirty-six per cent. Eighty-nine of the two hundred and seventeen cases in which the Klebs-Löffler bacillus was present, died, that is, forty-one per cent.; in the eighty-four in which it was absent, twenty-one, or twenty-five per cent. died. Of the remaining ninety-nine cases in which the diagnosis of scarlet fever or scarlet fever and diphtheria was made, twenty-six, or twenty-six per cent. died. The Klebs-Löffler bacillus was demonstrated in twenty-three, ten of which died, or forty-three per cent. Of the seventy-six cases in which it was absent, only sixteen, or twenty-one per cent. died.

Mortality in four hundred cases	34%
" in all cases containing K. L.	41
" in all cases without K. L.	23
" in all cases uncomplicated by scarlet fever	36
" in these cases which contained K. L.	41
" in these cases which did not contain K. L.	25
" in all cases complicated by scarlet fever	26
" in these cases containing K. L.	43
" in these cases not containing K. L.	21

These figures go to prove that the mortality in pseudo-membraneous inflammations of the throat is nearly twice as great in those in which the Klebs-Löffler bacillus is present as it is in those in which it is absent. Somewhat similar results have been obtained by other observers. Park (13) records a mortality of forty-six and one-half per cent. in true diphtheria. Twenty-five per cent. of Janson's (28) series, in which the Klebs-Löffler was found, died, while all the other cases of angina, uncomplicated with scarlet fever, recovered. In Baginsky's (11) series, thirty-eight per cent. of those with Klebs-Löffler died, compared with eleven per cent. of those without. Heubner (15) found a mortality of sixty per cent. in seventy-seven cases of true diphtheria.

Of the sixty-two adults, Klebs-Löffler was present in thirty-eight, absent in twenty-four. The general mortality was nine per cent.; that of those in which the Klebs-Löffler bacillus was present, thirteen per cent.; of those in which it was absent, four per cent.

MEASLES, SCARLET FEVER.

A mild epidemic of measles occurred in the scarlet-fever ward during the course of this investigation. Six cases had measles and scarlet fever together. All recovered, and the Klebs-Löffler bacillus was not found in any. Streptococci were present in five; staphylococci in two, and the diplococcus lanceolatus in three. Four cases of measles with severe throat symptoms, giving rise to the clinical diagnosis of diphtheria, occurred. One contained a few Klebs-Löffler bacilli and many staphylococci and recovered. The others were practically pure cultures of staphylococci, and all died, one, however, of scarlet fever contracted while convalescent. These cases, as far as they go, show that the Klebs-Löffler bacillus is certainly a very rare accompaniment of the throat complications of measles. The literature on this point is very scanty. Hofmann (16) and Escherich (17) claim to have found the pseudo-diphtheritic bacillus in several cases of measles.

TYPHOID FEVER.

Four cases of typhoid fever with throat complications have been examined, and seem worthy of separate consideration.

L. F., for some time a patient on the surgical side, developed a sore throat. Bacteriological examination showed a few Klebs-Löffler bacilli. She was transferred to the diphtheria ward, where a few days later the diagnosis of typhoid fever was made. She ultimately recovered. A guinea-pig, inoculated with a pure culture of the Klebs-Löffler bacillus obtained from her throat, died.

K. W. entered the hospital after a sickness of a week. The diagnosis of typhoid was made, but she was put in the diphtheria ward because of her throat. Examination showed a few Klebs-Löffler bacilli, many staphylococci, and a few streptococci. Her throat was clear in five days, and she was soon after transferred to a medical ward, where she recovered.

F. D. was ill with typhoid in a private room. A nurse, several days after leaving the scarlet-fever ward, had a sore throat, and was put in the same room over night. On the discovery of the Klebs-Löffler bacillus on the next day she was transferred to the diphtheria ward. Four days later F. D. developed a sore throat with membrane. The presence of the Klebs-Löffler bacillus was demonstrated, and she was also transferred. The next day a typical scarlet-fever rash developed, which was followed by desquamation. Her throat was clean in ten days, and she ultimately recovered.

Isabella N., nineteen, was admitted to the medical wards of the Boston City Hospital on October 27th, at about the middle of the first week of typhoid. She was a large, well-built girl, in very good condition. A faint systolic murmur was noted in the heart at both base and apex. Although her temperature ranged high, she did very well until November 4th, when she became delirious and her pulse more frequent. She slowly lost ground, and on November 11th it was noticed that swallowing was painful. Examination of the throat showed both tonsils and pillars of fauces covered with a dirty-white membrane, which extended all over adjoining parts of soft palate and uvula. The posterior pharyngeal wall was not seen. She was immediately transferred to the diphtheria ward. Cultures from swabs made on this day and the next showed streptococci and staphylococci, but no diphtheria bacilli. Blood-serum tubes made from swabs of November 14th showed almost pure cultures of the Klebs-Löffler bacillus. She was able to take but little nourishment, and remained semi-unconscious and delirious. Her pulse gradually failed, and she died on November 17th. Her throat had begun to clear up during the last two days. The autopsy was performed by Dr. Councilman thirty hours after death.

Body. — Large, well-built, tolerably well-nourished.

Skin. — Generally pale and anæmic. Mucous membranes pale. Posterior surface of body slightly congested. No eruption. Subcutaneous fat medium in amount.

Abdomen. — Moist and peritoneum smooth, save over spleen, where there is a slight fibrinous exudation. Both liver and spleen free from connective-tissue adhesions. Along course of ileum and colon areas of congestion. Diaphragm in usual position. Anterior mediastinal glands slightly enlarged and reddened.

Lungs. — Remarkably free from pigment. Both slightly adherent by old adhesions. The entire posterior part of right lung congested, œdematous, and slightly consolidated, the consolidation generally lax, with here and there areas of more distinct consolidation about the bronchi. The entire pleural surface of this portion of the lung covered with a slight fibrinous exudation, more marked between the lobes. The parietal pleura congested. Abundant muco-purulent secretion from the bronchi everywhere in the lungs, particularly in the posterior parts. In the left lung there are a few areas of consolidation about the bronchi, but the consolidation is everywhere less well-marked than in the right. The bronchial glands distinctly enlarged, reddened, and slightly pigmented.

Heart. — Medium size. Both layers of pericardium smooth. The myocardium generally pale without any appearance of faded leaf. In the right ventricle there are fresh clots. In the left there are old thrombi covered with adherent fresh clots along the musculæ trabeculæ of the septum and the apex of the ventricle.

Liver. — Large. Surface pale, markings somewhat obscure. Gall-bladder distended, bile-ducts free. On section, liver pale and somewhat cloudy.

Spleen. — Seventeen by ten by five centimetres. Weight three hundred and forty grammes. Surface covered with a slight fibrinous exudation. On section, comparatively firm, homogeneous, of a dark-red color, small dark-red points of hæmorrhage scattered through it. Neither Malpighian bodies nor trabeculæ visible.

Kidneys. — Of ordinary size. Surface smooth and capsule not adherent. The lobules very evident. On section, cortex pale, markings faintly visible, the labyrinth cloudy. On the surface of the right kidney there is a slightly elevated, soft, nodular mass, one and a half centimetres in diameter. On section the cortex at this point is soft, pale, with opaque white streaks and points scattered through it; where it extends into the pyramid, it has a reddish color.

Mesenteric Glands. — Both of the mesentery and mesocolon are enlarged, deeply injected, and soft. The post-mesenteric are also enlarged and reddened.

Intestines. — In the intestines there are numerous ulcers. There is one low down, almost in the rectum. Throughout the large intestine there are numerous ulcers with sharply circumscribed edges and perfectly clean base, extending down to the muscular coat, one of them extending through this to the peritoneum. In the small intestine also there are ulcers of the same general character as those in the large. Higher up in the intestine are some with sloughs in the base.

Adrenal Glands and Pancreas.— Normal. The pancreas large and firm.

Pharynx and Larynx. — Mucous membrane of the pharynx covered with an extensive muco-purulent mass. The tonsil on left somewhat enlarged and covered with a whitish deposit, which is easily scraped away, but does not wash off. On removal of this there is an epithelial loss of substance. There is an extensive formation of the same substance on the lateral wall of the pharynx opposite to the larynx. In the larynx there is an irregular ulcer on each side along the posterior portion of the vocal cord. The edges of the ulcer have a grayish film over them; the base also. All of the cervical glands are enlarged, softened, and reddened. The trachea is intensely congested.

ANATOMICAL DIAGNOSIS.

Typhoid Fever. — Ulceration of ileum and colon.

Diphtheria.

Heart thrombus.

Renal Infarction.

Congestion, œdema, pneumonia, and bronchitis in the lungs.

Acute swelling of spleen.

Diphtheritic ulceration of larynx.

Diphtheritic pseudo-membranous inflammation of pharynx.

Hyperplasia of lymphatic glands.

Acute parenchymatous degeneration of liver, kidneys and heart.

BACTERIOLOGICAL EXAMINATION.

Lung. — Pure culture streptococci.

Tonsil. — Numerous streptococci and other cocci, with a few Klebs-Löffler bacilli.

Trachea. — Mainly streptococci and Klebs-Löffler bacilli.

Tracheal Gland. — Negative.

Bile. — Typhoid bacilli.

Spleen. — Typhoid bacilli.

Mesenteric Glands. — Bacillus coli communis.

Pleura. — Streptococci.

Bronchial Glands. — Streptococci.

Heart's Blood. — Negative.

Heart's Thrombi. — Typhoid bacillus; streptococci.

Kidney Infarction. — Typhoid bacilli; streptococci.

Kidney. — Typhoid bacilli; streptococci.

Liver. — Streptococci.

One of the two pigs inoculated with the pure culture of the Klebs-Löffler bacillus, obtained from the trachea, died in forty-eight hours with the pathological lesions of experimental diphtheria. The bacilli, however, were not found at the seat of inoculation. As far as I know this is the first reported autopsy of a mixed case of typhoid and diphtheria. It proves conclusively that certain of the inflammations of the throat occurring in typhoid may be due to a mixed infection with the Klebs-Löffler bacillus. The other cases cannot be considered as more than suggestive. Wagner, who has given the most accurate description of the angina accompanying typhoid fever, calls attention to the greater frequency of pseudo-membranous affections when diphtheria is prevalent.

The bacteriological examination of the tissues of the case show that three different infections have taken place. One by means of the typhoid bacillus; one by means of the Klebs-Löffler, and one by a streptococcus, which probably found its point of entrance in the tissues from the lesions in the throat. Evidences of these three different infections were present in the tissues. The general lymphatic hyperplasia was due both to the typhoid and diphtheria. The lesions in the lung and pleura were due to streptococci coming from the throat, and from here the general infection of the body may have taken place. Streptococci were found in the thrombus in the left side of the heart, and on section of the tissue beneath the thrombus there was a slight endocarditis with streptococci in the superficial layers of the tissues. The embolus which produced the infection of the kidney came from the heart thrombus and produced a circumscribed purulent infiltration of the kidney in the place of a simple infarction. No effect seems to have been produced on the intestinal ulcers by the other infections. They had the typical appearance of late ulcers in the beginning of healing. The presence of the streptococci in the acute fibrinous pleurisy shows that they may produce in the pleura as typical a fibrinous exudation as is found in the pleurisy accompanying an acute croupous pneumonia.

(*To be continued.*)

Clinical Department.

A CASE OF ACUTE INFECTION SIMULATING ACUTE YELLOW ATROPHY OF THE LIVER IN A PREGNANT WOMAN: AUTOPSY.[1]

BY SAMUEL CROWELL, M.D., DORCHESTER, MASS.

Jaundice and a sudden suppression of urine in a pregnant woman, lasting eight days and ending in death, is the story in a nutshell. We will go into the clinical history of this interesting case, however, more in detail.

Near midnight of November 15, 1893, I was consulted by a husband seeking aid for his wife, who was suffering from pain in the back and stomach. She was a primipara, at about the sixth month, age forty-two. She had always enjoyed the best of health, and had been entirely free from the many ails accompanying pregnancy. She attended a lecture in town that very evening, retired for the night in her usual health, but shortly afterwards began to complain of this pain, which no domestic remedy seemed to relieve.

November 16th. I was sent for in the early evening to see the patient. The quarter-grain of morphine of the night before had relieved the pain, and it had not recurred. The patient was bleeding from the gums, and had been spitting and wiping blood from her lips all the afternoon. The face, eyelids, lips, hands and feet were swollen. Headache, and vomiting of all nourishment taken into the stomach, had existed all day. On inquiry it was found that not a drop of urine had been passed for the twenty-four hours. The patient was about the house doing her work. At my request, she passed four ounces of bloody-looking urine, containing a large amount of albumen, granular and hyaline casts, renal epithelium and a few blood-corpuscles.

November 17th. I saw the patient in the morning by daylight. She was deeply jaundiced. This jaundice I believe to have been present from the first, but just when it appeared it was hard to say, as no one had noticed it, and the gaslight would have hidden its presence the night previous on my visit. She had vomited everything but cream-of-tartar water. The headache was less, she did not complain of it again until twenty-four hours before her death. The skin was moist from the attempts made to sweat her. The bowels had moved slightly from a dose of ol. Tiglii, and there was only two ounces of urine to show for the twenty-four hours' excretion of the kidneys.

November 18th. Condition the same; mind clear; no urine for twenty-four hours. Ten grains of calomel had produced one watery discharge.

November 19th. Condition the same; no urine.

November 20th. Condition the same; no urine.

The temperature taken at the time of my visits was generally normal, twice I found it 99°. The pulse ranged about 76 per minute.

November 21st. Condition the same; no urine. In the morning I started up labor with a bougie. The uterus responded, and in the evening I took away a macerated fœtus at about the sixth month. The patient's condition was good. There was no flowing connected with the miscarriage and practically no discharge afterward.

November 22d. Condition the same; no urine. I drew, with the catheter, five ounces from the bladder. In the afternoon a convulsion occurred lasting ten minutes, followed by delirium, requiring two to hold her in bed, and an intense headache and pain through the right eye. The tongue became thick and swollen, and the features expressionless. In the early evening she had a second convulsion of about the same duration. This was followed by delirium alternating with short lucid spells during the night, and ending in death at eight A. M., November 23d, on the eighth day of the disease.

At the autopsy made five hours after death, the heart and lungs were normal. No fluid in the serous cavities. Liver not descended below the ribs. It extended well over to the left side of the body, and seemed somewhat larger than normal. It was firm and smooth. The gall-bladder was not distended.

Specimens were sent to Dr. W. T. Councilman for examination. His report reads:

"There was brought for examination a portion of the liver, one kidney, spleen, a portion of the heart and of the uterus.

"The portion of the uterus brought had about the thickness and consistency of the uterus at the end of pregnancy. It was rather soft and of a pale-yellowish color. On its internal surface there were some adherent clots.

"The liver microscopically was of a dark green color. The bile-duct was not occluded at the autopsy. The kidney was very large, of a pale-yellowish color, with a distinct greenish tinge. The cortex was smooth. No appearance of hæmorrhage. On section, the cortex enlarged and pyramids congested. Markings obscure. On section, the cortex had the same greenish appearance as the surface. Cultures made from the organs gave pure cultures of streptococci in all of the organs. They were most abundant in cultures made from the uterus and spleen. The cultures from the liver and kidneys gave only a few colonies. The streptococcus found belongs to the general type of the streptococcus longus. It grew out in long thin chains, and the opposing surface was flattened.

"Microscopic examination of the tissues was made both in the fresh state and after hardening in various media. At the fresh examination a considerable amount of bile pigment was found in the kidney, with well-marked fatty degeneration, principally confined to the collecting tubules. Sections of the hardened organ showed a considerable degree of acute nephritis. The glomeruli were but little altered. The only change noticed was that the capillaries were somewhat thickened and indistinct. The epithelium of the convoluted tubules was swollen, fatty and in places distinctly necrotic. Accumulations of round cells and leucocytes were found in various parts of the parenchyma. Numerous casts were found in the collecting tubules. The liver showed, both fresh and hardened, an injection of the smaller bile-ducts with inspissated bile. There was marked fatty degeneration of the cells, and in places the cells were necrotic. No change was found in the heart other than a very slight fatty degeneration.

"The case appears to be one of general infection with streptococci proceeding from the uterus. The condition of the kidneys is probably to be referred to this. The jaundice and the lesions in the liver may have been due to other causes."

The autopsy is of great value to us in making the diagnosis, though it does not throw all the light we want; it fails to explain the jaundice. Without its assistance one would not be far out of the way in making a diagnosis of acute yellow atrophy of the liver, brought about by the general infection from the uterus, and especially aided in its development by the kidneys, except that percussion of liver dulness was too great.

---

[1] Read by invitation before the Obstetrical Society of Boston, December 9, 1893.

Jaundice in pregnancy is of rare occurrence, and should always be looked upon as a grave complication, threatening the life of both mother and child, especially the life of the child, even where the jaundice is of benign origin.

Acute yellow atrophy of the liver is considered to be the cause of jaundice in a large proportion of the cases, though jaundice may be produced by the same causes as in the non-gravid state.

It is also stated that the pressure of the gravid uterus upon the liver is a cause of jaundice. This theory seems to me hardly tenable, when one considers the innumerable pregnancies where the liver must be greatly pressed upon without jaundice, and the few cases where it occurs are in those months of pregnancy before the uterus has attained sufficient size to cause pressure.

◆

A CASE OF MYXŒDEMA TREATED BY THYROID EXTRACT.[1]

BY W. N. COWLES, M.D., AYER, MASS.

In view of the prevailing interest in the subject of myxœdema and allied affections, I have prepared a report of the following case:

Mrs. S., aged forty-two years, is the oldest of a family of five children. Her mother, a brother, and three sisters are living and in good health. Her father died two years ago at the age of sixty-six years, after a long illness accompanied by gangrene of one foot. For many years previous to his death his eyes presented a bulging, staring expression, so marked as to attract the attention of all who saw him. He was of an excitable disposition, and his ability to work was limited by what his family called "nervousness and heart disease." His family physician says he had an excitable heart. There is no history of thyroid enlargement. A photograph of this man taken just before his last illness shows the characteristic facies of Graves's disease.

My patient, Mrs. S., has always been well until her present trouble began. Menstruation has always been regular except when interrupted by pregnancy. She is the mother of five children, three of whom are living. About seven years ago, soon after the birth of her youngest child, the patient noticed that she was getting bulky in body and awkward and weak in her movements. The trouble increased at a variable rate until July, 1893, when her condition was as follows:

The body bulky; the face, hands and feet distinctly swollen, the swollen surface not pitting on pressure. The skin was dry, harsh, thick, and always cold to the touch. There was a pale-yellow tint of the surface, suggestive of slight jaundice. Scaling of the epidermis was noticeable over the greater part of the body. The skin of the ends of the fingers was thick and cracked, and the nails seamed and brittle. The hair had a dry and broken appearance. The tongue was unusually broad and thick. Speech was slow and thick, as if the tongue were too large for the mouth. There was apparent mental sluggishness, with an inclination to melancholy ideas. The temperature was always subnormal, 96° to 97° F. in the mouth. The thoracic and abdominal viscera appeared to be normal. The thyroid gland could not be felt. The patient complained of great weakness, of being easily tired, of shortness of breath on exertion, and of a constant feeling of coldness. She had noticed a lack of perspiration, even in hot weather. The urine collected for several days in succession in July, 1893, amounted to about two pints in twenty-four hours. Specific gravity, 1,024 to 1,026; color, pale; reaction, acid; sediment, normal; no albumen or sugar found.

On September 8th, Mrs. S. began taking dessicated sheep's thyroids, in doses of one-third of a gramme, three times a day.

Her condition at the time was practically the same as in July. Weight, 204 pounds; temperature, 96.4° F.

After three or four days of treatment the patient complained of severe pain in the lower extremities.

September 18th, the patient's weight was 192 pounds, the temperature 96.5° F. The amount of the remedy administered was reduced one-half, on account of severe pain in the lower extremities.

September 26th, weight, 190 pounds; temperature, 96.5° F.; no pain or discomfort of any kind. The remedy was increased to one gramme daily.

October 2d, weight, 186 pounds; temperature, 97.5° F. Severe pain in head and left shoulder. Dose of the extract again reduced to half a gramme daily.

October 7th, weight, 188 pounds; temperature, 98.2° F. The dose of dessicated thyroids was again increased to one gramme daily, and continued at that amount without further discomfort.

October 14th, weight, 182 pounds; temperature, 98.4° F.

November 12th, weight, 172 pounds; temperature, 98.6° F.

December 20th, no further change in weight. The patient's appearance has wonderfully changed. The swelling of the face, hands and feet has literally melted away. During the first six weeks of treatment there was marked anæmia, as shown by pallor of the mucous membrane. That condition is gradually giving place to a ruddy, healthy appearance. There has been a considerable desquamation of the skin, especially upon the hands and feet. The surface is warm to the touch. The yellow color has disappeared. The perspiration has retured. The condition of the nails and hair has improved, but is not yet normal.

A record of a number of urinary examinations made during the first two months of treatment shows an increase in amount to about four pints in twenty-four hours; specific gravity, 1,018 to 1,022, with no marked departure from a normal quality.

Quick movements, rapid speech, and an animated manner have taken the place of former slowness of speech and action, and stupid appearance.

This case appears to be especially interesting on account of the probable occurrence of exophthalmic goitre in the father of the myxœdematous patient, Mrs. S.

A MEMBER of Sorosis says that every young girl should read Naphey's "Physical Life of Woman," a book called "Tokology," and Cook's "Mothers and Daughters."

---

[1] Read before the Section of Clinical Medicine, Pathology and Hygiene, of the Suffolk District Medical Society, December 20, 1893.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

HENRY JACKSON, M.D., SECRETARY.

REGULAR meeting, Wednesday, December 20, 1893, DR. F. C. SHATTUCK in the chair.

DR. J. J. PUTNAM presented a paper on

THE FUNCTIONS AND THE THERAPEUTIC USES OF THE THYROID GLAND.[1]

DR. W. N. COWLES reported

A CASE OF MYXŒDEMA TREATED BY THYROID EXTRACT.[2]

DR. J. C. WHITE: I have not used this substance in the treatment of skin diseases, but judging by what I have read, it follows the rule of many new remedies in cutaneous therapeutics, that do not seem to produce in the hands of subsequent experimenters the results produced in the hands of those who published the first accounts. I should like to ask some of the gentlemen who speak of its action upon the growth of the hair in myxœdema, whether they noticed it produced such astonishing results in male patients. If it would make the hair grow in male patients, it would be quite different from making it grow in the female patient.

DR. PUTNAM: Most of the cases have been in women. I cannot answer from memory.

DR. F. C. SHATTUCK: Of my four cases two have been in males and two in females. In one male, a man of sixty-nine, the beard is distinctly thicker than it was before he took the thyroid extract. I think there is more change in the hair of the beard than in the hair of the head. My other male patient has been under treatment too short a time to give opportunity for observation in this respect. With regard to the loss of weight, which seems to be so common a feature in the treatment of myxœdematous patients, and which has led to the employment of the drug for obesity with good results apparently, it is interesting to note that in one of my cases there was a gain of twenty pounds in weight, coincident with great improvement; and the weight has been properly distributed. The waist and the neck have got smaller, and the legs of proper shape, which they were not before. That, as far as I know, is rather unusual. It has always seemed to me that this Brown-Séquard treatment by testiculin is by no means analogous to the use of thyroid. We call both the testicle and the thyroid, glands; but, physiologically, they have nothing in common. I was a good deal interested in a patient of mine at the hospital this winter, as vigorous, fine-looking a man as one could wish to see, who was castrated several years ago for some disease of the testicles without the slightest change of appearance, up to the present time at any rate.

DR. CLARK: In regard to a possible relation of the spleen to the thyroid gland, I think some recent experiments of Zanda are interesting. This observer performed thyroidectomy on dogs without any evil results in cases where the spleen had been removed at least a month before. He concluded from this that the thyroid probably neutralizes some toxic principle, apparently a product of tissue change sent into the blood by the spleen.

DR. PUTNAM: I did not speak of the therapeutics of myxœdema, because Dr. Shattuck recently read an interesting paper on that subject.[3] I should like to add the fact that quite a large number of cases of cretinism have been published as much benefited by thyroid extract even where the disease had persisted to adult life. Two or three of these cases have been under the care of Dr. Osler, of Baltimore.

There is another interesting point that I meant to refer to, which has been made the subject of a good deal of experimental work, namely, the relation of animal food to thyroidectomy. It was first observed by Munk that some of his animals died after they swallowed lumps of meat; and that was thought to strengthen his theory that the result was due to injury of the nerves of the neck, but it was observed that if the extractive matters were removed from the lumps of meat by boiling that these results did not occur. On the other hand, it was found that if the animals were fed with strong beef broth that they apparently did die sooner, and experiments of this sort form a part of this recent series to which I referred, as having been just published in Virchow's Archiv.

DR. C. B. PORTER referred to the question of pregnancy. It was observed quite early that during pregnancy some of the symptoms of myxœdema seemed to grow less severe, and Dr. Murray suggested that the thyroid of the fœtus might be doing duty for the lacking thyroid of the mother. Some doubt, however, is thrown on that by certain observations I have read. It was found by Coiztisui, that if rats were pregnant, they seemed to suffer more from thyroidectomy than if not pregnant.

It is also an interesting fact, to which Dr. Porter referred, that occasionally the cachexia does not seem to follow thyroidectomy, and that has been reported, I think, after complete atrophy of the thyroid in Graves's disease. It would seem that sometimes this may be due to the fact that accessory glands exist, but it does seem as if a person could get accustomed to do without the thyroid.

Reports indicate that not all observers find the same improvement in the use of these preparations of the thyroid in healthy persons. It would also seem that in persons in health the effects of the thyroid were temporary, that loss of weight only went on to a certain point, or was fluctuating.

A case reported by Dr. Bramwell and one or two of Vermehren's cases would seem to indicate that the improvement as regards the skin and nutrition at large, was not necessarily lasting.

THE Smithsonian Institute has received from the Peruvian Army Surgeon-General nineteen crania of pre-historic character. They are of interest because they show that in that far-off age the skull was trephined. In one instance the patient survived the removal of a fragment four inches long and one and one-quarter inches wide; the cavity was covered with silver. In one case the patient survived two trephinings, but died after the third. The instruments used were flint. — *Medical Standard.*

---

[1] See page 153 of the Journal.

[2] See page 167 of the Journal.

[3] To be published in the Journal of February 22d.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Meeting, December 9, 1893, the President, **Dr. Charles M. Green**, in the chair.

Dr. S. Crowell, of Dorchester, reported, by invitation,

A CASE OF ACUTE INFECTION SIMULATING ACUTE YELLOW ATROPHY OF THE LIVER IN A PREGNANT WOMAN: AUTOPSY.[1]

Dr. C. E. Stedman regarded the case as one of peculiar interest from the fact that the patient secreted only eleven ounces of urine in eight days, three of these being days of complete anuria. During the greater part of this time the patient appeared fairly well.

Dr. C. G. Cumston said that the endometrium's well-known ability to absorb would account for this case of general infection.

Dr. Wm. Ingalls thought it was a very curious fact that the patient was in such good health previous to the attack. The case would suggest some antecedent cause.

Dr. M. H. Richardson thought the case was an extraordinary one and that its true origin was not yet found. The unusual points were the sudden onset, and the absence of marked constitutional disturbances. One would suppose that the pulse, at least, would be affected by the streptococcus infection.

Dr. J. G. Blake would agree with Dr. Richardson that the case was certainly very obscure and not thoroughly understood.

Dr. Edw. Reynolds said he believed a great advance was being made in our understanding of sepsis by the aid of bacteriology. Clinical experience had taught him that the sense of smell might be of little use in these cases, that severe sepsis might exist with absence of odor in the uterine discharges.

Dr. M. H. Richardson said that there was often no odor from pure cultures of certain septic bacteria, but that the degeneration of the tissues which followed with the addition of other bacteria resulted in the foul stench.

Dr. C. M. Green saw the patient two days before death. From the appearances alone at this time one would wonder why it was necessary to keep the patient in bed. He had learned to believe, however, that in sepsis a sense of comfort and well being on the part of the patient was often of serious import. As to the odor this was not infrequently absent in cases of true sepsis.

Dr. M. H. Richardson reported

THREE CASES OF SALPINGITIS OF UNUSUAL EXTENT,[2]

and showed the specimens.

Dr. G. Haven mentioned reported cases where a preliminary operation was done in order to examine the contents of the tubes. He himself had operated some twelve or fourteen times with good recoveries in all except one who died of embolism on the ninth day. He thought that one could not operate too early.

Dr. J. G. Blake would take issue with the treatment of the second case by laparotomy. Why not have drained through the vagina which would have been a perfectly safe operation. He has been treating cases in this way for thirty years. A case he had treated in this way for a double abscess two years ago, gave birth to a child a few nights ago. He remembers another case where the abscess was very large and where the patient has had several babies since. Of course, the risk in opening the abdomen nowadays is very slight, but still there is some risk. Hence he would prefer to evacuate the abscess per vagina whenever that is possible.

Dr. S. Crowell referred to an abscess in the posterior cul-de-sac of the vagina which was opened through the vagina, but pointed later in the left iliac region.

Dr. C. G. Cumston, late of Geneva, Switzerland, showed some instruments.

Dr. G. Haven reported a case of rapidly growing fibroid of the uterus and showed the specimen. The patient, a woman of forty, had been examined within six weeks and nothing found. Since then the fibroid had rapidly developed and she had lost much blood during menstruation. The tumor was removed and the patient has made a perfectly good recovery.

Dr. M. H. Richardson showed a pregnant uterus removed for cancer of the cervix.

◆

Recent Literature.

A Manual of Practical Hygiene. Designed for Sanitary and Health Officers, Practitioners and Students of Medicine. By W. M. L. Coplin, M.D., and D. Bevan, M.D. With an introduction by H. A. Hare, M.D. 140 illustrations. Philadelphia: P. Blakiston, Son & Co. 1893.

Great improvement has taken place in the past five years in the character of works pertaining to practical hygiene; and this book offers no exception to this statement. Its excellent treatment of the subject will make it a valuable hand-book for reference.

The general character of the book may be understood from the following list of subjects treated: Causes and Prevention of Disease, Individual Hygiene, Clothing, Food, Water, Air, Climate, Soil, Habitations, Sewage, Disposal of the Dead, Technic. The chapters on Climate and on Habitations are especially full and complete.

The following extract from the introduction sets forth the general scope of the book: "Heretofore the busy practitioner has often neglected hygiene, in its relation to private life, because the reliable books were, most of them, based on military needs. The architect has found that too often the stated scientific facts clashed with the utility of his building, and, as a result, in many instances serious hygienic sins were committed. It is to meet such cases that this book was planned and written; and that its objects have been accomplished will be evident to any one who is wise enough to study this important branch of knowledge in its pages."

Disease in Children. A Manual for Students and Practitioners. By James Carmichael, M.D., F.R.C.P. (Ed.), Physician Royal Hospital for Sick Children, University Lecturer on Disease in Children, Edinburgh. New York: D. Appleton & Co.

This handy little book takes up briefly the whole subject of pædiatrics, and finishes with an excellent appendix, containing directions for making the simpler dietary of children. It should meet with much favor.

---

[1] See page 167 of the Journal.

[2] See page 159 of the Journal.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, FEBRUARY 15, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 WASHINGTON STREET, BOSTON, MASS.

SANITARY INSURANCE: A SCHEME.

UNDER this head, Dr. G. Walter Steeves writes in the January *Nineteenth Century* magazine, taking for his text the proposition that "thousands of deaths annually result from diseases which are in the most absolute sense preventable."

The complaint which he has to make is that under the existing social arrangements, there is no sufficient guaranty to the purchasers or lessees of tenements as to the perfect sanitary condition of such dwellings. It frequently happens that the first intimation of a sanitary defect in a house is an outbreak of a preventable disease, or one of those infectious maladies classed under the generic term "zymotic," such as diphtheria or typhoid fever. It is an acknowledged fact that people are living at the present day in habitations whose condition of healthiness is only tested by the sudden advent of an infectious disease, and it is equally true that a house is usually considered healthy till found unhealthy. If the wealthy may indeed carefully select their dwellings, the time has certainly not arrived in any civilized country when sanitary surroundings are a *sine qua non* with the masses; and the majority are only induced to inquire into such matters after serious illness has occurred, or some marked insanitary condition has been pointed out.

Despite the fact that the Health Department is a prominent feature with all our municipalities, that there are Local Boards and State Boards well equipped and that all our universities have departments for the study of hygiene and laboratories for bacteriological research, and that grand results have been accomplished by all these instrumentalities — it would appear from mortality statistics that the public are not yet sufficiently protected against insanitary dwellings and surroundings.

Dr. Steeves cites instances like the following, which seem to settle the question of the tenant's protection — such instances can be paralleled in the history of many municipalities:

Mr. A., a prosperous draper, with a family of young children, elects to lease a house in a presumably healthy suburban district; he himself is quite ignorant of sanitary matters, but is naturally anxious to be on the safe side; consequently, as soon as he has taken possession, he communicates with the Health Department, asking for an inspection. He is surprised to find that as he cannot complain of any nuisance, the services of the Board's officials are not at his disposal. He is next advised to call in a sanitary engineer, who may or may not be associated with some sanitary association, to make an examination of the premises. This time he is successful; he is satisfied with the report, pays his fee, brings his family from town, where they have always enjoyed good health, and settles down at his new fireside with a feeling of relief. Six months elapse, when suddenly one of his children complains of sore throat; the doctor is sent for, and to the horror of the parent, the patient is declared to be suffering from diphtheria. The doctor now notifies the local Board of Health; and the main drain of the house, on being carefully tested by the officials, is found faulty — cracked by the sinking of one of the walls of the house, or one of the joints underground has been badly cemented. A further examination reveals the fact that the earth in the immediate vicinity is sewage soaked.

If such an incident as the above were to be taken as a statement of sober fact, it would teach either that the engineer who made the first report was careless in his inspection, or that the drain had subsequently become defective; in any case the necessity of frequent sanitary inspections of premises is apparent. Dr. Steeves's especial contention is that the existing protective associations, while doing much good work, have not gone far enough. As for property that has been standing twenty or thirty years, inspections with the necessary testing, should be scrupulously conducted three or four times yearly.

The "scheme" which this writer proposes, is as follows (how far it is practicable we must leave to our readers to judge): It is proposed that any city or district may organize for itself a sanitary protective and insurance association founded for the purpose of providing the public with a source of protection against unsanitary dwellings and surroundings. The definite objects would be:

(1) To examine into the sanitary condition of any building previous to tenancy, or after, and to afford skilled advice on hygienic matters or appliances, either on existing premises or on the plans of proposed arrangements of new buildings.

(2) To issue certificates respecting the sanitary condition of dwelling houses and buildings.

(3) To provide the means by which a cleanly and wholesome state of dwelling houses and premises may be maintained.

(4) The sanitary registration of dwellings.

(5) The insurance of buildings against a defective sanitary condition.

It will be seen from the above statement that such an association would have for one of its principal duties to keep yards clean, house-drains flushed, gullies cleared out, and all refuse promptly removed. Landlord and tenant would thus be relieved of needless worry.

It is a part of this scheme to insure dwellings against preventable diseases; it does not seem probable that this writer would advocate the indemnification of persons in the case of illness, for this would open the door to exorbitant claims. Nor is it quite clear on what principle damages could be assessed.

His notion is that dwellings are to be kept in sanitary repair by his hypothetical association in consideration of an annual premium paid by the owner, tenant, or both. In order that any property should be accepted by the association as a risk, it would be subjected to a stringent examination by both engineer and medical officer. Before this inspection could be made, a written permit must be obtained from the owner. The report with full details shall then be submitted to the members of council, who, with all the facts before them, assisted by the advice of their officials, would determine on an acceptance or rejection, as the case might warrant. When once the dwelling is insured, it will be the duty of the association to see that it is kept in a healthy condition. It is obvious that such a house would be subjected to frequent inspections, and minor defects would be at once corrected; it is also evident that all work (plumbing, etc.) would be performed by skilled and trusted workmen.

The review writer thinks that builders and landlords would favor this scheme, (1) because they would have an opportunity of having their property certified and registered; (2) they would be free from petty annoyances and frequent demand from tenants on account of unsanitary conditions arising from faulty traps, house-drains, etc.; (3) where the property was of such a high order as to warrant its acceptance by the association as an insurance risk, the owner would practically be rid of all responsibility.

The Boston Board of Health at the present time will, upon application, send one of its inspectors to examine the plumbing in a house or tenement where, on account of sickness or for other reason, there is cause to suspect an unsanitary condition — more than this cannot be undertaken without greatly increased resources. In other and smaller cities of this State a similar provision prevails, though the ability to respond to such demands is even less in proportion to the populations. The New York Board undertakes to do there about what the Boston Board does here.

Such an incident as the following, however, is not unheard of. In a large building, rented for industrial purposes, complaint is made by the occupants that the plumbing is defective. Inspection by the Board of Health shows that the complaints are well-founded, and that the defects are both grievous and dangerous to health. The owner is notified. Plumbers are employed, and several hundred dollars are expended. Their work is approved by an inspector of plumbing in the department of the inspector of buildings. Upon re-examination, the Board of Health finds the condition of the plumbing as faulty as before, but the work having been accepted and approved by the inspector of the other department, the Board is powerless to take further action, the owner's money has been wasted, and the occupants are still exposed to the same danger and inconvenience.

It is not a new proposal to undertake the sanitary inspection of dwellings and of buildings as a private commercial enterprise, but we doubt if it hitherto has been successful from a financial standpoint. There is no doubt, however, that of two dwellings offered for lease or for sale, one of which carried a guarantee of its sanitary condition and the other not, the former should, and we believe would, command a better price than the latter.

SURGICAL TREATMENT OF CRIME.

In the last issue of the Journal, editorial reference was made to a curious bill lately presented to the Ohio Legislature for the treatment of condemned criminals by using them as material for physiological experiment, and then putting them to death under ether. This may be called the physiological treatment of crime.

We have, before this, on several occasions referred to a proposition which is not new, but which seems to commend itself to members of the medical profession in our Southern States, namely, that criminals should be reformed and held in check by castration, instead of by imprisonment and hanging. A correspondent, Dr. Bishop, of Smithsburg, Md., sends us his views on this subject, which are not without originality as set forth before the Medical Society of Washington County, under the title of "Surgical Treatment of Crime."

Dr. Bishop is impressed with the feeling that law is a curious business, and that lawyers are curious people, but he thinks there might be hope of improvement if the legal mind would give its attention to medical methods. This idea he develops as follows:

> "If a case comes into court (the hospital for the care of social maladies being so called) for treatment for curative or preventive results, and a remedy should be proposed altogether rational and promising, its use is not permitted by the learned judge until a precedent for it has been discovered. Then the counsel in the case turn over the pages of legal lore to the times when people did not seem to know much of their own affairs, and if they find something like the case in hand (like it, because it is not like anything else), then they employ it as a remedy, — not otherwise. Under such circumstances it is hardly matter for wonder that the disease keeps ahead of the remedy, or that the law's delay should be a proverb and a threat against honest business. It is not so in medicine. If a physical malady occurs, all scientific methods are at once invoked to discover its nature and an efficient remedy and preventive. Chemistry, microscopy, physiology, are all employed. The profession everywhere is enlisted in the investigation.

One doctor is never employed by anybody to defeat the honest efforts of another.[1] Under such conditions it is hardly marvellous that there should occur marvellously contrasting results. In court, in equity cases so-called, the chances are largely with the rogue."

Returning to the subject of surgical treatment of crime, he says:

"Crime of all kinds is on the increase; our jails and almshouses and other asylums are filled with its products. Lynch-law cases (the signal-lights of lost confidence in courts of justice) are flashing everywhere every day, and everyday business transactions are largely based on individual integrity.

"On the other hand, it need only be mentioned that the average of human life is being gradually raised. Not only that, however, but all the deadly diseases of the past are under virtual control.

"Population is no longer decimated. People no longer fly in insane fear from house and home at the approach of cholera or yellow fever where medical men hold sway.

"Seeing that these things are so, would it not be wise for the one profession to borrow the methods of the other? Nay, would it not be even better to profit by both their example and assistance?

"The medical profession have long since shown that criminals are of germ origin, some peculiar character or condition of the spermatozoon resulting inevitably in the production of a criminal. The saying, '*Nascitur non fit*,' is as true, therefore, for the criminal as it is for the poet. Now, the doctors have found that the true way to prevent diseases of germ origin is to prevent the germ; and if the law wants to prevent criminals, the sure way to do it is to sterilize the parent criminal, and the only way to do that is to castrate him. Of course there will be a thousand objections urged against the remedy, only two of which will be worth answering. One will be cruelty, the other danger to life, both of which are already negatived by anæsthesia and asepsis. Doubtless there will also be the epithets 'uncivilized' and 'unchristian' applied to such treatment. But how will prevailing methods of treating criminals compare with this? Now they are penned up together to fester and ferment into more and more repulsive and dangerous criminal forms, — the petty thief emerging in form of a daring robber and the robber in the shape of a murderer.

"The practical effect of it all is the production of murderers by cultivation and breeding and the subsequent slaughtering of them by hanging. The thief, especially a bank thief, is imprisoned until the baby is weaned; but the spots of the leopard change not and the thief remains a reproducing thief in spite of legal punishment. How simple and how clean and how effectual the germicide method! You destroy the germ factory of the thief and so reform the thief himself more surely and effectually than all the prayers of the righteous would do it and prevent the production of thieves. If you do not breed thieves you will not have them.

"We owe it to the old English custom of hanging thieves that we are now as well rid of them — more than we owe it to moral suasion.

"One curious result of the treatment would be the settling of the race problem.

"Castration would hardly be a hardship to the negro. It has been practised upon members of the race from all time.[2] The harem of the Turk is always supplied with negro eunuchs. Why they were selected we may never know. Possibly it was because there were individuals who could be restrained in no other way. Of course a law declaring all crimes not punishable by death shall be punished by castration would not be tolerated by the Constitution as it is now written. But a law could be enacted punishing all slighter crimes by an exceedingly severe flogging, but releasing the criminal upon producing proof of recent castration. There is a Japanese law which secures the destruction of State offenders by restoring to the family the estate if they could prove that the offender had committed suicide. Truly wonderful is aseptic surgery: it enables us to literally obey the Scripture which enjoins us to cut off the offending member. It is, of course, taken as understood, that lady criminals are meant also, it being as easy to cure one as the other."

DISSECTION IN THE PUBLIC SCHOOLS.

It seems to be dawning upon the minds of some of the members of the Boston School Committee that a foolish thing was done when the Committee passed a vote recently, prohibiting all dissection of animals in the public schools. The idea apparently was that, if zoology could not be taught without dissection, so much the worse for zoology. Some members of the Committee, however, have now sufficiently recovered their mental equilibrium to admit that a cold-blooded animal, a fish or an oyster, for instance, may be dissected, but a warm-blooded animal may not.

This somehow suggests the art-code of members of our common council, that little boys in diapers or panties may be done in stone, but little boys without may not.

At the last meeting, on Wednesday evening, it was voted, after a sharp discussion, that dissection of animals be allowed in the public schools, and so the question returns to the *status quo ante*. We are not by any means enthusiastic that zoology should be taught in the public schools — certainly not in the grammar grade; but if it is to be taught at all, there is but one way to teach it — thoroughly, by means of dissection.

MEDICAL NOTES.

A Special Vaccination Train.— The Pennsylvania Railroad Company has sent out a special train with two physicians, who are to go over the whole line to Chicago and vaccinate at each station all the switchmen, section-men, gate-keepers and other employés.

The Medical Society of the District of Columbia.— The Medical Society of the District of Columbia will celebrate the seventy-fifth anniversary of its organization in Washington, on Friday, February 16th.

A New Medical Quarterly.— Dr. Joseph M. Matthews, of Louisville, Ky., has issued the first number of his new quarterly journal devoted to the diseases of the rectum, gastro-intestinal diseases, and rectal and gastro-intestinal surgery.

---

[1] Except in giving expert testimony.

[2] Until they have become quite used to it.

A New Italian Journal.— Guido Baccelli, M.D., Minister of Public Instruction in the Italian Cabinet and Director of the Medical Clinic in Rome, is to edit, with the association of Dr. Durante, a new Italian medical journal, *Il Policlinico*, a periodical of medicine, surgery and hygiene.

The Academy of Medicine Bureau of Nurses. — The New York Academy of Medicine has established a bureau of nurses which was opened February 5th. Each nurse is charged a registration fee of two dollars; and a complete record of all her cases is kept on file, with the report of the attending physician as to her work. It is hoped to have the bureau open both by day and night as soon as it is sufficiently organized.

The Secretary of the Wisconsin State Board of Health.— U. O. B. Wingate, M.D., M.M.S.S., of Milwaukee, has been elected Secretary of the Wisconsin State Board of Health, to succeed J. T. Reeve, M.D., who retires June 1st next, after serving in that capacity since the board was organized, nineteen years ago. Dr. Wingate's term of four years as Commissioner of Health of Milwaukee, expires in April next; about two years ago he was appointed on the State Board of Health for a term of seven years by Governor Peck.

The Protective Influence of Vaccination. — The report of the medical superintendent of the hospital-ships of England is strongly corroborative of previously recorded experience as to the protective influence of vaccination in safeguarding nurses and members of the staff of small-pox hospitals against an attack, and more especially a fatal attack, of that disease. Of 1,201 persons employed on the staff of the hospital-ships during the years 1884 to 1892, only six, or one-half per cent., contracted small-pox, and all of those attacked recovered.

The International Medical Congress. — The Minister of the Treasury of Italy has awarded the sum of 30,000 lire ($6,000) from the reserve fund of the treasury, toward the expenses of the Eleventh International Medical Congress of Rome. This is given as a temporary instalment pending the meeting of parliament, when a special bill for an adequate contribution from the State will be presented by the ministry.

The International Sanitary Conference at Paris. — The International Sanitary Conference which was to have met in Paris during the last week in January for the consideration of measures to control the cholera in the Red Sea and Persian Gulf in connection with the Pilgrimages to Mecca, was postponed by the French Government owing to incomplete arrangements made by other countries, especially Turkey which appointed no delegates. The postponed meeting was opened on the 7th of February, and the members were received by President Carnot, who welcomed them to the warmest hospitality in the name of the Republic.

Preliminary Programme of the Congress of American Physicians and Surgeons. — At the Congress of American Physicians and Surgeons to be held in Washington May 29th, 30th, 31st, and June 1st, the following subjects have been selected for discussion: By the Association of American Anatomists, "Morphology as a Factor in the Study of Disease"; by the American Climatological Association, "Sewer Gas"; by the American Dermatological Association, "The Distribution and Control of Leprosy in the United States"; by the American Association of Genito-Urinary Surgeons, "Nephritis in its Surgical Aspects"; by the American Gynæcological Society, "The Conservative Surgery of the Female Pelvic Organs"; by the American Laryngological Association, "The Surgery of the Accessory Sinuses of the Nose"; by the American Neurological Association, "The Influence of Infectious Processes on the Nervous System."

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, February 14th, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 24, scarlet fever 44, measles 10.

Report on State Control of Vaccine Farms. — At the next meeting of the Section for Clinical Medicine of the Suffolk District Society, Wednesday, February 21st, Dr. D. D. Gilbert, of Dorchester, will give the report of a Committee appointed by the Norfolk District Society to investigate the various vaccine farms with reference to State control. The Committee was appointed to act with the aid of the Suffolk District.

The Massachusetts General Hospital. — At the meeting of the Corporation of the Massachusetts General Hospital last week, the following officers were elected: President, Charles H. Dalton; Vice-President, John Lowell; Treasurer, Franklin Haven; Secretary, Thomas B. Hall; Trustees on the part of the Corporation, Arthur Astor Cary, Edmund Dwight, Samuel Eliot, William Endicott, Jr., Thornton K. Lothrop, Nathaniel Thayer, Henry P. Walcott, Roger Wolcott. The Governor has sent to the Executive Council the following nominations as trustees of the hospital on behalf of the State: Charles T. Bemis, of Medford; David P. Kimball, Thomas E. Proctor, and William S. Bigelow, M.D., of Boston.

Cost of the Small-Pox Epidemic in Lowell. — There were eight cases of small-pox in Lowell during the recent epidemic. Their occurrence cost the city nearly $7,000. This sum includes the hospital expenses and the cost of the free public vaccination.

NEW YORK.

Children in Factories. — The State Factory Inspectors, in their annual report, transmitted to the legislature on January 31st, state that the number of children under sixteen found employed during 1893, was a fraction under 34 in each 1,000 persons, as against

38 during 1892, and 112 in 1887; showing a decrease of about 10 per cent. over 1892 and of 70 per cent. over 1886, when the law restricting the employment of children went into effect.

A Reception to the Surgeon-General. — On Tuesday evening, February 6th, Mr. William Wood, the publisher, gave a large reception at his residence on 63d Street in honor of the new Surgeon-General of the United States Army, Dr. George M. Sternberg, at which there were present a representative gathering of the medical profession of New York and a number of other guests.

A Fire at the Memorial Hospital in Brooklyn. — On the evening of February 5th there was a serious fire at the Memorial Hospital for Women and Children in Brooklyn, which broke out in the operating room. All the patients, however, were successfully removed to the nurses' dormitory. The hospital is a three-story frame building, and it will be some time before the damage inflicted can be repaired. A longer and more substantial building is now in process of construction, and funds are being raised for its completion.

Transfusion of Blood in Asphyxia from Illuminating Gas. — In the case of a woman asphyxiated with illuminating gas recently admitted to the Long Island College Hospital, Brooklyn, all other remedies having failed to relieve the patient, transfusion was resorted to, and the blood for the purpose was generously supplied by the house-surgeon, Dr. Franklin W. Kemp. There was some temporary improvement after the operation, but she died the following day. A young girl, seventeen years of age, who had slept in the same room with this patient and had also been overcome by the gas, was successfully treated by the ordinary means.

Small-Pox. — During the week ending February 10th, 23 cases of small-pox were reported, with 9 deaths, against 22 cases and 4 deaths the previous week; and 594 cases of measles, with 19 deaths, against 554 and 20 deaths the previous week. The other contagious diseases showed a decrease. There were reported 129 cases of scarlet fever, with 16 deaths, against 151 cases and 20 deaths the previous week; diphtheria, 190 cases and 59 deaths, against 197 cases and 58 deaths. The total number of deaths in the city was 868, an increase of 20 on the week ending February 3d.

PHILADELPHIA.

Protection of Water-Supplies in Pennsylvania. — A conference of county and other local boards of health of the State of Pennsylvania was held at Harrisburg during the week ending January 29th. The preservation of the water-supplies of communities from pollution was discussed, and a resolution adopted pledging all boards of health in the commonwealth to do all in their power to prevent contamination of the inland waters of the State. In a paper read by the Health Officer of Philadelphia the work done by the Woman's Health Protective Association in stimulating sanitary reforms, such as keeping streets clean, removing nuisances, and improved household hygiene was referred to in the highest terms of approbation. The communications read were generally of a very practical and useful character. It was decided to form a permanent organization, which is to hold annual meetings at Harrisburg. The name adopted is "The State Association of Health Authorities of Pennsylvania." All persons officially connected with boards of health of this commonwealth shall be members, and honorary members may be elected from those who have rendered distinguished services to sanitation. Committees on Legislation and on Publication were provided for, besides an Executive Committee. The following officers were elected for the ensuing year: President, Hon. Robert E. Pattison (the Governor of Pennsylvania). Vice-President, Major Moses Veale, Philadelphia; Hon. Thomas P. Merritt, Reading; J. H. McClelland, M.D., Pittsburgh. Secretary, Wm. B. Atkinson, M.D., Philadelphia. Treasurer, Jesse C. Green, M.D., West Chester. At the first session, Dr. Walter Wyman, Supervising Surgeon-General United States Marine-Hospital Service, and Dr. J. H. Rauch, of the Illinois State Board of Health, were elected honorary members of the Association. This recent development in public health work is principally due to the zeal of Dr. Benjamin Lee, the secretary of the State Board of Health.

◆

Miscellany.

THE STUDY OF PEDIATRICS.

Dr. W. S. Christopher[1] makes an earnest plea for the more general and thorough study of the diseases of children. As it is the most immature department of clinical medicine, so it offers one of the richest fields of work for the student and pioneer. "Internal medicine," he says, "is taught almost universally from the standpoint of the adult, and pediatric manifestations of disease are only incidentally referred to. The consequence is that the new graduate is afraid of a baby, readily accepts the diagnosis of the grandmother, and not infrequently follows her treatment."

Another important factor in the retardation of the study of infantile disorders is the inherent difficulty of diagnosis. While the infant has not the power of speech, yet it does possess a very distinct and quite full language, the acquirement of which, however, demands faithful and persistent effort on the part of the practitioner. This language is quite as difficult to acquire as the manual skill needed in so many of the mechanical departments of the profession.

The foundation of the new work lies in the study and appreciation of the normal processes of growth, and of the development of functions which at birth and in infancy are so immature as practically to be non-existent. The anatomy and physiology of infancy and childhood are as much a part of pediatrics as is their pathology.

The great importance of environmental factors in the child's development is to be borne in mind: both the nutritive, the sanitary and the psychic. All are to be considered. Infant-feeding is not the whole of pediatrics, though, from the clinician's standpoint, it is the most important single factor.

---

[1] American Journal of Obstetrics, January, 1894.

The advantage gained from this systematic study of disease in children is not the child's alone. Much light will be thrown upon disease as it occurs in adults, and a keener appreciation of many conditions will be possible. The study is important for the great light which it will shed upon the diseases of adults, for the better alleviation of the sufferings of the helpless little ones, and for the broader and nobler, because farther-reaching, purpose of improving the race.

◆

SIR ANDREW CLARK ON OCCUPATION.

In the course of a most interesting lecture on the treatment of fibroid phthisis,[1] Sir Andrew Clark makes the following observations on occupation, which show clearly the peculiar quality which gave him his wonderful control over his patients. After speaking of the prime importance of proper food, clothing and exercise, he says:

"Another point about the management of those cases is occupation. If people are wonderfully well off in life, and a member of the family falls sick or becomes delicate, they are disposed to take him away from work on the ground that work is bad for him. I do not agree with them at all. I think that is about the biggest mistake that you will have to encounter. *Labor vitæ vita est.* Labor is the life of life; and especially is it the life of life to the delicate. And when any organ is sick it is then truer than in health that even in sickness and delicacy it is better for the organ to do what work of its own it can, provided it can do it without injury. And I can say to you from a considerable experience of tuberculous pulmonary disease, I can say with perfect confidence, that those who have done the best have usually been those who have occupied themselves the most. . . . Then comes tranquility of mind. Yes, labor is life, but worry is killing. It is bad management that kills people. I am frequently told that such and such a man has overworked himself. Nature will let no man overwork himself unless he plays her false — takes stimulants at irregular times, smokes too much or takes opium. If he is regular and obeys the laws of health and walks in the way of physiological righteousness, nature will never allow him or any person to work too much. I have never yet seen a case of breaking down from mere overwork alone; but I admit that it is necessary above all things to cultivate tranquility of mind. Try to help your patients to exercise their wills in regard to this, for wills count for something in securing tranquility — to accept things as they are, and not to bother about yesterday, which is gone forever; not to bother about to-morrow, which is not theirs; but to take the present day and make the best of it. Those affectionate women who will continually peer into what lies beyond never have any present life at all — they are always grizzling over the past or prying into the future; and this blessed to-day, which is all that we are sure of, they never have."

Correspondence.

THE VERMIFORM APPENDIX.

Clinton, Iowa, February 10, 1894.

Mr. Editor: — Recent articles on appendicitis have suggested to my mind that if the vermiform appendix is of no use to its possessor from his birth to his death, it follows that its period of usefulness must have preceded his birth. In that case it must be a remnant of the umbilical cord, and should have been removed at birth, as is the custom, beyond a doubt, among the brute creation. The depression of the human navel, as compared with the smooth cicatrix of the brute, indicates a different condition of the interior of the abdomen of the one as compared with that of the other.

My belief that animals remove this from the body of their young at birth, rests on the fact that I have witnessed the operation. Over a dozen years ago I befriended a little female dog in her hour of travail, and, instead of concealing, she seemed to take pains to make evident to me what services she rendered her young. Cautiously, with the points of her teeth, she made an incision around the umbilical cord about an inch from the body. This incision disclosed an inner membrane sheathed within the outer one. Grasping this inner membrane with her teeth and pushing with her forepaws on the little body, she pulled vigorously at the membrane, withdrawing quite a quantity through the umbilical orifice and out of the body of the pup. When she had removed all that would yield to her efforts, she bit it off and carefully and neatly chewed together the severed edges of the part that remained. Then commencing at the hind quarters of the little thing, which was lying limp and helpless, she gave it a vigorous licking with her tongue. Every sweep of her tongue seemed to give it life, and also to raise it slightly, when it would fall back again. She persevered and soon had it nearly upright, standing on its head and shoulders; but she did not leave it till she had thoroughly licked it all over and had brushed every hair into its proper place.

I have reason to believe that this custom prevails among all animals, though they perform the operation in a manner to defy the curiosity of man. The instinct of the brute prompts her to devour ravenously, everything ejected with her young. Having consumed all that is visible, she pursues the invisible, which she extracts by suction, while ostensibly she is merely licking her offspring. The ripples that pass through the little one, and the contortions it involunterily undergoes, testify, however, to some change which is occurring within, such as, possibly, the removal of a separate tissue enveloping each individual organ.

If, as the Scripture teaches, our first parents were created, not born, and created in the image of One who was not born, there could be no *raison d'être* for a navel. On the other hand, if mankind is an evolution from the animal, why did his reason bid him discard a practice which he had followed with success as a brute? We seem to hold a chain which stretches back, link by link, through past generations, till we reach a point coeval with the Fall of Man. Is it a cause or a result?

Looking forward, however, what might be the result if man would learn of Nature from the brutes around him? To the infant, immunity from pain, a life as healthy as any little animal; to the woman, a vast decrease in the pains of gestation and parturition; to mankind at large, less liability to hereditary disease and a freedom hitherto unknown from those unnatural appetites which sink man below the level of the brute, and lead to insanity and suicide.

Certainly, the subject is well worthy of investigation; and the solution of the problem would tend to raise man to a plane far above his present level; and the generations of the future, by avoiding the mistakes of their forefathers, would attain the perfect type of the human form divine.

Very truly yours,

Margaret C. Hayes.

---

[1] Lancet, January 6, 1894.

METEOROLOGICAL RECORD,

For the week ending February 3, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer Daily mean.	Thermometer Daily mean.	Thermometer Maximum.	Thermometer Minimum.	Relative humidity 8.00 A. M.	Relative humidity 8.00 P. M.	Relative humidity Daily mean.	Direction of wind 8.00 A. M.	Direction of wind 8.00 P. M.	Velocity of wind 8.00 A. M.	Velocity of wind 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S..28	30.38	26	32	19	60	56	58	W.	W.	10	8	C.	C.	
M..29	30.10	28	36	19	73	100	86	N.W.	N.E.	5	25	O.	N.	0.36
T..30	29.08	31	38	23	100	70	85	N.	W.	17	25	N.	C.	0.74
W.31	29.88	32	38	25	60	60	60	W.	W.	15	13	C.	C.	
T.. 1	29.96	27	30	23	60	60	60	N.	N.W.	9	8	O.	C.	
F.. 2	30.17	23	30	16	83	47	65	W.	S.W.	10	10	C.	C.	
S.. 3	29.80	32	41	23	81	60	70	S.	W.	12	9	O.	O.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, February 3, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Consumption.	Diphtheria and croup.	Scarlet fever.	Measles.
New York	1,891,306	848	344	19.08	21.00	8.52	2.40	3.36
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,115,562	462	144	9.90	20.24	6.60	.66	.44
Brooklyn	978,394	396	163	12.25	25.25	8.00	1.50	.50
St. Louis	500,000	—	—	—	—	—	—	—
Boston	487,397	220	59	12.15	22.05	7.20	1.35	—
Baltimore	500,000	—	—	—	—	—	—	—
Washington	308,431	95	35	11.55	19.95	6.30	—	1.05
Cincinnati	305,000	115	42	10.44	24.36	3.48	—	—
Cleveland	290,000	87	23	13.09	15.47	5.95	—	1.19
Pittsburg	263,709	87	41	20.23	—	5.95	9.52	—
Milwaukee	250,000	83	42	22.80	13.20	9.60	1.20	4.80
Nashville	87,754	25	9	—	20.00	—	—	—
Charleston	65,165	37	13	5.40	28.80	—	2.70	—
Portland	40,000	14	3	—	7.14	—	—	—
Worcester	96,217	31	13	19.38	25.84	16.15	—	—
Fall River	87,411	31	11	9.69	32.30	—	3.23	—
Lowell	87,191	35	8	17.10	14.25	—	—	2.85
Cambridge	77,100	37	10	—	32.40	—	—	—
Lynn	62,656	14	0	7.14	7.14	—	—	—
Springfield	48,684	17	2	5.88	17.64	—	—	—
Lawrence	48,355	10	0	10.00	—	—	10.00	—
New Bedford	45,886	19	5	5.26	21.04	—	—	—
Holyoke	41,278	8	3	12.50	50.00	—	—	—
Salem	32,233	14	4	21.42	21.42	—	—	—
Brockton	32,140	7	0	14.28	14.28	—	—	—
Haverhill	31,396	12	1	16.66	8.33	16.66	—	—
Chelsea	30,264	7	0	14.28	14.28	—	—	—
Malden	29,394	5	1	—	—	—	—	—
Newton	27,556	12	2	16.66	8.33	16.66	—	—
Fitchburg	27,146	—	—	—	—	—	—	—
Taunton	26,972	17	2	—	29.40	—	—	—
Gloucester	26,688	10	4	20.00	—	20.00	—	—
Waltham	22,058	0	0	—	—	—	—	—
Quincy	19,642	6	3	—	—	—	—	—
Pittsfield	18,802	2	0	—	—	—	—	—
Everett	16,585	5	1	—	20.00	—	—	—
Northampton	16,331	5	1	—	20.00	—	—	—
Newburyport	14,073	6	2	16.66	16.66	—	—	—
Amesbury	10,920	2	1	50.00	—	—	—	—

Deaths reported 2,811: under five years of age 1,000; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 377, acute lung diseases 467, consumption 300, diphtheria and croup 190, scarlet fever 47, measles 39, typhoid fever 28, diarrhœal diseases 26, cerebro-spinal meningitis 18, whooping-cough 18, erysipelas 10, small-pox 6.

From typhoid fever Philadelphia 6, New York, Cincinnati and Lowell 4 each, Brooklyn 3, Cleveland and Pittsburgh 2 each, Boston, Milwaukee and Springfield 1 each. From diarrhœal diseases New York, 13, Cincinnati 4, Brooklyn and Milwaukee 3 each, Charleston, Fall River and Somerville 1 each. From cerebro-spinal meningitis New York 8, Cleveland 2, Brooklyn, Washington, Worcester, Lynn, Holyoke, Chelsea and Amesbury 1 each. From whooping-cough Boston 4, New York and Washington 3 each, Philadelphia and Milwaukee 2 each, Cincinnati, Cleveland and Fall River 1 each. From erysipelas New York 5, Philadelphia 2, Boston, Pittsburgh and Lowell 1 each. From small-pox New York 4, Brooklyn and Boston 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending January 27th, the death-rate was 20.7. Deaths reported 4,156; acute diseases of the respiratory organs (London) 422, whooping-cough 192, diphtheria 80, measles 73, fever 42, diarrhœa 42, scarlet fever 35, small-pox (Birmingham 7, Bradford 3, Bristol 2, London, Nottingham, Liverpool and Halifax 1 each) 16.

The death-rates ranged from 14.8 in Derby to 31.1 in Norwich; Birmingham 25.6, Bradford 19.6, Croydon 17.7, Halifax 18.5, Hull 18.6, Leeds 18.8, Leicester 14.9, Liverpool 24.6, London 19.8, Manchester 23.8, Newcastle-on-Tyne 19.9, Nottingham 18.9, Portsmouth 16 8, Salford 30.1, Sheffield 19.7, Sunderland 16.5, West Ham 16.0.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 3, 1894, TO FEBRUARY 9, 1894.

The following named officers of the medical department are relieved from duty in this city, to take effect upon the completion of the present course of instruction at the Army Medical School, and are assigned to duty at the stations hereinafter designated: **First-Lieut. William W. Quinton**, assistant surgeon, Fort Riley, Kansas; **First-Lieut. Thomas S. Bratton**, assistant surgeon, Fort Niobrara, Nebraska; **First-Lieut. Deane C. Howard**, assistant surgeon, Fort Buford, North Dakota; **First-Lieut. Alexander S. Porter**, assistant surgeon, Fort Keogh, Montana; **First-Lieut. William H. Wilson**, assistant surgeon, Fort Leavenworth, Kansas.

Leave of absence for two months, with permission to go beyond sea, is granted **Major Robert M. O'Reilly**, surgeon, U. S. A.

First-Lieut. Benjamin Brooke, assistant surgeon, is relieved from duty at Fort Leavenworth, Kansas, to take effect upon the arrival of **First-Lieut. Wm. H. Wilson**, assistant surgeon, at that post and ordered to Camp Pitot, Butte, Wyoming, for duty.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING FEBRUARY 10, 1894.

Frank C. Cook, assistant surgeon, ordered to the Naval Laboratory and Department of Instruction, New York.

SOCIETY NOTICE.

Massachusetts Medical Society, Suffolk District. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, February 21st, at 8 o'clock.

Papers: Dr. D. D. Gilbert, of Dorchester, will give the report of a committee appointed by the Norfolk District Medical Society, to investigate the production of "Vaccine Virus."

Dr. A. P. Chadbourne will read on "Fibroid Phthisis."

F. C. Shattuck, M.D., *Chairman.*
Henry Jackson, M.D., *Secretary.*

RECENT DEATH.

Theodor Billroth, M.D., professor of surgery in the University of Vienna, died at Abbazia, in Austria, February 6th, aged sixty-four years. He was born on the Island of Rugen, in the Baltic, and received his education in arts and medicine at Göttingen, Berlin and Vienna. In 1855 he was assistant to Langenbeck at the clinic. In 1859 he was made professor at Zurich, but returned to Vienna in 1867 where he has since remained. During the Franco-Prussian War he had charge of the military hospitals on the Rhine. In 1881 he performed successfully the first operation of pylorectomy for cancer of the stomach. Of his numerous writings his work on "Surgical Pathology" is probably the best known.

BOOKS AND PAMPHLETS RECEIVED.

Anger; An Analysis of the Words of Jesus Christ Concerning Anger, as Given in the Sermon on the Mount. By Aaron M. Crane, Boston.

Trephining in Its Ancient and Modern Aspect. By John Fletcher Horne, M.D., D.Sc. (Hon.), F.R.C.S., Ed. London: John Bale & Sons. 1894.

Treatment of the Diseases of the Stomach and Intestines. By Dr. Albert Mathieu, Physician to the Paris Hospitals. New York: William Wood & Co. 1894.

Original Articles.

FOUR CASES OF MYXŒDEMA TREATED BY THYROID EXTRACT.[1]

BY FREDERICK C. SHATTUCK, M.D.

The evolution of our knowledge of the functions of the thyroid gland and the interdependence of atrophy of the gland and the disease which, following Ord, we call myxœdema, will constitute, I think, one of the most interesting chapters of the medical history of our time. Cretinism, endemic and sporadic, had long been known when the late Sir William Gull, just twenty years ago, published his paper on "A Cretinoid State Supervening in Adult Life in Women." The next important step was taken when the Swiss surgeons, Kocher and Reverdin, recognized the identity in symptoms of the cases described by Gull and certain cases in which total extirpation of the thyroid gland for goitre had been practised. Then came the confirmatory experimental evidence derived from extirpation in animals, notably dogs and monkeys, and complete demonstration that the thyroid gland plays an extremely important rôle in the economy, profoundly influencing the nutrition of the central nervous system, and through it of the skin and its appendages in particular. Antiseptic surgery rendered the next step possible — the transplantation of the thyroid gland. Temporary improvement followed this procedure: but it was only temporary, as a rule, inasmuch as the gland underwent absorption instead of rooting itself and persisting as such. The disease thus remained of great clinical and pathological interest, but was considered practically not amenable to treatment. For instance, Osler's "Practice of Medicine," the prefatory note of which bears the date January 1, 1892, says: "Unfortunately, no satisfactory treatment is known. The patients suffer in cold and improve gradually in warm weather; they should therefore be kept at an even temperature and should, if possible, move to a warm climate in the winter months." How differently would this passage have been worded January 1, 1893!

To Dr. George Murray, of Newcastle, England, belongs the credit of the practical introduction of our present brilliantly successful treatment. In 1891, he began the hypodermic injection of a glycerine extract of the sheep's thyroid. The obvious dangers and inconveniences of this method led to the attempt to attain the same good results by the feeding of the raw gland, finely minced, to myxœdematous patients. *Mirabile dictu*, gastric and intestinal digestion were found not to impair the efficacy of the gland, and it was proved to be still active even when moderately cooked. Under these circumstances it is not to be wondered at that dried or liquid extracts of the gland, which offer convenient modes of administration, are found to be thoroughly effective. We are still much in the dark as to exactly what the gland does in the economy and how it does it, and we must probably look to physiological chemistry for the answer to these questions. The interest of the subject is so great that I have not been able to refrain from these introductory remarks to a brief report of four cases in private practice which I have thus far treated by thyroid extracts.

Case I. This is, as far as I know, the first thus treated in this country, and presents some points of special interest. Miss A, twenty-nine years old, first consulted me April 21, 1892. Her maternal great-grandmother and great-aunt and her paternal grandmother died of cancer; otherwise the family history is unimportant. The catamenia appeared during the thirteenth year, and were regular. She was well until she reached the age of seventeen, when she left school on account of frontal headache and nervousness. For the next five or six years she was anæmic and lacked strength. The catamenia diminished in amount and she had leucorrhœa; but she did much as other girls, nevertheless, and was fond of dancing, in which she excelled. In 1885, much arsenic was found in the cretonne and wall-paper of her room. These articles were removed, and she improved somewhat; but remained physically below par. In October, 1890, she took carbonate-of-iron pills, and by January 1, 1891, considered herself perfectly well. In January, 1891, normal menstruation appeared; February was skipped; in March, May and June there was a slight flow; but the period has been entirely absent ever since, nor has there been any return of the leucorrhœa. In February, 1891, she began to gain weight, and since then had put on twenty pounds, especially about the face and bust. The complexion, which was formerly fair and delicate, had become coarse and red, and her appearance had so changed that she was often not recognized. Within a few months the palms of the hands in particular, but also the soles of the feet and portions of the integument covering the neck and trunk, had acquired a peculiar yellow color. This could also be detected on the mucous membrane of the inner surface of the lips. The skin was generally rather coarse and rough, but was deeply fissured and cracked toward the finger-tips. The coloration of the fingers, combined with the roughness, led Dr. Osler, who saw her with me, to compare the skin to the covering of a goose's foot. The nails were brittle and uneven, the hair thin and dry. The patient herself questioned whether the color of the fingers could be attributed to oranges, of which she had eaten many of late; but she observed that she could not wash or scrub the color off, and that it did not disappear when she temporarily omitted this fruit. She stated that three years ago, and several times since, she had awaked in the morning to find blisters (herpes?) on her nose. Lately she had had two small red bunches on her eyelids. One was removed by Dr. Cheney; the other disappeared spontaneously. Later she had another which I saw, and which looked like a stye, though it did not suppurate. Within two years a vaginal examination had been made by a competent hand, which discovered nothing amiss. In past years she had consulted specialists for her hair, and a throat specialist, and had been under the care of several physicians one after another.

Visceral examination was negative and the temperature normal. There was no mental or physical sluggishness; indeed, subsequent evidence would suggest that she was at this time mentally elated rather than depressed or indifferent. She was not strong; but complained chiefly of her changed appearance, coarse complexion and unevenly distributed gain in flesh. Perspiration was slight or absent. Her appetite was very large, digestion good, but sleep very poor, not more than four hours a night. I examined the blood, though I made no regular count, nor did I estimate the hæmoglobin. I considered it practically normal as did Dr. Osler some weeks later. The urine was normal in amount and not very significant. It contained constantly a very faint trace of albumen, uric-acid crystals, once a few hyaline casts, and a trace of arsenic ("A small trace in comparison with most cases of arsenical poisoning," Dr. Wood reported to me). Supraclavicular pads were present.

---

[1] Read before the Boston Society for Medical Improvement, December 11, 1893.

Suspecting myxœdema, though the case differed decidedly from those I had seen or read of previously, I sent her to Dr. J. J. Putnam, providing that he should not know my opinion before he stated his own. He was inclined to call it obesity with menstrual disturbance, rather than myxœdema. A few weeks later Dr. Osler saw her, and concurred in my diagnosis. I then began injections of a glycerine extract of sheep's thyroid prepared for me with every precaution by Dr. A. C. Jelly, who visited the abattoir weekly himself, and kindly took infinite pains, thanks to which no undesirable local symptom was ever produced. The extract obtained from one gland was injected every week in three doses for about three months by myself and Dr. Charles Folsom, who kindly assumed charge of her during my vacation.

For the last year she has not been under my care, as she lives out of town and has been unable to come in. During this year she has taken the dried extract of Parke, Davis & Co., and is now taking the New York glycerine extract by the mouth. At first, there was improvement in the condition of the skin, but I now believe that was attributable to the warm weather rather than to the treatment, which has been of no real benefit to her. About the middle of May an ecchymosis appeared on the right thigh as large as a small lemon. She had received no blow or injury so far as she knew, and the injections were all made in the back. In August, 1892, she began to be depressed mentally, and several times tried to end her life; indeed, for the last year she has been watched incessantly. The chief effects attributable to the thyroid administration seem to be loss of flesh, strength and appetite. A number of months ago a swelling near the left angle of the jaw appeared and discharged pus.

Dr. Cutler, of Waltham, under whose care she now is, kindly writes me that the left cheek is riddled with sinuses, and new abscesses occasionally form. He also says: "There is no violence, and apparently no hallucination or delusion, unless it may be a delusion when she says she cannot possibly move while almost in the act of walking. She is much depressed, and indeed quite desperate often, for she is certain she shall never be better. She has an intense præcordial distress often, which I judge to be the præcordial pain of melancholia. The hair is still falling, but new is growing. The skin and nails are still dry and rough. Speech is slow, but perfectly rational. She probably still retains her suicidal inclination, but does not manifest it in any way except in an occasional doubtful word."

Her mother writes under date of December 8, 1893: "There are black and blue marks on her legs, which, indeed, are so thin that they look like two sticks. Her face is swollen, also her waist, but the chest is hollow. The eyelids are swollen; the eyeballs often protrude. Her weight, which was 135 pounds when she first consulted you, is now less than 99. The under eye-lashes have gone. In July, 1892, her bust measured 40 inches; in October, 1893, 36 inches. In July, 1892, her waist measured 33 inches; in October, 1893, 29 inches."

I permit myself a few remarks on this case here, as it is sharply contrasted with the others which I am about to report. I confess that the failure of the appropriate treatment is a point against the correctness of the diagnosis of myxœdema in this case. If it be not myxœdema, I am at a loss what to call it. Dr. Mitchell Clark[2] reports two cases of failure, the only two I have been able to find in which treatment has been ineffectual. The treatment lasted two months and six weeks respectively. The use of these different thyroid preparations in my case, one after another, shows that the failure is not attributable to inertness of the remedy.

Case II. Mr. B., sixty-nine years of age, consulted me first March 26, 1893. He has had many attacks of rheumatic iritis, and been quite deaf for a number of years. He at first dated his symptoms from about December, declaring that he had been perfectly well the previous summer. Later he, and especially his wife, felt sure that the symptoms were of older date, and had been gradually coming on for at least a year, though more rapidly of late. He said he was suffering from "a dropsical tendency," and wished relief for two symptoms, — a nearly constant watering of the eyes and serous running from the nose, and an unsatisfactory condition of the bowels which moved once daily, the dejections being small and watery. I found that he was notably weak, so much so that he had not for some weeks made his accustomed daily visit to his club, only a few steps from the house. He had become very sensitive to cold, and would sit before the fire with his feet in a foot-muff and in a temperature of the room which was trying to his family. A sensation as if the lining membrane of his mouth and throat were swollen was also mentioned. Perspiration was absent. The skin of the hands was very dry and rough, the nails brittle; and he said his hands felt stiff when trying to grasp anything. The integument generally was dry and harsh, though far less so than the hands, and his skin had previously been unusually soft and smooth. There was pallor of the face and slight puffiness about the eyes and cheeks, suggestive of Bright's disease except for a translucency of the little folds and wrinkles revealed by close examination. The lips seemed swollen, and the lower was everted and somewhat pendulous. There was slight œdema of the ankles. His wife had noticed no mental change. Supraclavicular pads were not marked. In the median line of the neck, extending for perhaps two inches above the thyroid cartilage, was a scar, the result of an operation for the removal of a tumor by Dr. Hodges some twelve years ago. Dr. Hodges states that this was a deep-seated lipoma. The texture, color and thickness of the hair had shown no change; pulse 64; temperature 97.5; and the temperature was subnormal whenever taken during the few days which elapsed before treatment was begun. Physical examination, including the blood, gave negative results except as above stated and hæmoglobin 60 per cent. The urine was only 740 c. c. in twenty-four hours; specific gravity 1,020; albumen very faint trace; urea nineteen grammes to the litre; sugar absent; a few medium-sized hyaline casts and abnormal blood corpuscles.

The signs and symptoms seemed to me the same in character as those of myxœdema, though they were less in degree than in any case which I had ever seen or read of; and I had no hesitation in making this diagnosis, in which Dr. J. J. Putnam concurred. Dr. Putnam was so kind as to let me have some of Parke, Davis & Co.'s dried extract of thyroid gland, which had not yet been put on the market; and from April 1st to April 5th, inclusive, fifteen grains, the equivalent of one lobe of a sheep's thyroid, were given twice daily. April 6th, fifteen grains were given once. Before April 6th he complained of pains in the limbs and back. April 10th, seven and a half grains once. The remedy was then omitted until May 5th. After dinner on the evening of April 10th, I was sent for, and found him with severe pain in the cardiac region, resembling that of angina, with quick pulse and temperature slightly above normal. Morphia was given under the skin. For the next two to three weeks now he kept his bed. The attacks of pain tended to recur toward evening, and were always accompanied by marked increase in the pulse-rate, though irregularity and intermittency were never observed. With the subsidence of the pain, either spontaneously or after morphia, the rate promptly fell again. Nitroglycerine had no control over the pain. Repeated and most careful examination of the heart itself failed to detect any change in the size and sounds. He is a courageous man, whose iritic attacks have taught him what pain is, and he is reasonably tolerant of it; but this anginoid pain was so severe as to necessitate morphia hypodermically in one-half-grain doses. Two nights, at least, four of these were required to give relative comfort. The whole cardiac area was tender to pressure or touch, and a very limited spot just outside of the left nipple was exquisitely so. The necessity for hypodermics ceased April 28th. Gradually the attacks of pain diminished and disappeared; as did the tenderness, though more slowly. Meantime the myxœdematous symptoms showed marked improvement. The urine more than doubled in quantity, and April 13th was 1,028 specific gravity, with a very faint trace of albumen and forty-six grammes of urea to the litre, the sediment remaining the same. As he lay in bed now, he kept his arms out, covered only by his night-shirt, and desired only a sheet and one blanket as covering instead of a thick layer as before treatment. Desquamation took place as freely as after scarlet fever, affording the patient much occupation. The skin came off a toe like the finger of a glove. The watering of the eyes and running at the nose diminished materially. May 5th, one-grain doses of the extract every second day were given; May 18th to June 8th, one grain daily; June 9th to July 5th, two grains daily; from July 6th to the present time, four to eight grains daily. In June he felt better than for a year or two, in fact, perfectly well; and he has since so remained, though with the advent of cold weather the symptoms seem inclined to return in a measure. He has been remarkably free from headaches, to which he was formerly much subject. His weight has not varied materially.

---

[2] British Medical Journal, August 27, 1892, p. 451.

Case III. Mrs. C, thirty-four years old, consulted me at my office in March, 1893. Her family history was good, except that an uncle was ill for years with "deathly pallor and bloating." The catamenia appeared at fourteen and were regular until her marriage at twenty. Ten months later she was confined, and has never since been pregnant. The catamenia have recurred every five to seven months, painlessly and otherwise normal in every way. For at least ten years she has been notably pale, more or less "bloated," sensitive to cold, perspiring but little if at all, better summers than winters. Six years ago she was operated on for laceration of the cervix, with some subsequent gain in strength. Her urine, she thinks, has not been scanty. She has been supposed to have Bright's disease. She thinks her memory is less good than it was, but recognizes no other mental change. The facies was strongly suggestive of nephritis, but the urine was negative. Unfortunately the urea was not quantitated. There was some swelling of the legs without distinct pitting. Visceral and blood examination gave negative results. The temperature was normal. The skin and its appendages were not notably changed except for swelling and pallor. Supraclavicular pads not marked. At her first visit I was not inclined to think her the subject of myxœdema; but was led to reconsider the diagnosis after my observation of Case II, which came to me soon after. I therefore sent for her and gave her at first seven and a half grains of the dried extract every third day, after three weeks every second day. There was no unfavorable symptom except some palpitation; later, pains in the limbs were complained of, but they passed off entirely. Improvement was prompt, and has been very marked. The swelling of her face and her girth diminished. There was desquamation of the skin and increase in strength. Early in June she reported that she perspired as she had not done for a long time, and said that all her friends were congratulating her on her changed appearance. One grain of the extract was ordered thrice daily, and this dose has been maintained ever since. I saw her a few days ago; and she then said that she felt better than for years, and has regained her natural shape, though her weight has gone up nearly twenty pounds. Her dressmaker states that her neck measures one-half inch less, her bust three and a half inches less, than last winter. The swelling of the legs has disappeared. The flesh in general has become natural in consistency; there is color in the lips and cheeks. She volunteered the statement that last winter she was not comfortable if the temperature of the room was less than 80°; and now she objects to a temperature above 65°.

Case IV. Mr. D., of Missouri, visiting friends in the East, was sent to me by Dr. Gage of Lowell, November 17, 1893; fifty-two years of age, banker. Until five years ago his occupation was a very active one; since then has been sedentary. Family history, previous history and habits good. He never had malaria. For the past two years he has been less strong. The past two winters his hands especially have been very rough, and he has not perspired. Last winter and spring his friends began to notice a change in his color and appearance. Rest and change of scene was advised; but the panic came, and he had to stay at home. He lost his appetite; bowels became constipated; sexual desire was lost. He was weak, and very sensitive to cold. Some weeks ago he left home and went to some iron springs and then came East. He has gained fifteen pounds in flesh, with increased appetite and strength since leaving home; but his hands and appearance do not change. His eyes water easily, and his tear-ducts were dilated last summer with some relief. His former weight was 205; present, 180. The face presented a dirty pallor, with slightly puffy and translucent lids; no swelling of the lips. The skin generally was harsh, especially the hands and feet. The hair dry; supraclavicular pads marked; temperature 96.5°; pulse 60; heart sounds weak, otherwise not remarkable; lungs and abdomen clear; knee-jerks present. Blood negative except for diminished hæmoglobin. No enlarged glands; no œdema of the legs; feet objectively very cold. November 17th, the daily amount of urine was about 40 ounces; specific gravity 1,015; an accident prevented the estimation of urea. November 24th, specific gravity 1,020. November 29th, specific gravity 1,025; albumen slightest possible trace; a few casts. December 6th, specific gravity 1,027; albumen slightest possible trace; an occasional hyaline cast. The patient reports a distinct increase in the flow of urine, but the amount has not again been measured. One grain of the thyroid extract twice daily was ordered, and November 29th four grains a day. November 29th, temperature 97.5°; less watering at eyes; sweat some yesterday after exertion. Some pain and tenderness on right elbow. Increased thyroid extract to six grains a day. December 6th, pulse 72; temperature 97.4°; skin about the same; color better; less sensitive to cold; eyes distinctly less watery; is less hoarse than for six months, and sang last Sunday for the first time during that period. The duration of treatment in this case has been very short; but its results confirm the diagnosis. I have learned to push the remedy cautiously.

Cases II, III and IV are unquestionably cases of myxœdema, and can be added to the rapidly lengthening list of cures. Dr. Kinnicutt[3] collected 49 cases up to May 1st, treated by thyroid extract; and Dr. R. C. Cabot has kindly collected 68 cases published since May 1st. As before stated, two showed no gain under the treatment. Two of Dr. Murray's[4] died suddenly while under treatment, the symptoms having markedly improved. One was known, the other suspected to have an unsound heart. Dr. Cabot has found two other fatal cases. In one diarrhœa set in after the first dose, and death was speedy. In the other,[5] figured in Plate III, in Byrom Bramwell's "Atlas of Clinical Medicine," marked improvement in the myxœdematous symptoms had taken place. January 6, 1892, the patient had an attack of angina, took the last dose, and died seventeen days later. Myocarditis was found at the autopsy. In the 68 cases collected by Dr. Cabot the only other untoward symptoms which occurred often enough to make them especially suggestive were: faintness and headache in six cases, nausea and vomiting in four cases, pain in the back in four cases.

There has been so much written on this subject of late, and it is so prominently before the profession, that I shall not go into statistics or any general consideration of the disease and its symptoms; but there are several points illustrated by my cases to which I wish to ask your indulgent attention.

In the first place, we must recognize the fact, that, as in all other ailments, there are here differences of degree. Naturally the extreme cases were the first to be recognized, and to these alone does the description as now laid down in the text-books closely apply. Total inactivity or loss of the gland is one thing; partial inactivity or loss another. It is highly probable that the latter does not necessarily lead to the former; at all events, a long period of years may elapse before the mild passes into the fully developed disease. The symptoms in Case III were of ten or twelve years' duration; and yet I at first crossed out myxœdema in my differential diagnosis. Now that our attention is awakened and we are on the lookout for cases, I am convinced that we shall find them to be pretty common. Case IV, the mildest I have seen, I am sure I should not have recognized a year ago, although I was then watching for cases. Case II illustrates the power of the remedy and the dangers of overdosage. Dr. Putnam and I decided on the initial dose in that case, as he had been giving that dose for some time to another, but an extreme, case with great benefit and no untoward result. The anginoid attacks caused me great anxiety. I can now see that it was unwise to fail to appreciate therapeutically differences in degree and duration, but I did not see it then. It may be said in extenuation that knowledge of the safe dosage of the remedy was then very slight and that experience had to be gained. Similar anginoid attacks have been noticed by other observers, and constitute the most important untoward symptom likely to be encountered during treatment. Pains in the limbs and back have also been noticed in some cases, and were complained of by Case II before the appearance of the anginoid pain. They were also present in Case III, and the pain and tenderness of one elbow in Case IV may be of neuritic nature.

It seems probable that the use of the remedy must be persisted in through life, and that larger doses will be required during the cold than during the hot weather.

Diagnosis should seldom offer any special difficulty at present. Grave anæmias and Bright's disease are readily excluded, as a rule. I say, "as a rule"; for we must not forget Starr's[6] case, which had been diagnosticated as Bright's by eminent authorities and so treated for years. But the albumen and casts disappeared entirely under thyroid extract.

◆

SECOND ATTACKS OF TYPHOID FEVER IN ADULTS, TWO CASES.[1]

BY A. L. MASON, M.D.,
Visiting Physician, Boston City Hospital.

OCCASIONALLY a patient with typhoid fever says that he has had it before; but on further inquiry this statement can rarely be verified, on account of the lapse of time and memory, and the absence of accurate data regarding the previous illness, the history, charts, etc. Therefore the two following cases, which came under my care during both the primary and the second attacks, with an interval of two years in each case, are recorded as being somewhat exceptional. In Case I, that of a nurse, it seems not improbable that the disease was conveyed to her directly by the patients she was nursing.

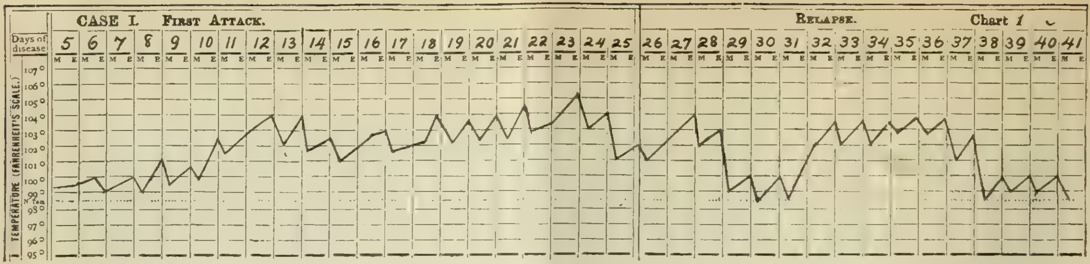
CASE I. — *First Attack.* Hospital nurse, aged twenty-four, after five days of prodromal malaise, September 7, 1890, was admitted to Dr. Rotch's service with typhoid fever. She came under my care October

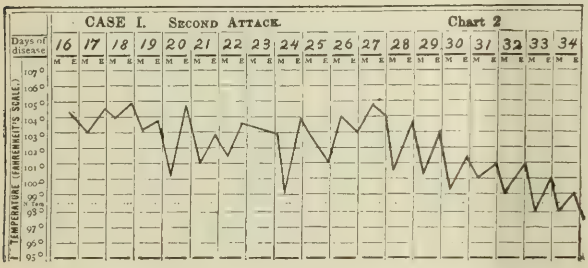
---

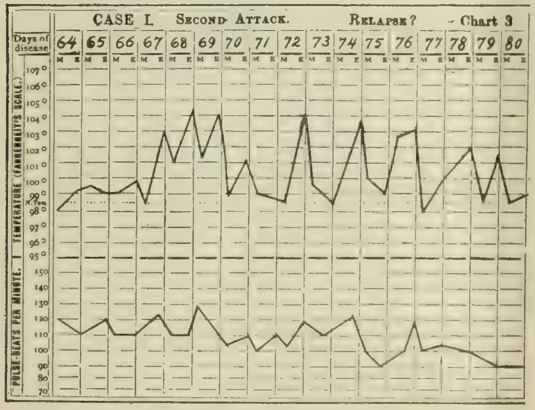
[3] Transactions of the Association of American Physicians, vol. viii, 1893, p. 332.
[4] British Medical Journal, 1892, ii, p. 450.
[5] Edinburgh Medical Journal, May, 1893, p. 1014.

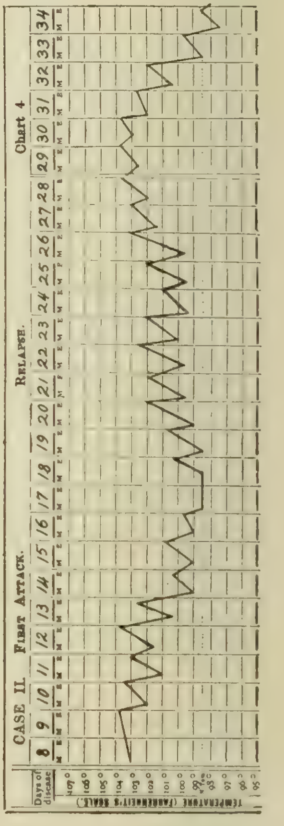
[1] From the forthcoming Medical and Surgical Report of the Boston City Hospital.

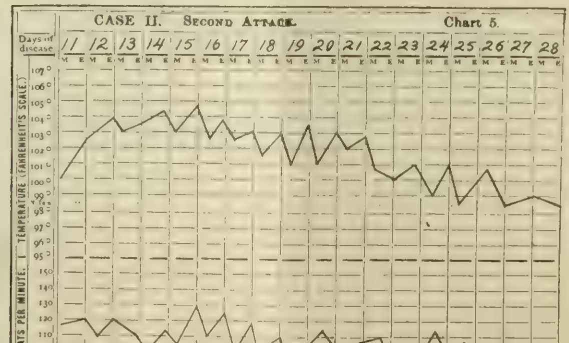
[6] Transactions of Association of American Physicians, 1893.


CASE I. First Attack.
Relapse.
Chart 1
Days of disease
5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41
M E
Temperature (Fahrenheit's Scale.)
107° 106° 105° 104° 103° 102° 101° 100° 99° N. Tem. 98° 97° 96° 95°


CASE I. Second Attack.
Chart 2
Days of disease
16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34
M E
Temperature (Fahrenheit's Scale.)
107° 106° 105° 104° 103° 102° 101° 100° 99° N. Tem. 98° 97° 96° 95°


CASE I. Second Attack.
Relapse?
Chart 3
Days of disease
64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
M E
Temperature (Fahrenheit's Scale.)
107° 106° 105° 104° 103° 102° 101° 100° 99° N. Tem. 98° 97° 96° 95°
Pulse-beats per minute.
150 140 130 120 110 100 90 80 70


CASE II. First Attack.
Relapse.
Chart 4
Days of disease
8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34
M E
Temperature (Fahrenheit's Scale.)
107° 106° 105° 104° 103° 102° 101° 100° 99° N. Tem. 98° 97° 96° 95°


CASE II. Second Attack.
Chart 5.
Days of disease
11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
M E
Temperature (Fahrenheit's Scale.)
107° 106° 105° 104° 103° 102° 101° 100° 99° N. Tem. 98° 97° 96° 95°
Pulse-beats per minute.
150 140 130 120 110 100 90 80 70

1st, in the later stages of a typical attack, which had been characterized by much abdominal pain and tympany, and was attended by a relapse, as is shown by the appended chart. During convalescence the pulse was high, 100 to 112, and she remained in hospital sixty-five days. (See Chart 1.)

Case I. — *Second Attack.* October 10, 1892, the same patient was admitted to my service on the sixteenth day of her second attack. On the 23d of August she had gone to the country to nurse a patient with typhoid fever, and, after remaining there for a month in constant attendance, she contracted the disease herself. I saw her a few days later at home, when the symptoms were general malaise, insomnia, bad headache, fever and diarrhœa, but the knowledge of her severe attack two years before led me to doubt whether she had typhoid fever a second time. On admission to the hospital, rose-spots were abundant, the spleen was enlarged, anorexia and vomiting were troublesome. The urine was albuminous. The disease ran a longer course than before, defervescence taking place at the end of the fifth week, and the pulse then falling to 80. (Chart 2.) She got up on the fifty-seventh day, but from the sixty-fourth to the seventy-ninth day convalescence was interrupted by a recurrence of febrile symptoms and severe pain in the right iliac fossa, requiring morphia for relief. She left the hospital on the ninetieth day. (Chart 3.)

Case II. — *First Attack.* A male cook, aged twenty-one, entered the service of Dr. Rotch, September 22, 1890. He had been ill ten days and complained of the usual prodromal symptoms of typhoid; malaise, pains in the limbs, headache, and nose-bleed. The bowels were constipated. In the second week splenic enlargement and rose-spots were noticeable; later the abdomen was swollen and tender. The fever abated at the end of the third week. As the patient appeared to be entering upon his convalescence, however, a relapse occurred which delayed his recovery for another month, and he remained in the hospital until the sixty-fourth day. (Chart 4.)

Case II. — *Second Attack.* March 19, 1892, the same patient re-entered my service with a history of malaise and debility for the previous three weeks. He had lost his appetite, slept badly, and felt chilly and feverish by turns. Eight days before admission he gave up and went to bed. Epistaxis had been frequent. In the second week the symptoms were bronchitis, abdominal pain, splenic enlargement, and an abundant eruption of rose-spots. Diarrhœa ensued, with tympany; epistaxis recurred, and during the third week typhoidal stupor was very marked, as was also sensory deafness. There was no otitis. In the fourth week a laryngitis began and lasted two weeks. The right submaxillary gland became swollen to the size of an hen's egg, red and tender, but subsided without suppuration. During convalescence there was a peripheral neuritis affecting the feet and legs, and the patient was not discharged until the sixtieth day of his illness. There was no membrane in the throat at any time, and the laryngitis, glandular swellings, and neuritis were thought to be post-typhoidal. (Chart 5.)

Remarks. — The rare recurrence of typhoid fever in persons who are protected by a previous attack has been pointed out by many writers, but there is some difference of opinion as to the degree of immunity which is thus conveyed.

Nathan Smith, in his "Medical and Surgical Memoirs," says: "My own personal experience is strongly in favor of the non-liability of the same individual to a second attack of typhus; for during the twenty-five years since I first attended patients in this disease, and in that time I have visited many hundreds, and have witnessed its prevalence several times in the same village, I have never known nor heard of its recurrence in the same person."

This accords with the researches of Gendron in his "Mémoire sur les epidémies des petites localités."[2] He mentions several instances of this immunity, among them the following: The village of Petit-Gênes had fifteen inhabitants, of whom twelve had typhoid fever. Of the three others two had had it before. Three years later, in a second epidemic, the disease attacked five persons only, who had come there since the previous outbreak.

Chomel, at the Hôtel Dieu, among one hundred and thirty typhoid patients, found no one who had previously had the disease.

On the other hand, Alonzo Clark, in his "Lectures on Fevers,"[3] mentions two epidemics of typhoid as occurring in Richmond, Massachusetts, in which Dr. Jennings attended two patients with second attacks, of whom he had also taken care during their fevers two years before. Sixty persons were attacked in each epidemic, but no details of these cases are given.

Piedvache[4] relates the case of a girl who had a severe attack at the age of ten, and a second one eight years later. Michel[5] had met with three cases; and Paul,[6] one in which a second attack occurred after three years.

Trousseau,[7] with his long hospital experience, saw but one case at the Hôtel Dieu, where a woman under his care had typhoid four years after an attack of the same disease in the wards of Professor Rostan, where she had remained four months. Trousseau in his private practice also met with one case: a girl twelve years old took typhoid fever in a severe form. The illness lasted fifty-seven days. In the following year she had another characteristic attack fifty days in duration.

Liebermeister[8] says that this disease confers a certain immunity, but not as complete as is the case with variola, measles and scarlet fever. He alludes to recurrent cases at the Basle Hospital, but gives no details.

Murchison (third edition, 1884) says: "It is generally believed that one attack of enteric fever confers an immunity from subsequent attacks." After recounting in brief the observations of Gendron, Piedvache, Bartlett, and others above-mentioned, he states that several cases had come under his notice in which two attacks had occurred in the same person after puberty, and that four similar cases were observed by Dr. William Budd (1859).

Strümpell's opinion (American edition, p. 4) is that "it does seem to be certain that the occurrence of typhoid fever gives very probable though not absolute immunity against any later new attack."

Pepper, in "The American Text-Book of Theory and Practice,"[9] states that he has attended several patients through two characteristic attacks of typhoid fever, and has had more than one apparently reliable account of three distinct attacks at intervals of several years. The same author says that a study of six hundred cases by Eichhorst showed the occurrence of a second attack twenty-eight times, or in 4.7 per cent.; and that recurrences are more common in men than in women, and milder than the original attacks.

---

[2] Journal des Connaissances Medico Chirurgicales. Par M. Gendron, 1834.

[3] New York Medical Record, vol. xiii, 1878.

[4] Piedvache, p. 103, 1850.

[5] Michel, p. 297, 1859.

[6] Paul: L'Union Medicale, 1870, i, 587.

[7] Trousseau, vol. iii, p. 50. Sydenham translation.

[8] Ziemssen's Cyclopædia, vol. i, p. 45.

[9] Ibid., vol. i, p. 165, 1893.

Moore, of Dublin, in his recent work on "Eruptive and Continued Fevers,"[10] gives a "Case of Recurrent Enteric Fever followed by Relapse," in full detail, with charts of both attacks, and also contributes a report of the same case to the Dublin *Journal of Medical Science*, April, 1892.

From the foregoing citations and cases, it appears probable that physicians who see many cases of typhoid fever may, in the course of years, meet with a few recurrent attacks in their own practice. Therefore I made inquiry on this point of most of my past and present colleagues at the City Hospital, who have all had exceptionally large experience in this disease. The mere statements of patients that they had had typhoid fever more than once were not regarded as sufficiently conclusive, but cases corroborated by records, charts, or the remembrance of professional observation, were sought for. None were found.

Dr. Robert T. Edes, who paid much attention to this disease, and whose paper on "The Cold Water Treatment of Typhoid Fever," by bathing, appeared in the City Hospital Reports, Second Series, 1877, replied to my inquiry as follows: "I do not think I ever saw a case of typhoid fever in a person who, to my knowledge, had had it some months or years before."

Dr. C. Ellery Stedman, whose published "Notes on Typhoid," based on an analysis of 1,188 cases at the City Hospital, are contained in the "Reports," Third Series, 1882, answered that he had "formed the opinion that one seldom had the fever, *really*, twice." He had no proofs of recurrent attacks, in the way of charts and records.

Dr. C. F. Folsom writes: "I have never seen recurrent typhoid fever which I knew to be such. A few patients stated that they were suffering from second or recurrent attacks."

Dr. T. M. Rotch says: "I do not recollect any cases of recurrent typhoid."

Replies of similar tenor were received from Drs. J. G. Blake, Geo. B. Shattuck, E. J. Forster, and other members of the hospital staff with long experience. In an analysis of 676 cases of typhoid admitted to the hospital in 1890 and 1891, after careful examination of the records, I found no recurrent cases.[11]

Therefore the two instances recorded above, with their histories and charts, are the only ones I have been able to verify, as having occurred in this hospital, in which the same patient has been admitted twice for typhoid fever. One other case came within my own knowledge in which a recurrent attack was fatal after an interval of thirty years.

Although the negative results of such an inquiry must be to some degree inconclusive, and a few authenticated cases indicate the probability of a still greater number which fail of positive proof, I think it may be assumed that the immunity afforded by an attack of typhoid fever is as complete as in the case of the exanthemata, except, perhaps, small-pox, in which it is said that less than one per cent. of recurrences occur,[21] although Sir Thomas Watson states that a few instances are recorded of three attacks of this disease in the same person.[13]

---

[10] Moore, p. 351, Wm. Wood & Co., 1892.

[11] See Boston Medical and Surgical Journal, April 7 and 14, 1892.

[12] See Reynolds' System of Medicine, vol. i, p. 139.

[13] Watson's Principles and Practice of Physic, vol. ii, p. 784, 4th edition, 1857.

◆

A BACTERIOLOGICAL STUDY OF FOUR HUNDRED CASES OF INFLAMMATION OF THE THROAT, OCCURRING IN DIPHTHERIA AND SCARLET FEVER, WITH ESPECIAL REFERENCE TO PATHOGENESIS.[1]

BY JOHN LOVETT MORSE, A.M., M.D.

(Concluded from No. 7, page 156.)

MIXED INFECTIONS.

The pseudo-membranous inflammations of the throat occurring in scarlet fever are always accompanied by cocci, usually streptococci. The presence of the Klebs-Löffler bacillus, means association with diphtheria as the result of a mixed infection. Janson (28) in seventeen cases of scarlet fever found streptococci alone or associated with other cocci. Baginsky (11) did not find the Klebs-Löffler bacillus in scarlet fever, and thinks that it disappears in cases of diphtheria when an eruption similar to the scarlatinal fever is developed and gives place to cocci. Park (13) found streptococci in seventeen cases of scarlet fever, and Sorenson (18) in thirteen cases of scarlatinal diphtheria found cocci and other organisms, but never Klebs-Löffler bacilli. Booker (19) has made a special study of the forms of cocci found in the scarlatinal pseudo-membranous angina, but does not find the Klebs-Löffler bacillus in them. Escherich and Bourges, however, have found them in the throat affections appearing in the course of scarlet fever.

In ninety-nine cases of scarlet fever with simultaneous pseudo-membranous inflammation of the throat, the following bacteria were found:

	Cases.
Klebs-Löffler bacilli alone	3
K. L. and streptococci	1
K. L. and staphylococci	10
K. L. and streptococci and staphylococci	9
Streptococci alone	4
Staphylococci alone	12
Streptococci and staphylococci	23
Streptococci, staphylococci and others	34
Other bacteria	3

That is, there were twenty-three cases of mixed infection, or nearly twenty-five per cent. Streptococci were present, alone or associated, in seventy-one cases, or in seventy-one per cent.

This tremendous proportion of cases of mixed infection can be accounted for in a number of ways. In the first place, the scarlet fever and diphtheria wards, although isolated from the rest of the hospital, are in charge of the same house-officers and visiting physicians. They are constantly going from one ward to another, and, although always wearing gowns in the wards and disinfecting their hands on leaving a ward, are probably responsible for a large number of the mixed forms. Various other persons, not directly connected with the care of the patients, also enter both wards. The possibility of the direct infection with Klebs-Löffler bacillus by physicians, nurses, and convalescent patients must also be considered, as it is undoubtedly a fact that a person with a very slight sore throat, without visible membrane, due nevertheless to the Klebs-Löffler bacillus, may infect others with a severe form of the disease. It is also a fact that the bacillus remains for a long time in the throats of convalescent patients, retaining its virulence, and rendering them a source of danger to others. Escherich (17) found the virulent diphtheria bacilli in cases in which the clinical picture of diphtheria was wanting. He thinks that these persons are immune towards the toxine, while there is no limitation to the growth of the bacillus. In one case a nurse in a hospital had the bacilli in her throat and, without being diseased herself, gave the disease to the children intrusted to her care. Feer (20) reports five cases in children in which the diphtheria bacilli were found on the tonsils without there being a trace of membrane. Koplick (14) has also proven the existence of similar cases. A certain number enter the hospital with a mixed infection, as is shown by bacteriological examination. As there is at present no separate ward for such cases, they are necessarily placed in one of the present wards. Although they are isolated as far as possible in separate rooms, they are undoubtedly the source of a certain number of other mixed cases. I think, moreover, that the diagnosis of scarlet fever is often made on insufficient grounds. The existence of scarlatiniform rashes and erythema fugax in diphtheria is well recognized (21 and 22). Steam and rough clothing next to the skin are also very likely to cause an erythema, which is often quite lasting. Drug exanthems may also give rise to error. These mistakes in diagnosis are especially liable to occur in cases which survive but a short time, thus not allowing opportunity for the recognition of the fleeting nature of the eruption. That these mixed cases do originate in the hospital is shown by the fact that during the period covered by this study sixteen cases developed scarlet fever in the hospital at an average time of nearly two weeks after entrance. Moreover, seven cases of scarlet fever developed inflamed throats during convalescence, in all of which the Klebs-Löffler bacilli were then demonstrated, although they had been absent previously. Under the present conditions these secondary infections are unavoidable, although every possible precaution is taken to prevent them. With the completion of the new wards for contagious diseases, however, which are now in process of erection, the conditions will be radically improved and all opportunity for such cases removed.

---

[1] A contribution, under direction of Dr. W. T. Councilman, from the Pathological Department to the forthcoming Medical and Surgical Report of the Boston City Hospital. Awarded one of the Lyman prizes for 1893.

BACTERIA OF THE HUMAN MOUTH.

Very extended researches (34) have been made with reference to the bacteria in the human mouth, which show that numerous species are constantly present in the buccal secretions and upon the surface of the moist mucous membrane. Some are occasional and accidental, while others appear to have their normal habitat in the mouth, where the conditions as to warmth, moisture, and organic matter are extremely favorable for their development. Up to the year 1885 Professor Miller, of Berlin, had isolated twenty-two different species from the human mouth — ten were cocci; five short bacilli; six long bacilli, and one a spirillum. He later cultivated eight additional species. Vignal has isolated and described seventeen species obtained by him in pure culture from the healthy human mouth; most of them are bacilli. Miller, who found micrococci to be the more numerous, supposes the difference in results to be due to the fact that many of the cocci do not grow on nutrient gelatine, which was the medium employed by Vignal.

Among the species we find two of the most common pus cocci, namely: the staphylococcus albus and aureus. Very different results have been reported by different observers as to the frequency with which these pathogenic cocci are found in the buccal cavity. Black, in the saliva of ten healthy individuals, found the staphylococcus pyogenes aureus seven times, the staphylococcus albus four times, and the streptococcus pyogenes three times. On the other hand, Netter found the staphylococcus aureus only seven times out of one hundred and twenty-seven persons examined. Vignal, in the course of his researches, did not find the streptococcus pyogenes at all. Experiments made by Sternberg, Vulpian, Fraenkel, Netter, and others, show that the diplococcus pneumoniæ is frequently present in the mouths of healthy individuals. Netter found it in fifteen per cent. of one hundred and sixty-five cases. Several other species have also been isolated by late observers. Sanarelli has also shown that the normal saliva has the power to destroy the vitality of a limited number of certain pathogenic bacteria, among them the staphylococcus aureus and streptococcus pyogenes.

RELATIVE FREQUENCY OF MICRO-ORGANISMS.

The small number of organisms found in the course of this study is probably because many do not grow on the media employed, and because others do not develop in the short time allowed before the cultures are examined.

The organisms most commonly met with, either alone or associated with the Klebs-Löffler bacilli, were streptococci and staphylococci. Diplococci were found in a number of cases and various forms of bacilli met with from time to time.

Streptococci occurred in 191 cases	48%
Staphylococci occurred in 295 cases	74
Diplococci occurred in 54 cases	13
Bacilli occurred in 87 cases	22

MORTALITY.

In this routine work no attempt was made to determine the nature of these bacilli, although several of them were carefully worked out in a shorter series to be reported later. The diplococcus lanceolatus was also noted in nine cases. As has already been stated, the mortality in cases containing the Klebs-Löffler bacillus was forty-one per cent. against twenty-three per cent. in cases in which it was absent. How the mortality was influenced by the presence or association of the various bacteria is shown in the following table:

K. L. alone in 46, of which 20 died	43%
K. L. with streptococci in 21, of which 6 died . .	28
K. L. with staphylococci in 93, of which 43 died . .	46
K. L. with streptococci and staphylococci in 77, of which 29 died	38
K. L. with others in 3, of which 1 died	33
Streptococci alone in 18, of which 1 died . . .	5
Staphylococci alone in 27, of which 15 died . . .	40
Staphylococci and streptococci 99, of which 19 died .	19
Others in 5, of which 2 died	40

These figures show that the mortality is about twice as great in those pseudo-membranous inflammations of the throat in which the Klebs-Löffler bacillus is present as in those in which it is absent. They also show that the mortality is not appreciably altered by the presence of other bacteria in association with the diphtheria bacillus. This result is somewhat at variance with those obtained by other investigators, several of whom have done special work with regard to the influence of other bacteria on the virulence of the Klebs-Löffler bacillus. Roux and Yersin (27) made injection experiments on guinea-pigs with mixed cultures of Löffler's bacillus and erysipelas. The animals experimented on died in forty-eight hours, while other guinea-pigs, which were inoculated with pure cultures of the same diphtheria bacillus, did not die. They also found certain products in mixed cultures which were not present in the pure cultures of either organism.

The toxic albumens obtained from the mixed cultures were much more virulent than those from the pure. Those of pure cultures of diphtheria bacilli killed guinea-pigs in thirty-six hours, while those from mixed cultures killed them in ten hours. Janson (28) thinks that the prognosis is worse when the bacilli are associated with a streptococcus. Heubner (15) found that sixty-six per cent. of the cases in which the bacilli were found alone died, and fifty-five per cent. of those in which they were associated with other cocci. Martin (23) found that in all cases of diphtheria where the streptococci were present there was a more fatal course than in those where only simple forms of cocci were found. He thinks that the presence of streptococci, either with or without the bacillus, materially complicates the prognosis. Goldscheider (24) found that the cases in which streptococci were present ran a more severe course, and lasted longer, and thinks that they may play a very important rôle in diphtheria. Gottstein (25) thinks that the streptococcus symbiosis may cause an increase in the virulence of the bacilli. Barbier (26) thinks that the diphtheritic infection may have a much more malignant character when it is engrafted on a streptococcus inflammation. He is inclined to believe that there are two forms of diphtheria to be separated from one another, one the pure form, and the other mixed with streptococcus. The latter corresponds to the form which is known as septic diphtheria.

The general opinion thus seems to be that other organisms, especially streptococci, in connection with the Klebs-Löffler bacillus, render the prognosis more grave. It would seem from my figures, however, that they have little or no influence. It would also seem that staphylococci, either alone or in combination, were more fatal than streptococcci.

A series of twenty-five cases, uncomplicated by scarlet fever and containing the Klebs-Löffler bacillus, were examined more carefully. Agar plates were made from the first slant tube of blood serum, and all the organisms present isolated in pure cultures. Pure cultures of all the Klebs-Löffler bacilli were obtained upon blood serum, of the streptococci on glycerine agar, and of the staphylococci on blood serum or agar. The staphylococci were also further differentiated by growth and liquefaction in gelatine stick cultures. The other organisms met with were studied as to their cultural peculiarities on the various media and inoculated into animals. The following table shows the results obtained:

No.	Name.	Diag.	Bacteria.	Result.
1	M. B.	D.	K. L. streptococci	D.
2	B. C.	D.	K. L. streptococci : staphylococcus albus.	D.
3	D. F.	D.	K. L. streptococci : staphylococci aureus,	W.
4	F. K.	D.	K. L. streptococci	D.
5	A. O.	D.	K. L. stapylococcus albus	W.
6	C. K.	D.	K. L. streptococci	W.
7	S. G.	D.	K. L. streptococci : staphylococcus albus, staphylococcus aureus	D.
8	S. M.	D.	K. L. streptococci	W.
9	M. D.	D.	K. L. streptococci	D.
10	F. R.	D.	K. L. bacillus coli communis (1)	D.
11	F. H.	D.	K. L. streptococci: staphylococcus aureus,	D.
12	S. R.	D.	K. L. streptococci	W.
13	W. M.	D.	K. L. streptococci : diplo-bacillus (2)	D.
14	V. E.	D.	K. L. streptococci	W.
15	A. A.	D.	K. L. streptococci: staphylococcus aureus,	W.
16	E. W.	D.	K. L. streptococci	W.
17	O. T.	D.	K. L. staphylococcus albus	D.
18	F. H.	D.	K. L. staphylococcus aureus	D.
19	J. H.	D.	K. L. streptococci	W.
20	V. P.	D.	K. L. large diplococcus (3)	W.
21	L. R.	D.	K. L. streptococci, large diplococcus (3)	D.
22	E. M.	D.	K. L. streptococci, diplo-bacillus	D.
23	G. T.	D.	K. L. streptococci, short bacillus (4)	W.
24	T. K.	D.	K. L. streptococci: staphylococcus aureus,	D.
25	B. H.	D.	K. L. staphylococcus albus, staphylococcus aureus.	D.

(1) Bacillus Coli Communis.

Diagnosis made on following peculiarities: Short, thick bacillus with rounded ends, often resembling a coccus. Acidified and coagulated litmus milk. Formed gas in sugar agar. Did not liquefy gelatine. Gave moist, distinct, yellowish growth on potato. Slightly motile in hanging drop of bouillon culture. Gave indol reaction in Dunham's solution.

(2) Diplo-Bacillus.

A diplo-bacillus with lancet-shaped ends. Morphologically always the same. Stains readily with the aniline dyes. Grows freely in white colonies on blood serum and glycerine agar. No growth in gelatine. Invisible growth on potato. Does not form gas in sugar agar. Does not coagulate or acidulate litmus milk. Whitish growth at bottom of bouillon. Non-motile in hanging drop of bouillon culture. Non-pathogenic for guinea-pigs. Resembles more nearly the bacillus septicus acuminatus of Babes than any other, but is probably not the same. Was found in two cases of this short series and observed a good many times in the long series, although its cultural characteristics were not studied at that time.

(3) Large Diplococcus.

Colonies on agar plates. White, homogeneously granular, with well-defined edges. Grows rapidly. Profuse white growth on glycerine agar; removed from surface with difficulty. Grows freely on blood serum. No growth in gelatine. Slow growth at bottom of bouillon. Non-motile in hanging drop of bouillon culture. No growth on potato. Non-pathogenic for guinea-pigs.

(4) Short Bacillus.

A small bacillus, not forming spores. Stains with aniline colors. On gelatine plates deep colonies show coarsely-granular, sharply-defined centre with finely-granular, outer layer having well-defined border. Liquefy plates in 24°–48°. Stick cultures in gelatine tubes show profuse white growth, liquefying surface and extending in pyramidal shape downward. Profuse growth on blood serum which it liquefies. Moist, yellowish growth on potato. Profuse white growth on surface of sugar agar, but no gas formation in stick culture. Gives marked white cloudiness in bouillon culture, and after a few days forms a white pellicle on surface. Motile in hanging drop of bouillon culture.

Does not coagulate or acidify litmus milk. Profuse creamy-colored growth on glycerine agar. Non-pathogenic for guinea-pigs.

These two last forms do not correspond to any described by Sternberg. This may be either because they have not been met with before, or if so, imperfectly described.

Of course, statistics compiled from so small a number of cases are of little value, but I nevertheless give them for what they are worth.

Klebs-Löffler bacillus not found alone.	
Streptococci in 19	76%
Staphylococci in 10	40
K. L. and streptococci in 9	36
K. L. and staphylococci in 4	16
K. L., streptococci and staphylococci in 6	24
General mortality	56
Mortality, K. L. with streptococci alone	33
" K. L. with staphylococci alone	66
" K. L. with streptococci and staphylococci,	66

Thus this series, as far as it goes, also seems to prove that staphylococci are more fatal in combination with the Klebs-Löffler bacilli than streptococci. It must be remembered, however, that in both series bacteriological results have alone been considered. It is very probable that an explanation for this excessive mortality in connection with the staphylococci would be found in the other pathological conditions, other factors, possibly severe lung complications, being present to account for the fatal termination.

Streptococci were present in a much larger proportion of cases than in the longer series. This result is, however, probably more correct, for in the routine examination mistakes were liable to arise in two ways. Streptococci, on account of their slower and smaller growth, were probably missed in some cases, and in others called staphylococci because they were bunched, it often being impossible to differentiate the two forms when closely crowded on a cover-slip.

VIABILITY OF KLEBS-LÖFFLER BACILLUS. — PERIOD OF CONTAGIOUSNESS.

Investigations were begun as to the length of time that the Klebs-Löffler bacilli remained in the throat after it was apparently clean. Patients are not now allowed to leave the hospital until the bacilli have disappeared from both throat and nose, as shown by bacteriological examination. The results of the examinations in the first twenty-five cases is appended. Considerable work has recently been done in this direction by several investigators. Janson (28) found the bacilli fourteen days, and Haubner (15) ten days after the membrane had disappeared from the throat. Tobiesen (30) examined the throats of forty-six patients, who left the hospital as well, for diphtheria bacilli. They were found in twenty-four cases, the length of time which they persisted bearing no relation to the previous severity of the case. They were found eight times four days after the membrane had vanished; three times, five days after; three times, seven days after; three, nine days after; one, eleven days after; one, fourteen days after; one, fifteen days after; one, seventeen days after; and one, thirty-one days after. These patients did not present any other pathological condition. He thinks that the presence of bacilli in the pharynx is assisted by pathological conditions of the larynx and nose. This late bacillus had the same pathogenic influence, on the inoculation of guinea-pigs, as the others. He regards it as possible that half the patients who leave a hospital, after having had diphtheria, have the power to infect their surroundings with the disease. He found one case who, after leaving the hospital, was certainly the source of infection for others. Löffler (31) investigated one case daily as to the presence of diphtheria bacilli. The fever disappeared on the fifth day, and the throat lesions on the sixteenth day. The bacilli, however, remained for four weeks longer. Verstraeten (32) also found the bacilli four weeks after the membrane had disappeared and Roux and Yersin (27) found them in virulent condition fourteen days after the membrane had vanished.

In my cases it was found that the average length of time that the Klebs-Löffler bacillus remained in the throat or nose after the membrane had disappeared was ten days. The average duration was the same for both throat and nose, although in some cases the bacilli were found in the throat much longer than in the nose, and *vice versa*. The bacilli disappeared in one case the day after the throat was clear; in three, three days after, and in one, four days after. In two cases in which the bacilli were never found in the nose, they remained in the throat ten and seventeen days respectively. In other cases, they were present in the throat thirty-seven days, and in the nose thirty-six days; in the throat twenty-two days and nose eighteen days; in throat ten days and nose seventeen days; and in both twenty-seven days. In order to test the virulence of these late bacilli, a guinea-pig was inoculated with a pure culture of the bacillus obtained from a throat which had been perfectly clear for ten days. It died on the third day, and the Klebs-Löffler bacillus was recovered from the seat of inoculation.

PSEUDO-DIPHTHERITIC BACILLUS.

The so-called pseudo-diphtheritic bacillus was not considered in this series, as the diagnosis was usually made entirely on morphology, and the cultural and pathogenic properties of the bacilli rarely studied. So much has been written about this organism, however, that it deserves consideration. The evidence is very contradictory, however, and the question of its existence must still be regarded as unsettled. Hoffmann (16) finds that this bacillus is a frequent and apparently regular inhabitant of the pharynx, and that it agrees very closely in its morphology and physiology with the Klebs-Löffler bacillus, but is non-virulent. He says that certain definite morphological differences may be made out on careful comparison with the Klebs-Löffler bacillus, but fails to state them clearly. Escherich (17) thinks that the diphtheria bacillus has in bouillon cultures a greater tendency to arrange itself in parallel masses, while the pseudo-bacillus lies in irregular groups. In the pseudo-bacillus there is a brown color on old agar cultures which never occurs on diphtheria cultures. He regards as the most distinctive point the growth in litmus bouillon, which at first remains violet and then becomes red. Diphtheria cultures produce this more rapidly. By inoculations of guinea-pigs, no immunity could be produced. According to his investigations, the pseudo-bacillus has been found only thirteen times in three hundred and twenty cases. Fraenkel (33) thinks that it is the true bacillus which loses its virulence on artificial media, just as the pneumococcus does. Roux and Fraenkel consider the two bacilli identical, and that the only difference is one of virulence. Roux and Yersin (27) found that the only difference between these forms appears to be that the false bacillus is found shorter on serum, that it develops more abundantly in bouillon, and continues to grow at twenty to twenty-two, while the virulent one grows only slowly. The change in the reaction of the bouillon takes place less quickly in the pseudo diphtheritic than in the diphtheritic. They sought for this pseudo-form in forty-five sound children, and found it in fifteen. They also found it in the throats of twenty-six children out of fifty-nine in a village where there was no diphtheria. It was always present in small numbers. The inoculation of this bacillus never produced fatal consequences; at the most, only a local œdema. They succeeded in various ways in diminishing the virulence of cultures of the virulent bacilli. The non-virulent organism thus produced compared fully with the pseudo-diphtheritic bacillus. These pseudo and non-virulent forms did not produce any toxines. In some cases, also, it was possible to increase the virulence of the organisms. The virulence was increased when the guinea-pig was inoculated with an active erysipelas culture at the same time. Neither the weakened bacillus nor the streptococcus alone could produce the death of the animal, but the mixed cultures could. Death took place with the phenomena of diphtheria, and the diphtheritic bacilli underwent an increase of virulence. The weight of evidence at present thus seems to show that the organisms are the same, differing only in virulence. Further work is necessary, however, before the question can be definitely settled.

RESULTS.

The results obtained from the study of this large number of cases are not as valuable as they would be if the clinical side was considered in connection with the bacteriological. It is probable, for example, that the mortality apparently due to staphylococci would be to a certain extent explained by a careful examination of the cases clinically. The relation of the operative cases to the bacteria present is also important. There would be great danger, however, of detracting from the value of the results as a whole, if too many factors were considered. It is unfortunate, also, that the fatal cases could not have been autopsied, as an accurate knowledge of the pathological and bacteriological conditions would be invaluable. It is extremely difficult, however, to obtain autopsies in Boston, and in no case more so than in that of a contagious disease. It is to be hoped, nevertheless, that they may be obtained in the future and this vast amount of material utilized, for here lies the field for conclusively demonstrating the results of the symbiosis of other forms of bacteria with the Klebs-Löffler bacillus.

BIBLIOGRAPHY.

1. Klebs. Verhandl. des sweiten Congress f. inner. Med., 1883.
2. Löffler. Mithz a. d. Kais. Gesundheitsamte, Bd. 2, 1884.
3. Babes. Zeitschrift f. Hygiene, Bd. 5, p. 177.
4. Welch and Abbott. Johns Hopkins Hospital Bulletin, 1891.
5. Welch and Flexner. J. H. Bulletin, 1892, No. 20.
6. Babes. Virch. Arch., Bd. cxlx, Heft 3.
7. Martin. British Medical Journal, 1892, March and April.
8. Guinochet. Arch. de Med. experimentale, Tome 4, 1892.
9. Councilman. Medical Communication of the Massachusetts Medical Society, xlv, 1, 260.
10. Prudden. American Journal Medical Sciences, May, 1889.
11. Baginsky. Berl. klin. Wochenschr., February 29, 1892.
12. Martin. Annales de l'Inst. Pasteur, May, 1892.
13. Park. Medical Record, 1892, xlii, 113.
14. Koplick. New York Medical Journal, August 27, 1892.
15. Heubner. Vortrag gehalten in der Med. Gesellsch zu. Leipzig, 1892.
16. Hofmann. Versammlung Deutsches Naturforscher and Aerzte in Wiesbaden, September, 1887.
17. Escherich. Berlin klin. Wochenschr., 1893, Nos. 21 and 23.
18. Sorenson. Zeitschr. f. klin. Med., Bd. 19.
19. Booker. Johns Hopkins Bulletin, 1892.
20. Feer. Korrespondenzblatt f. Schweizer Aerzte 23, 1893.
21. Osler. System of Medicine, p. 74.
22. Smith. Keating's Encyclopædia of Diseases of Children, 1, 625.
23. Martin. Annal de l'Institut Pasteur, 1892, No. 5, p. 334.
24. Goldscheider. Zeitsch. f. klin. Med., vol. xxii, 1893.
25. Gottstein. Berl. klin. Wochenschr., 1893, No. 23.
26. Barbier. Arch. de med. experimentale and d'anatomie pathologique, Tome 2, 1891.
27. Roux and Yersin. Annales de l'Institut Pasteur, 1888, No. 12.
28. Janson. Hygiea, April, 1893.
29. Williams. Medical Communication, Massachusetts Medical Society, 1893.
30. Tobiesen. Aus dem Laboratorium f. Med. Bacteriologie in Kopenhagen.
31. Löffler. International Medical Congress in Berlin, August, 1890.
32. Verstraeten. Annales de la Société de Medecine de Gand., vol. lxx, 1891.
33. Fraenkel. Berlin klin. Wochenschr., 1893, No. 11.
34. Sternberg. Bacteriology.

◆

RECURRENT APPENDICITIS.[1]

BY ALBERT AUGUST, M.D., CAMBRIDGE, MASS.

THE subject of this paper is a young man, age twenty-three years, single, student. Born and lives in Cambridge. Family history negative. Has always been well until he had typhoid fever three years ago, from which he entirely recovered, but has been troubled with chronic constipation since.

His first attack of appendicitis was January 1, 1892, when he complained of pain across the lower part of the abdomen, not very acute, but with considerable soreness; bowels were constipated. He entered the Cambridge Hospital at this time, and the record of the examination showed him to be of fair nutrition, pale and nervous, tongue coated with a pasty white coat. There was general tenderness over the abdomen, but it was especially tender in the right and left iliac regions. No dulness on percussion except in hypogastrium, due to a distended bladder, for the relief of which the catheter was used. The treatment at this time consisted of morphia suppositories, sufficient to keep him comfortable, and flaxseed poultices over the abdomen.

January 2d, the record shows some resistance in the right iliac region, with considerable sensitiveness on superficial pressure. Bowels were flat. I will say here that our patient was extremely hyperæsthetic.

January 4th, the tenderness over the abdomen had considerably diminished. Area of dulness had decreased in the right iliac region. Bowels were moved by enema. As our patient continued to improve, the tenderness became more distinctly confined to the area of the appendix.

He was discharged well January 14, 1892, having been in the hospital thirteen days. After he left the hospital he improved gradually, and at the end of a few weeks he was able to resume his college work.

His next attack was February 14, 1893, a little over a year since the first. He had been feeling poorly for five days, due to constipation, for which he took compound licorice powder. On the 13th he went to an evening party, and on his return home began to vomit, and complained of considerable pain in the abdomen.

He entered the hospital February 16th, where the recorded examination showed much tenderness in the right iliac region. The point of extreme pain was just below a line drawn from the anterior superior spine to the umbilicus; the tender area was about two inches long, and one and one-half inches wide, with the internal border about three-quarters of an inch to the right of the median line. His general and local condition constantly improved after entering the hospital, so that he was discharged on March 2d with only slight resistance in the right iliac region, but no dulness on percussion.

---

[1] Read before the Cambridge Society for Medical Improvement.

The third attack occurred April 14, 1893, an interval of a little over a month, and again after dancing at a party. He went to bed feeling perfectly well, but awoke early in the morning with severe pain in the bowels, most marked in the right iliac region. He entered the hospital on that same afternoon. Examination showed the bowels to be flat; on pressure, there was slight resistance over same area as described in previous attack, with the greatest tenderness confined to this region. Examination of urine showed it to be normal.

A consultation of the hospital staff was held at this time with reference to surgical interference, but it was decided to wait and advise operation during an interval between the attacks.

He steadily improved with a diminution of the resistance in the right iliac region and disappearance of the pain, and was discharged well March 22d.

Our patient gradually improved, but not wholly. He became very pale and anæmic, was extremely nervous and irritable, and was obliged to give up his college work. He was unable to take any immoderate exercise, on account of soreness and a feeling of stiffness in his right side; and if any one accidentally came in contact with him here, it would cause him considerable pain. His general condition became extremely erratic now. One day he felt perfectly well, and would indulge either in a day's work or amusement, for which he would pay the penalty on the next by being overcome with a sense of weariness and inability for any unusual exertion; in other words, he was reduced to the state of semi-invalidism, so much so that in the latter part of July, I urged him to take a journey into the country, to see what a change of air might do for his general condition. He had grown extremely nervous about himself, and was in constant fear of another attack.

On the 24th of July last, he went to New London, N. H.; and while there he indulged in considerable exercise — base-ball and riding (or rather jolting) over the New Hampshire roads, etc.

On the 26th of July he began to feel ill; and on the evening of that day he was seized with extreme pain in the right iliac region, and vomited considerably. They had no morphia to give him, and he suffered extreme agonies; the only relief he obtained was by frequent applications of hot poultices. In this way they brought him through the night, and until they were able to procure some morphia for him on the next morning.

I saw him in New London, July 28th, with a temperature of 102.5°, and pulse 120; he had not passed water for eighteen hours, and on his countenance was a very anxious expression. The abdomen was flat; in the right iliac region there was considerable dulness, with the tenderness well marked at McBurney's point; and the general condition was like that of his three previous attacks. By means of rest, poultices, and morphia sufficient to control his pain, we were able to bring him home, August 3d, when he began to improve again to a certain extent.

About a week later, August 11th, after running for a train, he was seized with another attack, very slight, which confined him to his bed for four days only.

He was now tired of Damocles' sword, and readily acquiesced when relief was offered to him by surgical means.

He entered the Massachusetts General Hospital August 23, 1893. The operation was performed by Dr. A. T. Cabot, August 26th, the patient having been previously carefully prepared. On the day previous to the operation, he was allowed no solid food; his bowels were well moved with castor-oil; and an enema, with turpentine, was administered. On the morning of the operation he was thoroughly bathed, and an antiseptic poultice placed over the abdomen.

Operation. — Patient was anæsthetized, ether being used. An incision was made over McBurney's point, about four and one-half inches long, the general direction corresponding to the outer border of the rectus muscle. Passing the fingers into the peritoneal cavity, the appendix was found in a bed of very firm adhesions, attached to the anterior abdominal wall. Adhesions were separated with the fingers, and the appendix was liberated and brought up into view at the opening. The appendix was surrounded with adhesive inflammatory products, from which it was freed. Hæmorrhage from a small artery on the external surface of the appendix persisted, and the artery was tied. A silk ligature was now passed around the base of the appendix; a cuff of the peritoneal coat of the appendix was dissected back; the appendix was cut off; and the peritoneal cuff was stitched over the stump with silk. The stump was turned toward the right side of the abdominal cavity. The abdominal wound was brought together by means of six silkworm-gut ligatures, which were passed through all the layers of the abdominal wall; the wound was sewed up tight, no drainage being used.

Macroscopic examination of the appendix showed it to be two and one-half inches long, with the walls somewhat thickened; at the end and on one side it was perforated, but the surrounding parts were protected by the inflammatory products. The lumen was pervious, and no concretion found. I have not received the report of the microscopic examination.

He made a good recovery from the ether, and made a progressive convalescence. His temperature was practically normal throughout; his bowels were moved August 28th with calomel and one seidlitz powder, and thereafter moved voluntarily. On account of the unusual length of the incision, the stitches were not removed until the twelfth day, when everything was found firmly united. He walked out from the hospital well, September 11th, sixteen days after the operation. Since leaving the hospital, he has steadily improved, both in weight and general condition. He has lost that nervous irritability to a great extent, and has regained his former ambition. He is now able to go in town every day, and do a day's work without any of the former fatigue. I saw him recently, and examination of the right iliac fossa revealed no tenderness or resistance whatever.

The particular etiology of appendicitis is still somewhat obscure, that is, we have no definite set of predisposing causes which we can be sure are the origin of the trouble. Some writers speak of constipation as a *sine qua non;* others suppose that diarrhœa plays an important part; still others think that it is caused by the impaction of a foreign body; and Treves considers a short mesentery as an important etiological factor, and a consequent twisting of the appendix as a result of this.

Constipation seems rather coincident than etiological. In 209 cases analyzed by R. H. Fitz, only 38 had an antecedent history of constipation; while Talamon points out that the most obstinate cases of constipation are in women, and still appendicitis is four times as common in males as in females. Again, we have constipation the rule in people of advanced age; and we all know that the greatest number of cases of appendicitis occurs between the ages of fifteen and thirty years.

Treves says that fæcal concretions are not commonly found; Matterstack found only nine cases in a series of 146. Talamon suggests that a considerable proportion of cases are caused by fæcal concretions, those not being found at operation having possibly been forced back by the muscular contractions of the appendix, or if an abscess has formed with perforation, that the fæcal concretion has become softened and disintegrated by the action of the pus.

I have been much interested in Dr. Talamon's theory as regards the predisposing cause. He suggests the existence of a membranous colitis, or intestinal atony, where the patient has uncomfortable, distressing pains in the bowels, irregular stools, sometimes mucoid and sometimes constipated, and that the fæcal and mucoid matters are deposited in the cul-de-sacs of the mucosa and are dried, and under favorable conditions (for example, increased peristalsis) are forced into the lumen of the appendix. He considers this to be the primary cause in recurrent attacks, which causes a peri-appendicitis and consequent adhesive inflammation about the appendix which binds it at an acute angle to the cæcum, as in the subject of this paper, where the appendix was bound down firmly to the anterior abdominal wall in such a manner that all fluids or solids were forced into the cæcum against the action of gravity. It is very easy to see how the appendix may become distended with fluids under these conditions, and how congestion and ulceration may follow.

Dr. Cabot has noticed in almost all of his operations for recurrent appendicitis that the appendix was bound down by adhesions in such a manner as to twist the lumen of the appendix out of its proper relations.

Dr. W. T. Bull, in the New York *Medical Record* of March 18, 1893, describes twelve cases in which he also noticed the appendix sharply bent and fastened in that position by adhesions.

In some cases, the tip of the appendix had been imbedded in a small abscess-cavity, which remained latent only to light up and cause a recurrence at the slightest occasion.

Fitz states that attacks of indigestion and acts of violence, especially from lifting, jumping and pulling, are exciting causes in one-fifth of the cases. A local cause is found in more than three-fifths of all cases, for example, inspissated fæcal matters, or the presence of a foreign body.

The question of the propriety of operating in the interval between the attacks is an open one, and must be considered in each individual case. Dr. Fitz, in his statistics, places the percentage of recurrence at 11 per cent. Dr. S. F. Dennis thinks that conservatism should be used in operating, since only 11 per cent. of the cases are recurrent, and of these some end in resolution, or else the lumen of the appendix is ablated by chronic inflammation, and is reduced to a thickened fibrous cord. In some cases, he says, the perforation will cause an extra-peritoneal abscess; and in still others there will be a localized, circumscribed, intra-peritoneal abscess, which may empty itself by rupturing into the rectum, vagina, cæcum or bladder; and that only a small percentage of dangerous cases would be left, and he thinks these might be operated on early in the next attack.

Treves first advised the operation in 1877, and considers that the following indications justify it: (1) If the attacks have been very numerous; (2) if the attacks are increasing in frequency and in severity; (3) if last attack has been so severe as to place the patient's life in considerable danger; (4) if the constant recurrences have reduced the patient to a condition of chronic invalidism, and has rendered him unfit for occupation; (5) if owing to persistence of certain local symptoms during the quiescent state, there is a probability of a collection of pus.

As regards the mortality of the operation. In a collection of 81 cases by Cabot, there has been only one death, which was due to sepsis, a mortality of about 1¼ per cent. Treves reports 14 cases operated upon, all of which made a sound recovery.

It seems to me that if an operation is inevitable, the sooner it is done the better, that is, before the patient has had too many recurrences; for then there is a liability that the adhesions are dense and firm, and very difficult of separation.

Some writers say that there is no necessity of alarm in recurrent attacks, for nature protects herself against general infection of the peritoneum by these very adhesions which are formed, and that general peritonitis is avoided. Still, Price has collected 30 cases of recurrent appendicitis, and 20 of these exploded into an abscess or general peritonitis before the third attack.

The operation during an interval seems a safer one than that during an acute attack, even if that is done early; for in the latter case you have no time to prepare your patient for an aseptic operation. The patient is in an extremely nervous condition, is fatigued from pain, his bowels are more or less distended, the site of the operation has been reddened or blistered by stimulating embrocations; so, as Cabot says, it is almost impossible to do an aseptic operation. And here I would reiterate Dr. Cabot's plea, that the general practitioner who has a case of appendicitis under his charge, should use antiseptic poultices, which will render an operation much safer if one has to be done in an emergency.

It is very much different in an interval between the attacks. You approach the patient under entirely different conditions; he has been prepared for the operation, both in body and in mind; his diet has been regulated; his bowels have been moved, and all flatus possible has been removed; and the field of operation has been made thoroughly aseptic.

The technique of the operation varies according to the individual taste of each operator. Dr. McBurney uses the cautery and ligature in all of his cases. Dr. Treves sews up all of his cases without drainage.

Dr. S. C. Gordon, in the Boston *Medical and Surgical Journal*, reports six cases with recovery. He believes that all cases can be carried through the acute stage by means of salines and depletion, and that it is much safer to operate in an interval; he also sews up without drainage, even those in which he finds an abscess.

In conclusion, I would say that it does not seem to me possible to lay down any definite rules as to when the operation should be done, but that each case must be considered separately. It seems to me that if it were possible to carry a patient through the acute stage without operation it should be done, since the operation in the interval by a skilful surgeon carries with it such a small mortality, and the abdominal wound can be sewed up tight, therefore minimizing the danger of a subsequent hernia.

◆

Clinical Department.

A CASE OF MALIGNANT ENDOCARDITIS.[1]

BY WILLIAM E. FAY, M.D.

THE early recognition of malignant endocarditis is so often difficult to the clinician that I desire to read this case. It is with the hope that it may be suggestive of discussion which will elucidate the way of diagnosis.

The patient was an Irish waiting-maid of twenty-two. Of her family there is little knowledge. Measles in early childhood; joints swollen and painful, with rheumatic fever lasting one month at the age of twelve; catamenia beginning three years later, always regular; occasional headaches; and a futile operation to find a needle she thought lost in her foot, comprises the known previous history.

On June 22d last, she is reported as standing in a china-closet, during a thunder storm of unusual severity, attending to her duties. Suddenly she was unable to speak. She understood what was said to her. She knew the words she ought to say, but could not utter them. From her own statement she thought she was all right in every other way, because she could move her hands and feet, and see and hear and eat. She experienced a chill some time during the next two days, when she was placed in the Newport Hospital. In a few days more she began to be able to say a word or two. Sometimes she was unable to repeat a word just spoken. She gradually acquired increasing power of speech during the six weeks of her treatment there.

On August 5th she was transferred to the Carney Hospital, and admitted to the service of Dr. James J. Minot. She had partial aphasia and huskiness of voice. Pain in left side, under costal border. Temperature 102.5° F. in the evening, subnormal in morning. A trace of albumen with a few blood and vaginal epithelial cells found at this time soon disappeared. Urine otherwise unimportant. No error detected in reaction of pupils to light or accommodation, nor in the protrusion of tongue. No paralysis. Throat and lungs normal. Apex beat of heart seen in fifth interspace, inside the mammary line. Pulse full, regular, compressible. Systolic murmur quite loud at apex, propagated into axilla, heard posteriorly at border of left scapula, anteriorly lightly over præcordia to base. Pulmonic second sound increased. Splenic area considerably increased, but limits indefinite on account of extreme tenderness at this time. No tenderness elsewhere. No extreme tympany. Skin sensations normal.

During the following two weeks her speech became pretty natural, except for a certain hesitancy. She had a daily rise of temperature in the afternoon with morning remissions between the extreme limits of 96.4° and 104.8°

Ten grains of quinine given at height of fever, caused gradual diminution of temperature, tinnitus and headache. Eight grains daily in divided doses was not well borne. However, during administration of quinine the variance in limits of pyrexia was somewhat lessened. Examination for plasmodium malariæ was negative in results.

The patient came under my observation, during the absence of Dr. Minot, in the second half of August. She presented an aspect of anxiety, pale, eyes becoming slightly sunken. Tongue clean. No cough. No dyspnœa. No hæmorrhages. No abdominal tenderness except over area of splenic dulness. This area extended from the sixth interspace to the costal limit, where during inspiration the edge could be dimly felt. Dull pain here was more or less constant. No rose spots or petechiæ. Urine and dejections normal. Heart's murmur unchanged. Baffled in diagnosis, I asked Dr. J. J. Thomas to see the case with me and examine the blood. He found the red to the white as 100 to 1. Red normal. White in excess. Hæmaglobin 50 per cent. A condition more often pertaining to chronic, and after some acute diseases, as malaria and pneumonia, not typhoid fever.

About September 1st a small red spot appeared just below the trochanter of right femur, extending two or three centimetres. A small abscess developed at the centre, with infiltrated, uneven edge. Somewhat painful. Yielded a drop of pus. Healed in three weeks, under antiseptic dressings. Through this month patient gained a little strength. Splenic pain diminished. She sat up. A week more, and she was again in bed. Morning remissions of temperature are a degree or two less, and the evening rise higher. Pain recurs in the region of spleen. Urine becomes smoky; amount diminished; specific gravity 1,023; sugar absent; large trace of albumen; hyalin, fine, granular, fibrinous blood and epithelial casts; free blood and epithelial cells. It is five weeks since the urine was normal. In another fortnight there is one-eighth per cent. albumen; casts more numerous, of both large and small diameter. The spleen continues to be felt. Œdema of face appears. Semi-comatose condition supervenes.

On November 20th patient dies.

This illness extended over 122 days. In reviewing the time, it seems to divide itself somwhat into different periods. First aphasia is prominent, whether due to functional or organic cause? The kidneys showed no evidence to signify a causal relation to embolus. The mitral valve seemed responsible for a heart murmur, but this was thought to be an old chronic injury from an attack of rheumatism in childhood, and incidental to this illness. There had been no trauma. It was difficult to distinguish whether the trouble was motor aphasia or hysterical aphonia. There was no mind-blindness nor mind-deafness; and if Broca's region was impaired, lesion must have been extremely limited to be without some loss of function in the face, arm, or leg. In favor of the functional causation seemed to be the onset of the trouble coincident with her alarm from thunder and lightning, which frightened others about her; her age and sex. Also from the surgeon who sought the needle in her foot a year before, is learned her disposition then, which led him to suppose it might have been hysterically lost.

---

[1] Read before the Boston Society for Medical Observation, December 4, 1893.

As this symptom passed, the question of malaria offers. There had been one chill reported. A suggestion of malaria accompanied her from the Newport Hospital. She had almost daily rises of temperature of four or five degrees, and an enlarged splenic area. But the lack of distinct periodicity, the tenderness disproportionate and extreme over a moderately enlarged spleen, the absence of plasmodium malariæ in examinations made by the interne (Mr. Dewis), and the intolerance of moderate doses of quinine made this diagnosis improbable.

Typhoid fever was disregarded after observing that the peculiar temperature chart maintained its character constantly without any typhoidal curve, the tongue clean, no rose spots, and nothing abnormal with the bowels. In regard to tuberculosis, she had some hectic at times, progressive emaciation; and but for its rarity the skin lesion upon the thigh might have pointed to it, as it somewhat resembled the description in the books of such affections. Microscopic examination of scraping from same by Dr. Coggeshall discovered no tubercle bacillus. Examination of the choroids was not made. Tuberculosis of the spleen is always secondary, so far as I know. The lungs were repeatedly found quite normal, and no other origin of tubercular affection could be proved.

There was no condition of anæmia shown by examination of the blood to account for the patient's condition.

Some splenic or peri-splenic abscess could not be excluded by the symptoms; but the infectious source to which it might be secondary, and the source of the sudden severe nephritis did not appear. Cultures from the blood were not attempted during life. Had they been successfully made, inoculations in small animals might have given certainty, where clinical signs left us in doubt until facts were obtained by autopsy.

Autopsy eighteen hours after death, by Dr. F. Coggeshall: Small stature, emaciation. Rigor mortis marked. Scar, size of silver quarter, under right trochanter. Whole brain very soft. Left temporal lobe and adjacent portions especially softened and yellowish in color.

Organs were taken to Dr. W. F. Whitney, at the Harvard Medical School, who found the following: Heart of normal size. Right side normal. Left auricle slightly dilated. In it and on surface covered with small papillary fibrous projections which were also found on the edge of the mitral valve. With these were also associated soft, grayish, opaque small masses, especially abundant on the chordæ tendinæ. Left ventricle presented nothing abnormal, nor was anything abnormal noticed in the wall of the heart. Lungs, liver and stomach presented no marked deviations from normal. Beneath the mucous membrane in the lower part of the ilium were numerous small hæmorrhagic spots. At the root of the mesentery was a swelling, the size of an egg, composed of clotted blood, which seemed to be more or less extravasated into the tissues. The spleen was twice its normal size. Surface marked by several depressed cicatricial places, the base of which had a yellowish aspect. On section showed the pulp markedly increased; the cicatrized portions above mentioned corresponded to more or less wedge-shaped, yellow, opaque extensions into the substance of the spleen, and which were sharply differentiated from it. The kidneys were large, capsules slightly adherent. On section, found to be swollen, very moist surface, Malpighian bodies appearing as minute whitish bodies in the midst of grayish cortical substance, and with numerous small hæmorrhagic spots. There were several cicatricial places in the kidney similar in character to those in the spleen, and which in like manner were continued into yellowish, sharply differentiated, somewhat wedge-shaped nodules. Anatomical diagnosis: Softening of the brain; chronic verrucous endocarditis, associated with acute vegetative endocarditis; anæmic necrosis of spleen and kidneys, results of infarction; acute diffuse and glomerulo nephritis.

I am especially indebted to Drs. Minot and Temple for permitting me to report a case from their services at the Carney Hospital, and to Dr. Whitney for his examination of the organs.

◆

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

J. T. BOWEN, M.D., SECRETARY.

REGULAR Meeting, Monday, December 11, 1893, the President, DR. C. F. FOLSOM, in the chair.

DR. J. J. PUTNAM made an oral communication concerning

A CASE OF MYXŒDEMA.

The patient, who was present, was a woman of forty-four, and of Irish parentage, though she had lived a great many years in America. It is interesting to note that her sister, who still lives in Ireland, also presents symptoms which strongly suggest myxœdema.

The patient's symptoms were of gradual onset, and date back perhaps a year. Previously to this she had been in good health, except that for four years past the menstruation had been irregular, and for two years she had had "hot flushes." A puffiness of the hands was noticed a year ago, but not much was thought of it until six months ago, when a swelling of the face and a slowness and huskiness of speech attracted her attention more forcibly. At this time, also, her eyelids began to droop, so that she had to drag them up by wrinkling the forehead. Soon afterwards the feet became swollen, and the hands were noticed to be dry and scaly.

These changes are said to have been gradually increasing, but even now there is nothing to attract the notice of a casual observer.

On close examination there is observed, besides the above-mentioned conditions, a slowness of the motions of the tongue, a marked trace of the characteristic alabaster appearance of the eyelids, a slightly subnormal temperature (98° F.), slow pulse (69), and typical "supraclavicular fulness." The hair has been falling of late. The urine is normal. The diagnosis was confirmed by the fact that under treatment by feeding with dessicated sheep's thyroids (five to ten grains daily), which had been going on for two weeks, there had been a steady gain in all respects, except that the hair had continued to fall out.

[At the present time of writing this improvement has progressed still further, to the patient's great content. The temperature and pulse are now normal; the weight, which was 187, has fallen a number of pounds; the appearance and manner suggest greater alertness. An examination of dried and stained specimens of blood, made by Dr. Richard Cabot, shows the normal proportion of whites and reds, and no unusual peculiarities.]

Dr. F. C. Shattuck presented

A REPORT OF FOUR CASES OF MYXŒDEMA TREATED BY THYROID EXTRACT.[1]

Dr. J. J. Putnam: I have been much interested in this subject for the last year or more, and have been very glad to hear Dr. Shattuck's paper. To speak of the points to which he has alluded, I should like to say a word about the matter of dosage. I have recently read of a case where, from taking a single rather large dose of sheep-gland, the anginoid symptoms to which he has referred came on, and were quite serious. It is a curious thing that not only pains of this character, but also pains of other kinds, have shown themselves from time to time — I think especially intercostal neuralgia. Also, in one of Laache's cases, great prostration occurred, with some bowel complication, requiring the patient to keep the bed for some time.

With regard to the frequency with which this trouble occurs, it seems to me beyond question that some of these cases are often diagnosticated as Bright's disease. The second case that I saw, and in the treatment of which I took part, had a cousin and an aunt, both of whom had died long before anything was known of myxœdema, but who had certainly had the disease in a pronounced form. I knew them well, and one of them was believed to be a typical case of Bright's disease. The face was swelled, the lips were thick, and the voice was husky and hoarse. The face presented the same appearance, though in more marked degree, with that shown in the colored illustrations that Dr. Shattuck passed around. The sister of the patient whom I showed this evening also, from her account, would seem to be a victim of the same disease, although not recognized. I have not seen her; but she is said to have shown a similar loss of hair and marked weakness (without pain and without the signs of any particular disease), and puffiness of the face and hands. My second patient, who is still under the care of my brother, was at one time also supposed to have Bright's disease, because she had had albumen and casts in the urine for some time. Those have now disappeared with the treatment. I think it probably true, as Dr. Shattuck says, that the dose of thyroid extract to overcome symptoms will have to be increased in cold weather, because my first patient, who improved to a considerable degree between July and October, with the advent of cold weather fell off considerably, and the œdema of the eyelids returned to a marked degree. With regard to the first case that Dr. Shattuck described, and which I am extremely glad to have had the chance of seeing through his kindness, although I am not inclined to insist that his diagnosis was not correct, and although I have no doubt that it belongs in general to a large class of trophic disorders of peculiar kind, still it did not seem to me to be a typical case of myxœdema. The speech, instead of being slow, was quick; the mental condition was active, instead of being very dull and apathetic; and the temperature was not subnormal, as has been the case in almost all the cases reported. Dr. Dercum described two years ago two cases which it seems to me should be mentioned in this connection. They were cases characterized by a peculiar form of obesity, with neuralgic pains and a few symptoms suggesting myxœdema, although many symptoms were wanting which would be necessary to make a complete picture of the disease. It is an interesting question, which has come up in connection with recent researches of Vermehren, of Copenhagen, whether some of the affections from which old people suffer, such as weak action of the heart and nutritive disorders of various kinds, may not be due to a slight failure of the thyroid. At any rate, he found that giving thyroid improved their condition. Thyroid has been used successfully against certain forms of obesity; and I have had several cases where patients not having myxœdema have lost weight for a time very rapidly, two or three of them losing in the neighborhood of forty pounds. The loss did not, however, continue indefinitely; and there are also other troubles in which it would appear we may possibly be able to use it with advantage.

Dr. E. D. Spear: I want to add one suggestion in regard to the function of the thyroid gland, and that is the probable regulation of the cerebral circulation by means of the thyroid through the sympathetic system. I find that in certain aural cases where there is a certain noise in the ear which may be called a bruit, the thyroid gland is always enlarged; that is, the lobes of the thyroid are always enlarged, and that in those cases the pulse is always raised usually to 120 or 130 beats a minute. I only want to speak now of what has been referred to as pain about the heart in those cases where the thyroid extract has been given. I do not know as there is any connection, but I do know that the thyroid in some obscure way controls the cerebral circulation through the sympathetic; how it does it I cannot say. These clinical observations which I make in these cases are of interest, and, I think, should be studied in connection with all those obscure affections in which the thyroid is spoken of. It is a fact that, if in these cases I press upon the thyroid gland with my thumb to make massage to a light extent, the pulse drops immediately after from 120 to 60. If I continue the pressure the patient faints. If I stimulate the thyroid gland where it is enlarged by external irritants, I shall, instead of depressing the circulation, stimulate the pneumogastric apparently, and tone up the heart so that the pulse is made normal. These noises in the head are described by the patient as roaring noises, and are always accompanied with changes in the power of hearing, but with no obvious changes in the ear. I always found, however, that the turbinate body was enlarged, and that treatment in early cases — that is, in cases lasting from six weeks to six months, we will say — the simple application of heat to the thyroid gland by means of hot water upon a towel or flannel is sufficient to stop the noise and improve the hearing. Of course, in all, or most all my cases, I make local treatment. In the few cases which are slight I rely upon heat; but were I to map out a full treatment for a case of this kind where there is noise in the ear, deafness, I should, in addition to the heat to the thyroid, give a nerve stimulant; that is, strychnia in full doses, and apply mustard or some counter-irritant to the heart, and make local applications to the ear through the nose.

---

[1] See page 177 of the Journal.

One other thing that I would like some of the neurologists to take up is to prove if my observation is correct. Of course, I know I am correct in regard to the function of the thyroid as regulating the cerebral circulation, but whether I am correct in this I am uncertain. In a large number of cases it is possible to induce sleep by means of application to the thyroid. I can relate one experience which will prove it was possible in one case to induce sleep by hot applications. One of my patients used to awake at all hours of the night. She was the wife of a fireman who was deaf, and she listened for his tapper. At any time of night or day she roused him and got him ready for the engine. After she came under treatment for nasal obstruction, I put her upon applications of heat to the thyroid. One afternoon at three she felt uncomfortable, had some disturbance in the head, made an application to her thyroid, and went to sleep! There were two alarms of fire, and at the end of an hour a policeman went in and asked what was the matter that she did not wake him up. I should like to have neurologists try this experiment, which is simple, but a very powerful remedy in cases of insomnia. The danger to be avoided is the depression of the heart if the applications are continued longer than ten or fifteen minutes at the outside.

Dr. F. C. Shattuck: I quite agree with Dr. Putnam that my first case was not a typical one of myxœdema. Had it been typical I should not have sent it to him for an opinion. The absence of mental sluggishness and of subnormal temperature does not weigh much in my mind. Increasing experience is constantly showing us deviation from the symptoms as now laid down in the books. The Chairman saw this case; and I should be glad to have him give his opinion of it.

Dr. Folsom: I have not consulted my notes; but I am quite sure that this is the fourth or fifth case which I have seen. The others were before anything was known about the thyroid-extract treatment. It seemed to me an unquestioned case of myxœdema. It is quite true that there was no mental torpor, in the strict sense of the word, to be observed; but I am inclined to think there was, in fact, because there was a certain amount of mental momentum, so to speak, got up by the exhilaration of the patient sufficient to mask a considerable degree of mental impairment. As it seemed to me, the essential points were such that I felt quite confident of the diagnosis of myxœdema.

Dr. M. H. Richardson showed a specimen of

AN APPENDIX OBLITERATED IN THE GREATER PART OF ITS LENGTH.

This specimen I removed this morning from a man thirty-eight years of age. The history of the case is very interesting in connection with the condition found at the operation. He had been subject for four years to occasional attacks of violent pain in the epigastrium. From the epigastrium the pain would go into the right iliac fossa. On Tuesday, February 7, 1893, he had an attack of "terrible pain" in the epigastrium, with vomiting. The fever lasted for several days. He supposed he had the colic, and treated himself for it. At the end of five days he sent for Dr. Marshall, of Lynn. He went on from bad to worse until Sunday, the 19th, when I saw him. The whole of the lower part of the abdomen from right to left was filled by a large, fluctuating tumor. It pressed also upon the rectum. I opened, by an incision parallel to Poupart's ligament, without infecting the general abdominal cavity. The mass was made up of several abscess-cavities. The appendix could be felt, very large and thick, intimately adherent to the surrounding parts, so that it seemed to me inadvisable to make any prolonged efforts to separate it. One large tube was put down into the pelvis, and another toward the bladder. About the tubes sterile gauze was packed. The temperature went down after the operation, but about two weeks later there was a discharge of a pint of pus. After this he made a good convalescence.

On November 21, 1893, I examined him again. Since the operation he had been perfectly well till three weeks ago, when he had another spell that came on in the same way as the others had — with pain in the stomach. There was a little fever with this attack. Examination of the scar showed a well-marked ventral hernia, slight in extent, but unmistakable. There was no tenderness or pain. In view of the second attack, in its onset precisely like the first, and considering the hernia in the scar, I advised him to have an operation performed, first, for the radical cure of the hernia, and secondly, for the removal of the appendix, should it seem desirable after exploration. I cut out the scar tissue this morning, and came down upon the cæcum. There was no trace of the formerly extensive abscess, except a little induration behind the cæcum. The appendix was attached to the posterior and outer cæcal wall by strong adhesions. These had to be cut before the appendix could be separated. There was nothing left of this organ except a small stump and a rounded extremity. Between the two, as the specimen shows, there was nothing but a fibrous cord, which may have been nothing but the remains of the inflammatory process. The condition of the appendix, in my opinion, would not have justified an operation for its removal, had we known it beforehand. The one attack of which he complained did not seem to me alone sufficient to justify this operation. The presence of the hernia was a real menace to his health, and alone justified the interference. Having opened the abdominal cavity, the removal of the fragments of the appendix seemed to me a rational procedure, especially as enough of the stump was left to account for the symptoms of the second attack.

◆

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

J. C. MUNRO, M.D., SECRETARY.

Regular Meeting, Monday, December 4, 1893, **Dr. J. B. Ayer** in the chair.

Dr. W. E. Fay described

A CASE OF MALIGNANT ENDOCARDITIS.[1]

Dr. Ayer: I should like to ask whether at any time the temperature rose more than once in the twenty-four hours and also whether it is not a very frequent symptom to have an irregular rise twice in the twenty-four hours?

Dr. Fay: There was an absolutely constant afternoon rise, except when modified by quinine; one rise during the day, never two. I do not know how frequent it is to have the temperature rise twice in the twenty-four hours. In the *British Medical Journal* a year ago last March, in a paper by Dr. Frederick Taylor, is pointed out the long duration of the pyrexia which was seen in some cases, during which the fever was almost absolutely regular.

---

[1] See page 189 of the Journal.

I should like to mention one case of endocarditis I came across among a number of cases from various sources of infection. The duration of the case was, within two days, the same as this one, and it passed through all the stages and was recognized in life.[2]

Two months after the illness began a rabbit was inoculated with a culture of a staphylococcus made from a drop of blood taken from the finger of the patient. In another month the rabbit died. There was an endocarditis of remarkable intensity, vegetations arising from the valves, and bloody effusion into the peritoneum. In nearly another month the patient died. Autopsy showed precisely similar conditions.

Dr. M. H. Richardson showed a specimen of

FIBROMA OF BREAST, WITH LARGE CYST SIMULATING CARCINOMA.

This specimen was removed two days ago from a woman of fifty-three. It was my intention to show this tumor in connection with a similar one removed from a woman of thirty-one. Both involved totally the left breast and both contained a hard mass distinct from the main swelling. The axillary glands were enlarged enough to be felt distinctly in each case. I advised operation in each. This specimen from the woman of fifty-three proves to be benign — diffused, intracanalicular fibroma — without a suspicion of malignancy; while the breast from the young woman contained a nodule of cancer three centimetres in diameter and was itself a mass of fibrous tissue formation.

Dr. W. F. Whitney's report is as follows:

"Mrs. B., age fifty-three. On section it was in general, firm and fibrous looking, and the surface was interspersed with numerous cysts of size varying from a pin's head to one of the size of a small egg; the lining of this was smooth and the contents thin and watery. Microscopic examination showed dilated ducts and acini of the gland lying in a matrix of dense fibrous tissue. Some of the dilated spaces were more or less sinuous, and suggested a growth into the lumen of a canal of fibrous tissue. The diagnosis is a chronic, diffuse, fibrous-tissue formation in the breast, with retention cysts. The whole of the gland was affected."

"Miss P., age thirty-one. The tumor of the breast and axilla from Miss P. showed a large, densely-fibrous growth occupying the greater part of the breast. At one part it was opaque, more homogeneous and grayish. Microscopic examination showed remnants of gland acini, surrounded by dense layers of fibrous tissue, with quite hyaline-looking walls. Involving these were irregularly-branching lines of solid epithelial cells. The axillary glands were enlarged, and contained large epithelial cells separated by a little fibrous-tissue stroma. The case is one of a cancer (rather of the medullary type) which has invaded a breast where had previously existed a chronic diffuse fibrous-tissue formation."

The interesting clinical question was that of diagnosis. In the younger patient there seemed a strong doubt as to the presence of cancer, though the enlarged axillary glands — much more pronounced than in the older woman — pointed more to a malignant tumor than the slightly enlarged ones in the older patient.

I advised operation in the latter case because I believe that all mammary growths in women over forty should be explored most thoroughly; and in the former because, though in a young woman, the appearances were very suspicious. Cancer developing in a diffuse fibroma is very unusual in my experience; its occurrence in so young a woman emphasized the importance of removing such tumors early. Not that the danger of malignant degeneration is pressing; but unless we are able positively to exclude malignancy, we ought to remove, or at least, to explore, all suspicious tumors, even if they cause only discomfort and anxiety.

I have frequently found the axillary glands enlarged in benign tumors, where there is no reason for their presence beyond a possible irritation. This enlargement, if not one of irritation, is usually coincident with a swelling of the glands of the opposite axilla.

The slowness of growth was another point in favor of the benignancy of the cystic tumor. The cysts themselves are often so tense that it is impossible to tell whether they are the solid irregularities of cancer or not. Even after the removal of this specimen, it was impossible to exclude malignant growths until the tumor had been all cut to pieces and several questionable points had been examined microscopically. The mistakes likely to occur if the diagnosis rests upon sections made with a punch before operation are obvious. In the young woman's case the specimen removed by the punch very likely would have contained none of the malignant structures, and depending upon an apparently scientific demonstration of security, I should have allowed the patient to lose the favorable moment for operation. Not that the exploring punch is of no use. On the contrary, if it does catch the malignant neoplasm it is a demonstration that may be looked upon as final; if it does not, we must at times still make the radical incision.

In these operations now I close the wound without drainage. My experience in this procedure shows the rapidity with which a man's ideas may change. I do not feel ashamed to say that my views on many subjects are very different from what they were a year ago. I dare say that in a short time hence I may do these operations in a very different way from what I do them now, but it seems at the present time as if there were not much improvement to be made in the technique of operations of this sort. The mortality in breast-operations in my experience has gone down from four or five per cent., in the carbolic-acid times to practically no mortality in the last four years. We have also got rid of the disagreeable features of drainage by means of careful asepsis and absolute hæmostasis. If we are careful not to operate in hopeless local disease or when there is hopeless disease of the internal viscera, the mortality must always remain very low indeed.

One thing I forget to say about the desirability of operating in cases of fibromata in young women in whom the question of disfigurement is important. Were it not for the cases in which Dr. Whitney has found malignant disease complicating these benign growths, I should not insist upon their removal except in the rarest instances. When the tumor is small and movable, I should not interfere. When the tumor does not demand the removal of the whole breast, the disfiguring scar can be avoided by Gaillard's method of post-mammary dissection.

Dr. Vickery: There is a kind of hard, painful lump that quite young women have in their breasts. It is a source of great anxiety. When I was a student such lumps used to be left in; now a good many surgeons take them out. I should like to ask Dr. Richardson if he will tell us his view about the matter.

---

[2] Referred to in Sajous's Annual for 1891.

DR. RICHARDSON: My advice to a young woman with a fibroma of the breast is this: if it troubles her very much, she can easily and safely have it removed. In leaving it alone the dangers to health are very slight. The pain and tenderness are frequently the result of her constantly examining it; if she lets it alone, and if it is not very large, the tumor often disappears. They are sometimes very large. I have seen them occupying the whole breast, weighing perhaps a pound, though the ordinary fibroma is seldom beyond the size of a hen's egg. A tumor that causes discomfort ought to be removed because it can be done with great ease and safety. In none of these cases is excision necessary on account of the danger to life if you can be sure that no malignant complication exists.

◆

Recent Literature.

Introduction to the Catalogue of the Collection of Calculi of the Bladder. By SIR HENRY THOMPSON, F.R.C.S., etc. London: J. & A. Churchill. 1893.

This little volume is nothing less than a summary of the entire experience of its eminent author with reference to operations for stone and foreign bodies in the bladder. It accompanies the more extensive catalogue which, prepared and revised with great care, was presented by Sir Henry, together with the cabinet containing his collection of calculi and foreign bodies removed from the bladder by him, to the Hunterian Museum of the Royal College of Surgeons in 1892. This collection represents the whole of Sir Henry's work in this department of surgery, from his first case in 1857, up to the date of presentation, which, with the additions made between that time and April, 1893, comprises 1,013 operations.

The "Introduction" furnishes statistical tables of the results of these operations and of the more important points connected with them, as well as comments by the author concerning the matters of especial importance in regard to the subject. We are glad to note, under the heading "Lithotrity," that Sir Henry gives as his latest expression in the matter the full credit which is its due to the notable achievement of Dr. Henry J. Bigelow ("Litholapaxy").

Sir Henry's "Introduction," etc., is a *multum in parvo* which will well repay careful study, since it gives, even in this condensed form, a valuable record of part of the work of one of the most remarkable and talented of surgeons and men of our day.

A Practical Treatise on Materia Medica and Therapeutics. By ROBERTS BARTHOLOW, M.A., M.D., LL.D., Professor of Materia Medica, General Therapeutics and Hygiene in Jefferson Medical College, Philadelphia, etc. Eighth edition, revised and enlarged. New York: D. Appleton & Co. 1893.

The recent revision of the United States Pharmacopœia has led Professor Bartholow to bring out a new edition of this well-known and deservedly popular work: and we need only say that in it, he has adopted the metric system and included such of the newer remedies as he deems worthy of recognition.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, FEBRUARY 22, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 WASHINGTON STREET, BOSTON, MASS.

DISEASES DUE TO "HARD TIMES."

IT would doubtless be an interesting study to investigate from the inductive side the morbidity in communities directly traceable to business depression; this, however, would require wide observation and careful collection and collation of data, and the subject would be at the best a very complex one.

The most that we can attempt to do on the present occasion is to approach the subject from the deductive side; given the want and distress into which large portions of communities are plunged from lack of work and lack of money, to deduce the necessary pathological consequences in accordance with well-known laws.

Seasons like that through which this country has been passing are times of great psychical depression. There is (or has been) profound discouragement among employers and employed; among men of business making no money (or losing), and workingmen idle, with distress and poverty before them. With multitudes there is paralysis of the higher incentives and emotional forces, and psychical failure and degradation.

Among the many startling things uttered by Senator Stewart, in his lengthy speeches before the Senate of the United States recently, was the statement that the mental stagnation, degeneration and darkness of the Middle Ages was principally due to diminished production of the precious metals and consequent depression of business and lack of remunerative employment for the masses.

Times of financial depression like the present are fraught with anxiety and worry among all classes of society; and anxiety and worry, along with want of nourishment and hereditary predisposition, are powerful factors in the production of insanity. "Low wages," says Maudsley, "mean poverty and bad nourishment, and lunacy shows a distinct tendency to go hand-in-hand with pauperism."

The statistics of our insane hospitals bear out this statement; nor can we be surprised at the large accessions to the ranks of the insane from the lower classes during the past year. When chronic worry coincides with chronic want of work, some form of mental degradation is almost sure to supervene, for "mental exercise is the true foundation of mental health."

If we may trust Huchard,[1] mental emotions (and he specifies chagrin, anxiety, disappointment, worry) may have a real and positive influence in the origin and development of *cardiopathies*, and, in particular, of *arterio-sclerosis*. The order of morbid events, according to this writer, is as follows: Spasm of the arterioles (due to the emotion), hypertension of the arterioles and capillaries, sclerosis of the arteries, scleroses of the viscera. The existence of arterial spasm under the influence of even trifling emotion has been demonstrated by the experiments of Mosso by the aid of his plethysmographs. "If now," says Huchard, "you have a state of prolonged or chronic emotion, as where the person is in a protracted worry, or is profoundly, permanently disheartened by losses and adversity, you have a condition of almost permanent vascular spasm and of arterial hypertension."

We have not space here to give Huchard's explanation as to how this affects the vasa-vasorum and the nutrition of the arteries. He finds reason for the belief that strong and repeated emotion may determine cardiac affections by its incessant action on the peripheral circulatory system; "and this," he adds, "is one of the reasons why arterio-sclerosis is (according to my observations) so frequent in the medical profession, pre-eminently the kind of life entailing overwork and worry."

Doubtless, if this writer's views are correct, the past year, by its chagrins, anxieties and cares, must have been a very eventful year in the pathogenesis of arterio-sclerosis.

It hardly needs to be said that inebriety is a disease no less prevalent in hard times than in times of prosperity. Idle men naturally flock to the saloons, and evil and misery drive the poor and the desperate to seek solace and forgetfulness in strong drink.

Among the diseases to which times of great business depression have a causal relation are all those derangements of the alimentary canal and of nutrition which are the result of insufficiency or improper quality of the ingesta. That human beings this present winter in all our cities are without sufficient food is painfully known to physicians and all others who are brought into daily contact with the poor. In very many instances the physician feels that food and not medicine is needed. Many families, too proud to receive charity, are living on a starvation diet. They cannot afford meat, and they buy only the poorest, cheapest foods. Hence the evils attendant on anæmia and inanition are soon apparent. The poorly fed soon fall a prey to grave diseases (tuberculosis, pneumonia, typhoid fever, even influenza, etc.) because their vital resistance is weakened. Children brought up on a meagre diet become frail, sickly and neurotic. Are we destined to witness, as the outcome of this long period of business depression, a generation of miserable candidates for tuberculosis, for hysteria — physically stunted, intellectually undeveloped, unfit to bear the burdens of life, a burden on society.

To the ills which we have mentioned, we might add all the pathological results of insufficient fuel and insufficient clothing.

Doubtless with the starting up of idle machinery all over the country, there is the promise of future prosperity; and the greatest boon which we can ask for the idle and unemployed is the hygiene of regular work, for this means plenty of food, enough clothing, strength of body and mental health.

THE SUPERVISION OF THE INSANE IN NEW YORK.

The leading medical journals in New York continue to express thorough dissatisfaction with the State Commission in Lunacy, for the reasons which we have suggested in a previous number of the Journal.[1] In a recent editorial in the New York *Medical Journal*, the statement is made that on all sides in the State the tendency of the Commission in Lunacy to evolve itself into an enormous political machine has been subjected to severe criticism from honorable men of every profession, and that the voice of reproof grows louder every day as the lowering ambitions of the commissioners become clearer and clearer.

A bill has been proposed in the Assembly to abolish the Commission in Lunacy, and to confer upon a committee of the State Board of Charities — really upon the secretary of such a committee — the work of supervising the care of the insane in the State institutions. This plan is essentially the same as those which have proved so satisfactory in Massachusetts and Pennsylvania; and the reputation of the New York State Board of Charities for excellent work is such that it will be quite safe to place additional responsibility in its hands.

Moreover, the Board has already distinguished itself for investigations and recommendations with regard to providing for the insane, and has a familiarity with the subject that must prove of great practical use, if it can be made available. In continuation of the studies of the Board, Dr. Stephen Smith, formerly State Commissioner in Lunacy, has formulated a number of suggestions[2] for improving the administration of insane asylums and for increasing the comfort and chances of recovery of the insane, in which he has especially recommended the principles embodied in the proposed law.

We have in this State been so fortunate in keeping politics out of our public institutions and in having the management of our State Charities in the hands of public-spirited persons devoted to their work, that it is difficult to appreciate how important is the issue at stake in New York. The proposed change in the law is in the right direction; and we hope that it may be soon brought about.

---

[1] Huchard: Maladies du Cœur et des Vaisseaux, Paris, 1890.

[1] Vol. cxxix, p. 603.

[2] American Journal of Insanity, January, 1894, pp. 325-344.

◆

MEDICAL NOTES.

A National Bureau of Health. — We learn that the bill presented to Congress by a committee of the New York Academy of Medicine, for the establishment of a Bureau of Health, has been so essentially modified that the new draft is much more likely to represent the views of the various health bodies of the country, and, in consequence, to have favorable action at the hands of the authorities at Washington.

Yellow Fever at Rio Janeiro. — The yellow fever epidemic at Rio Janeiro has started up again, and is increasing to a considerable degree, there being an average of about forty new cases each day. One case has occurred on the United States cruiser *Newark*, and the vessel has been ordered to Montevideo to be disinfected.

Successor to Professor Moleschott. — Professor Luigi Luciani, of Florence, has been appointed to the Chair of Physiology in the University of Rome, to succeed Professor Moleschott.

The Study of Leprosy in Iceland. — The Danish Parliament has voted the sum of $840 for the expenses of a medical mission to Iceland for the purpose of studying the extent to which leprosy still prevails on that island. The mission, which is to consist of Drs. Ehlers and J. Ulrich, of Copenhagen, with an Icelandic physician as interpreter, will make its investigation in July and August of the present year.

Award of the Riberi Prize. — The Riberi Prize, founded by Prof. Alessandro Riberi, has just been awarded to Dr. Camillo Golgi, Rector of the University of Pavia, and Professor of General Pathology, for his essay upon Malarial Fever. The prize amounts to $4,000, and is open to international competition every five years. The subject must be one of purely medical interest, and the essay be the result of original research. There were three essays this year deemed worthy of final consideration, that by Dr. Golgi being finally awarded the prize. The others were by a Frenchman and a German.

Medical Practitioners in Scotland. — The last volume of the census of Scotland, for the year 1891, gives a list of 7,709 medical practitioners, or one to every 522 inhabitants. This proportion seems rather large until it is noted that the list of medical practitioners includes physicians, surgeons, dentists, veterinary surgeons, sick-nurses, midwives and invalid attendants. An analysis shows that there are but 2,595 physicians and surgeons, or one to every 1,550 inhabitants. There were only twelve women physicians.

Coroners or Medical Examiners? — The clumsiness and inefficiency of the old coroner system is becoming each year more widely appreciated. The committee appointed by the Medico-Chirurgical Society of Montreal to suggest modifications in the present law relating to coroners' inquests has recommended that the office of coroner be made a purely judicial one; and (1) that salaried medical examiners be appointed to investigate all deaths occurring under circumstances calling for medico-legal investigation under any act, and that these officers be given authority to make such medical examination of the body as may be necessary to determine whether death was due to violence or not; (2) that in every case the medical examiners report the result of their examination to the coroner or other judicial officer charged with investigating the legal side of such cases, who, in case of violent death, shall make such investigations and take such measures as are necessary for the proper administration of the law.

Henoch's Successor. — Prof. Johann Otto Leonhard Heubner, of Leipsic, has finally accepted the chair of Children's Diseases at Berlin made vacant by Henoch's retirement. At first he declined the position, owing to its being only an Extraordinary Professorship, while his own position at Leipsic was that of Ordinary Professor. Heubner, who is fifty-one years old, has done practically all his work in Leipsic. He was assistant to Wunderlich in 1868 and private docent in 1869.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the six days ending at noon, February 20, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 26, scarlet fever 23, typhoid fever 2, small-pox 7. There was one death from small-pox. The small-pox cases were reported at about the same time from three different parts of the city. There was some difficulty in accounting for one of the cases, that from the South End, until the arrival at the hospital of another patient from the West End who had acquired the disease from visiting the family in South Boston who were supposed to be ill with chicken-pox. The South End patient was delighted to see in the West End patient a friend whom he had visited some days before, and the chain of evidence was complete.

Small-Pox in Massachusetts. — During the past six days there have been reported to the State Board of Health six cases of small pox from places outside of Boston. One case in Worcester and five cases in Holyoke.

A Bequest to the Harvard Medical School. — The will of Rev. William C. Moseley, of Newburyport, bequeaths $50,000 to Harvard College, to endow a professorship in the Medical School. Other bequests in the will were $20,000 to the Massachusetts General Hospital, for beds in memory of his son; $10,000 to the Boston Lying-in Hospital; $10,000 as a trust to the Perkins Institute for the Blind; and $10,000 to the Anna Jacques Hospital, of Newburyport.

No Medical Students to be allowed in the Charity Club Hospital. — The Women's Charity Club, of Boston, has voted, 43 to 38, forbidding all medical students the privileges of clinical instruction at operations performed in the hospital of the club. This is the final decision of the club on the question, which has been before it for some time, whether small numbers of last-year or graduate students might not be allowed to witness gynæcological operations. The privilege was asked especially for students of Tufts Medical School, but no distinction has been made, and all are to be excluded.

The Feet of Cambridge School-Children. — An order was passed last week in the Cambridge School Committee authorizing Dr. G. W. Fitz to make examination in the Peabody School of that city, of the rapidity and touch of pupils, and to take measurements of their feet. The latter statistics are to be taken in reference to the development of the arch of the foot.

Vivisection in the Public Schools. — The Committee on Education, of the Massachusetts Legislature, gave a hearing last week on the proposed bill to prohibit dissection or vivisection in the public schools. The bill was favored by representatives of the Society for the Prevention of Cruelty to Animals on the grounds that vivisection is cruel and unnecessary, and because it teaches children to practise cruel acts, and is calculated to cause suffering to animals, and does no good.

Committee on Public Health Hearings. — The Committee on Public Health, of the Massachusetts Legislature, gave a hearing on Monday, February 19th, upon a proposed bill for the establishment of hospitals or wards in the various cities of the Commonwealth for the treatment of venereal disease. The hearing of the same committee upon a proposed bill for the construction and maintaining of hospitals for contagious diseases in the various cities and towns, said hospitals to be under the control of the local boards of health, which was ordered for the same day, was postponed to March 9th. The hearing on public vaccination was postponed to March 5th.

Miscellany.

PRESIDENT ELIOT ON THE REGULATION OF ATHLETIC SPORTS.

In the annual report of Harvard College for 1892–93, just issued, President Eliot devotes considerable space to a consideration of College Athletics. According to our custom, we shall notice this report at length. This week we can only give the conclusions reached by the President in regard to the regulations of College Athletics. Under the head of "Possible Checks on Excess in Sports," he says :

"If the evils of athletic sports are mainly those of exaggeration and excess, it ought not to be impossible to point out and apply appropriate checks. The following changes would certainly diminish the existing evils: (1) There should be no Freshman intercollegiate matches or races ; (2) no games, intercollegiate or other, should be played on any but college fields, belonging to one of the competitors, in college towns ; (3) no professional student should take part in any intercollegiate contests ; (4) no student should be a member of a university team or crew in more than one sport within the same year ; (5) no foot-ball should be played until the rules are so amended as to diminish the number and the violence of the collisions between the players, and to provide for the enforcement of the rules ; (6) intercollegiate contests in any one sport should not take place oftener than every other year. Finally, if trial shall prove the insufficiency of all these limitations, intercollegiate contests ought to be abolished altogether.

"These suggestions are by no means of equal importance ; some of them concern many persons, and some but few ; but all or any of them could be put into force by a single college without diminishing that college's chances of success in such intercollegiate contests as it undertook.

"Different persons will undoubtedly strike the balance differently between the advantages and disadvantages of athletic sports ; but one important fact will for many people incline the balance in favor of the sports — the fact, namely, that there has been a decided improvement in the average health and strength of Harvard students during the past twenty-five years. The gain is visible in all sorts of students — among those who devote themselves to study, as well as among those who give much time to sports. In 1888 the Faculty passed a useful vote to the effect that all holders of scholarships were expected to present themselves twice every year to the Director of the Gymnasium for a physical examination. The Faculty passed this vote under the impression that the bodily condition of these hard students would be found to be unsatisfactory ; but it has turned out that, though some were weak, others were strong, and that the development and condition of the larger number were fairly good."

THE PATHOLOGY OF BICYCLING.

The list of diseases of occupation has received an addition, this time a whole pathology ; and the bicycle is to blame. The fear of kyphosis has terrified the young man into an erect position upon his wheel ; but now a French physician brings forth an array of lesions caused by riding the velocipede which is suggestive of the extent of the present passion of Parisians for the wheel.

Dr. Pezzer[1] reports a considerable series of cases where more or less injury has been caused by the pressure of the saddle upon the soft or bony parts of the rider. Superficial lesions he has seen almost entirely on female riders ; they consist of inflammatory affections of the labia majora, the urethra and adjacent parts. Twice he observed acute lesions of the hæmorrhoidal veins, with tumor and hæmorrhage in men ; twice, also, acute retention of urine from prostatic irritation. Many patients were troubled by prolonged erections while riding, due to impeded venous return. There were several cases of annoying anæsthesia of the regions supplied by the pudic nerves. The more serious lesions, however, occurred in the urethra; caused in women by friction, and in men by prolonged pressure on the bulbous portion. One patient suffered from ystitis after riding; and there were several cases of ruptured urethra (periurethral abscess), and one case of acute dislocation of the kidney.

---

[1] Annales des Maladies des Organes Genito-Urinaires, January, 1894.

It will be seen that after all bicycling is but little less dangerous than foot-ball.

◆

THE PRESENT GENERATION.

AN overtaxed nervous organization is not the peculiar possession of the American people of to-day, as has been claimed. In his opening lecture on Therapeutics Landouzy gave the following picture of "the present generation of neurotics, which numbers so many youths of enfeebled ardor, of waning desires, of sterile intellects, and of saddened, restless and suspecting character; so many young women who are always anxious, dissatisfied and of constant functional instability, never ill but always disordered; so many impatient, capricious women, at once charming and unendurable, of strange *états d'âme*, ruled by casuistry, full of sparkling laughter and of ready tears, with high-pitched voice (exhausting but inexhaustible) whose talk is inconsequential, discursive and hyperbolic; so many women who are despondent, never satisfied, in love with realism not with the ideal, who will soon have eyes only for the impressionists, taste only for symbols, and passion only for literature and music of a certain kind; so many beings needlessly discouraged, faltering and baffled in the struggle for life."

◆

ANTI-CHOLERAIC INOCULATION.

THE *Lancet* publishes the following communication from Haffkine, reporting upon his work of anti-choleraic inoculation:

"Anti-choleraic inoculations continue to occupy all my time, and the process has now been applied to about 16,000 persons. I try to work on as large a scale as possible, because it is impossible to know beforehand in what part of the country cholera will make its next appearance. I append the names of the places where inoculations have been freely made up till now: Agra, Alligarh, Lucknow, Delhi, Sanawar, Karsauli, Dagshaï, Patiala, Rajpoorah, Chirat, Jhansi, Simla, Jatagh, Rawal-Pindi, Murree, Abbottabad, Peshawur, Sangrur, Nowshera, Naïni-Tal, Almora, Ranikhet, Dworahat, Kaïnur, Pauri, Saknìana, Mussa Gali, Srinagar (Garhwal), Tehri, Mussoorie, Dehra Dun, Hardwar, Lahore and Meean Meer. In all these localities it has been attempted to make the inoculations upon persons who are living in precisely the same environments as their uninoculated fellows; that is to say, I have selected half of a regiment, of a school, of a prison, or of a village for treatment. A record of the names, social position and surroundings, symptoms which appeared, etc., has been carefully kept of each case, with most minute details, and copies of these records have been given to the medical officers in these localities; and it is from these gentlemen that I hope to receive clinical observations upon the subjects of operation when next an epidemic appears. The constitutional differences displayed by man with regard to cholera are so large that no experience gathered from one, two, or ten individual cases would give even the most general result; the probability being that all the ten selected persons might be constitutionally incapable of being affected by the disease in the recognized manner. On the other hand, operations on animals on account of the particularity of the symptoms which result, are always open to discussions. The results of experience now placed before the eyes of the medical service in India, will bring about, I hope, in the near future a direct revolution in our ideas of the nature of cholera and the means of combating the disease."

◆

A MEMORIAL SKETCH.
WILLIAM F. HUTCHINSON, M.A., M.D.

DR. WILLIAM F. HUTCHINSON died suddenly on September 30, 1893, at Providence, R. I. He had spent the whole day in the usual routine, practising and writing letters, and after dinner made a social call.

He had organic disease of the heart, and several times has had attacks in consequence, in which he was attended by his friend, Dr. Remick. Dr. Hutchinson was sick only fifteen minutes, being conscious to the last. He greeted his medical adviser pleasantly, saying, "Too late this time, I feel I am going, it is filling up gradually, I cannot breathe."

These were his last words, after which he expired, without a struggle, genial and social till the last, just as his life had been. Our departed friend was so talented that it is impossible to say where he excelled most. He was a jovial companion, a true friend, a linguist, a journalist, a tourist, a patriot, a scientist, a true physician and as a specialist an authority in electricity.

He was the friend of his patients, and prominent in all public benevolent enterprises of the day; as a citizen, he was scrupulously honest, generous, and public-spirited, warm-hearted, cordial and genial. As a Freemason he had received the thirty-third degree.

Dr. Hutchinson was born in Oswego, N. Y., October 28, 1838. His collegiate education was obtained at the University of Pennsylvania; and after receiving the Bachelor's and Master's degrees at that institution, he pursued the study of medicine at the Buffalo Medical College and also abroad in the most celebrated of the French and German universities.

Since the close of his student career his life has been a most active one in the service of his country, in both army and navy, in the work of his chosen profession, in literature, art and travel.

He was a linguist, and had travelled much, in fact, had been almost everywhere, particularly in Germany and the West Indies. His memory was wonderful; he could advise about all routes in travelling with more exactness than an excursion agent, tell the time-tables, best ways to take, the names of hotels and their charges. In the West India Islands he was acquainted with every place and everybody, and even could tell of individuals, their habits and their state of health.

As a *patriot* he was a veteran of the army and navy, and thereby became a member of the Loyal Legion. When the Civil War broke out he went to the front with the Twenty-second Regiment of New York Volunteers, as Assistant Surgeon, in May, 1861. At the battle of Antietam, while giving a drink of water to a wounded Confederate soldier, Dr. Hutchinson was struck by a bullet just over the heart.

At the first battle of Bull Run he was taken prisoner of war; and from July 21, 1861, spent nine weeks in Libby Prison, when he used an opportunity to escape. He participated in the battles of Cedar Mountain, Rappahannock, Catlett's Station, Yorktown and South Mountain, Antietam and second Bull Run. At the latter place he was captured again, but escaped three days after. He was promoted August 18, 1862, to Surgeon and later to Brigade-Surgeon. He was in charge of Falls Church U. S. A. General Hospital from March to August, 1862, also Provost-Marshal of Fairfax County and commanding Post at Falls Church; on duty at the office of the Surgeon-General and at U. S. A. General Hospital, Portsmouth Grove, R. I. He was wounded several times, and as a consequence suffered every winter afterwards during his life, which necessitated a sojourn in a warmer clime. For this reason he generally spent two months from January in some parts of the West Indies.

On April 13, 1863, by act of the War Department, he was discharged from the army with the rank of Colonel, and transferred to the navy as Acting Past-Assistant Surgeon on the sloop-of-war *Vincennes*. He remained with this branch of the service throughout the remainder of the war. Next he was on the U. S. frigate *Potomac* at the siege of Port Hudson, La., at siege of Vicksburg, and at the battle of Mobile Bay, where he was wounded and taken prisoner again. From the navy he was honorably discharged in December, 1869.

The next four years of his life were passed at Minneapolis, where he acquired an extensive practice.

In 1873 Dr. Hutchinson came to Providence, where he has since resided, except for his frequent European and South American trips. He made electricity a specialty.

He was Assistant Secretary-General of the Pan-American Medical Congress, the organization of which society owed much to his efforts, as he was the representative who brought about the co-operation of the medical men in the Spanish American countries. He was also Vice-President of the American Electro-Therapeutic Association and a Fellow of the Société Française Electro-Thérapeutique.

As a journalist he was considered particularly clever, and for a considerable time was attached to the regular staff of the *Star and Press*. He was formerly an editor of the old *American Magazine;* and up to the time of his death he was the associate editor of the following periodicals: *New England Medical Monthly* and *The Prescription, The Times and Register* (Philadelphia), and *Journal of Balneology* (New York).

He has written many valuable editorials and other medical articles, one of his last was "Electrical Anæsthesia by means of the Singing Rheotome," and also a text-book, "Practical Electro-Therapeutics," which has had a large circulation. Among his other works are many interesting novels and volumes of travel in South America. His principal work was "Under the Southern Cross." His style of writing is vividly descriptive, and very interesting to read.

Dr. Hutchinson was a prince of good fellows, and moved in the best society. He had been one of the best known men in Grand Army circles. Immediately after his arrival in Providence, he joined Slocum Post, and afterwards became its commander. Later he organized Arnold Post, of which he was also commander for several years. He was a member of the Rhode Island Historical Society, of the Rhode Island Medical Society; and at the organization of the medical department at Tufts College he was chosen a professor.

The funeral of Dr. Hutchinson took place at Providence on Tuesday, October 3d, with military honors. After prayer by the Rev. Mr. Bassett at the house, 78 Mawney Street, at 2 o'clock his remains were taken to the Church of the Epiphany, where the funeral service was held. After all the seats in the church had been filled, Rev. Mr. Bassett and Chaplain Webb escorted the remains to the altar, and the two ministers proceeded with the Episcopal burial service. The solemn rite was very impressive by additions of very tasteful organ preludes and singing of a male quartet. Beautiful flowers covered the coffin. After the service the military cortége followed the remains to Pocasset Cemetery, where the burial service of the Grand Army Veterans was held and the body placed in the earth with the customary military honors.

Robert Newman, M.D., New York.

Correspondence.

THREE UTERINE PREGNANCIES DURING AN EXTRA-UTERINE PREGNANCY.

Worcester, Mass., February 15, 1894.

Mr. Editor: — The enclosed cutting from an old newspaper[1] is certainly curious, and may be interesting to some of your readers.

> DIED.
>
> In Uxbridge, Feb. 1, Mrs. Ruth Ellis, wife of Mr. Charles Ellis, 32. It had been her singular lot, for nearly eight years, to have borne an extra-uterine fœtus of full size, during which period she had become the mother of three healthy children. Her health evidently declining during the last fall, from its presence, no alternative seemed to be left but its removal, which was effected on the 31st of December, by the Doct's. Miller, of Providence, R. I., and Franklin, Ms. The subsequent discovery, however, of a free communication, which had been previously formed by ulceration, between the small intestine and the sac, and by which all nutriment, received into the stomach, passed through the artificial opening, destroyed all hopes which her physicians, at the successful termination of the operation, may have been disposed to entertain of her eventual recovery. Her sufferings were less than before the operation, but emaciation progressed rapidly; and became extreme, and she at length sank. Her life having been doubtless prolonged by the serenity of mind and calm resignation with which she awaited her fate. (Com.)

I have not found any record of the case in text-books and monographs. Very truly yours,

George E. Francis, M.D.

---

[1] The Massachusetts Spy, Worcester, Second Month (Feb.) 10, 1841. Its motto was, "The liberty of the press is essential to the security of freedom."

RECORD OF MORTALITY

For the Week ending Saturday, February 10, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal Diseases.	Diphtheria and croup.	Scarlet fever.
New York	1,891,306	868	350	17.04	22.44	1.80	8.76	1.92
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,115,562	474	169	9.66	19.95	.63	5.25	.84
Brooklyn	978,394	385	137	11.07	24.57	1.35	6.48	.61
St. Louis	560,000	—	—	—	—	—	—	—
Boston	487,397	245	73	11.07	24.19	.41	3.28	3.69
Baltimore	500,000	—	—	—	—	—	—	—
Washington	308,431	130	27	10.78	17.71	.77	5.39	1.54
Cincinnati	305,000	123	39	8.10	18.63	2.43	1.62	—
Cleveland	290,000	94	—	10.60	16.96	—	6.36	—
Pittsburg	263,709	—	—	—	—	—	—	—
Milwaukee	250,000	80	42	22.50	12.50	6.25	5.00	1.25
Nashville	87,754	32	11	—	31.30	—	—	—
Charleston	65,165	40	9	7.50	7.50	2.50	—	2.50
Portland	40,000	20	4	10.00	15.00	—	5.00	5.00
Worcester	96,217	31	9	19.38	22.61	—	9.69	—
Fall River	87,411	35	14	11.44	22.88	2.86	5.72	—
Lowell	87,191	—	—	—	—	—	—	—
Cambridge	77,100	29	12	20.70	10.35	6.90	—	13.80
Lynn	62,656	10	4	30.00	—	—	10.00	—
Springfield	48,684	13	3	—	22.07	—	—	—
Lawrence	48,355	15	3	—	20.00	—	—	—
New Bedford	45,886	19	7	5.26	10.52	5.26	—	—
Holyoke	41,278	—	—	—	—	—	—	—
Salem	32,233	10	0	—	—	—	—	—
Brockton	32,140	12	3	8.33	—	—	8.33	—
Haverhill	31,396	4	0	—	25.00	—	—	—
Chelsea	30,264	10	0	—	10.00	—	—	—
Malden	29,394	7	1	—	28.56	—	—	—
Newton	27,556	4	0	—	25.00	—	—	—
Fitchburg	27,146	—	—	—	—	—	—	—
Taunton	26,972	9	1	—	33.33	—	—	—
Gloucester	26,688	3	1	—	—	—	—	—
Waltham	22,058	2	0	—	—	—	—	—
Quincy	19,642	6	1	33.33	—	—	16.66	—
Pittsfield	18,802	4	1	—	—	—	—	—
Everett	16,585	8	1	12.50	—	—	—	12.50
Northampton	16,331	2	0	—	50.00	—	—	—
Newburyport	14,073	5	2	—	40.00	—	—	—
Amesbury	10,920	2	1	50.00	—	—	—	—

Deaths reported 2,718: under five years of age 768; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 342, acute lung diseases 570, consumption 313, diphtheria and croup 160, scarlet fever 42, diarrhœal diseases 38, measles 33, typhoid fever 23, whooping-cough 16, cerebro-spinal meningitis 11, small-pox 9, erysipelas 8.

From measles New York 19, Milwaukee 8, Philadelphia 5, Brooklyn 1. From typhoid fever Philadelphia 5, Washington 4, Boston, Cincinnati and Cleveland 3 each, Charleston, Worcester, Fall River, Lynn and Quincy 1 each. From whooping-cough Boston 4, New York, Philadelphia and Brooklyn 3 each, Cincinnati 2, Cleveland 1. From cerebro-spinal meningitis New York 5, Worcester 2, Cleveland 1. From small-pox New York 9. From erysipelas Brooklyn 4, New York 2, Philadelphia and Boston 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending February 3d, the death-rate was 20.0. Deaths reported 4,012; acute diseases of the respiratory organs (London) 385, whooping-cough 158, diphtheria 109, measles 54, scarlet fever 45, fever 41, diarrhœa 34, small-pox (Birmingham 5, West Ham 2, London, Bradford and Gateshead 1 each) 10.

The death-rates ranged from 13.3 in Blackburn to 29 2 in Liverpool; Birmingham 20.9, Bradford 16.5, Croydon 14.4, Hull 23.8, Leeds 18.6, London 19.4, Manchester 19.4, Newcastle-on-Tyne 17.6, Nottingham 17.7, Portsmouth 18.9, Sheffield 18.6, Sunderland 16.5.

METEOROLOGICAL RECORD,

For the week ending February 10, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S.. 4	29.80	32	37	27	61	94	78	N.W.	N.W.	3	9	O.	N.	0.11
M.. 5	30.28	16	22	11	52	55	54	N.	W.	17	10	F.	C.	0.07
T.. 6	30.36	21	33	9	48	60	54	W.	S.W.	3	12	C.	C.	
W. 7	30.10	35	45	25	74	69	72	S.W.	S W.	13	17	C.	O.	
T.. 8	29.96	43	50	36	76	62	69	S.W.	W.	10	12	R.	C.	
F.. 9	30.07	36	39	32	74	99	86	N.	N.E.	3	23	O.	R.	0.28
S..10	29.84	35	38	32	100	95	98	E.	N.W.	15	7	R.	O.	0.26
☞														0.72

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 10, 1894, TO FEBRUARY 16, 1894.

Leave of absence for one month and ten days, to take effect upon the adjournment of the Eleventh International Medical Congress, to be held at Rome, Italy, March 29 to April 5, 1894, is granted **Colonel Joseph R. Smith**, assistant surgeon-general.

Leave of absence for one month is granted **Captain Reuben L. Robertson**, assistant surgeon, U. S. A., with permission to apply for an extension of one month.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING FEBRUARY 17, 1894.

A. F. Price, surgeon, ordered to the Torpedo Station, Newport, R. I.

H. E. Ames, surgeon, detached from Torpedo Station and to the "Richmond."

M. W. Barnum, assistant surgeon, ordered to temporary duty on the "Ranger." Upon the reporting of relief detached from the "Ranger," ordered home and wait orders.

G. T. Smith, passed assistant surgeon, detached from Naval Hospital, Chelsea, and ordered to the "Ranger."

M. R. Pigott, assistant surgeon, detached from "Richmond" and to Naval Hospital, Chelsea.

T. B. Bayley, passed assistant surgeon, detached from the "Machias" and to the "Richmond."

DEATH.

Jas. F. Keeney, passed assistant surgeon, died on board the U. S. S. "Ranger," February 10, 1894.

SOCIETY NOTICE.

Boston Society for Medical Improvement.— A regular meeting of the Society will be held at the Medical Library, No. 19 Boylston Place, on Monday, February 26, 1894, at 8 o'clock, P. M.

Dr. E. N. Whittier: "Digestive Paresis." Discussion opened by Drs. E. G. Cutler and W. W. Gannett.

Dr. J. G. Mumford: "Compound Fractures." Discussion opened by Drs. A. T. Cabot and R. W. Lovett. Dr. Goldthwait will show a new method for the direct fixation of the fragments in severe fractures of the long bones.

Dr. J. H. Wright will show cultures from "Gonorrhœa."

Members are requested to show interesting cases and pathological specimens.

John T. Bowen, M.D., *Secretary.*

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The next lecture will be given on Wednesday evening, February 28th, at 8 o'clock, by Prof. E. S. Wood. Subject, "Urinary Diagnosis." Physicians are cordially invited.

RECENT DEATHS.

Samuel Magner Donavon, M.D., M.M.S.S., died in Quincy, Mass., February 19th, aged forty-two years. He was town physician of Quincy for a number of years and was appointed City physician the first year of municipal government, and held the position to the time of his death. He was one of the visiting physicians to the Quincy City Hospital.

August Hirsch, M.D., professor of special pathology and therapeutics and of the history of medicine in the University of Berlin, died January 28th, aged seventy-seven years. His great renown was gained by the publication in 1859 of his invaluable hand-book of "Geographical and Historical Pathology." Subsequent to this he was a member of several German Scientific Commissions, notably the German Imperial Cholera Commission in 1873. He represented the German Government at the International Sanitary Conference at Vienna.

Francisco Alonzo Rubio, M.D., professor of obstetric medicine in the University of Madrid, died recently. He was President of the Royal Council of Public Health, President of the Royal Academy of Medicine and perpetual President of the Spanish Gynecological Society.

BOOKS AND PAMPHLETS RECEIVED.

Tariff Reform: A Manufacturer's Point of View. By Arthur T. Lyman. 1894.

Hernia and Its Mechanical Treatment. By John B. Walker, M.D. Reprint. 1894.

Non-Malignant Tumors of the Larynx. By W. Scheppegrell, A.M., M.D., New Orleans, La. Reprint. 1893.

A Case of Ringworm of the Scalp Simulating Alopecia Areata. By Henry H. Whitehouse, M.D. Reprint. 1893.

Where to Send Patients for Water Cures and Climatic Treatment. By Dr. Thomas Linn. London: Henry Kimpton. 1894.

Establishing a New Method of Artificial Respiration in Asphyxia Neonatorum. By J. Harvie Dew, M.D., New York. Reprint. 1893.

On Methods Used and Results Obtained in Making Germicidal-Efficiency Tests of a Disinfectant for Use in Railway Sanitation. By William T. Sedgwick, Ph.D. Reprint. 1893.

Operative Surgery. By Th. Kocher, M.D., Professor at the University and Director of the Surgical Clinic at the Berne University. With one hundred and sixty-three illustrations. New York: William Wood & Co. 1894.

Philadelphia Hospital Reports, Vol. II, 1893. Edited by Charles K. Mills, M.D., Member of the Neurological Staff, and James W. Walk, A.M., M.D., one of the Directors of Charities and Correction. Philadelphia: Printed by J. B. Lippincott Co. 1893.

The National Dispensatory, Containing the Natural History, Chemistry, Pharmacy, Actions and Uses of Medicines, Including those recognized in the Pharmacopœias of the United States, Great Britain and Germany, with numerous references to the French Codex. By Alfred Stillé, M.D., LL.D., Professor Emeritus of the Theory and Practice of Medicine in the University of Pennsylvania; John M. Maisch, Phar.D., Late Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy, and Henry C. C. Maisch, Ph.G., Ph.D. Fifth edition. Enlarged and revised in accordance with the Seventh Decennial Revision of the United States Pharmacopœia. With three hundred and twenty illustrations. Philadelphia: Lea Brothers & Co. 1894.

Original Articles.

CASE OF FATAL HÆMORRHAGE FROM THE LEFT LATERAL SINUS, CAUSED BY A BLOW ON THE JAW.

A. H. L., a tall, athletic student, aged nineteen, was struck in a friendly sparring bout upon the left jaw by the right hand of his opponent. The blow was delivered very nearly straight from the shoulder, and over the uplifted hands of the recipient, whose head was bent forcibly backward by the impact. The fist in striking was pronated. Large gloves were used. The patient on receiving the blow commented in a natural manner upon its excellence, and asked with which hand it had been struck; immediately after this he said that he felt queer, then put both hands to his head, jumped up and down several times, reached out his hand for the wall, staggered and fell unconscious.

The accident occurred about five in the afternoon, Tuesday, February 13, 1894.

Efforts at resuscitation on the part of the students proving ineffectual, Dr. Lamarche was summoned, who advised removal to the patient's room. From this time on consciousness was not recovered. The breathing became stertorous; the pupils were first dilated, then contracted. Within about four hours rigidity had appeared in all four extremities, preceded by restlessness. Drs. J. L. Hildreth and J. Homans were called in consultation. The rigidity became more marked, the toes at midnight being drawn down violently. At one o'clock in the morning Dr. Walton was called to advise regarding localization and operation. Dr. Pease was also summoned to assist in case of operation. The condition at this time was as follows: all four extremities were in a condition of tonic rigidity, the legs stiffly extended, the feet in a condition of plantar reflexion, the left great toe being in addition drawn up spasmodically. Clonic movements of the right hand were also superimposed upon the tonic rigidity of this extremity. The elbows were flexed, the hand clenched with the thumbs inward. There was no trace of spasm or paralysis of the face. The eyes were turned somewhat to the left, without strabismus. The pupils were alike, reacting only slightly to light. The neck was flexible, and there was no apparent irregularity of the cervical vertebræ. The unconsciousness was complete; the breathing heavily stertorous, abdominal, with moaning on expiration. There was a tendency to Cheyne-Stokes respiration. Both pupils were large, the left perhaps a trifle the larger. There was a tendency to lateral nystagmus. The knee-jerk could not be obtained on account of the position of the limbs, but continual ankle-clonus was present. There was no priapism. The pulse was 96, full and strong. The temperature was 101°. There had been no bleeding from the nose or ears, no subconjunctival hæmorrhage.

It was concluded that a large hæmorrhage had taken place, involving the base of the skull and extending into the vertebral canal. The most probable starting-point of the hæmorrhage was deemed a fracture of the left glenoid fossa from the impact of the condyle of the jaw, an adjacent vessel being ruptured. Operation was seriously considered, but was decided to be inadvisable, as there seemed no chance that the essential part of the clot could be removed, namely, that pressing upon the pyramidal tract in the medulla oblongata, an opinion borne out by the autopsy.

The condition remained practically unchanged until the next morning. The ice-bag had been applied to the head, counter-irritants and heat to the lower extremities.

Wednesday (second day) spasms recurred at 4.45 and 5.30 A. M. At 7.30 the patient was breathing quietly, the eyes slightly open. There was profuse perspiration. Temperature 102.2°, pulse 100, respiration 28. At 8 A. M. all extremities were still rigid, the rigidity in the right arm and leg being most marked, with spasmodic tendency in these parts. The pulse varied from 76 to 90. At noon the breathing was still quiet, with slight snore on inspiration and low moan on expiration. The pupils were now somewhat dilated, alike. During the afternoon the pupils were widely dilated. The rigidity remained the same, with slight twitching of the right hand. The head was drawn somewhat to the left. The temperature fell to 101.2°. During the night of this day the rigidity lessened; the pupils were widely dilated, and responded slightly to light. The urine had been passed involuntarily before the catheter was used. The jaws were less rigid, but the patient could not swallow. The head was turned somewhat to the left, the eyes markedly so. Attacks of choking occurred during the night.

Thursday (third day) the temperature rose to 102°, the respiration to 30. Breathing stertorous. Head straight. About four ounces of urine drawn. The rigidity had entirely disappeared, leaving all four extremities almost completely relaxed, and paralyzed. The knee-jerk absent. Nutrient enemata not retained.

Operation was carefully considered on this day, Dr. M. H. Richardson being called in consultation regarding this point. It was again decided inadvisable, for the reasons already stated.

Friday (fourth day) the condition had remained unchanged, excepting that twitching of the right eyelid and right angle of the mouth had appeared, with slight spasm of the left upper lip. Very slight spasm of the right leg and hand appeared at the same time. The knee-jerk was absent. The pupils were alike, rather small, the eyes turned somewhat to the right, the left not following perfectly. At 11 A. M. the respiration was very shallow; the pulse varied from 58 to 84. Enemata were retained. The catheter showed the bladder empty. During the preceding night the respiration had been very irregular, at times sighing in character. The eyes had turned sometimes to the right, sometimes to the left. Every half-hour there were short cessations of breathing, followed by spasmodic cough, with intermittent pulse, rising to 90, then falling to 48. Respiration 50.

Saturday (fifth day) the condition remained much the same; the patient gradually failing; the temperature rising in the afternoon to 105°, dropping back to 104°; the pulse rising to 130 and becoming very feeble.

Sunday (sixth day). Patient steadily sinking; temperature rising in the afternoon to 106.4°; hands purple. Patient died quietly at 3.50 P. M.

The autopsy was made the following morning by Medical Examiner Swan, Drs. Councilman, Homans, Hildreth, Durrell, Walton, F. W. Webber (of Newton), Pease, and G. W. Fitz (of Cambridge), being present. The result of the autopsy was as follows:

Body of a spare, muscular, well-built young man. Rigor mortis present. Lividity of dependent parts. No external marks of violence. Head opened. Subcutaneous tissue of scalp shows no evidence of injury.

Calvarium removed. Surface of brain covered with extravasated blood beneath dura, (most marked over occipital lobes,) of blackish color and tarry consistency; greatest quantity on the left side. On removing brain, middle fossa on left side found to contain several ounces of the same black, tarry blood, and base of brain covered with the same (filling the posterior fossa and extending into the vertebral canal). There was a small rent in the lateral sinus near outer margin of temporal bone. About this rent, for a short distance, the dura mater was dissected up. No fracture of upper part of skull or upper cervical vertebræ. Brain, on section, showed marked injection of blood-vessels and flattened convolutions; otherwise normal. No extravasated blood or fluid in ventricles.

Pleura everywhere smooth and glistening. *Lungs* large, soft. On section, upper part of lungs dry and crepitant. Much dark and frothy fluid flowed from middle and lower portion of lungs (œdema). *Pericardium* smooth and glistening. *Heart* normal size. Walls of right ventricle slightly thicker than normal. Valves smooth and soft. Aorta smooth, soft and elastic, and measures only six and one-half centimetres, just above the aortic valve. *Peritoneum* everywhere smooth and glistening. *Stomach* contains a little dark, slimy mucus. Small intestine contains small amount of yellowish, gruel-like material. *Large intestine* contains gas and lumps of small, yellow fæces. Mucous membrane throughout normal. *Liver, spleen and kidneys* engorged with blood, otherwise normal. *Pancreas* normal. *Bladder* contains a little turbid urine. Great vessels of trunk contain dark liquid and clotted blood.

Diagnosis, rupture of lateral sinus and resultant hæmorrhage, caused by blow on head.

REMARKS (DR. G. L. WALTON).

On account of the widespread interest in this unfortunate case, and in consideration of the general desire on the part of practitioners to know the exact facts, it was thought best to publish the account at once, without attempting a review of sparring accidents in general, the collection of the necessary data for which would require considerable time. A *résumé* of the important points at issue will not, however, be out of place.

On holding to the light the base of a skull, from which the calvarium has been removed, it will be seen that the roof of the glenoid fossa, which receives, on either side, the condyle of the jaw, is extremely thin. Cases are on record, and specimens preserved, in which blows upon the jaw have produced fracture at this point. The condyle has been found in one such case driven directly through the skull. Study of the parts would lead one to expect this accident with comparative frequency if the condyle were not so placed that the violence of such a blow is quite as apt to be distributed to the sides (more particularly to the posterior and inner walls) as to the roof of the glenoid fossa. In fact, the violence of most blows upon the jaw, upon the chin, for example, would naturally be so far distributed in other directions (upon the teeth, or through the superior maxillary bone) to say nothing of the mobility of the jaw itself, and its liability to fracture, that it must be only in a very exceptional case that the full force of impact is transmitted to the roof of the glenoid fossa.

Rarely as fracture occurs in this locality from this cause, it is probably even more unusual for a blow of this nature to produce hæmorrhage without fracture. Assuming the vessel wall to be healthy (and the autopsy revealed nothing to the contrary) the most plausible explanation in this case seems to be that if the force of the blow was expended on the jaw it was directly transmitted to the posterior upper wall of the glenoid fossa (firm bone), thence through the zygoma and petrous portion of the temporal, expending itself, by a species of *contre coup*, upon the point of least resistance on the other side of the bone, namely, the thin wall of the adjacent sinus. This course would follow an uninterrupted path of solid bone; which broadens into the petrous portion of the temporal, and furnishes a buttress well fitted ordinarily to withstand blows from this direction. The term *contre coup* should not be here confounded with its ordinary surgical usage, for there was no indication that any hæmorrhage, contusion, laceration, or other lesion, was produced upon the opposite side of the cranium.

Possibly the compression of the jugular vein may have caused sudden tension in the sinuses, contributing to the result.

It will not be out of place briefly to discuss the localizing symptoms and the question of operation, vital considerations in this class of cases.

In the first place, regarding the nature of the lesion, all the general symptoms pointed to hæmorrhage. The fact that the patient was not momentarily stunned (as shown by his remarks on receiving the blow) ruled out concussion in the ordinary surgical acceptation of the term. The onset of reeling, falling, loss of consciousness, deepening stupor, stertorous respiration and full pulse, with alteration of pupils, pointed conclusively to the pouring out of blood; the severity and fulminating character of the symptoms indicating a hæmorrhage of rapid onset and considerable extent.

With regard to the seat of the clot, convulsive rigidity of arms and legs pointed to implication of the motor tracts of these members somewhere in their course, or to their cortical centres, the absence of facial involvement showing the escape of the facial centres and tracts. Hæmorrhage into the internal capsule could at once be ruled out by the bilateral nature of the symptoms from the first. The only accessible regions left to consider were the motor centres for the arms and legs on the cortex, the crura cerebri, and the pyramidal tracts at the base, especially in the medulla oblongata, where they come to the surface.

In the case of bilateral symptoms resulting from unilateral pressure on the cortex (for example, in cases of middle meningeal hæmorrhage, with transmitted pressure to the opposite side) the onset of symptoms is always unilateral. Supposing, again, so improbable a lesion as double middle meningeal hæmorrhage from a blow of this nature, the facial centres could hardly escape.

At the base, however, we find the fibres for both upper and lower extremities for the two sides running so closely together that involvement of all four limbs would be the natural consequence of hæmorrhage pressing upon this region. The facial nerves having left the motor tract above the pyramidal crossing, would explain the absence of facial spasm and paralysis, in case the bulk of pressure was brought to bear at this point. We have only to suppose that the facial nerve in its course, escaped sufficient pressure to cause paralysis, a not unreasonable theory, considering the comparative immunity of basal peripheral nerves sometimes observed in cases of even extensive basal exudation. The ocular nerves were certainly almost free from implication in their course along the base. It is especially noteworthy that there should have been no paralysis of the abducens, for the long course of this nerve over bony irregularities renders it especially liable to pressure, so much so that internal strabismus sometimes results from pressure downwards of the brain itself, caused, for example, by a large tumor in its substance.

While it might be conceivable that convulsive symptoms from irritation of the cortex should result from pressure at the base, this seems a hardly probable supposition, and in any event the symptom-complex should have included facial spasm.

The most reasonable explanation of the rapid onset of convulsive rigidity of all extremities, with ankle-clonus, seemed, therefore, that irritation of the pyramidal tract in the medulla was quickly produced by the hæmorrhage, the succeeding paralysis with relaxation resulting from loss of conduction through these tracts on account of the extreme pressure of the clot.

Let us now consider the other symptoms in the order of their localizing value. The occasional slight difference between the pupils, in favor of the left, was due to paresis of the third nerve on that side, from pressure of the clot in the middle fossa extending to the sphenoidal fissure, as pointed out by Hutchinson,[1] in cases of middle meningeal hæmorrhage. The temporary weakness of the internal rectus, shown by the left eye not perfectly following when the eyes were deviated to the right, points to the same pressure on the left third nerve.

Conjugate deviation of the eyes, as well as bilateral dilatation and contraction of pupils, are common in various lesions, and furnished very little assistance as localizing factors in this case.

With regard to the conjugate deviation, the direction was generally to the left while convulsive symptoms were present, this condition alternating with deviation toward the right when paralytic symptoms ensued. This fact would tend to negative the view that the symptom was due to extension of the clot to the centre for conjugate deviation in the angular gyrus. In this event the extension would naturally be more marked on the left than on the right, and would seem rather to turn the eyes to the right than to the left, since deviation *away from* the lesion is the rule in case of cortical irritation, *towards* the lesion in that of cortical paralysis.

Irritation and paralysis of the sixth nucleus in the medulla oblongata cause, respectively, conjugate deviation toward and away from the lesion through fibres connecting the sixth nucleus of one side with the third of the other; this nucleus is, however, so far removed from the surface, that is, in the floor of the fourth ventricle (where no evidence of lesion existed) that the pressure of a clot at the base could hardly be expected to cause such irritation and pressure, at least, affecting the nucleus on either side alone. A centre for conjugate deviation also exists in the second frontal convolution, which may or may not have been directly or indirectly affected by the extension of the clot. In point of fact conjugate deviation is a symptom so readily provoked by lesions in various localities, as well as in cases without recognizable local lesion (as in simple epilepsy) that it is of comparatively little value as an absolute guide to localization, though sometimes valuable as a corroborative element in diagnosis.[2]

The comparative rapidity of the pulse in spite of the extreme degree of compression, while possibly merely an accompaniment of elevated temperature, may have denoted paresis of the pneumogastric.

Analogous cases can hardly be adduced to throw light on this one, for, as far as we know, we have to do with the first instance on record of this exact injury.

An unfortunate coincidence of hæmorrhage at the base and a blow received in sparring, occurred in 1884, at New Haven. The physicians differed as to the probability of fracture. It was said, however, by observers of the bout, that the young man commenced to fall before the blow (upon the forehead) was struck. Dr. Foster writes Dr. Hildreth regarding this case, that stupor and paralysis of all the extremities followed, and that death ensued six days later. No fracture was found, and Dr. Foster, who had disbelieved in fracture from the first, regarded the blow merely coincident, not causal, the apoplectic attack being precipitated, in his opinion, by excitement. This case comes, therefore, under a different category.

No report of autopsy after death from a blow upon the jaw has come as yet to our notice, though we are informed that this is not the first instance of such unfortunate result.

Cases of hæmorrhage following blows directly upon the head, without fracture or predisposing arterial disease, are already sufficiently rare to be worthy of publication, but that such a blow as here received should produce this result, would seem almost impossible were the fact not demonstrated by such a case as the one under consideration. The occurrence must be regarded, therefore, as a rare result of a chance blow, which could not have been foreseen and which may never occur again.

With regard to the question of operative interference: Had the symptoms pointed to middle meningeal hæmorrhage of the usual seat, whether upon the side upon which the blow was struck or upon the opposite side, the advisability of operation would have been at once established. The symptoms of this lesion are sufficiently well marked, and the successful issue of operation sufficiently well established, to place this contingency among the well-recognized indications for surgical interference. The same is true of hæmorrhage from the middle cerebral artery, the symptoms in this event being identical, the seat of the clot being practically the same, except that it is subdural instead of extradural. The chief localizing symptoms in both these lesions are spasmodic movements of the opposite side of the face, and of the opposite arm and leg, followed by hemiplegia, the symptoms later becoming bilateral. Such symptoms may be delayed, a period of perfect consciousness intervening after the stunning effects of the blow have passed away and before the deepening stupor of hæmorrhage ensues. In one such case under Dr. Homans's care, reported in the Boston *Medical and Surgical Journal* (February 12, 1891) spasm of the right angle of the mouth preceded by aphasia and followed by convulsions involving the right arm and leg, becoming rapidly general, appeared seven days after a fall upon the right side of the head.

---

[1] On Compression of the Brain, London Hospital Reports, 1867.

[2] See Vierordt (Diagnostik der Inneren Krankheiten, s. 511) on the Localizing Value of Conjugate Deviation.

Hæmorrhage by *contre coup* was diagnosticated, and the clot successfully removed at my suggestion by Dr. Homans, perfect recovery following. The hæmorrhage was subdural and involved the motor tract and temporal region, most copious over the facial area.

In the present case we had to do with a hæmorrhage in such location, and so quickly poured out, that by the time the symptoms were sufficiently marked to point with any definiteness to the seat of the lesion, the base of the skull had been flooded, and the vertebral canal so far invaded as to cause severe pressure upon the medulla oblongata. The only excuse for operation here would seem to be the otherwise hopeless condition of the patient. Upon this point the personal equation varies greatly, but the prevailing feeling among the consultants in this case was that while any hope of relief, however faint, would justify the attempt in so desperate a situation, there was really absolutely no prospect of relief by surgical interference. The patient was on the verge of death, which the shock of operation might only precipitate, and remove the remote (certainly extremely remote) possibility of absorption. Ligature of the carotid artery was hardly advisable. This procedure, aimed to control, for example, middle meningeal hæmorrhage, though proposed by Forneaux, Roser, Simons and others,[3] promises very little in these cases, as shown by Gallez[4] in his recent contribution to the study of trephining, who points out that the hæmorrhage is not always controlled in this way, and that even if it be controlled, the consequences of the clot are not averted.

The question of trephining for hæmorrhage at the base, with or without fracture in this location, is one upon which study is not exhausted. Possibly future experience may lead to less conservatism in this class of cases, but we do not gain sufficient encouragement from the present status of cerebral surgery to afford hope that drainage of the base of the skull, difficult at the best (particularly on account of pressure downwards of the cranial contents) can be satisfactorily established in so desperate a case as this, in which the vertebral canal has been already invaded.

Gallez,[5] in commenting upon this point, after speaking of the comparative hopelessness of operations for very extensive hæmorrhage, uses the following language: "It is even less justifiable to undertake operation when symptoms exist of compression of the bulb, and of the nerves at the base of the brain; dilatation and paresis of the pupils, or rapid pulse (caused by paralysis of the pneumogastric). The extravasation is too diffuse."

Jacobson and Agneau are quoted by this writer in substantiating this view, the former authority adding that the condition points to extensive fracture. This would certainly in a majority of cases be true, and was to have been expected in our case, but whether fracture were present or not, the contra-indications to operation for hæmorrhage of this extent and seat, would seem absolute.

The autopsy, in the opinion of all present, certainly justified the conclusions drawn, both regarding the localization and the question of operation, the vital points in the case. The existence or non-existence of fracture had comparatively little practical bearing, either on the diagnosis, prognosis or treatment.

---

[3] Lancet, 1885; Medical Times, October 17, 1883, page 548.
[4] La Trepanation du Crâne, Paris, 1893.
[5] Loc. cit, page 272.

MALIGNANT DISEASE OF THE RECTUM.[1]

BY GEORGE W. GAY, M.D.,
Surgeon to the Boston City Hospital.

The brief paper which I venture to present to you to-night is a sort of running commentary upon some of the salient points of this disease and upon some of the cases met with in my practice. As there is no known permanent, radical cure for these affections, our efforts are necessarily directed to the management of the cases with a view to prolonging life, and to making it as endurable as possible while it lasts.

The first point to receive consideration in all diseases of the rectum is the diagnosis. I should not feel called upon to advise and to urge upon the younger members of this Society the very great importance of a digital and visual examination, had I not seen and made some very embarrassing mistakes by neglecting this important essential. Every hospital or consulting surgeon has met with cases of malignant disease of the anus and rectum which have been treated as piles, simply because no proper examination had ever been made.

A noted musician, whom the older portion of this community remembers with pleasure, came into my office some years ago, saying that he had the piles, and had been treated for them off and on for two or three years. He wanted to know what was the matter with him. I was shocked at his appearance; emaciated, sallow, weak, a wreck of his former robust self. A digital examination revealed a large mass of malignant disease situated just above the internal sphincter, which any one could easily have found, and the character of which could not have been mistaken for anything else. It need not be said that I received much undeserved credit in the case by simply telling him his real condition.

As further showing the importance of making a careful examination in cases of suspected disease of the rectum, I may allude to the case of a woman who was brought to me by a reputable physician for an opinion as to the character of a rectal tumor which he had detected by a vaginal examination alone. Epsom salts and warm-water injections removed the lump in a few days.

Both of these mistakes could have been easily avoided by simply making a digital examination of the rectum. The diagnosis should never be made upon subjective symptoms alone. The external parts should be carefully inspected, and the finger should be carried as far up the rectum as possible. A lady was put under my care several years ago by Dr. Brainard, for the removal of a small patch of malignant disease situated nearly or quite five inches from the anus. It was reached with difficulty by the finger, and a careful, thorough search was necessary for its detection. Hæmorrhage was the principal symptom.

A woman about fifty-two years of age is under my care at the present time, who for several weeks had pelvic pain and colic, which were greatly aggravated by laxatives or cathartics. Constipation was obstinate. Repeated vaginal and rectal examinations revealed only a uterine fibroid on the posterior surface of the womb, which, it was thought, might be the cause of the pain and constipation through pressure. Etherization relaxed the parts, so that this explanation was at once abandoned, and a fibrous stricture was detected, as far up the rectum as the fingers could be carried. It was annular, movable, firm, not hard nor nodular. Its character may be inferred from the fact, that the symptoms were promptly ameliorated by inunctions of oleate of mercury, and the administration of iodide of potash. These cases are sufficient to show the importance of a thorough digital examination.

---

[1] Read before the Boston Society for Medical Observation, January 1, 1894.

The last case leads me to speak of the great value of an anæsthetic in all rectal affections located above the sphincters. Except in very thin people with lax tissues, it is not possible to make a thorough and satisfactory examination of the pelvic organs without an anæsthetic. This rule is emphatically true, as regards affections of the rectum. With the patient under ether in the lithotomy position, the sphincters are to be thoroughly stretched, and the rectum cleared by an enema if necessary. A digital examination can now be made to the best advantage to detect strictures, growths or ulcers. With a Sims's speculum and a horizontal light, a good view can be obtained of from four to six inches of the lower part of the rectum, which is the location of nine-tenths of its lesions.

Bougies, sounds and catheters are of little use in making a diagnosis of stricture of the rectum. They impinge upon the promontory of the sacrum, or get caught in a fold of the mucous membrane, thereby giving untrustworthy evidence as to the true condition of the part. The finger is the only reliable sound, and the diagnosis of those rather rare strictures located above its reach is to be made from the symptoms, such as colic, abdominal distention, etc.

The majority of abnormal growths found in the rectum of adults are either specific or malignant in character. Aside from these causes, strictures may be due to tuberculous or other inflammatory changes, or they may be traumatic in character. Neoplasms or strictures due to other causes than cancer or venereal disease, are not very common in our metropolitan hospitals. Dr. Kelsey, in the late edition of his admirable work upon diseases of the rectum, makes the statement that almost as many strictures of the rectum, not malignant, are non-venereal as are venereal. Considering the facts, that little dependence can generally be placed upon the therapeutic test of the nature of the affection; that the clinical appearances are not always sufficiently characteristic; and that histories of cases through ignorance, carelessness, or wilful deception, are proverbially unreliable, I am unable to understand this statement. Specific and venereal diseases permeate society to such an extent, and are met with in such unexpected places, that the older practitioners, who have seen a good deal of these affections, will hesitate to subscribe to the above statement.

I venture the assertion that strictures of the rectum in adults, non-malignant and non-venereal are not often met with in our large hospitals. It is by no means easy in every instance to decide at once as to which of the two most common classes the patient belongs, but the cases are rare which cannot fairly be ascribed to malignant or venereal causes.

A differential diagnosis is of much importance, as affecting the prognosis and treatment. Specific and other non-malignant strictures may, and not infrequently do, send their owners to the poorhouse; but it is only after many years of suffering that they find rest in the grave. On the other hand, malignant disease of the rectum usually runs its course in two to three years, and terminates fatally in the vast majority of cases. The exceptions to this rule are so rare, that I have ascribed the recovery in two instances to a mistake in the diagnosis.

When a digital examination reveals a hard, nodular mass in the rectum, more or less immovable, involving the mucous, submucous and adjacent structures, and encroaching upon the lumen of the bowel, there can be little doubt as to the malignant character of the disease. It is safe to entertain the same opinion in cases of hard, ragged ulcerations with indurated edges, and deep attachments. Not infrequently a rather soft, friable upgrowth is met with, which bleeds easily, grows rapidly, and is liable to recurrence.

Malignant disease at the anus resembles epithelial growths in other regions of the body, presenting an ulcerated surface with or without an upgrowth, and having a hard indurated base. The surrounding skin usually presents a healthy appearance, rather than a sodden, fissured, or nodular surface, as is so frequently seen in cases of specific disease in this region.

A broad, general distinction between malignant and specific disease of the lower bowel is, that the latter involves the anus, while the former is located higher up, so that oftentimes an area of healthy mucous membrane separates the disease from the sphincters.

While the therapeutic test is usually disappointing and unreliable, yet occasionally it is very satisfactory. Four years ago I saw, with Dr. Joseph Stedman, a woman under forty years of age who had extensive disease of the rectum above the sphincters, which was hard, indurated, involving adjacent tissus, thereby leading me to express the opinion, that it was malignant in character. She was put upon the compound tincture of iodine, and given an unfavorable prognosis. She took the medicine faithfully for many months, and still continues its use at intervals. She is very well, and has evidently derived great benefit from the drug. In this case the diagnosis was wrong, but the treatment was right.

It goes without saying that the prognosis in malignant disease of the rectum, as in other parts of the body, is unfavorable. While there is no known cure for these affections, yet much can be done to prolong life in many cases, and nearly always to make it more endurable.

The treatment is palliative or radical. I think that the opinion is gaining ground in this country that the former is preferable in very many patients. The operation, or mode of treatment, which cures cancer, has not been discovered. Hence the object of our efforts in the management of the affections under consideration is to give the sufferers all the comfort possible. It does not always seem desirable to prolong life, and yet that is very properly one of the objects of the physician's work.

The treatment of this disease may be considered under three heads, namely: the alterative, the opium, and the operative methods. Whether one or all of these modes of treatment shall be pursued in any given case, depends upon circumstances.

A good illustration of the alterative method was seen in the case of a policeman about forty years of age, who had a malignant ulcerating mass three inches in diameter upon the anterior wall of the rectum above the sphincters. Its location precluded any radical operation, and the symptoms did not call for colotomy. He took from nine to twenty-seven drops of the compound tincture of iodine daily for upwards of two years; once or twice a day he took an enema containing from one to two grains of cocaine. He was thus enabled to do his work as patrolman for the above period. The time finally came when his strength began to fail; and on the day that he was discharged from the force, he went into an adjoining room, and shot himself dead. He fully understood the hopeless nature of his disease; and the moment that he was disabled he took the management of the case into his own hands.

In view of the fact that this man was always better on resuming the treatment, his physicians could not but think, that it had a decided beneficial effect.

It is nearly three years since I removed a growth two inches in diameter from the rectum of a man forty-seven years of age, by Cripps's operation. It was pronounced malignant by competent authority. The symptoms were pain and hæmorrhage. He has taken the iodine daily since the operation, and there has been no return of either symptoms or growth. I dread, however, to see this man enter my office, as I do any other person, upon whom I have operated for cancer; for it is probably only a question of time when a recurrence will take place.

Six years ago I removed a similar growth from the rectum of a middle-aged lady, by Cripps's operation. For four years she took Chian turpentine, and drank Ypsilanti water constantly. There has been no recurrence of the hæmorrhage, or of the disease. I am inclined to ascribe the cure in this case to a mistake in the diagnosis, rather than to the treatment.

Many years ago Dr. Henry M. Field, of Newton, suggested to me the iodine method of treating malignant disease of the rectum. He thought that he had seen beneficial effects from its use; and so far as regards two cases, which I saw with him, I can confirm his opinion. For a long time I have given the drug to nearly all of my patients with malignant disease, wherever located, provided they could take it without disturbing the stomach. In many cases I could not see that any benefit was derived from its use. The rapid growing and markedly malignant ones, as might be supposed, derive less aid from it than others.

The natural course of malignant disease varies so much in different individuals, that it is extremely difficult to arrive at reliable conclusions as to the true value of any drug in checking or modifying the new growths. Chian turpentine, cundurango and many other articles have had their day, and have been discarded because they did not stand the test of experience. I do not claim anything for iodine. I use it, because I think it is our duty to give these unfortunate people the benefit of every possible aid; and for this particular purpose, I know of nothing better at present than the compound tincture of iodine.

Sooner or later most patients afflicted with malignant disease of the rectum are compelled to resort to opium to relieve their sufferings. The pain is usually due to obstructed peristalsis, colic as we call it, or to the pressure or other influence of the growth itself upon the nerves. The first is paroxysmal, and is coincident with the vermicular action of the bowels. The latter is a steady, grinding, boring, or aching pain, very wearing to the nervous system, and very distressing to bear. Both can be controlled to a certain extent with opium. Both are relieved temporarily by excision of the growth. Colotomy usually relieves the colic permanently, but may do the pressure-pain little, if any good.

A fair example of the opium treatment was recently under my care through the courtesy of Dr. Whittier. A man, sixty-eight years old, had suffered about two years with a cancer of the rectum. It was located well above the sphincters, hard, nodular, and involving the neighboring parts to a wide extent. Colic and pressure-pains were severe. The liver was greatly enlarged by a secondary growth extending nearly to the umbilicus. Several surgeons were consulted at different times, and all very properly advised colotomy. The patient finally became so weak and exhausted from the progress of the disease, aggravated by the great difficulty experienced every week in his efforts to empty the bowels, that he realized the fact that something must be done. The opium and operative treatments were fully explained to him and he decided to try the former. At first a quarter of a grain of morphine given twice daily under the skin was sufficient to relieve most of the pain. This quantity was gradually increased until he took between three and four grains daily, with the effect of keeping him fairly comfortable. The bowels did not move for nine weeks after he began the morphine. His diet consisted of gruels, soups, and beef extracts. No clear or unmodified milk was given during this period. After some weeks of this complete obstruction, the fæces could be easily felt in the left iliac region. The abdomen never became distended to any extent, although very little flatus escaped for several weeks. The paresis of the intestines produced by the morphia was surprising. There was no vomiting, hiccoughs, delirium, nor headache. Thirst was urgent, and the mouth and throat were very dry and parched, in spite of all our efforts to prevent it. The emaciation became extreme. The bowels finally began to move of themselves, without aid of any sort; and during the last weeks of his life he had from two to six stools daily, thereby completely removing the collection above the stricture. There was no hæmorrhage. He died from exhaustion. A seasonable colotomy would doubtless have enabled this man to keep about longer, and to have postponed the opium stage for a time. Whether his life would have been prolonged thereby, is a question not so easily decided.

Under the head of operative treatment there are three measures, which require consideration, namely, Cripps's and Kraske's operations and their modifications, and colotomy. The first is particularly adapted for cases in which the disease is limited to the first five inches of the bowel. It consists briefly in dividing both sphincters and rectum as high as the tip of the coccyx, and then dissecting out the growth or diseased tissues.

Judging from a limited experience, this is a very satisfactory operation. The dangers are shock and hæmorrhage. I have never seen incontinence of gas or fæces to a troublesome degree follow this operation. It is especially indicated for the removal of growths which are limited in extent, movable, and not located over the urethra and prostate.

Kraske's operation is designed for the removal of growths located higher up than five inches, or above the reach of the finger. The sphincters are not divided. The bowel is reached through an incision over the sacrum and coccyx. The latter bone and a portion of the former is removed. The gut is divided above and below the diseased portion; the latter is removed; and the ends of the healthy bowel are joined with sutures or fastened in the wound, as the condition requires.

The peritoneal cavity is usually opened in this operation, thereby adding another element of danger from extravasation of fæces.

Finally, we come to the most satisfactory operation for the relief of the majority of cases, colotomy. This is now most frequently done in the left inguinal region, for the reason that the operation is more quickly and easily performed, the wound can be attended to far better by the patient, and the danger is no greater than in the loin. The relief to the obstructive pain or colic is usually complete and permanent. The pressure-pain may still require opiates or other treatment. Many lives are prolonged; and, more than that, they are made comparatively comfortable by this operation. In most cases the patient can keep himself clean and free from odor. A woman upon whom Dr. Bradford performed right lumbar colotomy worked for many months alongside another woman, without the latter ever suspecting that anything was the matter with her companion.

Kelsey's description of the operation is the best one I have seen. The incision parallel with Poupart's ligament is made about an inch from the left anterior superior spine. The peritoneal cavity is opened, and the colon brought out of the wound. The "bar" is made by joining the edges of the incision with a silver wire passed underneath the bowel. The intestine is then joined to the edges of the wound with sutures, and two or three days allowed to elapse before the bowel is opened. The operation is neither difficult nor dangerous, and in very many cases it is a most satisfactory one to both patient and surgeon.

By way of recapitulation it may be said, that the treatment of malignant disease of the rectum is essentially palliative. Colotomy is indicated to relieve obstructive colic, and it should be done early in order to save the patient's strength. The radical operations are indicated in the early stage, when the growth is limited in extent, free from deep adhesions and infiltration, and not infringing upon the urethra or prostate. Opium, the king of drugs, is to be avoided as long as possible, and given judiciously, in order that its beneficial effects may not be lost by over-doses before the time comes when it is needed the most. While the disease is incurable, very much can be done by judicious management to make the patient's life endurable and his death peaceful and easy.

◆

A CASE OF PULMONARY STENOSIS IN AN ADULT.

BY OLIVER H. EVERETT, M.D., WORCESTER, MASS.

The following case is interesting in that the diagnosis was made incidentally, and not because the patient complained of any symptoms pointing to her heart. Furthermore, the rarity of the lesion in an adult makes it worthy of record, as well as the fact that the patient has attained her present age with so few symptoms. Professor Loomis, in reporting a similar case,[1] speaks of it as one of the "curiosities of medicine."

Mrs. X., twenty-seven years old, a native of the State of New York, of French-Canadian parentage, applied for admission to the Memorial Hospital, November 10, 1893, thinking she had typhoid fever, as she had been taking care of a patient with that disease. She had a slightly elevated temperature, and was admitted for observation. She says she has always been fairly well, though never strong and cannot do hard work without getting tired and out of breath. Even as a girl she could not join in active plays. There is no history of rheumatism, chorea or other disease except scarlet fever and *la grippe*. When she was ten or twelve years old her dyspnœa became more marked; and in the course of the next few years she was examined by several physicians, who said she had heart disease. There has been nothing abnormal about menstruation since that function was established at the age of fourteen. Since that time she has never but once consulted a physician for her heart. She was married ten years ago, and has had four children. She has always suffered from cold hands and feet, and occasionally has had slight swelling of the ankles. She does her own house-work, with some help about washing and ironing.

She is a fairly strong-looking woman, of medium height, face slightly flushed, but not cyanotic or livid. Finger- and toe-nails somewhat rounded, and blue (instead of the normal color) under them. On examination of the chest the most striking point is a long inspiration, like a sigh, occurring from three to six times a minute. She says she always breathes in this way, feeling as if she should smother otherwise. The night-nurse reports that there is no irregularity in her breathing when asleep. The apex beat of the heart is faint and diffused, and can be only definitely localized when she is sitting up. It is then found in the mammary line below the seventh rib. No thrill is perceptible over the heart, nor any impulse to be felt below the ensiform cartilage. The heart's dulness begins at the upper border of the fourth rib, thence to the apex beat, and thence to the middle of the sternum. Over most of the cardiac area the heart-sounds are normal, though rather faint, and there is no murmur over the aortic valves. To the left of the sternum, however, in the first, second and third intercostal spaces, is a soft, blowing, systolic murmur. Its point of greatest intensity is in the second intercostal space, close to the sternum, whence it may be traced upwards, and to the left, in a line pointing directly to the middle of the clavicle. Downwards it cannot be heard further than the third intercostal space. The murmur does not disappear on full inspiration. The pulmonic second sound is fainter than normal, and there is no thrill or impulse to be felt over this artery. Percussion and auscultation reveal nothing abnormal in the lungs. Dulness is normal over the liver and spleen. There is no ascites, and no œdema of any part of the body. Superficial veins of legs and upper part of the chest are well marked. There is no pulsation in the jugular veins, nor are they particularly prominent. The radial pulse is small and weak, has ranged between 70 and 90, and is alike on both sides. Examination of the urine shows it to be acid, specific gravity 1,015, and containing neither albumen nor sugar. Since being in the hospital she has once spit up a little blood, or bloody mucus, which I did not see, and have no reason to suppose came from the lungs; but the fact is interesting in view of the frequent termination of such cases in phthisis, with hæmoptysis often an early symptom. Her temperature became normal the next day after her entrance, and she has shown no symptoms of typhoid fever.

---

[1] International Clinics, 1893, second series, vol. iv, p. 13.

Having now a case of murmur over the seat of the pulmonic valves, the first question is as to its origin. Balfour[2] says, "The pulmonary area has been not inaptly termed 'the region of romance,'" referring to various interpretations which have been given to murmurs in this location. This is one of the less common situations of cardiac murmurs, which, when present are usually inorganic. Flint[3] says an inorganic pulmonic direct murmur is not infrequent, though it seems to be far less common than an aortic inorganic murmur. That the murmur in this case is pulmonic and of organic origin I feel very sure. It is not heard at all to the right of the median line of the chest, nor is it transmitted into the carotids as Flint[4] says is always the case with an aortic murmur. Neither can it be heard at all towards the heart's apex, nor in the back, as a mitral murmur would be; but can be traced from its point of greatest intensity, upwards and outwards, towards the middle of the left clavicle. All these points show its pulmonic origin. Murmurs in this situation have been ascribed by some authors to mitral regurgitant lesions, heard here instead of at the apex as usual. In accordance with this theory, which has been advocated by Balfour, the murmur comes from the dilated appendix of the left auricle coming close to the chest wall. Such a murmur is differentiated from one arising in the pulmonary artery by its point of greatest intensity being a little further to the left, in such a position that when the stethoscope is placed over it there is at least the width of the tip of the middle finger between the instrument and the left border of the sternum. With a pulmonic murmur the stethoscope, when over the point of greatest intensity, touches, or even overlaps, the sternal border. Authorities differ as to such a murmur being ascribed to mitral insufficiency. Flint dismisses it very summarily, saying the question is hardly worth the discussion which has been given to it. However that may be, there is in the case reported an entire absence of any symptoms pointing to mitral disease, and the murmur is best heard when the stethoscope is close to the sternum.

Now, most pulmonic murmurs are inorganic. Is that the case in our patient? I think not. The color of her skin and mucous membranes is good, and shows no sign of anæmia; there is no venous hum in the vessels of the neck; and the pulmonic second sound is fainter than normal, instead of being accentuated. The heart's dulness on percussion is somewhat increased; and there are positive signs of engorgement of the systemic veins, in the blue finger- and toe-nails, and the venous enlargement in the legs and chest. In addition to these points in the differential diagnosis, Bramwell[5] mentions the difference in the character of the pulse. In early anæmia it is of good tension, but irritable and variable in rate, while in pulmonic stenosis the pulse is small and weak, and may be intermittent. Furthermore, this patient has had rest, tonics and good food; yet while she feels better than on entrance to the hospital three weeks ago, her murmur is just as clearly marked as at first.

Dr. Nelson, at the Memorial Hospital, has very kindly examined this patient's blood, according to Ehrlich's method, as described by Dr. W. S. Thayer in the Boston *Medical and Surgical Journal* for February 16 and 23, 1893, and finds no indication of anæmia. Dr. Nelson's report is as follows:

"Red corpuscles normal in size, form and color. Red and white corpuscles in normal proportion. Different varieties of leucocytes are in about normal proportion; neutrophiles 75 per cent., eosinophiles four per cent., small mononuclears 18 per cent., large mononuclears and transitional forms three per cent."

For these reasons an inorganic, anæmic origin of the murmur may be excluded.

Before considering stenosis of the pulmonary artery as the cause of the murmur, there are some other conditions, which may give rise to it, to be taken into account. When the left lung is retracted, as by adhesions from an old pleurisy or by long standing disease, the pulmonary artery may be in contact with the inner surface of the anterior chest wall, making its pulsation visible and palpable, and producing a systolic murmur. There is no history of any such disease of the lung in this case, nor any physical sign of such a condition now existing. Balfour says that under these circumstances the murmur is produced by compression of the artery between the parietes and the heart in systole; and he describes such a case.[6] A murmur depending on retraction of the lung disappears on a full inspiration, which is not the case with this patient. Bramwell[7] speaks of cases where a pulmonic murmur was produced, which he ascribes to a deposit of lymph outside the pericardium, the result of an antecedent pleurisy. Pressure upon the artery by a tumor in the mediastinum, or by enlarged bronchial glands, may cause enough narrowing of its calibre to give rise to a murmur. In an article by R. Douglas Powell, in Reynolds's "System of Medicine,"[8] a case is given where an aneurism of the aorta pressed upon the pulmonary artery, causing signs of pulmonary stenosis, as well as those of a thoracic aneurism. Displacement of the heart by fluid may also cause a pulmonic murmur. Hayden[9] refers to cases reported by Da Costa, of pulmonic systolic murmur believed to be caused by the pressure of solidified lung on the left branch of the pulmonary artery. He also speaks of a case where such a murmur developed shortly before death, probably caused by thrombosis. None of the above conditions seem to exist in the case of Mrs. X. Her embarrassment of respiration dates back too many years, and has no history of any antecedent lung disease. One other cause of such a murmur needs only to be mentioned. In children, and in adults with thin, yielding chest walls, it may be produced by pressure with the stethoscope.

If then, this murmur is not inorganic, nor caused by pressure, or other causes outside of the artery itself, it must be caused by some obstruction within the vessel. This may be either a narrowing at the pulmonic orific, some valvular lesion, or a diminution in calibre of the artery. Occasionally the stenosis takes place in the conus arteriosus, or infundibulum, of the right ventricle. Exactly what the condition is in a given case cannot be positively known. The general name of pulmonary stenosis embraces them all.

Such a lesion may be either congenital or acquired, with the probabilities very greatly in favor of the former. Rosenstein[10] says that there are only a very few scattered cases (he mentions four) of the acquired form, and on this point all authorities agree. In the *British Medical Journal* of a later date[11] is reported a case supposed to be acquired, and not congenital, and the specimen is described. It is usually the result of intra-uterine disease (endocarditis) or of arrested fœtal development. A diagnosis between the acquired and congenital varieties in an adult cannot often be made with certainty. Keating and Edwards[12] say there is "no sign or sequence of signs by which a congenital murmur can be definitely differentiated from an acquired lesion." Bramwell[13] says the history of the case is the only means of differential diagnosis, and we may be helped by the fact that several members of a family may have congenital heart disease. He also says it is "only when symptoms and signs of cardiac disease have been entirely absent in early life that the diagnosis of the acquired form can be made." On the other hand, even the history of cyanosis and dyspnœa from early childhood is not conclusive proof of congenital disease, as such a history may be found in other cases.

---

[2] Clinical Lectures on Diseases of the Heart and Aorta, London, 1876, p. 194.

[3] Manual of Auscultation, etc., Philadelphia, 1890, p. 251.

[4] Loc. cit., p. 234.

[5] Diseases of the Heart and Thoracic Aorta, New York, 1884, p. 553.

[6] Medical Times and Gazette, London, December 12, 1874, p. 655.

[7] Loc. cit., p. 554.

[8] American Edition, Philadelphia, 1880, vol. ii, p. 899.

[9] Diseases of the Heart and Aorta, Dublin and London, 1875, p. 1003.

[10] Ziemssen's Cyclopædia, vol. vi, p. 155.

So that unless the case has been seen, both before and after the establishment of the murmur, the differential diagnosis seems to be purely a matter of probabilities. Assuming then, as there is no evidence to the contrary, that we have a case of congenital pulmonary stenosis, let us see what is the usual course of such a lesion, and then compare this with the history of the present case.

Of all forms of congenital heart disease, pulmonary stenosis is the most common. This stenosis may be at the infundibulum of the ventricle, at the pulmonary orifice, or a general narrowing of the artery and accompanied by different conditions of the various fœtal openings, in the heart and great vessels. The most common form is stenosis of the artery itself, as far as its bifurcation. With this condition is usually found either an open foramen ovale, or a deficiency in the ventricular septum. The ductus arteriosus may be either open or closed, more often the latter. The interventricular septum is normally closed at the third month of fœtal life. If the pulmonic obstruction occurs before this time the blood finds its way through this opening, preventing its closure. Obstruction occurring after the third month finds some relief by the flow of blood directly from auricle to auricle through the foramen ovale. After birth, in either case, some blood goes to the lungs through the ductus arteriosus, if this remains open. If this is closed there is a certain amount of collateral circulation established by means of the bronchial, œsophageal, or other branches of the aorta. Compensation for the stenosis is not perfect by any of these means, so that there is usually hypertrophy of the right side of the heart, with more more or less dilatation, and also cyanosis and enlargement of superficial veins, in greater or less degree. The more complete the compensation, the less marked are the symptoms, or as Keating says, compensation is the "key-note in prognosis" in these cases.

Bramwell divides cases of stenosis into three groups, according to the severity of the symptoms.

(1) Where the lesions are severe, and the patients die at once or soon after birth. If they live for any length of time there is great cyanosis, a subnormal temperature, somnolence, dyspnœa, dropsy, and often fatal convulsions.

(2) The lesions are less severe, and they may live several years, but with heart symptoms from the first. Cyanosis may be only noticeable on coughing or exertion, and is more marked on the periphery of the body. Fingers are clubbed, and superficial veins prominent. When compensation becomes imperfect, or is interfered with by intercurrent bronchitis or other trouble in the lungs, to which these patients are very liable, dyspnœa and palpitation increase. Œdema is usually a late symptom, at which period there may be convulsions. At the same time albuminuria and enlargement of the liver and spleen may be found. If the patients survive puberty, they generally die young from phthisis. Hæmoptysis is frequent, being often the earliest symptom of lung invasion.

(3) The lesions are slight, and symptoms may not arise till years after birth. They are caused by failure of compensation, which is either gradual, or brought about more rapidly by intercurrent disease. At about the time of puberty, compensation is very apt to be disturbed. The cases then run the same course as if the symptoms had been present from early life.

Children with this defect usually develop slowly, both mentally and physically. Menstruation is apt to be late in its establishment. The hypertrophied heart presses upon the yielding ribs and cartilages, causing a bulging of that part of the chest wall. A majority of the cases die before adult life is reached. The elements which favor survival are a slight or moderate degree of stenosis, a sufficient opening through some of the fœtal passages, and a good collateral circulation. Lebert[14] quotes a table from Kussmaul showing that out of 64 cases, 41 died under ten years of age, 14 between ten and twenty years, and only 9 lived beyond twenty years. One case of undoubtedly congenital stenosis lived to the age of sixty-five, and two cases of complete closure of the artery died respectively at twenty-one and thirty-seven years (Lebert). Another, with stenosis and open foramen ovale, died at fifty-seven, from cerebral apoplexy (Keating and Edwards, p. 38). These cases are, of course, exceptional. As a rule, even for favorable cases, middle age will not be passed, and there is a remarkable tendency for them to terminate in pulmonary tuberculosis, a combination which is rare in any other form of heart disease. This is a curious fact to which Lebert (in "Ziemssen's Cyclopædia") devotes considerable space. He finds that the cases so terminating show no hereditary tendency, and he can only ascribe this frequency of tuberculosis to a deficient blood-supply in the lungs, and the pressure upon them of an hypertrophied heart. The left lung is usually first attacked.

As no dyspnœa was noticed in the patient till she was ten or twelve years old, while it usually appears early, the following table (Keating and Edwards, p. 41) may be interesting. In 41 cases of congenital defect, cyanosis first appeared at the age of

2 weeks	in 3 cases
3 weeks	in 1 case
1 month	in 2 cases
1 to 2 months	in 7 cases
2 to 6 months	in 5 cases
6 to 12 months	in 5 cases
1 to 2 years	in 3 cases
2 to 5 years	in 6 cases
5 to 10 years	in 1 case
10 to 20 years	in 6 cases
20 to 40 years	in 1 case
Over 40 years	in 1 case

---

[11] December 17, 1881, p. 983.

[12] Diseases of the Heart and Circulation in Infancy and Adolescence, Philadelphia, 1888, p. 35.

[13] Loc. cit., p. 555.

[14] Ziemssen's Cyclopædia, vol. vi, p. 321.

In only nine did cyanosis first appear after the age of five years.

The case reported seems to be one of a mild degree of stenosis, and she has been able to live in great comparative comfort. She has been singularly free from any diseases tending to disturb the compensation effected by her moderately hypertrophied heart. There is evidence of some disturbance of compensation at about the time of puberty. She says she has had *la grippe* twice; but, if so, her account shows that neither attack could have been very severe. Cyanosis only shows itself in the extremities, and there has been no œdema except occasionally at the ankles. She has the cold hands and feet mentioned by the authorities. The physical signs about the heart and lungs support the diagnosis, though the cyanosis and dyspnœa, even on exertion, are of a milder degree than usual. Sansom,[15] however, reports the autopsy of a child where pulmonary stenosis was found, though there had been absolutely no cyanosis, but rather pallor. The indications of hypertrophy of the right heart are less marked than usual, and there is not the epigastric impulse usually felt; yet this symptom was entirely absent in a case of congenital stenosis[16] where great hypertrophy of the right ventricle was found, and where the symptoms came on suddenly at the age of eighteen. Her lesion is not severe enough to have interfered with her growth and development. As long as no extra strain is brought on her heart she is likely to go on as she is for some time. She has lived unusually long without the appearance of tuberculosis, which may be expected to develop later. It would not be surprising to see it show itself by hæmoptysis at any time, though at present her lungs seem to be in a normal condition.

The cause of cyanosis is an interesting question in this connection, which has been argued by several writers. Two theories have been advanced. According to one the coloration is due simply to venous stasis, the blood backing up in the right side of the heart, and then in the systemic veins. The other theory ascribes cyanosis to the fact that there is a mixture of unoxygenated blood circulating with the arterial blood, the two being allowed to mingle by the persistence of one or more of the fœtal openings which should have closed under normal conditions. Some think the color of the surface is due to the operation of both of these causes combined. In an article on cyanosis in the *Practitioner* for 1888, the writer takes the ground that less than a normal amount of blood goes to the lungs in these cases. The lungs then become partially collapsed, respiration is impeded, and what blood does go to the lungs is not properly aerated. This he regards as one of the most important elements in producing cyanosis.

---

[15] Lectures on the Physical Diagnosis of Diseases of the Heart, Philadelphia, 1876, p. 130.

[16] Lancet, August 2, 1884, p. 183.

THE RADICAL CURE OF HYDROCELE.[1]

BY M. F. GAVIN, M.D.

The different methods used for the radical cure of hydrocele are antiseptic incision, excision of a part or the whole of the sac, and injection: all other methods are now obsolete. It is with the last-mentioned method my paper will mainly deal. The open incision, with or without excision of the sac, means the administration of an anæsthetic, detention in bed for a varying period from one week to four, while to undergo an operation has considerable effect on the minds of most of our patients.

There are cases where the open incision is the only operation to be considered: where there is a question of diagnosis; where a hernia exists; where injection has failed — congenital hydrocele; where the sac is much thickened. In all of these some form of open operation is called for.

There is a large class that can be successfully treated by injection. Perhaps it is well to inquire why injection has so often failed to cure the disease.

Let us hear the explanation as given by Jacobson, for the many failures: (1) The use of too weak a solution; (2) not bringing the solution in contact with the whole of the sac; (3) not withdrawing all the hydrocele fluid; (4) injecting large hydroceles immediately after they are emptied; (5) making use of injections in unsuitable cases.

No simple, uncomplicated case of hydrocele ought to be treated other than by injection. The use of tincture of iodine, the simple as well as the compound, is too often followed by failure to urge its use, which is often attended by a scene — patients often fainting, and suffering from griping pains, retraction of the testicle, nausea and even vomiting; unpleasant things to have happen in one's office. Since about six years I have treated all suitable cases of hydrocele by injecting half an ounce of a solution composed of equal parts of carbolic acid, alcohol and glycerine — a small bulb syringe answers very well. A little care is necessary in the use of the solution. Protect the skin surrounding the canula with a little gauze or absorbent cotton, so as to avoid the burning sensation so easily produced on the tender skin covering the scrotum; allow the fluid to remain. The injection is practically painless, and no unpleasant effects follow its use. Patients are allowed to attend to their ordinary business; and in from two to four weeks the acute hydrocele disappears.

I have no record of the number of the cases so treated; but since I have used it, I have seen only one relapse. The method has proved so effective, and with none of the drawbacks of other methods, that I feel warranted in bringing it before the Society. I have never dared to use carbolic acid as recommended by Dr. Levis. I am unable to give the name of the originator.

---

[1] Read before the Boston Society for Medical Observation, January 1, 1894.

Medical Progress.

RECENT PROGRESS IN OBSTETRICS.

BY EDWARD REYNOLDS, M.D.

SINGLE LIGATURE OF THE CORD.

Nguyen Khac Can[1] bases his opinion of the superiority of a single ligature upon his observation that out of 68 cases of labor with double ligature of the cord, there were four cases of retention of the placenta; and out of 146 cases with single ligature, only two cases of retention. The duration of the third stage with the double ligature averaged 64 minutes, while with the single it was but 27 minutes.

---

[1] Algeria. Arch. de Toc. et de Gyn.

The author believes that a rapid diminution in the size of the placenta, due to the free escape of the intra-placental blood, favors retro-placental hæmorrhage, and consequent complete separation of the placenta, and that it further lessens the obstacle to its escape from the uterus and vagina by the resulting decrease in size. He recommends that double ligature of the cord should be reserved for cases of twin pregnancy. While we think that there is a question as to the correctness of the author's reasoning on the first point, there can be no doubt as to the advantage of diminishing the size of any body which is to pass the os uteri, and we think that we have ourselves noticed a greater ease of delivery of the placenta in cases in which but one ligature had been applied.

The suggestion of Nguyen Khac Can is certainly of value. It should be easy to prevent untidiness by catching all the intra-placental blood in a suitable basin, but the determination not to check intra-placental hæmorrhage, of course, implies a careful palpation of the uterus before the cord is cut, and an absolutely positive elimination of the possibility of a twin pregnancy.

CHOLERA IN PREGNANCY AND LACTATION.

L. Gaillard[2] reports seven cases of cholera during pregnancy. Five terminated fatally, two were lightly attacked and recovered. The synopsis of the fatal cases is as follows:

(1) Seven months pregnant; premature labor on second day; intravenous transfusion. Patient died on the sixth day.

(2) Eight months pregnant. Labor did not appear. Death of the fœtus on the sixth day, and of the mother on the eighth day.

(3) Six months pregnant. Intravenous transfusion on the fourth day. No labor. Death of fœtus on the seventh day; of the mother on the tenth day.

(4) Patient tuberculous, and six months pregnant. Death of the fœtus on the ninth day; of the mother on the fourteenth. No labor.

(5) Eight months pregnant. Fœtus dead when first seen. Spontaneous labor on the eleventh day. Intravenous transfusion just before death.

Gaillard thinks that four of these cases would have recovered, if they had not been pregnant. His experience supports the classic belief that pregnant women support cholera badly; that the disease is almost invariably fatal to the fœtus; that it is almost always accompanied by abortion, miscarriage, or premature labor; that such an occurrence increases the danger to the mother; and that this risk increases in proportion to the previous duration of labor. Gaillard has seen nearly 400 cases of cholera, and considers pregnancy by far the most serious complication of the disease, worse even than senility and phthisis.

When nursing women are attacked by cholera the mammary glands frequently become congested and painful. In spite of the depleting effect of choleraic diarrhœa upon all the other fluids of the body, the secretion of milk persists in normal quantity. Lactation does not seem to be a serious complication, so far as can be judged from the author's experience, six out of ten patients having recovered.

SYMPHYSEOTOMY.

The proper limitation of the field for this operation, the determination of its value and of its risks, have occupied a prominent place in the obstetrical work of the past six months; as is evidenced by the publication of 64 papers upon the subject during this time and of about half that number of cases.

Byron Stanton[3] gives a good abstract of the latest opinions of the best authorities upon the amount by which the pelvic space is increased.

Experiments upon puerperal cadavera have shown that the gain in the pelvic diameters is in direct proportion to the amount of separation; that, in high degrees of contraction, the proportional gain is greater than in normal pelves and in the lower degrees of deformity; that this gain is not limited to the conjugata vera, but is also present, and to a greater degree, in the transverse and oblique diameters, at both the inlet and outlet; that the increase of these latter diameters varies between three-fourths and one-third of the length of the inter-pubic separation, while the increase in the conjugate is about one-fourth of this space. Morisani quotes experiments showing that for each centimetre of pubic separation, the lines between the promontory and the extremities of the separated pubic bones are increased two and one-half millimetres, that is, that two inches of separation of the symphysis would yield a gain of half an inch in the conjugate; while with three inches of separation, the gain is three-fourths of an inch; and to this amount is added a possible still further gain by the projection of one parietal protuberance into the distensible space between the separated pubic bones. Cases have been reported in which more than three inches of separation has been possible without injury (Novi, of Naples, $3\frac{3}{16}$ inches; Caruso, $3\frac{9}{16}$ inches); but, as a rule, three inches is the extreme degree of separation which is safe. We must not, therefore, count upon a gain of more than three-quarters of an inch in the conjugate, an inch in the oblique, and an inch and a half in the transverse diameters.

Limitations of the Operation. — The size of pelvis in which symphyseotomy is appropriate has been placed as low as $2\frac{1}{2}$ inches, and as high as a normal pelvis with an unusually large head, but these limits are probably far too wide. At the lower limit given the operation would probably result in the loss of the child unless the latter was extremely small. The application of this operation to normal pelves can hardly be too severely criticised. It is probable that there is not one case in 10,000 in which, in competent hands, the loss of the child during its extraction through a normal pelvis can fairly be laid to pure disproportion between the head and pelvis, and the success of symphysiotomy has been so marked that there is grave danger that it may be used in cases that could be treated equally well by the ordinary obstetric operations.

Technique. — The most scrupulous asepsis is necessary. The first step in the operation is freeing the surface of the mons veneri and labia majora of hair, rendering the skin thoroughly aseptic by the usual methods of preparing the abdominal walls for cœliotomy, and disinfecting the vulva and vagina. The patient may be placed at the side of the bed with knees drawn up and separated, or the operator may take his place between the extremities of the patient.

The technique of the operation has been improved by the more complete separation of the operation wound from the vulva by making the division of the symphisis subcutaneous. The incision should lie in the median line, should be long enough to admit two fingers, and should terminate at its lower extremity just above the symphysis. This incision not only renders asepsis more easy of attainment, but places the wound in a situation where the bandage which fixes the pelvis during the after-treatment does not press upon the wound. The incision should be carried through the skin and subcutaneous fascia, and should lay bare the insertions of the recti on the pubes. These should be separated from the pubic bones by a transverse subcutaneous incision to an extent sufficient to admit two fingers, and care should be taken that the prevesical space is not opened in separating these insertions from the bone; as the posterior layers of the fascia of the abdominal wall may with care be separated from the symphisis by blunt dissection with the finger without this accident. A catheter should be passed into the urethra, and the soft tissues behind the symphisis widely separated from the bone by the finger. It should then be placed behind the symphisis with its tip upon the subpubic ligament; Galbiati's knife, Harris's modification of the same instrument, or in case of emergency any strong blunt-pointed bistoury, should be passed behind the symphysis with the finger as a guide, and should divide the joint and subpubic ligament from behind forwards, and from below upwards. The operator should then open the symphysis by abduction of the patient's knees, and should continue the separation till he judges that a sufficient amount of space has been gained, or till he feels the check due to the sacro-iliac ligament. The wound should then be covered with a protective dressing and a firm bandage placed around the pelvis below the crests of the ilia in such a manner as to prevent any further separation during the extraction of the child. After the delivery of the child the bladder should be injected with warm milk or some bland, colored fluid in order to determine the existence of any injury which may have been inflicted upon this organ during the extraction. Should such be found, it should be repaired at once. If no injury is detected, a strip of gauze should be placed in the wound, the remainder of the skin wound should be sutured; a dressing should be applied; and the divided surface of the symphysis should be held in place by a firm bandage round the pelvis below the crests of the ilia.

---

[2] Arch. de Toc. et de Gyn.

[3] Am. Jour. Obst., September 1893.

Mortality. — The latest general statistics noted gave a death-rate of about six per cent. from all causes; but it must be added that in many of the cases the patients were already in bad condition, and that the fatal result could be attributed to the operation itself in only one case (to be referred to later). These statistics are incomplete, contain the early cases, and are probably less favorable than could be now reported, unless an allowance must now be made for the fact that fatal cases are often unreported. Dr. R. P. Harris, in a recent personal letter, says that there have been 35 American cases, with four deaths. Of these, one was due to post-partum hæmorrhage, *unconnected with the operation;* one was due to shock in a much exhausted patient, *more the result of neglected labor than of the operation;* one was due to uterine sepsis, the operative wound remaining clean, *probably unconnected with the operation;* and one was due to sepsis in the symphyseotomy wound, *directly a result of the operation.* Among the successful cases there had been no permanent unfavorable after-results. The operation must then be still considered a major procedure with a considerable mortality; but it is only fair to add that among the cases which were operated upon early, there has so far been no death-rate peculiar to the operation, other than that from sepsis, which should, of course, be preventable.

ECLAMPSIA.

Alphonse Hergott[4] has conducted a further series of experiments with the blood and urine of women suffering from eclampsia. His investigations lead him to believe that the convulsions of parturient women may be produced by either of two different causes. The first class he considers due to lesions of the kidneys; and the renal lesion may, he thinks, be produced by pregnancy. The second variety of eclampsia he considers due to the activity of a special pathogenic microbe which finds a suitable field for its development only when the organism has been modified by pregnancy. The first is an auto-intoxication, the second a bactero-intoxication. He thinks it likely, though not yet proved, that eclampsia of the second variety is not caused directly by this microbe, but by the action of the toxic products of its activity upon the nervous system, when modified by pregnancy.

A. Charpentier[5] writes upon the treatment of eclampsia from the basis of a clinical experience, which he has divided into three classes: The first treated by blood letting; the second with sedatives, that is, chloroform or chloral; and the third by the prompt termination of labor. He is an advocate of active interference when labor is already underway, but refuses to induce labor unless in very exceptional cases. He bases this refusal upon the following theoretical considerations: He believes emptying the uterus may ameliorate the condition of albuminuria and eclampsia, but cannot cure it, as it depends on a renal lesion, which may not disappear with the delivery of the child; the induction of labor requires a longer time than is consumed in an eclamptic attack; any excitation of the uterus is sufficient to cause a convulsion; the manœuvres necessary to the induction of labor necessarily furnish such excitation. He mentions forced labor only to condemn it. He recommends the administration of chloral by enema in doses of one drachm of the drug every five or six hours, and uses chloroform at the time of each seizure, advising conservative treatment till labor appears. If labor is fairly rapid, he deprecates interference, but, in case of delay, permits the use of forceps.

Charpentier believes that venesection may be of value in cases where congestive symptoms are permanent, and especially where there is reason to believe in the existence of congestion of the lungs or brain. He thinks that, though not in itself a cure, it can be counted upon to diminish the frequency and force of the eclamptic seizures. His conclusions are as follows:

(1) Whenever a trace of albumen is found in the urine of a pregnant woman, she should be put at once on a rigid milk diet.

(2) When the convulsion occurs in a strong woman of full habit and is accompanied by marked cyanosis, bleed and administer chloral as described.

(3) If the patient is delicate and the cyanosis is not extreme, the treatment should be limited to the use of chloral.

(4) Let labor appear spontaneously, and be concluded by the efforts of nature whenever this is possible.

---

[4] Annales de Gynecologie.
[5] Nouvelle Arch. d'Obst. et de Gyn.

(5) Should interference be necessary, deliver as rapidly and with as little manipulation of the uterus as possible.

(6) Interference should never be resorted to till the os is fully dilated.

(7) Labor should be induced only in the very exceptional cases, in which all other methods fail to check the attacks.

(8) Never resort to forced labor.

One is struck by his entire neglect of the active treatment of the skin and kidneys, upon which American obstetricians have been accustomed to place the first reliance; and we cannot but believe that his objection to forced labor, that is, gentle but rapid dilatation of the os and subsequent immediate extraction of the child, under full surgical anæsthesia, is due to the fact that he has reserved it for desperate cases, and for them only, instead of resorting to it, as is the practice here, whenever the convulsions are so frequent and severe as to make the prognosis for the mother really grave, or whenever in milder cases the patient's condition fails to improve under conservative methods.

◆

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

JOHN C. MUNRO, M.D., SECRETARY.

Regular meeting, Monday, January 1, 1894, Dr. J. Stedman in the chair.

Dr. M. F. Gavin read a paper on

THE RADICAL CURE OF HYDROCELE.[1]

Dr. Gay: I have used the pure carbolic acid treatment in three cases, and it is a pretty severe treatment and not a very certain one; so I long ago gave that up. At one time the red oxide of mercury was talked about. It consisted in tapping the hydrocele, and then with a small director or grooved probe carrying a little of the oxide into the sac. It seemed to me a bungling way. Then I learned the method I think a good deal of, and that is tapping, emptying thoroughly and injecting two ounces of the compound tincture of iodine. The compound tincture is especially indicated, because that mixes thoroughly with water or with this fluid of the hydrocele. It is squeezed about inside of the sac, so that all parts shall be bathed with it, and then all that will is allowed to run out of the canula. I have used this treatment a few times in my office, and so far I like it. I never have had but one uncomfortable result from it, and that was a spasmodic retraction of the testicle. This in one case was rather uncomfortable for two or three weeks, but it finally passed away, and the man got a complete cure of his hydrocele. The only points about it are, that the sac is to be thoroughly emptied, the compound tincture to be used, and enough used to thoroughly moisten the inside of the sac, and then the superfluous part to be allowed to run out. The pain for two or three minutes is intense, and then it gradually quiets down, so that by the time the patient leaves the office he has a feeling of warmth in the scrotum. I do not claim this as a universal cure; but, aside from the pain, it is a very good way of treating the hydrocele that are not too old. I think Dr. Gavin's classification is an excellent one. The old ones want something more than injection.

Dr. Burrell: I was not fortunate enough to hear Dr. Gavin's paper. There is one point about the question of radical cure for hydrocele of which I should like to speak. Of late I have been making open incisions and packing the sac of a hydrocele. I have been strengthened in my opinion that this was the wisest procedure by what I have found inside the sacs. Not infrequently I have found bits of fibrinous material which acted as foreign bodies, which were a constant source of irritation, and which kept up the effusion of fluid into the tunica vaginalis. This has led me to lean strongly towards the more radical operation of opening and seeing the condition inside the sac than to the more indefinite method of injection.

Dr. Richardson: I am sorry I was not able to hear Dr. Gavin's paper. I have preferred when possible to dissect out the sac entirely. My experience with milder methods, like injections of iodine and carbolic acid, is very limited. I have seen all methods fail except the dissection and removal of the sac. This is surely the end of the hydrocele, but in many instances the method is severe. With a patient unwilling to submit to so radical a measure I have always intended to use the method of injection. Such methods are very desirable in those cases in which for any reason it is unsafe to etherize or to subject the patient even to the slight dangers of radical excision of the tunica vaginalis.

Dr. Gavin: I should like to ask Dr. Richardson if he had a simple case of hydrocele come to his office, who had not been tapped, if he would recommend excision without any treatment to begin with?

Dr. Richardson: If the patient wishes to be absolutely certain of cure, and if there is no reason against the operation, the best plan is to dissect out the whole tunica vaginalis except the portion that covers the testicle. I prefer this method because I am used to it, and it is always successful. The operation should be limited to simple drainage when the sac is very thick and adherent. In children I make a simple puncture of the sac with a glover's needle, — a method which sometimes succeeds and sometimes does not.

I do not wish to be understood as opposing the method recommended by Dr. Gavin, for I have had no experience with it. I have no doubt that his method will be found admirable in a great variety of cases. Now and then, however, one will be found in which the fluid will return. This recurrence is seen in all operations upon hydrocele except that of complete extirpation of the tunic. In one instance I found a hydrocele of the cord which pressed upon a hydrocele of the tunica vaginalis, the two being blended into one tumor; this accounted for the return of the hydrocele. The second attack was a hydrocele of the cord.

Perhaps I am too much inclined to give the patient the more radical operation first, for there is certainly no objection to trying the methods which may be called palliative. The last radical operation that Dr. Mumford and I performed was about two weeks ago upon a man of seventy. I had tapped him for a long time, and advised him to continue that treatment. He decided, however, to have a radical cure. We removed the tunica vaginalis entirely, and he has made a most satisfactory recovery.

---

[1] See page 210 of the Journal.

Dr. G. W. Gay read a paper on

MALIGNANT DISEASE OF THE RECTUM.[2]

Dr. Burrell: I have been very much interested in the paper presented by Dr. Gay. Recently I have twice supposed that I was going to operate upon a case of hemorrhoids, and a careful rectal examination under ether showed the presence of malignant disease high up in the rectum; and I believe that a high rectal examination cannot be too strongly insisted upon before any operation about the sphincters is undertaken.

In reference to Dr. Gay's position in regard to the radical cure of cancer in the rectum, I am very much disappointed at his outlook. I have been looking at the operation for the relief of cancer in the rectum in a much more favorable light. After listening to the report of his cases, especially the one in which after four years the disease returned, I shall be very loath to speak of any permanent cure of a case under four years. Before I heard Dr. Gay's paper I had arranged the operations for cancer in my mind in this way: Excision of the growth in the lower end of the rectum, and a Kraske operation for excision of the growth in the upper part of the rectum. I have come to believe that an iliac colotomy is the operation of selection as a palliative measure. It is simple; the relief is very great; and it has seemed to me a preferable operation to lumbar colotomy, which requires a deep dissection; and the location of the two openings is in favor of the iliac operation, as an artificial anus in this position can be better controlled. In favor of the Kraske operation, I can say that I have one patient upon whom I operated two years ago, and whom I have seen within a month, where there has been no return of the disease. I shall evidently have to wait longer before claiming a permanent cure.

But setting aside for a moment the question of its being a radical cure, I think there is a word to be said in reference to the Kraske operation as a palliative operation. On comparing it with lumbar colotomy and iliac colotomy, an iliac colotomy simply taps the stream of fæces above the disease, and leaves the growth *in situ;* and while occasionally it is possible to make a spur in the bowel which shall prevent fæces passing beyond the artificial anus, yet this is often unsuccessful. This has always seemed to me an objection to colotomy, in that it does not deal with the disease *in situ.* On the other hand, the Kraske operation, as I have recently performed it, does not seem to me as severe as it sounds in description. To speak of the removal of the coccyx and the removal of a portion of the sacrum, seems a great deal, as we listen to it; but if carefully and rapidly performed, and especially if, after removal of the coccyx and a portion of the sacrum, one cuts into the right cellular interspace and practically shells out the rectum by a "dry dissection," there is but very little bleeding. On clamping the rectum above the growth and below, a quick excision of it can be made; and even if the peritoneal cavity is opened, it can be sutured, and but little danger exists of infection, especially if the patient is kept in a semi-upright position.

By the Kraske operation we have all the benefit of a colotomy, plus the great relief of the complete removal of a mass of malignant disease, which, of course, may return in the future. Patients after a Kraske operation are very comfortable, have but little pain, and when a pad is properly adjusted can go around with but little inconvenience to themselves and no offensiveness to others.

Dr. J. C. Stedman: During my service on the house-staff of the Post-Graduate Hospital, New York City, I find, on looking over my records, in the service of Prof. Charles B. Kelsey, 14 cases of malignant disease of the rectum treated by him; and of these, 10 were treated by inguinal colotomy, two by extirpation (Cripps's method and Kraske's method), one by inguinal colotomy first and subsequently amputation of rectum, and one was discharged without an operation. Twelve of these cases were discharged very much relieved and improved; and two died in the hospital. As most cases of malignant disease of the rectum consult the surgeon three or four months after they complain of the first symptoms, it only remains for the surgeon to give them some form of temporary relief, for in these cases they will generally suffer a great deal before they will make up their minds to accept the treatment proposed by the surgeon. Therefore it is according to the extent of the disease and the severity of the symptoms that will determine the line of treatment to be carried out, whether simply palliative or more radical. As most of the cases of cancer of the rectum treated by Professor Kelsey in the Post-Graduate Hospital were those where the disease was advanced three months or more, and not only the rectal walls, but the surrounding tissues were involved, he therefore performed inguinal colotomy on most of them, as the best plan of treatment for the immediate relief of distressing symptoms and also prolongation of life. If the bowel is diseased within three inches of the anus, and from examination it is thought to involve only the gut, then Professor Kelsey may perform Cripps's operation, or proctotomy; and if the disease is above that and below the promontory of the sacrum, and the gut only involved, then he may perform Kraske's operation, or else amputation of the rectum; but generally he prefers inguinal colotomy, and presently I will give his reasons for the same.

I will not take the time to review the 14 cases in detail, but only to state, in general, that most of them were suffering with burning sensation in the rectum; great pain on going to stool, with frequent desire and great tenesmus, and passing large quantities of blood and mucus; losing flesh and strength; having in some cases fulness over the abdomen; not able to sleep well at night, but constantly getting up to use the commode, and suffering great pain. Of course, these cases were in various stages of development, generally three months to a year from the time they noticed the first symptom, and located in different parts of the rectum, and in one case in the segmoid flexure.

Professor Kelsey prefers inguinal to lumbar colotomy for several reasons: It is an easier and quicker operation, and as safe if not safer in these days of antiseptic surgery. Another great point in its favor is the convenience to the patient in keeping the parts clean, as compared with the difficulty and inconvenience of doing the same in the lumbar region; and the terminal portion of the gut can be more easily cleaned out of any fæcal or irritating matter which may collect in it.

The *technique* of the operation, as performed by Professor Kelsey, has been admirably described by Dr. Gay. I will simply lay more emphasis on the silver wire which forms the spur, as Dr. Kelsey is very particular in regard to forming a good spur in the bowel. The silver wire is passed an inch from the right of the line of incision, and half-way between the middle and lower thirds of the incision, through the muscular walls, peritoneum, under the gut, through the mesentery, and up the opposite side an inch to the left of the incision, and then drawn tight and fastened with the lead button and slot. It thus forms an excellent spur, and when opened serves as a barrier to the fæces from passing down the terminal end of the bowel. The colon is left intact for two days, unless for some counter-indication, in order to allow the peritoneum time to adhere firmly to the colon, and thus prevent extravasation of fæces into the abdominal cavity. It is then opened with a curved bistoury and scissors, cutting well down to the line of incision, no ether being necessary. From that time on, the patient, as a rule, will have one to three normal movements a day. The wire is taken out at the end of the fourth day, and the patient is generally sitting up at the end of the tenth day.

---

[2] See page 204 of the Journal.

The wound, immediately after the operation, is dressed; first, with Lister's protective next to the bowel and incision, to prevent the parts and dressings from becoming matted together by the effusion of lymph; next to that, bichloride pad and gauze, cotton and bandage. After the gut is opened, a simple dressing of sheet-lint, vaseline, cotton pad and bandage is all that is used. At the end of the third or fourth day the distal end of the bowel is generally irrigated with a weak solution of carbolic or bichloride, or even hot water — either from anal opening or the inguinal. When the patients leave the hospital they either use one of Dr. Kelsey's trusses, made for the purpose, or the pad and bandage mentioned above.

Professor Kelsey's reasons for preferring inguinal colotomy are these, as he has stated to the class over and over again; they will be found in the fourth edition of his works on rectal diseases:

"It prolongs life by the relief of pain. It substitutes in many cases a painless death for one of great agony; . . . does away with the constant tenesmus and discharge from the rectum, which by their exhausting effects are the immediate cause of death; delays the development of the disease by preventing the straining and congestion of defecation; prevents absolutely the complication of intestinal obstruction, which is another cause of death; enables the patient to sleep, eat and gain flesh; and often makes him think himself cured in spite of the plainest prognosis to the contrary. Instead of passing his days and nights upon the commode, wearing out his life in the effort to free the bowel from its irritation, he has one or perhaps two solid fæcal evacuations from the groin in twenty-four hours. Is it pleasant to have the gut end in the left groin? No. But after a very few days the patient with cancer of the rectum, whose anus has been placed in the groin by the surgeon, will tell you that life, from having been a constant torment, has again become worth living."

Another reason is, the mortality is less in inguinal colotomy than in any other operation for malignant disease of the rectum. During my service with Professor Kelsey, he performed 16 inguinal colotomies:

10 were for malignant disease of the rectum.
2 were for non-malignant stricture.
1, ulceration, with stricture.
1, extensive dysenteric ulceration.
1, dysenteric stricture.
1, stricture of segmoid flexure from pelvic cellulitis, with abscess.

Of these 16 cases, two died; the others were discharged much relieved and improved.

I speak of these for this reason; it is thought by many physicians, and very naturally so, of course, that it is very disgusting to have an anal opening in the groin and that patients object to it very much. Now my experience in the hospital has been the reverse of what would be supposed. Over and over again, the patients have said, in person or by letter, that "they would not return to the old order of things — pain, tenesmus, blood, etc. — on any account"; that they were perfectly satisfied and very much pleased with the relief obtained. And of the lesser evil, inguinal colotomy is to be preferred; and in most cases they have gained strength and flesh.

Therefore, the good results obtained, as regards quickness of operation, relief of distressing symptoms to patient, and prolongation of life, makes inguinal colotomy the line of treatment preferred by Prof. Charles B. Kelsey in the great majority of cases of malignant diseases of the rectum.

DR. M. H. RICHARDSON: I am very much interested in the practical aspects of this paper. We owe a great deal to the older men who call our attention to the results of their experience in diseases of this kind. As our experience gets larger, and after we have seen so many recurrences following operations for cancer, we cannot but become more and more conservative in advising surgical interference. Some years ago I looked up the ultimate results of all the operations performed upon cancer at the Massachusetts General Hospital for ten years. The results in breast cases were encouraging, especially after the radical operations performed in the later years. Cancer of the tongue was invariably fatal sooner or later. I did not investigate cancer of the rectum; I took it for granted that the patients were all dead. At the present time, nevertheless, I do not feel as hopeless in regard to malignant disease of the rectum as Dr. Gay does. In the first place, we must be very careful that our examination is thorough in cases of suspected cancer of the rectum. If we examine thoroughly every case of suspected cancer, and take nothing for granted, we discover frequently facts of the greatest importance, and at times avoid errors in diagnosis that would be laughable if they were not tragic. I remember a case that came to me with a diagnosis of cancer of the rectum — a hopeless case. On careful examination I found a carious coccyx surrounded by inflamed and thickened tissues quite like cancer on careless examination. I removed the dead bone and the man recovered. In connection with the difficulties of diagnosis at times, I would like to speak of a man operated on in one of the New York hospitals, for malignant tumor of the bladder. He recovered perfectly from a very brilliant operation. Later I examined him, and told his friends that he could not live. There was a long scar in the linea alba, in the mass of an evidently recurrent malignant tumor. He had a hopeless recurrence, as I thought; but I heard the other day that he got perfectly well, and is now at work in perfect health. This was a mistake in diagnosis, even after the greatest care in examination, in operation, and in gross inspection of the tumor: followed by the most expert microscopical examination. We ought, nevertheless, to have a microscopic examination in every case.

The only favorable instance of removal of malignant disease of the rectum in my practice was that of a jeweller who had to sit all day on a high stool, and who noticed very early some trouble in his rectum, which I supposed to be cancer. I operated on him three or four years ago; a year later I repeated the operation for a recurrence, though I had no idea that the man would permanently recover. Yet he has been well ever since. Presenting at first the general and local characteristics of malignant disease, he now has become robust, and there is no local recurrence. But the disease was not cancer; it was a malignant adenoma, with infiltration and induration. The pathologists have told me that in the cases of malignant adenoma, if we can get the disease all out, the prognosis is very good. While operating, we should have always at our elbow the microscopist, as we should have in abdominal work the bacteriologist.

In regard to the Kraske operation and its modifications, I have seen this operation performed, but I have never found a case of my own in which it seemed best to perform it. The mortality is 28 per cent., as recently reported by Kraske, and by Schide 35 per cent. — somewhat higher than Kelsey's.

I have performed many times the operation of inguinal colotomy, but I have never felt obliged to make a spur. Almost always the operation has been performed for cancer of the sigmoid flexure. I have operated in the left groin, right groin, and median line for the disease. For cancer of the rectum colotomy has been done very infrequently in my practice. I have never seen any subsequent distress or discomfort from the absence of a spur, though I dare say that this is completely at variance with the experience of others. In one instance I opened in the left and found a distended coil of intestine, fastened it to the groin, and opened immediately. The opening proved to be in the head of the cæcum. The patient lived about a year in a state of comparative comfort, resumed his duties in college, gave his lectures, and told me the year had been a year of satisfaction and happiness. I do not say that it is not a good plan to make a spur such as Dr. Kelsey has described, or one like that which Dr. Keene has just reported, but I have not seen any good reason for following the method in my own cases. I dare say that it is better in some instances to provide for the total escape of the contents through that opening, but not infrequently strictured bowel becomes pervious. In several cases the artificial anus has closed entirely, the discharges have resumed their normal course, and the patient has been relieved from the discomforts of the artificial opening. Under these circumstances the local discomfort from obstruction and from tenesmus has also disappeared.

It is said in cancer of the rectum, as in cancer of the breast, that three years of immunity after operation means cure. I do not believe in this time limit — at least not enough to feel safe as to recurrence even after five or six years. Absence of recurrence after operation on the breast at the end of three years is no certain assurance that the patient is safe. Those who have watched the progress of enlarged axillary glands when only the breast has been removed, must have observed how slowly at times they grow. In certain instances it has taken two or three years before they could be very perceptibly felt; yet, of course, the cells of the disease have been there and have been proliferating. I do not believe, therefore, that we can adopt any such limit as three years, and say that if the disease returns before three years it is not a cure, while if it returns after three years it is a second and wholly distinct attack. In looking up a very large number of cases of breast-cancers there were many instances in which after four, five, or six years the disease had not returned; on the other hand, there were one or two cases in which after four or five years there was a recurrence. In cancer generally, therefore, I do not feel sure that the patient is permanently cured until many years have elapsed without a sign of reappearance.

DR. GAVIN: My experience for relief in malignant disease of the rectum has been wholly confined to colotomy. I have always done the lumbar colotomy. I have done that operation eight or ten times. I have never had any difficulty about the absence of the spur. I had one case at the City Hospital two and one-half years ago. A man had complete obstruction of the bowel. I did the lumbar colotomy. He went out well and engaged in his ordinary occupation, and a year and a half later he came to my office to know if he could not have that thing sewed up. A few months later he died. Lumbar colotomy has always given relief to the patient, and I have no doubt prolonged the life of the patient.

DR. PAUL THORNDIKE: I want to say a few words about the Kraske operation, as compared with the anal operation of Mr. Cripps. While it is true that we are not justified to-day in promising our patient a cure from either of these operations, it is also true that both have distinct and well-defined places in surgery. In cases when the disease is low down near the anus we do the Cripps operation, hoping for a radical cure, and sure that if our patient survives we shall have prolonged his life and lessened his pain. For these same reasons should we make use of the Kraske operation in cases when the disease is higher up in the rectum. The former operation has a mortality of 10 to 15 per cent., is bloody and inaccurate. The latter operation has a slightly higher mortality — 15 to 20 per cent. — is less bloody, and offers an easy, direct road to the diseased bowel, thus making possible a very careful and thorough removal of the diseased area. It is an operation which seems more severe than it really is, and which is not receiving the attention it deserves in this country. Whatever may be our belief as to the possibility of radical cures of rectal cancer, there is a certain percentage of cases when the disease is apparently well defined and limited to the anal region, where it is plainly our duty to try for a radical removal of the disease. Just so there are other cases when the disease is higher up in the bowel, where the Kraske operation is demanded.

DR. RICHARDSON: I hope that my remarks will not be understood by Dr. Thorndike as opposing this operation. I did not intend to oppose it, because I have seen it most successfully used in the hands of Dr. Cabot; moreover, it seems to me at times a most desirable procedure. I spoke of the dangers from having seen Schede's and Kraske's mortality recently reported — one of 28 per cent. and the other 35 per cent.

I have demonstrated the anatomy of this operation time and again at the school; it is a beautiful way of getting at the rectum. I have not performed the operation because I have not seen a case in which it seemed wise to apply it. In the hands even of an experienced operator it is one of the bloodiest operations I have ever seen. I remember one of the first cases at the hospital; the hæmorrhage was so great that we had no idea that the patient would live; but she did live, and a very satisfactory result followed. I was surprised to hear Dr. Thorndike say this is a palliative method. I had supposed it was intended to be the most radical of radical measures.

I have seen recently described a method of bringing the upper part of the bowel down into the lower, so as to prevent formation of fistula and to restore the function of the bowel. If this could be performed successfully, we should have a most desirable condition of things, — the absence of opening in the groin and restoration of the alimentary canal; yet it seems to me that the dangers are great, and that they must be great until we have had considerable experience in performing the operation.

In regard to the difference between the lumbar and inguinal colotomy, I should like to see Dr. Gavin a convert to the inguinal method. I abandoned entirely the lumbar route, after having performed the Littré operation a few times. The advantages of the latter method are so great, both as to *technique*, and as regards the subsequent ease of the opening, that it seems to me very certain that lumbar colotomy will be performed only in those cases of obstructive cancer which are situated too high up for the inguinal incision.

◆

MASSACHUSETTS MEDICAL SOCIETY.

Councillors' Meeting.

A stated meeting was held at the Medical Library, Boston, on Wednesday, February 7, 1894.

The meeting was called to order at eleven a. m. by the President, Dr. James C. White. One hundred and nine Councillors were present.

APPOINTMENT OF DELEGATES AND COMMITTEES.

On nomination by the Chair, the following delegates to other State medical societies were appointed:

Maine: Drs. J. E. Garland, of Gloucester; M. H. Richardson, of Boston.

New Hampshire: Drs. J. G. Blake, of Boston; C. C. Odlin, of Melrose.

Rhode Island: Drs. F. W. Goss, of Roxbury; R. H. Faunce, of Sandwich.

Connecticut: Drs. G. E. Francis, of Worcester; C. H. Cook, of Natick.

New Jersey: Drs. C. A. Carlton, of Salem; H. Colt, of Pittsfield.

Committees were appointed:

To Audit the Treasurer's Accounts: Drs. G. G. Tarbell, A. D. Sinclair.

To Examine the By Laws of District Societies: Drs. S. D. Presbrey, F. W. Chapin, H. J. Barnes.

In accordance with the recommendation of the Committee on Medical Diplomas, it was voted that the degree of Tufts College Medical School be recognized by the Society.

The principal interest in the meeting centred about the report of the Committee on Securing Uniformity in Censors' Examinations. The President, as Chairman of the Committee, offered the report, and made remarks in support of the statements in the preamble. The report was as follows:

At a meeting of the Councillors, held October 2, 1893, the report of the Committee on securing Uniformity in Censors' Examinations was presented. To it objection was raised that it might exceed the limitations of the charter. The subject was thereupon referred to a new Committee, to be appointed by the Chair, and to include the President himself. The Committee thus appointed, consists of one member from each District Society.

Your Committee has carefully considered many plans for the establishment of a uniform examination of candidates for admission to this Society. The present status for admission is somewhat as follows: Different standards are established by eighteen different Boards of Censors, not acting in concert, and having only in common the welfare of the Society. The objections to this plan are the following:

(1) That in certain Districts a comparatively severe examination is held for admission to the Society; that in other Districts a comparatively easy examination is held.

(2) That the Boards of Censors, as a rule, are composed of young men but a few years out from the Medical School, who are naturally sharper critics than the older Fellows of the Society.

(3) That at present the Boards of Censors know very little of the requirements for admission into other State Societies.

(4) That there are many excellent regular practitioners scattered throughout the State, and that their number of late has been increasing, who are not members of the Society. This is owing to failure on their part to present themselves for admission to the Society, and this failure is due to their wishing to avoid the rigor of an examination conducted by young men; in many instances by rival practitioners.

We believe that it will be for the interest of the Society to establish a uniform standard of examinations throughout the Commonwealth, and further that such examinations shall be elastic at the discretion of the Censors, in order that practitioners of established reputation shall not be hindered from entering the Society.

In order to accomplish this object your Committee respectfully suggests that the Councillors and the Society authorize the following changes in the By-Laws.

(1) By-Law I to be changed by striking out part of line 21 on page 9, and lines 22 to 26 inclusive, and substituting the following words, so that the By-Law shall read, "and, by such further examination as the Censors shall deem expedient."

(2) By-Law XIII to be changed by omitting the words "five Censors," in line 22, and adding in line 23 the words "five Censors, all of whom shall have been Fellows of the State Society for at least ten years, one of whom shall be also a Councillor, and be designated a Supervisor, and Ex-Officio Chairman of the Board of Censors."

(3) By-Law XIX to be changed by adding after the word "held," in line 19, the words "they shall appoint the time and place of the annual meeting of the Supervisors";

(4) After the title "Censors," commence By-Law XX with the following additional provisions relating to supervisors:

The Censors, elected Supervisors, shall form a Board.

They shall elect their own Chairman.

The Recording Secretary of the State Society shall be their Secretary.

For the transaction of business ten Supervisors shall constitute a quorum.

They shall hold an annual meeting at such time and place as the Council shall direct; and may hold other meetings at such places and times as they may agree to appoint.

At their annual meeting, or adjournments thereof, the Supervisors shall formulate and adopt a uniform plan, consistent with the requirements of the By-Laws, to be pursued the ensuing year, by each District Board of Censors, in the examination of candidates.

They may authorize the Secretary to have printed, at the expense of the Society, all blanks and examination papers necessary to carry out their plans.

The Secretary shall furnish examination papers, to S pervisors only, and in such number as each may, in writing, request.

It shall be the duty of each Supervisor to convey to the Board of Censors of the District Society to which he belongs, together with the necessary examination papers, a report of the method and spirit in which the Board of Supervisors have directed that their plan should be used, and to see that in all examinations the designated details are properly executed.

Should a candidate otherwise qualified, but without a diploma from one of the schools accredited by this Society, satisfy the Censors of the District Society where he resides, by examination, that he has received an education equivalent to that prescribed by the By-Laws of this Society, the Supervisor of said District Society shall present the name, standing and qualifications of said candidate, to the full Board of Supervisors at their next meeting, whereupon the assenting votes of two-thirds of the Supervisors present and voting, shall elect such a candidate to be a Fellow of this Society.

(5) By-Law XX to be changed by adding after the word "By-Laws," in line 2, the following, so that the By-Law shall read: "The Censors shall examine, according to the rules and By-Laws, *and in conformity with the directions of the Supervisors*," such candidates, etc.; also after the word "day," in line 21, by adding the following, "but not at the same hour or hours."

(6) By-Law XXI to be changed by substituting the word "supervising," for the word "senior," so that this By-Law shall read, "and the supervising Censor shall preside."

DR. J. C. WHITE, *President.*

DR. G. W. DOANE,	DR. J. F. A. ADAMS,
DR. F. A. HUBBARD,	DR. B. J. HANDY,
DR. R. B. ROOT,	DR. A. H. JOHNSON,
DR. A. C. DEANE,	DR. W. H. POMEROY,
DR. D. W. MINER,	DR. S. W. KELLEY,
DR. H. B. HOWARD,	DR. E. R. CUTLER,
DR. M. V. PIERCE,	DR. J. F. WELCH,
DR. H. F. BORDEN,	DR. J. H. MCCOLLOM,
DR. E. B. HARVEY,	DR. F. H. THOMPSON,

Committee.

After discussion by DRS. HARVEY, WILLIAMS, WHEELER, FRANCIS, F. C. SHATTUCK and CUTLER, it was voted:

That the report be accepted, and that the changes in the By-Laws, as far as the Council is concerned, be adopted.

The Librarian reported that, in accordance with the vote at the last meeting, the publishers were notified that no orders for future numbers of "Braithwaite's Retrospect" would be given, and that an acknowledgment of the receipt of the notice had been returned.

The Treasurer offered the following votes, which were adopted:

Voted, That the Librarian shall be the custodian of such papers, manuscripts and books of record belonging to the Society as are not in use by its officers. He shall properly catalogue them, and see that they are stored against the risk of fire. He shall arrange and file them in such a manner as to promote the convenience of Fellows of the Society who may desire to [illegible] them. He shall include in his annual state[illegible]port upon their condition.

[illegible] That as the Censors are officers acting for [illegible] Society, the different Boards of Censors are directed to forward to the Librarian of the Society such books of record as are not in present use.

On motion, the question of the reduction of the annual assessment was taken from the table.

Voted, That the subject be indefinitely postponed.

In accordance with notice given at the last meeting, DR. FORSTER moved, and it was voted, that Rule 2 of the Rules and Orders of the Councillors be annulled. The following was the rule in question:

"There may also be annually prepared, under the direction of the Councillors and at the expense of the Society, a retrospect of the medical literature and science of the preceding year, having reference especially to discoveries and improvements of practical value."

◆

THE NEW YORK ACADEMY OF MEDICINE.
SECTION ON ORTHOPÆDIC SURGERY.

STATED Meeting, December 15, 1894, W. R. TOWNSEND, M.D., Chairman.

CONGENITAL TORTICOLLIS.

DR. ROYAL WHITMAN presented two cases of congenital torticollis complicated by induration of the sterno-mastoid muscles. The induration of these muscles was not the cause of the torticollis, but was secondary to it.

The first infant, now five months of age, was first seen at the age of three months. There was at this time well-marked left torticollis, hemiatrophy of the face, and congenital club-foot on the same side. In the middle of the contracted muscle there was an induration the size of a pigeon's egg. The labor was normal. The distortion of the head and the induration were noticed by the mother on the fourteenth day after birth. This induration in the muscle could still be felt, and the torticollis and hemiatrophy of the face were very evident.

The second infant, now seven months old, was first seen at the age of six weeks. Then, as now, there was marked torticollis, and an induration in the muscle, similar to that in the preceding case. In this case the child was delivered by forceps after a difficult labor. Immediately after birth the mother noticed the distortion of the head.

That the torticollis in the first case was of intrauterine origin was shown by the hemiatrophy of the face and by the club-foot. That scar contraction had nothing to do with the deformity in the second case was proved by the fact that the deformity was noticed immediately after birth. Injury at birth might have caused the deformity, but not scar contraction following rupture of muscle. Simple rupture of a normal muscle, shown by induration, was not, as a rule, accompanied or followed by torticollis.

POTT'S PARAPLEGIA.

Dr. Whitman also presented a case of Pott's paraplegia in which a rather unusual form of paralysis was the very first symptom. About the first of last October the child, two years of age, was noticed to be stumbling; when first seen by the speaker, about two weeks later, there was not the slightest pain, and no angular deformity. The paralysis was of the flaccid type like that of anterior poliomyelitis. At the present time, two months after the appearance of the paralysis, there was still no angular deformity of the spine, although a change in outline due to muscular spasm was apparent. Within a week there had been complaint of pain, and the paralysis was now of the spastic type.

PERSISTENT PSOAS CONTRACTION.

Dr. Whitman presented still another patient, a boy nine years of age, who illustrated an extreme and persistent psoas contraction. When first seen, about two years ago, there was deformity of the mid-dorsal region, with slight psoas contraction; subsequently while under the care of an instrument-maker, an abscess formed, which opened spontaneously. The deformity of the spine was not well-marked, and the leg was firmly held at a right angle with the body. It was probable that an extensive tenotomy and fasciotomy would be required to bring it down to the normal line. He was inclined to think, that, if psoas contraction were allowed to persist, it exerted a very unfavorable influence on the deformity, because it was impossible to maintain by apparatus a proper attitude.

Dr. V. P. Gibney said the occurrence of paralysis before the deformity was exceedingly rare, and in a series of fifty cases of Pott's paraplegia which he collected at one time, it was the rule for them to develop at first a little stumbling, but examination failed to show exaggerated reflexes until some time later. It was well to emphasize the fact, so apt to be overlooked by the general practitioner, that Pott's disease may occur without the pain or other usual signs described in the books. These are the slow cases of "caries sicca."

He did not agree with Dr. Whitman that it was necessary to treat the psoas contraction itself under ordinary circumstances. If one could exclude hip-joint disease, there need be no hurry about much treatment directed to the contraction.

Dr. Whitman said that psoas contraction caused by true psoas abscess, that is, abscess within the sheath or substance of the muscle, was very likely to become permanent distortion, as illustrated by the case that he had presented — a distortion which made it impossible for the child to stand erect. Psoas contraction was best treated by temporary rest on the back, and by the direct treatment of the abscess which caused the contraction.

THE LORENZ TREATMENT OF HIP-DISEASE.

Dr. V. P. Gibney presented a patient with hip-disease, who was being treated by the Lorenz method. This consists in applying a plaster-of-Paris spica bandage to a point midway between the knee and the foot, and then on the following day adding an iron stirrup which projects beyond the foot, and is secured by a starch bandage. It is claimed that with a high shoe on the sound foot the patient is able to go around easily. It would probably prove very useful where a good perineal crutch was not easily obtainable.

EXCISION OF THE HIP.

Dr. Gibney presented several cases of excision of the hip. The first one was that of John K., who was admitted to the hospital on October 3, 1892, at the age of eight years. The limb could then be flexed to 110°, and extended to 145°. After about one month of treatment in bed with the weight and pulley, a hip-splint was applied. On December 2d, an abscess was aspirated, but as it soon refilled and began to burrow, a partial arthrectomy was performed, and by the following February extension and flexion were nearly normal. On May 31st, he was discharged, still wearing the splint. There is now about one inch of shortening; flexion to nearly 90°, and extension to 170°; the other motions are very fair, and the hip seems to be quite firm.

The second case was a boy admitted on October 12, 1891, at which time there was but a small range of motion. The disease began the year previous, and during that year he had an abscess. As there was marked abduction, it was treated with the Taylor abduction brace. On November 21, 1891, the limb could be extended to 170°, but the limb was everted. On January 6th it was noted that he was wearing a Thomas brace, and that there was much spasm and tenderness. An abscess on the anterior aspect of the limb was aspirated, and a few drops of pus removed. On May 17th, the trochanter major, with the head and neck of the femur, were removed. He remained in the country all the summer, and in the following November it was found that extension could be made to 180° and flexion to 110°. The next March an abscess formed in consequence of a fall, so it was incised and several ounces of pus evacuated. He was discharged the following September without a brace, but wearing a one-inch-high shoe. At present, the limb comes down straight, and can be flexed to 90°; there is little resistance to abduction; there is slight adduction and rotation, and one inch shortening.

The third case was a boy who was four years old when his disease began in February of the present year. He was admitted in June; and in spite of repeated aspirations, a large abscess with marked deformity persisted, so that on November 10th, excision was performed. The wound healed very rapidly. On December 15th, a jointed Dowe's splint was applied.

The fourth case was a boy, five and a half years old, with a double hip-joint disease which began in May, 1891. His right hip was excised in Christ's Hospital, Jersey City, three months after the beginning of the disease. When first seen by the speaker the left hip was painful, and there was an abscess in this locality. The joint was excised on November 24th by posterior incision, and the head and neck removed. The case has done well.

These cases were presented to show that in hospital practice, there is a certain number which seem to require excision and which do well after it. None of the cases had a weak joint.

Dr. A. M. Phelps said he had seen this Lorenz brace applied many times. It was better than the Thomas splint, for it protected the limb, and it was superior to the long-traction splint, for the cases treated with it did not recover with the angular deformity so commonly seen after the use of the long-traction splint. The objections to the Lorenz splint were that it was cumbersome, that the patient walked upon it, and it did not apply extension in the line of the adductor muscles to prevent intra-articular pressure. With it abscesses were just as frequent as with the Thomas splint, and there was almost always shortening.

He heartily agreed with all that Dr. Gibney had said about the cases of excision. He had abandoned aspiration of abscesses, for eventually they must be incised. If by aspiration the presence of pus in a joint were detected, the sooner the abscess was incised, the better. By this means one was also enabled to explore the joint with the aseptic finger, and so determine whether or not an excision was required. No one could tell this from external examination alone. He favored the posterior incision and the removal of the great trochanter in order to secure free drainage; in short, Dr. Sayre's method of leaving the periosteum and packing the wound with antiseptic gauze was still the best mode of treatment.

The **CHAIRMAN** dissented very emphatically from the opinion that the aspirator was useless, and that all these abscesses should be incised. In a series of cases of abscess which he had collected, nearly fifty per cent. were permanently relieved by aspiration. There were many abscesses situated near joints which were not intra-articular, and also many abscesses supposed to communicate with a joint until examined at the time of operation, when it was found that they did not.

DR. N. M. SHAFFER said no abscess was opened in the Orthopedic Hospital during the year; yet he would be perfectly willing to compare his results with those of Dr. Phelps.

DR. REGINALD H. SAYRE objected to the Lorenz treatment, as shown in this patient, on the ground that a good deal of pressure was borne by the hip, because part of the weight fell on the condyles of the femur instead of on the ischium. He had been much pleased with the cases of excision; and he would contrast the motion in these joints with the ankylosed joints which Dr. Whitman said at the last meeting the Germans considered to be superior. The European operators were not careful to save the periosteum.

DR. HALSTED MYERS said that in connection with this discussion he wished to report a case. A girl, when six years of age developed hip-disease; and two months later an abscess formed. After wearing a traction splint for six months, the joint was excised. She was kept in the hospital without a brace for a year, and was then discharged "cured." Soon after this she slipped, and another abscess developed. She was again admitted, and five months later was discharged cured. Three years after this she had another fall, and another abscess appeared, which was cured in three weeks. One and a half years afterward still another abscess formed, and was cured in four months. In September, 1893, or when she was fourteen years old, there was found to be three and one-quarter inches shortening, an increase of three-eighths of an inch in the last two years; there was also slight telescoping. The motions allowed in the joint were: flexion 180° to 140°, adduction 30°, abduction 10°, and considerable rotation. She had no abscess, no pain, and no longer wore a brace. She limped badly, but did not tire easily. The case seemed to show that after such excisions, the shortening might be steadily progressive, and also that all the disease was not removed at the time of excision, else there would not have been these frequent abscesses.

DR. WHITMAN said he had been misunderstood at the last meeting, for at that time he was speaking of excision done as a last resort, and not of the class of cases represented by the patients just presented. Reproduction of bone after excision, with a firm and movable joint, was a result to be hoped for, but not confidently expected.

DR. SAYRE regretted if he had misquoted Dr. Whitman; but he had himself recently noticed a number of German articles in which it was stated that a stiff joint represented the result which should be sought for after excision for tubercular disease of the hip.

DR. GIBNEY, in closing the discussion, said he regretted that Dr. Phelps still persisted in the belief that every abscess in a tubercular joint should be incised. Regarding Dr. Myer's case, he said he did not see how the limb could grow when the upper epiphysis had been destroyed, whether by cicatricial tissue or by the removal of the epiphysis.

EXCISION OF THE TARSUS FOR CARIES.

DR. A. M. PHELPS presented a girl who had been brought to him at the Post-Graduate Hospital, two months before, with disease of the tarsus and the end of the tibia. At the operation it was found that the disease involved the astragalus, os calcis, cuboid and scaphoid bones, as well as the ends of the metatarsal bones and the end of the tibia, so these parts were all removed, leaving a shell of bone with the periosteum. At the end of six weeks the case was dressed, and it was then found that there had been perfect reproduction of the entire tarsus, and of nearly all of the metatarsal bones, together with the end of the tibia. Finding a metatastasis in the scapula, the spine of this bone was removed.

DR. GIBNEY said he had treated very successfully a number of cases of extensive disease of the entire tarsus without operation. The results were perfect in the great majority of such cases.

DR. S. KETCH said that very badly diseased tarsæ were often cured by simple protection and avoidance of traumatism and pressure. It had been his experience that disease of the ankle-joint was usually followed by better functional results than disease of the other articulations.

DR. PHELPS said that when, on cutting into the tarsus the bones were found separated and necrotic, he thought no protection would be of much importance.

LAMINECTOMY FOR TUBERCULAR DISEASE OF THE SPINE.

DR. CARL BECK presented a patient on whom he had performed laminectomy. He was first seen two years ago, and was then three years old. Resection of the shoulder was first performed for the removal of tubercular foci in the humerus. One year later it was found that there was some rigidity and pain in the spine. He was treated for some time in one of our hospitals, and when he came again to the speaker, it was found, on removing the plaster dressing that there was a kyphosis. He was greatly emaciated, and there was a large fluctuating tumor in the left gluteal region. An incision was made into this abscess; and after inserting a drainage-tube and gauze, he was placed in a Rauchfuss apparatus. After three weeks, a plaster jacket was applied, and he was treated as an out-patient. Soon after, a prominent kyphos appeared at about the ninth dorsal vertebra, and the child had paraplegia. An incision was made from the seventh to the last dorsal vertebra; and on exposing the spinal cord, it was found that the meninges were hyperæmic and thickened. Free drainage was established for the abscess, and the fistulæ curetted and packed with gauze. He was again placed in the Rauchfuss apparatus. His condition had greatly improved since the operation, and he hoped that eventually the child would be able to discard the plaster jacket. The open treatment, the speaker considered the treatment *par excellence.*

Dr. Beck then exhibited a new instrument for use in connection with these abscesses; he called it "the irrigation trocar."

A NEW OPERATION FOR THE RELIEF OR CURE OF ROTARY LATERAL CURVATURE OF THE SPINE. PROPOSED FOR DISCUSSION OF THE SECTION.

Dr. Shaffer read a short paper describing a new operation which he proposed for the relief and cure of rotary lateral curvature of the spine. After having performed it several times on the cadaver, he had proposed it in a certain case of a young girl, when the rotation had progressed steadily and persistently in spite of all that could be done with mechanical treatment, exercises, etc. The surgeons to whom he had proposed the operation, in formal consultation, did not approve of the procedure, not that the surgical risk would be so great, but rather on account of our present imperfect knowledge of the pathology of these persistent and inveterate curves. Under these circumstances he brought the subject before the Section for discussion.

The operation proposed is as follows:

A large curved incision is made, which extends from one inch above the upper end of the pathological curve to one inch below it. An incision is now made through the trapezius muscle, which with the superficial tissues is dissected off until the erector spinæ is fully exposed. This is now divided transversely, as many transverse incisions being made as there are intervertebral articulations to loosen. The fibrous tissues between the transverse processes are divided so far as possible. A curved director is then passed under the costo-transverse ligament, which is divided with a blunt-pointed, curved bistoury. All the accessible soft parts having now been divided, a forceps lever is placed between the transverse processes, and they are gently forced apart. In the cadaver, after the costo-transverse ligament was divided, it was found that the articular processes could be easily forced apart, and the vertebræ separated on the concave side of the curve.

In the cadaver it seemed easy to avoid the spinal artery and nerve, and with care there seemed to be no danger of wounding the pleura.

In view of the recent operations upon the spinal column, it seemed to the reader of the paper that the proposed operation was both feasible and justifiable, especially as applied to rotary curves of an inveterate type, if recognized in the early stage.

Dr. Whitman said the case of Dr. Beck was evidently suffering from double psoas contraction, and that as the attitude exaggerated the deformity, the treatment should be rest on the back.

Dr. Phelps said he had done seven laminectomies — two for Pott's disease, and five for fracture. The latter had yielded more favorable results. He believed laminectomy should be performed in cases of Pott's disease where paralysis was present, where there was incontinence of urine or fæces, and where there were abscesses and every indication of extensive disease of the bone.

Dr. Samuel Lloyd had been much interested in this case. The latest statistics showed that 103 laminectomies had been performed for Pott's paraplegia simply. Dr. Phelps has summed up the indications for operating well, but had applied Lauenstein's rule too rigidly, as this rule had never been intended to apply to other than traumatic cases. The number of cases requiring laminectomy was very few, and the operating surgeon should not attempt to operate until he had satisfied himself that efficient mechanical treatment had been employed previously without success.

Dr. Shaffer would find a good precedent for his operation in those operations which had been done for rotary and lateral dislocations of the spine. As the pleura was thickened, it was likely to be pushed aside out of harm's way, and the hæmorrhage should be the same as in laminectomy, that is, it should be readily controlled by packing.

Dr. Ketch said he did not consider laminectomy for Pott's disease a justifiable operation except where it was done as a life-saving measure. He agreed with the last speaker that the continuance of paraplegia or the presence of incontinence of urine and fæces were no guides to the operation. He thought most of the cases of Pott's disease operated upon would have done just as well without operation.

Dr. I. S. Haynes said that it should be remembered that a thick layer of tendinous fibres was present, and should be thoroughly divided in a number of places. Again, nothing could be gained until the anterior costo-transverse ligament had been completely divided. No arteries of importance were encountered. Primary union was very desirable, for if healing occurred by granulation, the cicatricial contraction would only serve to aggravate the original condition.

[Discussion to be continued at next meeting.]

Recent Literature.

Anæsthetics: Their Uses and Administration. By Dudley Wilmot Buxton, M.D., B.S., Member of the Royal College of Physicians; Member of the Royal College of Surgeons of England; Administrator of Anæsthetics and Lecturer in University College Hospital, the National Hospital for Paralysis and Epilepsy, Queen's Square, and the Dental Hospital of London. Second edition. Philadelphia: P. Blakiston, Son & Co. 1892.

This is the second edition of this work, which has done much towards systematizing our knowledge of anæsthetics. It is written from a historical as well as a practical standpoint; but while many different forms of inhalers are shown, the author has not given the advantages or disadvantages of each apparatus. The author's conclusions regarding the value of different anæsthetics are judicious. The effect of chloroform is well described.

The book will well repay perusal by those administering anæsthetics.

A Practical Treatise on Nervous Exhaustion (Neurasthenia): Its Symptoms, Nature, Sequences, Treatment. By George M. Beard, A.M., M.D. Edited, with notes and additions, by A. D. Rockwell, A.M., M.D. Third edition, enlarged; 8vo, pp. 262. New York: E. B. Treat. 1894.

To the third edition of this well-known work the editor has added a brief chapter on the etiology and pathology of nervous exhaustion. In this chapter he speaks of the changes in the nerve cells caused by fatigue, and points out the relations such changes may bear to neurasthenia. He also touches upon the influence which the conditions of American life have in producing the disease.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, MARCH 1, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 WASHINGTON STREET, BOSTON, MASS.

FEEBLE-MINDED CHILDREN.

SIR DOUGLAS GALTON has written an interesting article in the *Nineteenth Century*, in which he calls attention to the importance of making special provision in the elementary schools for training those children who are more or less defective, or who are suffering from mal-developments which are associated with defects in the brain.

To Dr. Francis Warner belongs the credit of having suggested methods for carrying into effect an inquiry into deviations from the normal in children in various London elementary schools. He has now reported on over 80,000 children seen individually by him in 148 schools, having taken notes of all cases presenting any visible defect, that is, 14,297 children. The method of procedure was as follows: "As the children stand in rank, each is viewed separately, without being touched, or questions asked. The child is then directed to imitate a few simple movements. Any deviation from the normal in bodily development or in conformation of the head or a feature is recorded; also any abnormality in expression, balance, movement of the eyes, or action in the hand or fingers is noted as an 'abnormal nerve-sign,' indicative of the state of the nerve-system, and these particulars are recorded in schedule forms." A full description may be found in the "Report on School-Children," by Dr. Warner, to the Charity Organization Society, 1892.

Statistics of the first 50,000 children seen (1890–1891) have been arranged and presented to the Local Government Board; this report is now published by the Bureau of Education, Washington, D. C.

Four primary groups of cases were easily arranged: "development cases," including all children presenting one or more defects; "nerve cases," each child presenting one or more "abnormal nerve-signs"; "nutrition cases," children pale, thin, delicate; "dull children," as reported by the teachers in school.

The same children often appear in more than one group; thus, of the "development cases," 52 per cent. also presented abnormal nerve-signs; and of the "nerve cases," 60 per cent. were also "development cases." Of the children "pale, thin and delicate," 71 per cent. of the boys, and 74.6 per cent. of the girls were also "development cases." In these figures, we see the physical co-relation of congenital defective development producing a tendency to nerve-disturbance and low nutrition of body.

In all schools, a larger proportion of boys than girls deviate from the normal. There is, however, a rather larger proportion of girls who are "pale, thin and delicate"; and congenital weakness in constitution, however slight, renders a girl more likely to ill-health than a boy; and any nerve disturbance occurring in her is more liable to be rendered permanent than in the boy. When, however, we take boys and girls presenting no defect in development, we find the proportion who are delicate equal in both sexes. Let the teacher then, arrange the curriculum for the normal girls, and modify it when necessary for the weaker members. Neglect of the latter precaution may lead to deplorable results; but the whole level of the school need not be lowered to the capacity of the weaker pupils.

One defect stands prominent among the girls: cranial abnormalities have the highest co-relation with defectiveness of health and brain power. The sub-class "small heads" forms 3.4 per cent. among English girls, as compared with 1.3 per cent. for boys, and is largely attended with mental dulness, low nutrition, and abnormal nerve-signs. Of girls in industrial schools, 6 per cent. were "small headed"; this condition is more common among the children of large blocks and warehouses.

Many points of direct educational importance have been elucidated. It has been shown that of the group of children presenting abnormal nerve-signs, 41 per cent. are dull mentally; and in a varying degree the same may be said of children presenting each separate nerve-sign. As examples: many children do not move their eyes properly in looking at objects, but turn the head toward the point looked at in place of moving the eyes; 43 per cent. of these children were reported as dull by the teachers, they are bad readers and bad observers. If this condition is known to the teacher, the fault may be corrected; eye-movements should be trained in the kindergarten.

A listless attitude in the pupil is not conducive to mental aptitude, but it is not generally understood that a good balance of the body in every detail, even to the hand and fingers, promotes in the brain an aptitude of mental brightness, and that cultivation of symmetry and accuracy in movement and attitude promotes a healthy brain state; yet such appears to be the truth. In removing abnormal balances and action in movement, the teacher helps to improve the activity and balance of brain.

It is most commonly among boys that we see frowning, or the formation of horizontal creases on the forehead by muscular action; this is very common among imbeciles — and it may be added, in monkeys also. Now such a boy will often cease to frown when he is interested; that lesson improves his brain during which frowning ceases. This condition is much more frequent among boys in the monotonous life of the Poor-Schools than in the elementary day-schools. It is the "development cases" that tend the most to defectiveness of brain-power and to low nutrition; such cases do the best in the day-schools. Their educational neglect tends to fill the ranks of pauperism, criminality, and the unemployed.

In one school, fourteen children were promptly taken to the Ophthalmic Hospital for correction of squint and other defects; their needs had not been noticed before.

The number of children presenting defective condition of the eyes is large; uncorrected squint is very common, and though this defect is often preventable by the use of spectacles, comparatively few pupils use them among those who ought to. Eye-diseases in all stages, often contagious cases, were seen in many day-schools, and other examples of preventable conditions. Here is a large field for good work. The want of correction of faults by the teachers, and neglect of cases needing medical treatment probably arise mainly from ignorance of existing conditions; but it may be hoped that a more widely spread attention to the study and observation of children among all classes will inspire a more intelligent interest in their care and training.

Defectiveness of body, brain-weakness and low nutrition are evils confined to no social class; it appears, on comparing the conditions of 10,000 children in schools of the middle and upper social classes with 26,000 children in poorer day-schools, that in each of the four primary groups of defects the proportion goes against the children of the upper class. This is very surprising and needs further inquiry.

The greater the number of visible defects in a child, the greater is the probability of its being dull; so that of children appearing in three of the primary groups of defects, 44 per cent. were said to be mentally dull.

The children presenting certain of the "abnormal nerve-signs," are those commonly called nervous children; they are usually intelligent and quick at lessons; they are imitative and gregarious. Whether it is advisable to allow such children to sit together at school is questionable; on the other hand, dispersed among the more average pupils, they tend to impart their quickness.

It has been shown by observation that spontaneity is the foundation of intelligence, yet the attempt is often made to keep young children quiet and almost motionless — often destroying spontaneity in place of co-ordinating it. The endeavor should be to encourage spontaneity, and to co-ordinate it to intelligent action adapted to the age of the child.

Spontaneity of movement to the extent termed *fidgetiness* is often the result of fatigue and exhaustion; if teachers were acquainted with the signs of fatigue, they could better control the child's condition. Fatigue in children is common; it may be the result of bad sleep, late hours, excitement of home life or school work. The signs of fatigue may be marked in the morning and lessen during the hours of school; or they may be most apparent in a certain class-room, if it be ill-ventilated and overcrowded. There is a small class of pupils presenting well-made bodies and well-acting brains who are said by teachers to be very dull, and doubtless this is true. Such children should not be discouraged; they may become useful members of society, and need not be treated exceptionally; though they have often been spoken of as idiotic, which is not true; and it is discouraging to give them a bad name.

Galton's article is full of valuable suggestions, showing that a more exact knowledge of the physical and mental conditions existing among children is needed. The scientific principles which have enabled the observer to detect the various degrees and items of mental weakness already point the way to their removal; and were instruction in such studies given to teachers and others, the methods of classification and training might be reduced to better order and adapted to the needs of groups of children.

◆

THE INDEX CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, UNITED STATES ARMY, VOL. XIV.

The latest contribution to the Index Catalogue cannot be passed without notice, though this present volume was issued several weeks ago. It completes the Index through the word "universally."

The Index Catalogue has been published now for so many years that one grows retrospective in the contemplation of another volume. Perhaps no publication of recent years has done more for the general good of the profession than this. Its influence has been felt in many directions and it is by no means easy to define exactly its effects. Perhaps they show themselves chiefly, but by no means exclusively, in our literature. The knowledge of previous writings on any subject is more easily gained as the Index approaches completion, and in consequence the writings of our forbears is less often overlooked; and medical men have gained the habit of looking at their unusual cases as but the experience of a single man which needs to be compared with similar experiences on the part of others, in order that it may have its proper value. In this way the classification and knowledge of unusual cases has increased.

One thing is very noticeable. The "Curious Cases" have vanished from our periodical literature, certainly from the more important journals. Authors and editors have learned that the title of a medical paper must give some clue to its contents if the case is to have any value beyond a mere curiosity and the facts narrated are to be of any service. Many a case which might be considered as absolutely unique is found to be but a repetition of previous experience by reference to records which are made accessible by this Index. It must also be said that the value of genuine observations is made manifest, and thus the record of cases is encouraged.

Medical libraries have grown in a way hitherto unequalled since the Index Catalogue has given an added value to their contents; yet it is rumored that the principal promoter of this valuable work has said, we presume in a careless moment, or at a time of such self-depreciation as occasionally comes to all busy workers, that he would rather have done a single piece of original work, however small, than have compiled this Index.

In one of the best regimental histories of the late war, the editor speaks as follows of some of his old comrades:

"We know men in the Thirteenth . . . . with a record that every man who respects courage and fortitude under trying circumstances would be glad to take off his hat to when meeting them on the street, but only their comrades know what soldiers they were. You never hear them mention the fact, for they see nothing heroic in anything they did themselves, while they imagine that every man did something better."

This quotation does not seem out of place here, for it illustrates the way in which modest men often regard their own accomplished deeds.

One of the interesting things one finds in this volume is the catalogue of testimonials to the qualifications of eminent aspirants for medical appointments — a collection which must be of equal value with the portraits of medical men; though it is doubtful if any hint of the human frailties inevitable to us all could be found in these testimonials.

◆

MEDICAL NOTES.

American Visitors at the International Medical Congress. — Prof. N. J. Johnston-Levis, of Chiatamone, Naples, desires to inform American visitors that he will be pleased to aid and advise those medical gentlemen who will visit Naples at and about the time of the International Congress.

Small-Pox in a Pittsburgh Hospital. — A case of small-pox occurred this week in a general ward at the West Pennsylvania Hospital in Pittsburgh, and the board of health has ordered a quarantine of the hospital, which contains some 950 patients and over 100 nurses.

International Sanitary Conference. — The International Sanitary Conference at Paris has already formulated a series of measures to prevent the Mecca pilgrims from spreading the cholera. The subject of immigration to this country, which was suggested by the United States delegates, was laid aside for later consideration as not falling within the primary purpose of the conference.

The Russian Jambul Commission. — The Russian Government has sent a commission composed of physicians to Asia Minor to inquire into the properties of the jambul plant, which has been reported to have marked efficacy in cases of cholera.

Resignation of Dr. Latham. — Dr. Latham has resigned the Downing Professorship of Medicine in the University of Cambridge, England, after having held the post for twenty years.

The Wonderful Jicama Root. — The discoverer of the Mexican Jicama root, which has been found useful in cases of typhus fever, claims now that it will cure small-pox and yellow fever. The list is not yet extended further.

Septicæmia in the Edinburgh Maternity Hospital. — The Edinburgh Maternity Hospital has been temporarily closed in consequence of an epidemic of septicæmia. Several consecutive cases occurred recently; and no new patients have been admitted for the present.

Fires in Asylums. — Two fatal fires have occurred the last week in asylums where great care should be exercised. One in the laundry building connected with St. Vincent's Male Orphan Asylum at Albany, N. Y. There were 130 boys in the main building who were at no time in immediate danger. The other fire was more serious and occurred at the New Jersey Training School for the Feeble-Minded in Vineland, N. J. The Robinson Memorial Cottage was totally destroyed and the inmates were rescued with some difficulty. The engineer and his wife were burned to death.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the eight days ending at noon, February 28th, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 35, scarlet fever 54, measles 19, typhoid fever 13, small-pox 12. There were four deaths from small-pox.

Small-Pox in Massachusetts. — During the week ending at noon February 28th, but two cases of small-pox have been reported to the State Board of Health from places outside of Boston, one each in Lawrence and Holyoke.

The Annual Report of Harvard College: The Medical School. — The report of the Dean of the Medical School in the annual report of Harvard College states the falling off in the number of matriculants this year — due probably to the change to a four years' course which went into effect at the beginning of last year — at twenty-five. Owing, however, to the large size of the higher classes the total number of students in the school will not be diminished. The diminution of the percentage of college graduates in the entering classes, previously noted and discussed, still continues. The causes of this, whatever they may be, are still operative. The percentage, having, between 1884 and 1892, fallen from 53.9 to 28.2, has in the present year dropped to 23. The President of the University directs the serious attention of the two

Governing Boards and of the University Council to this tendency, which, in his estimation, threatens the best interests both of the school and of the community. The school is in a sound financial position, and the total expenditure for salaries, which in 1891–92 was $47,212, has been raised in the year 1892–93 to $67,112. During the year a laboratory of experimental therapeutics has been established for carrying on original investigations and for training advanced students in pharmacological research.

The Dental School. — The number of students in the Dental School is steadily increasing; there were fifty-three matriculants the past year. The instructors continue their diligent and self-sacrificing devotion to the interests of the school. A new building with increased accommodations and greater facilities is more and more needed with the increase in the number of students. The attempt made a year ago by the Faculty and friends of the school to raise a building fund, started under favorable auspices, but has been much interfered with by the prevailing financial depression. The fund now amounts to $18,000, and $20,000 more are urgently needed for the purchase of a desirable lot which the Faculty has in view.

The Veterinary School. — The encouraging growth in the number of students previously noted, has been fully maintained. But the school is in great need of endowments for prosecuting its educational work to advantage. The annual deficit in the finances of the school is made up from the receipts of the hospital, the work of which is thereby restricted. The Dean gives expression to this need in the following closing sentences of his report: "I feel that I must lose no opportunity of urging the endowment of this totally unendowed school. As has been shown, we can use even a few hundred dollars a year to great advantage; for we have here a well-founded institution, at which a science of the widest usefulness to mankind, and the greatest humanity to dumb animals, is being well and thoroughly taught to good classes of bright and earnest young men; but this established institution is sorely in need of more room in which to carry on the work which its own prosperous career has brought it. It certainly seems remarkable to one who knows what has been accomplished by this department of the university during its short life, and how much need there was that the subject should be taken up by a strong American university, that among all the generous givers to the higher education, among the many who are interested in questions of public health, and among all those who love horses and dogs, none have yet been found willing to give us material financial support. The school is not an experiment; it is an assured fact. Where else has a scientific school, in any subject, ever been established that has fought the battle of the higher against the lower education successfully without endowment of any sort?"

Fire in a New Hampshire Insane Asylum. — A fire occurred in the Rockingham County (N. H.) Insane Asylum last Sunday, but was fortunately extinguished with small loss. No cause has been discovered for the fire.

Small-Pox in Waterbury, Conn. — A case of small-pox was discovered on Monday in Waterbury, Conn., in a house occupied by six families aggregating twenty-nine persons.

NEW YORK.

Tuberculosis in Cattle. — It is said that there are at present about twenty thousand head of cattle in the State which are affected with tuberculosis and have been condemned by the health authorities, but which cannot be destroyed for lack of funds to accomplish this object and compensate the owners. A bill has recently been introduced into the Legislature providing for an appropriation for the purpose of awarding proper compensation to those whose cattle it is found necessary to kill on account of this disease.

A Case of Traumatic Pulmonary Tuberculosis. — An interesting case of pulmonary tuberculosis, the exciting cause of which was traumatic in character, has just terminated fatally in the person of Dr. Robert N. Manney, a veterinary surgeon residing at Morrisania, in the annexed district of this city. Two years ago Dr. Manney got into an altercation with a blacksmith, and was stabbed in the side by the latter. The knife penetrated one of his lungs, and as a result of this injury tubercular disease eventually developed.

St. Mark's Hospital. — The new building of St. Mark's Hospital, on Second Avenue, near Eighth Street, was formally opened on February 17th. The building can accommodate about sixty patients, and the operating facilities of the hospital are of an admirable character.

The German Hospital Training School for Nurses. — The large new building erected for the Training School for Nurses of the German Hospital, at Seventy-fourth Street and Park Avenue, was opened with appropriate ceremonies and a reception on February 22d. It is five stories in height and is ninety-five feet long and twenty-five feet wide. There are two entrances upon the hospital grounds and from the basement a tunnel extends to the main hospital building. On the first floor are the apartments of the superintendent and his family, as well as a large lecture room, and the rest of the building has been fitted up for the accommodation of the pupils, forty in number. The cost of the structure was $72,000.

Membership of the New York County Medical Association. — At the last meeting of the New York County Medical Association, held February 19th, Dr. S. B. W. McLeod, who has been re-elected President for another year, delivered his annual address. In the course of it he gave an interesting review of the growth and history of the Association during the first decade of its existence. At the time of its first meeting for scientific purposes there were 109 members, and there are now over 950 on its roll. The first paper read before the Association was by the late Prof. Austin Flint, on "Pathological and Practical

Relations of the Doctrine of the Bacillus Tuberculosis." The meeting occurred January 14, 1884. During the ten years 75 members have been removed by death.

Miscellany.

A BILL RELATIVE TO VACCINATION.

The following bill, relative to vaccination, was introduced in the Massachusetts Senate by Senator Harvey, of Worcester, and has been referred to the Committee on Public Health:

Section 1. Parents and guardians shall cause their children and wards to be duly vaccinated before they attain the age of two years. For every year's neglect, the party offending shall forfeit the sum of ten dollars.

Sect. 2. The board of health in any city or town shall require and enforce the vaccination and re-vaccination of all the inhabitants thereof whenever in the opinion of said board the public health or safety requires such action. Every person over twenty-one years of age, not under guardianship, who neglects to comply with such requirement, shall forfeit the sum of ten dollars.

Sect. 3. The board of health in any city or town shall furnish the means of free vaccination or re-vaccination to all the inhabitants thereof whenever in the opinion of said board the public safety requires it.

Sect. 4. Incorporated manufacturing companies, superintendents of almshouses, State reform schools, industrial schools, lunatic hospitals and other places where the poor or sick are received, masters of houses of correction, jailers, keepers of prisons, the warden of the State prison and superintendents or officers of all other institutions supported or aided by the State, shall, at the expense of their respective establishments or institutions, cause all the inmates thereof to be vaccinated or re-vaccinated whenever in the opinion of the board of health, in the city or town in which such establishments or institutions are situated, the health of the inmates thereof or the public safety requires such action.

Sect. 5. Sections fifty-one, fifty-two, fifty-three, fifty-four and fifty-five of Chapter eighty of the Public Statutes are hereby repealed; *provided*, that nothing herein contained shall be construed as affecting any action that may be pending under said sections at the time of the passage of this act.

Our readers will find the substance of the existing law stated on page 22 of this volume of the Journal.

ACTING ASSISTANT SURGEONS.

The Association of Acting Assistant Surgeons has been endeavoring for some time to have Congress remove a technical disability of rank which prevented the members from obtaining admission to certain organizations. A bill has been introduced in both the Senate and the House of Representatives which is intended to provide for such cases. The following extract from the preamble and the bill will show its purpose.

"*Whereas,* Because these acting assistant surgeons were not commissioned as officers, but were employed by contract as such, they are denied admission to military organizations like the Loyal Legion and the Grand Army of the Republic; and to relieve this unjust discrimination, and to give a proper recognition to their patriotism, duties, responsibilities, services, hardships and exposures, they ought to be entitled to receive the rank for which they are allowed pensions and which will relieve them from these disadvantages. The appended bill is offered for this purpose. It involves no expense to the United States Government and no change in the relative rank of officers of the medical corps of the United States Army who have been or are now in the service of the United States; Therefore,

"*Resolved,* That private physicians who were employed as medical officers in the armies of the United States for a period of not less than three months, and who were known officially as acting assistant surgeons of the United States Army, and whose services were honorably terminated, shall be commissioned by the President of the United States as acting assistant surgeons of the United States Army; and the date of employment as acting assistant surgeons to be the date of commission and muster into service, and the date of the honorable termination of service as acting assistant surgeon to be the date of discharge or muster out of service;

"*Provided,* That no pay or allowance shall be made to any such acting assistant surgeon by virtue of this act; and this act shall not affect the rank, pay, or emoluments of commissioned medical officers of the United States Army."

SUICIDE IN NEW YORK.

The Committee of the New York Medico-Legal Society appointed to consider the repeal of the existing law in New York relating to suicide have submitted the following report:

We recommend the repeal of the existing law punishing unsuccessful attempts at suicide, for the following reasons:

(1) It is wholly indefensible from the standpoint of this great principle, that all penal laws should have for their object the deterring rather than the punishment of crime.

(2) It in effect repeals the former laws making suicide a crime, and makes its unsuccessful attempt punishable only; so that its effect is to stimulate the would-be suicide to higher efforts towards self-destruction to avert the punishment it visits only upon failure.

(3) The act, therefore, instead of serving as a deterrent to the commission of crime, which should be the aim of penal legislation, is one which, in its whole scope and effect, incites to and probably actually increases the volume of this crime.

(4) Civilization, in the recent centuries, has regarded and treated suicide as a crime, and has attempted to so frame its penalties as to act as a deterrent upon the minds of those who sought or have contemplated it.

The majority of mankind would be influenced by any post-mortem punishment that would bring disgrace or reproach upon the names, family, or friends of the suicide.

The existing statute ignores the universal recent judgment of the race in relieving the successful suicide from all such restraints, with their conceded deterrent effects.

(5) A large proportion of suicides are confessedly those laboring under insane delusions. Unsuccessful attempts by such, under the existing statute, are pitiful examples of the incongruity and unwisdom of the law in its practical operation.

(6) It is claimed, and with great propriety, that the present statute is practically inoperative.

We respectfully submit that this enactment should no longer remain among our criminal statutes.

IN MEMORIAM. — SAMUEL M. DONOVAN, M.D.

Quincy, Mass., February 20, 1894.

A breath of spring is in this winter morning; but its sweetness is tinged with profound sadness that Dr. Samuel M. Donovan whom so many have known so long as physician and friend, lies in the silence of death. His sunny smile and cheery welcome are among the valued recollections of the past. With an accomplished mind that led him to a conscientious absorption of what his profession taught him, was a rare, refined taste that embraced whatever was fine in art, music and science. His acquaintance with roses was a particular element; and while we, duller, knew and loved them as roses; he had the species and variety of each especial flower at tongue's end.

Tenderness in him was of a delicate quality, especially towards children. "His quiver was full," but he did not pass by any child slightly. Meeting him one morning with his buggy crammed full of little ones, we pointed to one, asking, "Are they all yours?" "No," said he, "that one is not." "Why," said we, laughingly, "have you not enough of your own?" "Well" was the answer, "that little chap saw us, and wanted a ride, so I took him in." Lately, speaking of illness and weakness, he said, "I ask one thing, to see all my children grow up to be fine." Now, the little light-haired, blue-eyed brood are fatherless.

His ready assimilation of medical knowledge made him a valued physician. He was a fond husband and a good friend. He was prominent in our charitable work and among our poor. We were not ready to spare him; but resting in the hope that if his brief life had incompleteness here, and trusting that it will find full completeness in the beyond to which he precedes us, we lovingly, respectfully, lay this memento of a friend of many years, upon his bier.

A. E. F.

◆

Correspondence.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA. COMMITTEE ON SCIENTIFIC BUSINESS.

Philadelphia, February 15, 1894.

Mr. Editor: — At its last meeting the Medical Society of the State of Pennsylvania appointed — under the provisions of a by-law proposed at Harrisburg and adopted at Williamsport — a Committee on Scientific Business, "to secure scientific papers and to provide scientific discussions for each annual meeting, and to co-operate with the Committee of Arrangements and Credentials in arranging the programme." The members of this Committee are Drs. Dulles, of Philadelphia; Gorgas, of Harrisburg; LeMoyne, of Pittsburgh; Tyson, of Philadelphia; and Towler of Marienville. The object of this change in the law is to have a permanent committee which, becoming familiar with the subject, shall find it easier to secure good scientific work than is possible for a committee that is appointed new every year.

The Committee on Scientific Business is working in conjunction with the Committee of Arrangements, of which Dr. E. E. Montgomery is Chairman, and will co-operate with it in arranging the programme.

The Committee hopes that each member of the State Society will aid it in attempting to make the meetings of the Society of greater scientific importance than they have been in the past. To this end the Committee will welcome suggestions from any member of the Society and especially, at this time, offers of contributions to the work of the next meeting at Gettysburg, May 15th to 18th. It is desired that there should be as many brief, concise, practical papers as possible; and it is proposed to have a discussion on "Tuberculosis," devoting the morning to "Medical Tuberculosis," and the afternoon to "Surgical Tuberculosis."

Any communication from members of the Society in regard to the work of the Committee, will be welcomed by it.

Members of the Society desiring to read papers, or to take part in the discussion on Tuberculosis will please notify the Chairman of the Committee,

Dr. Charles W. Dulles,
4101 *Walnut Street, Philadelphia.*

METEOROLOGICAL RECORD,

For the week ending February 17, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..11	29.98	34	38	30	67	67	67	W.	W.	23	16	O.	C.	
M..12	30.22	21	27	15	67	100	84	N.W.	N.E.	11	24	C.	N.	0.16
T..13	30.10	18	28	8	100	60	80	N.	N.W.	20	17	N.	O.	0.72
W. 14	30.37	17	25	9	77	87	82	N.W.	N.E.	5	4	O.	N.	
T..15	29.45	31	38	24	100	89	94	N.E.	W.	22	12	N.	O.	0.86
F..16	29.98	18	25	11	57	66	62	N.W.	N.W.	20	17	F.	C.	
S..17	30.42	18	35	1	69	73	71	S.W.	S.W.	6	12	F.	F.	1.74
☞	30.17		31	14			77							

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, February 17, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diphtheria and croup.	Measles.	Scarlet fever.
New York	1,891,306	856	351	16.92	22.68	7.20	3.24	2.28
Chicago	1,438,000	376	149	19.98	11.61	5.94	.81	2.43
Philadelphia	1,115,562	—	—	—	—	—	—	—
Brooklyn	978,394	371	126	12.96	25.11	7.56	.27	2.16
St. Louis	560,000	—	—	—	—	—	—	—
Boston	487,397	214	66	12.69	25.38	6.58	—	1.88
Baltimore	500,000	—	—	—	—	—	—	—
Washington	308,431	—	—	—	—	—	—	—
Cincinnati	305,000	102	33	5.88	17.64	1.96	—	—
Cleveland	290,000	76	29	18.48	21.12	5.28	3.96	—
Pittsburg	263,709	94	34	14.84	19.08	8.48	—	4.24
Milwaukee	250,000	80	38	22.50	12.50	8.75	1.25	1.25
Nashville	87,754	7	—	42.84	57.12	28.56	—	—
Charleston	65,165	29	8	—	13.80	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	96,217	29	10	13.80	13.80	6.90	—	—
Fall River	87,411	41	19	7.32	17.08	—	—	—
Lowell	87,191	—	—	—	—	—	—	—
Cambridge	77,100	38	16	21.04	21.04	—	—	18.41
Lynn	62,656	19	—	15.78	10.52	5.26	—	—
Springfield	48,684	15	4	—	20.00	—	—	—
Lawrence	48,355	21	1	23.80	14.28	—	—	—
New Bedford	45,886	19	7	21.04	15.78	—	—	15.78
Holyoke	41,278	—	—	—	—	—	—	—
Salem	32,233	10	0	10.00	20.00	—	—	10.00
Brockton	32,140	8	2	12.50	25.00	12.50	—	—
Haverhill	31,396	12	3	—	8.33	—	—	—
Chelsea	30,264	14	5	—	42.84	—	—	—
Malden	29,394	7	1	—	28.56	—	—	—
Newton	27,556	5	0	—	—	—	—	—
Fitchburg	27,146	—	—	—	—	—	—	—
Taunton	26,972	7	0	—	14.28	—	—	—
Gloucester	26,688	11	0	9.09	18.18	—	—	—
Waltham	22,058	7	3	14 28	14.28	14.28	—	—
Quincy	19,642	6	1	16.66	—	—	—	—
Pittsfield	18,802	2	2	50.00	—	—	—	—
Everett	16,585	7	2	—	14.28	—	—	—
Northampton	16,331	3	1	—	—	—	—	—
Newburyport	14,073	5	1	—	20.00	—	—	—
Amesbury	10,920	2	0	—	—	—	—	—

Deaths reported 2,521: under five years of age 919; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 441, acute lung diseases 504, consumption 304, diphtheria and croup 153, scarlet fever 57, measles 35, typhoid fever 32, diarrhœal diseases 30, cerebro-spinal meningitis 22, whooping-cough 19, small-pox 18, erysipelas 15.

From typhoid fever Chicago 9, Milwaukee 5, New York 4, Cincinnati, Lawrence and Cleveland 3 each, Pittsburgh 2, Brooklyn, Boston and Cambridge 1 each. From diarrhœal diseases New York 11, Chicago 4, Brooklyn and Milwaukee 3 each, Cleveland and Fall River 2 each, Boston, Worcester, New Bedford, Pittsfield and Marlborough 1 each. From cerebro-spinal meningitis New York and Chicago 5 each, Brooklyn, Cleveland, Lynn and Somerville 2 each, Worcester, Gloucester, Quincy and

Marlborough 1 each. From whooping-cough New York 5, Brooklyn and Boston 4 each, Cincinnati, Milwaukee and Fall River 1 each. From small-pox Chicago 13, New York 5. From erysipelas Chicago 6, New York 5, Boston 2, Brooklyn and Nashville 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending February 10th, the death-rate was 19.1. Deaths reported 3,830; acute diseases of the respiratory organs (London) 372, whooping-cough 138, diphtheria 88, measles 76, scarlet fever 46, fever 43, diarrhœa 35, small-pox (Birmingham 4, West Ham, Halifax and Bradford 1 each) 7.

The death-rates ranged from 12.1 in Croydon to 26.5 in Bristol; Birmingham 22.6, Bradford 16.3, Brighton 15.8, Huddersfield 18.0, Hull 21.8, Leeds 18.5, Leicester 13.5, Liverpool 24.2, London 18.4, Manchester 21.7, Newcastle-on-Tyne 18.6, Nottingham 20.5, Portsmouth 17.1, Salford 19.0, Sheffield 18.6, Swansea 19.7.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 17, 1894, TO FEBRUARY 23, 1894.

First-Lieut. Benjamin L. Ten Eyck, assistant surgeon, U. S. A., will report in person to Colonel Joseph C. Baily, assistant surgeon-general, president of the examining board appointed to meet at Fort Sam Houston, Texas, at such time as he may be required by the board for examination as to his fitness for promotion.

A board of medical officers to consist of Colonel Charles H. Alden, assistant surgeon-general; Lieut.-Col. William H. Forwood, deputy surgeon-general; Major Charles Smart, surgeon; Major Walter Reed, surgeon; Captain James C. Merrill, assistant surgeon, is constituted to meet at the Army Medical Museum Building, Washington, on the 12th of March, 1894, at ten o'clock a. m., for the examination of candidates for admission to the Medical Corps of the Army.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOUR WEEKS ENDING FEBRUARY 17, 1894.

Murray, R. D., surgeon. To proceed to Key West, Fla., for special duty. January 26, 1894.

Bailhache, P. H., surgeon. Granted leave of absence for twenty days. February 5, 1894.

Purviance, George, surgeon. Detailed as chairman, Board of Examiners. February 12, 1894.

Stoner, G. W., surgeon. Detailed as member, Board of Examiners. February 12, 1894.

Carter, H. R., surgeon. To report at Bureau for temporary duty. February 2, 1894. To proceed to Brunswick, Ga., Quarantine as inspector. February 6, 1894. Detailed as recorder, Board of Examiners. February 12, 1894.

White, J. H., passed assistant surgeon. Granted leave of absence for seven days. February 17, 1894.

Carrington, P. M., passed assistant surgeon. Granted leave of absence for thirty days. February 19, 1894.

Bratton, W. D., passed assistant surgeon. Granted leave of absence for thirty days. January 20, 1894.

Pettus, W. J., passed assistant surgeon. Granted leave of absence for thirty days. January 30, 1894.

Vaughan, G. T., passed assistant surgeon. To report to the Secretary of the Treasury for special duty. January 26, 1894.

Young, G. B., assistant surgeon. Ordered to examination for promotion. February 14, 1894.

Stimpson, W. G., assistant surgeon. Ordered to examination for promotion. February 14, 1894.

Brown, B. W., assistant surgeon. Ordered to examination for promotion. February 14, 1894.

Rosenau, M. J., assistant surgeon. Granted leave of absence for thirty days. February 26, 1894.

Cofer, L. E., assistant surgeon. To proceed to Mobile, Ala., for duty. January 30, 1894.

Eager, J. M., assistant surgeon. Granted leave of absence for four days. January 30, 1894.

Blue, Rupert, assistant surgeon. Granted leave of absence for eight days. January 26, 1894.

Norman, Seaton, assistant surgeon. Ordered to examination for promotion. February 14, 1894.

Prochazka, Emil, assistant surgeon. To proceed to New York, N. Y., for duty. January 24, 1894. To proceed to Buffalo, N. Y., for temporary duty. February 2, 1894.

SOCIETY NOTICES.

Boston Society for Medical Observation. — A regular meeting will be held at 19 Boylston Place, on Monday, March 5th, at 8 o'clock.

Readers: Dr. J. S. Greene: "The Obscure Origin and Indeterminate Course of Acute Infection, as Illustrated by a Case, Possibly of Multiple Neuritis, and by a Case of Malignant Endocarditis."

Dr. E. M. Greene: "Crystalline Deposits in the Urine; Their Occurrence and Significance."

Report of Treasurer.

Report of Committee on Admissions.

Appointment of committee to nominate officers for ensuing year. John C. Munro, M.D., *Secretary*.

The Suffolk District Medical Society, Surgical Section. — The Surgical Section of the Suffolk District Medical Society will hold its regular monthly meeting at 19 Boylston Place on Wednesday evening, March 7, 1894, at 8 o'clock.

The subject for discussion will be introduced by Dr. J. W. Elliot: "A Gall-Stone Removed by Opening the Common Bile Duct, the Wound in the Duct being Closed by Sutures."

Drs. G. W. Gay, R. H. Fitz, C. B. Porter, H. L. Burrell, J. C. Warren, A. T. Cabot, M. H. Richardson and W. M. Conant will briefly discuss the "Surgery of the Gall-Bladder."

Charles L. Scudder, M.D., *Secretary*, 1 Marlborough St.

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The next lecture will be given on Wednesday evening, March 7th, at 8 o'clock, by Dr. John Homans. Subject, "Ovariotomy." Physicians are cordially invited.

ERRATUM.

In the note on the hearings of the Public Health Committee in last week's issue of the Journal, the date for the hearing on public vaccination should be March 7th instead of March 5th as given.

RECENT DEATHS.

Benjamin Storer Codman, M.D., M.M.S.S., died in Boston, February 22d, aged seventy-eight years. He graduated from the Harvard Medical School in 1845. In 1855 he retired from practice and established the firm of Codman & Shurtleff, dealing in surgical instruments. He was a trustee of the Home for Intemperate Women.

Dr. Gustav Schenthauer, Professor of pathological anatomy in the University of Pesth, died January 28th.

BOOKS AND PAMPHLETS RECEIVED.

The Absorption of Immature Cataract, with Restoration of Vision. By J. Hobart Egbert, A.M., M.D., Ph.D. Reprint. 1893.

The Surgery of the Hand. Sarcoma of the Kidney; Its Operative Treatment. By Robert Abbe, M.D., of New York. Reprints. 1894.

A Human Embryo of the Second Week. Early Human Embryos and the Mode of their Preservation. By Franklin P. Mall. Reprints. 1893.

Proceedings of the Philadelphia County Medical Society. Volume XIV, Session of 1893. Lewis H. Adler, Jr., M.D., Editor. Philadelphia: Printed for the Society. 1893.

The Present Status of the Treatment of Uterine Fibroids. Etiology of Pelvic Diseases in Women and their Prophylaxis. By X. O. Werder, M.D., Pittsburgh, Pa. Reprints. 1893.

Antiseptic Therapeutics. By Dr. E. Z. Trouessart, Paris, France. Translated by E. P. Hurd, M.D. Two volumes. The Physicians' Leisure Library. Detroit: George S. Davis. 1893.

A Text-book of the Theory and Practice of Medicine. By American Teachers. Edited by William Pepper, M.D., LL.D., Provost and Professor of the Theory and Practice of Medicine and of Clinical Medicine in the University of Pennsylvania. In two volumes. Illustrated. Volume II. Philadelphia: W. B. Saunders. 1894.

Holden's Manual of the Dissection of the Human Body. Edited by John Langton, Surgeon to, and Lecturer on Anatomy at St. Bartholomew's Hospital; Member of the Board of Examiners, Royal College of Surgeons of England, etc. Sixth edition. Revised by A. Hewson, M.D., Demonstrator of Anatomy, Jefferson Medical College, etc. Three hundred and eleven illustrations. Philadelphia: P. Blakiston, Son & Co. 1894.

Original Articles.

OBSERVATIONS ON PNEUMONIA.[1]

BY WILLIAM H. PRESCOTT, M.D.

ACUTE FIBRINOUS PNEUMONIA WITH UNUSUAL EXTENSION OF THE FIBRINOUS EXUDATION.

There is nothing of especial importance in the clinical history of this case. The patient, a man about thirty-five years old, was brought into the hospital with well-marked evidences of pneumonia. There was complete consolidation of the lower half of the left lung and slight breathing, with less well-marked consolidation in the lower posterior portion of right lung. The temperature was high, and the breathing very much accelerated. The condition of the patient steadily grew worse, and he died forty-eight hours after entry into the hospital.

The autopsy was made November 25th, twenty-four hours after death. The body is that of a slightly built man. The mucous membrane pale, rigor mortis well developed. The superficial veins over chest prominent. The face cyanotic.

Scalp slightly adherent. Dura mater of ordinary thickness. Pacchionian granulations well developed. The pia slightly cloudy. The convolutions of brain well marked. Brain slightly œdematous.

Subcutaneous fat slight in amount. Muscles red. Peritoneal cavity moist. The appendix bound down by old adhesions extending across from the ileum. These adhesions involved the proximal two-thirds of the length of the appendix, leaving the tip free. The peritoneum over appendix thickened. Diaphragm on right side at lower border of fifth rib; on left side, in fifth intercostal space.

In the left pleural cavity about 500 cc. of cloudy serum containing flakes of fibrin. Both cavities free from old adhesions. Lungs do not retract on removal of sternum. The precordial space small. On the anterior surface, especially over the upper two-thirds, there is a thick fibrinous deposit on the epi-pericardial tissues. The pericardial cavity is obliterated over the anterior upper portion by fresh, thick fibrinous adhesions. In the lower portion of the cavity there is a small amount of clear fluid. The visceral pericardium in its upper portion, extending especially over the root of the aorta, is covered with a thick fibrinous exudation, containing here and there small hæmorrhages. The myocardium is generally pale. Immediately beneath the pericardium where the exudation is thickest the tissue is somewhat opaque and contains small hæmorrhages.

The heart of ordinary size. On the right segment of the mitral valve near its attachment, there is a minute superficial erosion not more than one millimetre in extent, covered with a thin, granular, hæmorrhagic fibrinous deposit.

Over the entire pleural surface of the left lung there is a thin fibrinous exudation, and in the pleura beneath it there are numerous small hæmorrhages. Over other portions of the pleura the exudation is thick and yellowish, and is easily removed as an adherent membrane, leaving the underlying pleura cloudy. The upper lobe of this lung is hyperæmic, œdematous, and more solid than normal. On pressure much blood-stained serum can be squeezed from the cut surface, and thick purulent exudation from the bronchi. The upper and lower lobes united by fresh adhesions. Fully two-thirds of the lower lobe is completely solid. The cut surface of this is gray, granular, and on pressure pus can be squeezed from the bronchi. The remainder of the lobe is intensely congested and partially solidified. Portions of the lobe will float in water. The costal pleura on the left side is covered with a thick fibrinous exudation. On being stripped off the vessels in it are enormously dilated, and hæmorrhages have occurred everywhere in the tissues. The intercostal muscle, especially in the upper half of the pleural cavity, appears swollen and softened. On section the intercostal muscle and subpleural tissues are thickened by an exudation which is intimately associated with the tissues. This exudation in places appears to extend through the entire thickness of the intercostal muscle, and there is apparently a sharp line separating it from the healthy tissues. At the apex of the pleural cavity a similar condition exists, and extends from here into the posterior mediastinum, and into the cervical regions. Some of the deep-lying cervical lymph-glands are reddened and swollen, and around them this fibrinous exudation is seen. In one place in the epi-pericardial fat there is a small collection of thick, creamy, gelatinous pus. The right lung is voluminous. The pleura smooth and free from fibrinous deposit. On section the lung is in general hyperæmic and œdematous. In the lower lobe there are scattered foci of consolidation varying in size from one to five centimetres. Pus can be squeezed from the bronchi in these places.

Liver is large. The surface pale. On section cloudy and opaque with indistinct lobules. The bile-duct free. The gall-bladder contains clear, yellowish bile.

The kidneys somewhat enlarged. Capsule easily stripped off. Surface smooth. On section, markings somewhat obscure. Cortex swollen and opaque. Glomeruli anæmic.

The spleen slightly enlarged. The capsule wrinkled. On section rather soft and dark. Neither traberculæ nor Malpighian bodies are visible. The adrenal glands and pancreas normal. The mucous membrane of stomach and intestines is hyperæmic, otherwise normal.

The mucous membrane of larynx and trachea is congested. Beginning in the lower part of the larynx and continuing uniformly through the trachea as far as the bifurcation, the mucous membrane has a granular appearance due to the presence of small vesicular-looking granules, of regular size, on the surface. This does not disappear on washing, but on gently rubbing the granules disappear and a thick fluid takes their place. This condition is due to small masses of the mucus distending the glands. The aorta and other arteries are normal.

ANATOMICAL DIAGNOSIS.

Acute fibrinous pneumonia with consolidation of lower lobe of left lung. Slight consolidation in upper lobe of left lung. Fibrinous lobular pneumonia of right lung. Acute fibrinous pleurisy of left pleura with extension of the process into the chest walls and into the posterior mediastinum. Acute fibrinous pericarditis with extension into myocardium. Acute endocarditis of mitral valve. Acute parenchymatous degeneration of liver, heart, and kidneys with slight fatty degeneration.

---

[1] A contribution to the forthcoming Medical and Surgical Report of the Boston City Hospital, from the Pathological Department of the Hospital, under direction of Dr. W. T. Councilman.

Cover-slips made from the lung, from the fibrinous exudation on the surface of the pleura and from the pericardium, showed large numbers of the diplococcus lanceolatus with well-marked capsule staining. In the fresh sections of the intercostal muscles the same condition was found. Fresh sections of the kidney showed swollen and granular epithelium in the convoluted tubules, with here and there minute drops of fat on the addition of acetic acid. The glomeruli were unchanged. Sections of the liver showed swelling and granular degeneration of the hepatic cells. Sections of heart showed a very slight fatty degeneration of the muscle. Portions of the various tissues were hardened in alcohol for further examination.

Microscopic examination of the consolidated portion of left lung. The alveoli are everywhere distended with fibrin and pus cells. Numbers of diplococci were found in the pus cells. Sections made from the less consolidated portions of this lung and from the areas in the right lung show a less advanced process. The vessels in the alveolar walls are dilated, and the walls themselves infiltrated with leucocytes. Within the alveoli there are small amounts of fibrin with numerous red and white corpuscles.

The most interesting conditions were found in the pericardium and in the pleura. The fibrinous exudation of the pericardium is very dense, and the fibrin is in places in the form of large, broad fibres which are frequently united together to form hyaline masses and a reticulum, somewhat similar to that in the diphtheritic membrane. In places it extends into the tissue of the myocardium. In these places there are numerous leucocytes, round and epithelioid cells between the muscular fibres. The muscular fibres appear swollen, and the nuclei are indistinct. In the least affected part of the myocardium there are no leucocytes in the tissue, but there are numbers of large epithelioid cells and round granulation cells between the muscular fibres. In these places there is no fibrin, and the muscular fibres themselves appear to be but little altered. Further back in the more affected portions the leucocytes are found, and with these masses of fibrin. Diplococci were found in great numbers in the exudation, both inclosed in the pus cells and scattered through the fibrin. None were found where the tissue contained only the epithelioid and round cells.

The process appears to invade the fat in the same way. In places, as observed with the low power, the fibrinous exudation and the leucocytes extend directly into the fat, passing along the connective-tissue septa.

On examination with a higher power, in the areas of fat, which under the low power appeared to be unchanged, there is a similar condition to that found in the myocardium. There are numerous large epithelioid cells between the fat cells, of the same character as those found in the myocardium. The fat vesicles themselves appear to be somewhat compressed and distorted by the formation of cells between them, but are otherwise unchanged. In some places only one or two of these larger cells were found, and in others they are more numerous. The inflammatory process appears to extend into the tissue along the lymphatics and blood-vessels. In one place a longitudinal section of a capillary is seen, the nuclei of which are swollen and granular, and the lymph sheaths of the larger blood-vessels are completely filled up with these large granular cells.

Examination of the intercostal muscle shows a similar condition. The fibrinous exudation with leucocytes extends into this, generally in the form of large bands in the intermuscular septa. There is also an extension in the muscle nearest the pleura between the individual muscular fibres. In the most affected places the muscular fibres are swollen, granular and necrotic; the nuclei do not stain, and they have lost the cross striation. In advance of the fibrinous exudation with leucocytes, there is simply a cellular infiltration without either fibrin or leucocytes. The cells in this are almost all of them large epithelioid cells with a clear, brightly staining nucleus. In one or two places nuclear figures were found in these large cells. Diplococci were only found associated with the presence of the leucocytes and fibrin.

A rabbit was inoculated from the fibrinous exudation in the intercostal muscles, a small portion of the muscle being placed beneath the skin of the back of the animal. An acute swelling developed at this place, but there was no distinct abscess formation. The animal in the course of the next few days lost some flesh, but it continued to eat comparatively well until it was killed, ten days after the inoculation. There was a large subcutaneous swelling at the point of inoculation, which had extended from this in all directions, especially downwards on the side where the inoculation was made. The entire subcutaneous tissue of the abdomen was swollen and infiltrated with a dense fibrinous exudation. Here and there in this exudation were softer places from which a thick tenacious pus could be squeezed. The tissue in places was one cubic millimetre in thickness. The inguinal and axillary lymph-glands on the side of the inoculation were reddened and swollen. No bactaria were found, either in the purulent portions or in the fibrinous masses, neither on the direct examination of cover-slips nor in the cultures which were made, both from the seat of the inoculation and from all the internal organs.

This case is interesting on account of its unusual extension. Practically in all cases of acute fibrinous pneumonia there is a similar fibrinous exudation on the pleura covering the affected portion of the lung, to that in the lung itself. In most cases the fibrinous exudation is not confined to the pleura immediately over the affected portion of the lung, but extends from this over the entire surface. There will usually be found a similar condition on the costal pleura, but not so marked as on the visceral. An extension of the process into the chest walls and into the mediastinal tissues from the pleura is exceedingly rare.

In this case there is no question but that the process in the chest walls is one of direct extension from the pleura. The histological examination of the tissues here was of great interest. Apparently the first change which took place in the intercostal muscle, in the myocardium, and in the fat of the pericardium was a cellular proliferation of the interstitial tissue. The new formation of cells appeared to have taken place from the interstitial tissue, most probably from the cells of the capillary walls or from the lymph spaces. The newly-formed cells were of two sorts. There were large cells with an abundant protoplasm and a large brightly staining nucleus, and small cells similar to the lymphoid corpuscles of the blood, with a nucleus almost filling up the body of the cell. In this tissue there were no leucocytes nor fibrin. They appear to come later, and with the leucocytes and the fibrin the organisms were always found.

ACUTE INFECTION WITH THE DIPLOCOCCUS LANCEOLATUS IN A CHILD FIFTY-SIX HOURS OLD, THE INFECTION PROBABLY TAKING PLACE AT TIME OF DELIVERY.

I am indebted to Mr. J. R. Poor, of the Harvard Medical School, for the autopsy and for the history of this case.

The mother of the child was a primipara, belonging to the criminal class. Two months before delivery an abscess of the breast had developed, following on a kick. At the time of delivery this was completely healed, leaving a stellate cicatrix. The mother was a healthy young Irish woman. Since delivery the mother has done well, with the exception of a very slight rise of temperature on the third day, apparently due to a family row. There was no respiratory trouble whatever. The birth took place at noon, May 12th. The delivery was a somewhat slow one, necessitating the application of forceps. The child was slightly asphyxiated at time of birth. The respiration was rather slow, necessitating hot and cold applications. No trouble noticed in the child until the 14th, forty-eight hours after delivery: then it appeared to be rather dull and slightly cyanosed. It died suddenly at seven P. M., fifty-six hours after delivery. Before death vomited slightly.

Autopsy made twelve hours after death. Male child, large and well formed. Posterior to the right ear there is a large ecchymosis made by forceps. A very slight hæmorrhage in the dura, on the right side, corresponding to the external ecchymosis. The brain is normal. In the peritoneal cavity there is a small blood-clot. No adhesions. In the anterior mediastinum there is a slight amount of hæmorrhage, the thymus glands being especially infiltrated with blood. In each pleural cavity there is a slight amount of hæmorrhagic exudation. The pleural surface of the right lung over the lower lobe shows in places a fine fibrinous exudation. The entire lower lobe of the right lung completely consolidated. The lower portion of the upper lobe also consolidated. The pleural surface of the lung sprinkled with fine ecchymoses. The consolidated lung is of a dark-red color, looking somewhat like a hæmorrhagic infarction. On section it is dark red. The cut surface is dry and smooth. The granular appearance of an ordinary croupous pneumonia is absent, but the lung is not so smooth as it would be in a purulent or hæmorrhagic consolidation. The bronchi contained bloody mucus. The left lung shows almost the same condition as the right. Consolidation complete in the lower lobe and in a considerable portion of the upper. In the pericardial cavity there is a considerable quantity of slightly opaque serum. The visceral pericardium sprinkled with small hæmorrhages, which are also seen in the myocardium.

The valves of the heart normal. The ecchymoses are not only found in the pericardium, but extend from this into the muscular tissue of the heart, and especially into the intraventricular septum. In the trachea there is a quantity of blood-stained mucus. The pharynx and œsophagus are normal. In the stomach there is a considerable amount of dark blood. The liver large, rather pale, and on section there are numbers of opaque, slightly reddish foci of an average size of half a millimetre, which contrast sharply with the surrounding parenchyma. The spleen is large. On section homogeneous, rather soft. Neither Malpighian bodies nor trabeculæ are visible. No abnormal condition found in the other organs.

Cover-slips examined, made from the lungs, show enormous numbers of typical diplococci with well-defined capsules. Similar organisms were found in the blood from the heart, and in the scrapings from the other organs. Cultures made from the organs gave pure cultures of diplococci from the lungs, heart, blood, liver, spleen and kidneys.

A rabbit inoculated with scrapings from the consolidated lung died in three days of typical diplococcus septicæmia.

Examination of the consolidated portions of the lung showed an absence of typical appearance of fibrinous pneumonia. The consolidation was almost entirely due to hæmorrhage into the lung. In places there were small amounts of fibrin. Usually this was mingled with the red corpuscles, but in some places it was found in the alveoli almost alone. Here and there a few leucocytes were found along with the red corpuscles, but the numbers of these were exceedingly scanty. There was everywhere hyperæmia of the vessels, and as far as could be ascertained by the examination of the cross-sections of the larger vessels, there was no leucocytosis. In many portions of the lung the appearance resembled that of the fœtal lung. The mucous membrane of the bronchi in these places was convoluted and the alveoli imperfectly expanded. Diplococci were everywhere present in enormous numbers. They were found not only in the hæmorrhagic exudation within the alveoli, but were also present in the alveolar walls and in the cross-sections of the larger blood-vessels. Fresh sections made of the various organs at the time of the autopsy showed no abnormal condition.

This case is of especial interest from the early age of the child, and the character of the infection produced by the diplococcus lanceolatus. In this case there was a general infection of the entire organism, similar to that which is usually produced in rabbits by inoculation with virulent cultures of the diplococcus. In spite of the early age of the child, it is not at all probable that the infection took place in utero. The mother was absolutely free from pneumonia or from any other pathological condition at the time of birth.

Welch has gone over carefully, in his paper on the diplococcus lanceolatus, all of the cases which have been reported of intra-uterine infection of the fœtus. In most of these cases death of the infant has taken place two to five days after birth; and although the infection was probably intra-uterine, the possibility of this having taken place during or after birth cannot be absolutely excluded. The most satisfactory of these cases is that reported by Birch-Hirschfeld. On the fourth day of a fibrinous pneumonia, the mother gave birth to a seven-months' still-born fœtus with intact membrane. There were hæmorrhages in the maternal and middle parts of the placenta. The only lesion noticed in the fœtus was ecchymosis in the pelvis of the kidney. Typical diplococci were found by culture in the liver, heart's blood, and umbilical vein.

It is well known that acute fibrinous pneumonia developing during pregnancy is likely to bring about miscarriage. This is the case not only in human beings, but in mice and rabbits which have been inoculated.

The character of the exudation in the lungs was also of interest. The exudation in the lungs was to a large extent hæmorrhagic in character, and the condition most resembling that produced by the organisms in the adult was the fibrinous exudation on the pleura. There can be little doubt from the extent of the lesions in the lung that the organisms had entered the lungs first, and probably at the time of birth. The artificial respiration carried on may have been responsible for the entry of the organisms into the lungs.

The two cases also show a marked contrast, not only in the character of the lesions in the human cases, but also in the character of the lesions produced in the animals. In the first case there was a marked tendency to a local extension of the organism, with the production of a typical fibrinous exudation wherever it was found. The same thing was seen in the rabbit which was inoculated with the exudation.

These varying effects which are produced by inoculation with the diplococcus lanceolatus are probably to be referred to especial differences in the action of the organisms, and not to a mere difference in the degree of virulence. Cultures of the pneumococcus are sometimes met with which will always produce in every generation the same definite lesions.

◆

CASES OF APPENDICITIS PRESENTING UNUSUAL FEATURES.[1]

BY MAURICE H. RICHARDSON, M.D.

ACUTE CASES.

The following unusual cases of appendicitis have been selected from those under my care in the past four weeks. They are reported in detail because each presents some variation from the ordinary case, and because in the existing uncertainties as to etiology, pathology and treatment, every observer owes to workers elsewhere a faithful report of his cases, whether successful or unsuccessful. There are many points of interest in regard to which these cases are too recent for deductions of value; in certain other respects, however, they justify definite conclusions.

I. Fulminating peritonitis: removal of gangrenous but unperforated appendix on second day; death. (Specimen.)

In a recent paper on appendicitis [2] I stated that in all severe acute cases with marked general and local symptoms, every appendix which I had removed was found to be perforated; and that in my belief the first symptoms depended upon such perforation. This opinion, though based upon a careful observation of many cases, is open to the criticism of being too strongly expressed. I hasten to report, therefore, an exception to this statement — a fatal fulminating case in which no perforation could be found on the most careful examination. The following are extracts from short-hand notes:

"Benjamin J. S., aged thirty-eight, single, East Boston. Dr. O'Keefe. Thursday, December 21, 1893. The previous health has been good. He was ruptured ten years ago. He has already had five attacks similar to the present. The last one occurred a year ago, keeping him from his business four or five days. Night before last he first began to feel a little pain in the bowels. Nevertheless, yesterday he was up and about till towards night. The symptoms had by that time increased so much that he had to go to bed, where he passed a restless and sleepless night. There was no vomiting. This morning he had a chill. All this afternoon the pain has been persistently located in the right flank, and has been growing worse. He fixed the seat of pain at first in the centre of the abdomen (indicating the median line just above the pubes). This morning it was half-way between the umbilicus and the anterior superior spine of the ileum. The pulse this morning was 80; the skin cool. He has vomited two or three times to-day. He has passed some gas, but not much.

"*Physical Examination.* — He is in a state of moderate shock. The general appearance is bad; he lies in bed restless and groaning. The pulse is 112, weak; the temperature 100°. The extremities are cool. The very rigid abdomen is dull over the bladder; elsewhere resonant. There is general tenderness, with constant eructations of gas. By the stethoscope no intestinal sounds can be heard. Though assured that the case is practically hopeless, his friends wish him to go to the hospital."

I sent an ambulance immediately, and an operation was performed by Dr. Newell in about two hours from this time. A thick and short appendix was removed, the tip of which was gangrenous. There was free fluid in the abdominal cavity. The intestines were congested and paralyzed. The appendix was tied and removed; the abdomen irrigated. No cultures were made. The patient gradually sank, and died at one o'clock Saturday morning.

The general condition of collapse, the rigid and distended abdomen, made the prognosis in this case nearly hopeless. I had predicted confidently a gangrenous and perforated appendix, with general infection. The general infection and gangrenous appendix were found, but no microscopic or macroscopic perforation could be detected. Though no cultures were taken, there is little doubt that an escape of micro-organisms from the appendix had taken place through the patch of gangrenous tissue. The absence of perforation in this instance is the feature which I wish to emphasize. I had never met with just this condition of the appendix before. It would seem that in general infection perforation does not necessarily exist. Not that this observation detracts in any way from the importance of the early interference in cases of this kind. Whatever the pathological condition of the appendix may be, the escape of its micro-organisms into the peritoneal cavity, whether through a large opening or through a small one, or by gradual march through the lymph spaces, places the patient in the utmost jeopardy. Excision of the organ, with drainage and irrigation, should be performed at the earliest possible moment in every such case.

II. Appendicitis of three weeks' duration; large abscess in pelvis; complete intestinal obstruction; fæcal vomiting; operation; relief of obstruction; death in six hours.

This patient presented the unusual complication of acute obstruction. There was no doubt upon this point, for the intestinal contractions, seen through the thin abdominal walls, were accompanied by loud borborygmi and intense pain. The patient was very much reduced in strength, and was already regurgitating the contents of the upper bowel.

"George T. B., aged twenty-one, South Hanover,

---

[1] Read by title before the Boston Society for Medical Improvement, January 8, 1894.

[2] American Journal of Medical Sciences, January, 1894.

Mass. Friday, December 22, 1893. Drs. Charles and McMillan.

"About four weeks ago he had a slight attack of appendicitis, with localized pain and tenderness. He described his pain as 'across his bowels.' Later, it was in the right iliac region. The pain subsided, and he began to improve, so that he got up and went about the house. Then the pain came on again. After two or three days he got better, and was not seen by Dr. Charles till last Monday. On that day he said that he had the pain only once in a while. In the beginning there was a temperature of 101°. Last Friday he had an attack like gastralgia, with pain in the epigastric region. This soon subsided, and has not been a prominent symptom since. There have been no chills. He gave a history of two previous attacks. The first one lasted but one day. The pain at that time was in the same place, 'across the bowels,' 'across the pit of the stomach.' Repeated questioning as to the locality of the pain elicited the same answer; 'right across the bowels.' The vomiting began last Saturday afternoon, and has continued ever since.

"*Physical Examination.* — Pulse 116, temperature normal. At times during the examination he complained of violent colic. Accompanying the pain, spasmodic intestinal contractions could be seen through the thin abdominal wall. Rectal examination showed a large tumor pressing on the bladder and apparently filling the whole pelvis. In this tumor irregularities in consistency could be felt, so that the question of draining by rectum was considered. The existence of acute obstruction decided me to select the incision through the median line.

"*Operation.* — A median cut was made between the umbilicus and the pubes. An acute obstruction of the bowels was found, caused by an omental band. The small intestine above the obstruction was dark-red in color and excessively distended. Deep in the pelvis filled with foul pus, was a large abscess cavity, the adhesions of which were separated with great difficulty. After cutting the band the cavity of the pelvis was washed out with peroxide of hydrogen, packed with gauze, and drained by means of a rubber tube. The operation was very rapid, not lasting more than twenty minutes. The patient died on the following morning."

This case is very similar to that of Mrs. C. F. A., reported last year,[3] in which recovery was due undoubtedly to a spontaneous opening in the cœcum through the stump of the appendix. In the present instance the coils of small intestine were bound down in the pelvis, and were relieved with great difficulty. There was no apparent hypertrophy of the intestinal wall, though its lumen was dilated and its peritoneum darkly congested.

The question of relieving the obstruction by opening the gut is interesting in these conditions. There is reason for supposing that such relief would have been attended by less risk than the methods used; yet the chief trouble would have remained untouched by a simple enterotomy. Moreover, the opening must have been made in the small intestine, possibly so high up as to interfere with nutrition. It seemed better, therefore, after thorough exploration, to remove at once the cause of obstruction. The immediate cause of death was the shock caused by manipulations upon the abscess, though they were extremely brief. The contents of the abscess cavity soiled the adjacent coils of intestine. They were immediately disinfected as thoroughly as possible by means of peroxide of hydrogen. Even if the bowel had been opened after separating the adhesions about the appendix, it is not likely that recovery would have followed. A rapid enterotomy alone might possibly have tided the patient over the crisis until strength enough could be stored to enable him to undergo even the slight manipulations of drainage.

III. Appendicitis; apparent general peritoneal infection; mechanical obstruction; removal of perforated and gangrenous appendix; drainage; recovery. Peritoneal exudate sterile; colon bacillus in appendix. Recurrence of obstruction in four weeks. (Specimen.)

This case is the only one in my experience in which I have demonstrated satisfactorily an acute mechanical obstruction in the first days of an appendicitis. That the obstruction would have continued cannot be asserted; yet it was sufficient to cause unmistakable fæcal vomiting, and was immediately relieved by separating the adhesions by which the small intestine was glued into the vesico-rectal fold by inflammatory adhesions.

"Binney, L. H., twenty-four years old, cabinetmaker. Thursday, December 28, 1893. Dr. Stevens of Cambridge.

"Last Sunday afternoon he first had pain in the belly, which he tried to relieve by walking. He walked around for a long time without relief. The pain continued two days. Wednesday morning it became intense and Dr. Stevens was called.

"*Dr. Stevens.* — 'When I came he had a great deal of pain in the abdomen, a pulse of 72, and a temperature of 99°. His hands and feet were cold. His abdomen was flat, retracted, rigid, and tender; more tender on the right than on the left, from the pubes round to the right side. It acted like a perforation of the appendix. He was in a state of collapse, and it did not seem wise to interfere until he should rally. At five o'clock that afternoon he had rallied. Temperature 103°, pulse 110. He was pretty free from pain. At eleven o'clock, Wednesday night the temperature was 101°, pulse under 100. No vomiting. On Sunday night he had a chill. There was a little nausea, but no vomiting. On Monday he took a cathartic. This (Thursday) morning the temperature was 100° and the pulse 76. There was no vomiting. He could not pass his urine. The abdomen was slightly tympanitic. The muscles were extremely rigid, especially on the right side; and he had a pretty sick look. He has gone on through the day in about the same condition. At the present time (8.45 P. M.) he is in great pain. He has never had anything like this before.'

"*Patient's Statement.* — 'I was taken Sunday about four o'clock. It was a good deal like a stomach-ache, and yet it was not. The pain was right across my stomach and my bowels, here (indicating the region of the bladder). The pain now is in the same place as at first. The attack was preceded by a diarrhœa following the use of rhubarb.'

"*Physical Examination.* — Pulse 72 to 80, temperature 99.8°. Complains much and groans constantly. Very tender on both sides in the lower part of the abdomen. There is some general tenderness without rigidity. No tumor; no dulness. Rectal examination negative.

"Friday, December 29, 1893, 10.20 A. M. Pulse 70, temperature normal. The abdomen is distended, and tender in the lower portion, where he complains also of pain. No sounds can be heard by stethoscope. The vomiting is distinctly fæcal in odor and color."

---

[3] Ten Days of Appendicitis, Boston Medical and Surgical Journal.

Dr. Taylor, of Cambridge, was present at this examination; also Dr. C. A. Porter, of Boston. It was a question, first, of appendicitis; secondly, of a general peritoneal infection; and, finally, of an acute obstruction. It seemed to me most like an acute intestinal obstruction. A grave prognosis was given.

An incision several inches in length was made in the right linea semilunaris. On nicking the peritoneum slightly cloudy serum escaped, from which a culture was immediately taken. The cœcum was found collapsed; the last three inches of the ileum were empty and flattened. The small intestines presenting were very much distended. The peritoneum was nearly normal, but slightly injected. The free fluid in the peritoneal cavity was removed as well as possible by means of dry sterile gauze. Adhesions could be felt about the appendix, which was situated in the pelvis between the rectum and the bladder. Gauze barriers were suitably placed to protect the general cavity of the abdomen before separating the adhesions, about which a small amount of fæcal pus was found. The parts about the abscess were irrigated freely with peroxide of hydrogen. The lowest segment of the ileum was caught at a sharp angle deep in the pelvis among the adhesions about the appendix. Above this angle there was great distention; below, collapse. After the adhesions had been separated and this portion of the bowel delivered, gas at once filled and distended the cœcum.

The recovery of the patient seemed very doubtful; yet he rallied, and is now well. Vomiting continued two or three days, and was treated by absolute rest to the stomach and intestines, neither food nor cathartics being given. At the end of three days the bowels began to move, the vomiting ceased, and the patient became convalescent.

It has been said in reference to this case, that the obstructions described frequently exist in acute general peritonitis. A general infection was thought to be present at the time, though the appearances did not indicate a general peritonitis. Moreover, it must have been an inflammation independent of micro-organisms, or, at least, of those which grow upon the medium of blood-serum, for to this day the tube inoculated from the fluids free in the abdominal cavity remains sterile, though from the appendix itself abundant growths of a large, thick bacillus have developed. Furthermore, that the obstruction was not due to a paralysis of the intestine was shown by the existing borborygmi.

In this case the sterility of the free fluid is a fact of the greatest interest, and it explains the rapid recovery. In many instances a fluid apparently precisely similar has shown a rapidly growing microbe. In such cases death has invariably followed.

IV. Probable appendicitis at the age of seventy-eight; no operation; recovery.

The following case seems worth recording in detail, because it presents the typical history of appendicitis at a very advanced age.

"Andrew H., aged seventy-eight, North Hanover, Mass. Thursday, December 21, 1892. With Dr. McMillan.

"Night before last his trouble began with severe pain in the right side. He was cold and pallid. For many years he had been ruptured on both sides. There was no indication of any strangulation or incarceration; there was no protrusion at the rings. The first symptom day before yesterday was vomiting, which lasted about ten minutes, and was followed by pain which ceased yesterday. He had two movements of the bowels from oil and enema. He never had anything like this before. The temperature last night was 103°; this morning it is 101°. The pulse was 104; now 90. His general appearance was good. There is tenderness in the right side of the abdomen, near the crest of the ileum, where there is also resistance and dulness. The temperature night before last was 103°. The right side was hard and tender." The condition of pyrexia in this case continued a few days. The symptoms gradually subsided, and the man is now well.

The history of this case is precisely like that of appendicitis with localized peritonitis. It is very unusual to see an appendicitis at this age. In one instance I have found, at the autopsy, in a woman of about seventy, a gangrenous and perforated appendix containing a gall-stone. If this man had been younger, or if there had been evidence of an abscess in the right iliac fossa, I should have advised interference. The patient was very much opposed to operation, preferring to die.

V. Appendicitis complicated by bronchitis; removal of appendix slightly affected; pneumonia; empyema; thoracotomy and excision of rib; recovery.

On Wednesday, June 7, 1893, I saw in East Boston, with Dr. Morrison, Fred A. R., aged six, who was taken sick the previous Saturday morning, complaining of pain in the side. (The father indicates the right lumbar region.) He had a good deal of pain, with some vomiting. He could keep nothing on his stomach. Sunday he was the same, complaining also of headache. On that day he was seen by a physician. Vomiting continued during Monday. Last night he was first seen by Dr. Morrison, who found him with a temperature of 104.5°. There was no symptom except this pain in the right iliac region, just between the umbilicus and the anterior spine. The left side of the abdomen was also tender. This morning he had rather more pain than last night, but there has been no vomiting since day before yesterday.

Physical Examination. — Pulse 120, respiration 40, temperature 102°. Though the abdomen was generally distended and tender, the tenderness was especially marked in the region of the appendix. There was no tumor; the tongue was clean. The thighs were flexed. The respiration was noisy and rattling; the cheeks were flushed; the eyes sunken. The general appearance was bad. There seemed very little doubt that this boy was suffering from an acute inflammation of the appendix, with perforation and a more or less general infection. The respiration of the left chest indicated trouble there, probably pneumonia. (This proved to be the case.) The surroundings of this child were so bad that we decided to send him to the hospital. The history and physical examination of this boy pointed clearly to appendicitis. On arrival at the hospital he was seen by Dr. Beach, who confirmed the diagnosis and opened the abdomen. The appendix was removed and found apparently normal. The child rapidly developed a pneumonia, from which he recovered. The abdominal wound healed firmly, and he soon became convalescent. This patient, in July, while under my care, developed an empyema on the right side, for which a rib was resected and drainage applied. The boy recovered rapidly from this operation, gained very much in weight and strength, and was discharged from the hospital a picture of health, in spite of the fact that tubercle bacilli were found in the sputum.

I am informed by Dr. Beach that after removal of the appendix, on careful examination a condition of thickening and of catarrhal inflammation was found. That this condition of the appendix was not the cause of the acuteness of the symptoms, seems to me very certain, for the general pain and tenderness, with the rigidity of the abdomen and the flexion of the thighs, mean gangrene and perforation, or at least a septic extravasation, if any value at all can be placed upon this combination of signs.

Very similar to the last case is the following which I saw in consultation with Dr. Berlin on January 1, 1894. Had it not been for the experience gained in the above instance I should have said that this, too, was an acute inflammation of the appendix, complicating a pneumonia, and possibly I should have advised exploration. I certainly should have done so, had I adopted the rule to operate upon every case of appendicitis as soon as the diagnosis was made.

VI. Pneumonia apparently complicated by appendicitis; no operation; recovery.

Malcolm E., aged four, January 1, 1894.

"Always delicate. Two years ago had whooping-cough, after which he went South for the winter. Last Thursday, the 20th, he said he had a stomach-ache. The abdomen was flat. The only symptom was pain. At one time he would complain of the right side, and at another of the left. The symptoms were not alarming. The temperature was 101°, the bowels free. On Friday, there was evidence of trouble in one of the lungs, thought to be pneumonia. There was no local abdominal tenderness. On Saturday the temperature reached 105°, and he said his stomach hurt him. He complains of a good deal of pain in the abdomen (indicating the epigastrium). This morning he locates the pain in the right side all the time."

The cheeks were red and the respiration was rapid, though not labored. The abdomen was somewhat prominent, but not rigid. Intestinal sounds could be heard with the stethoscope. There was no dulness. Pulse 120, temperature 102.2°. Tenderness more or less general.

The complaints of this child, with the physical signs, obscure though they were, would have been strongly suggestive of an acute appendicitis, had it not been for the experience gained in the preceding case. The evidence in this case, however, is much less indicative of an appendicular trouble than that in the former. In children and young males persistent pain in the abdomen, of whatever nature, even if far removed from the usual seat of the appendix, is usually dependent upon an inflammation of that organ. The errors to which we are liable are not in the direction of early interference or mistaken diagnosis; they depend rather upon our overlooking the lesion and delaying its appropriate treatment. For one instance in which the interference has been useless or too hasty, I could point out a large number in which failure to appreciate early the gravity of the case has been followed by a fatal termination.

Abdominal symptoms occurring in the course of acute thoracic diseases are not unknown. Dr. Russell Sturgis writes me in regard to this as follows: "I have several times been able to confirm the observations of Dr. Eustace Smith, made in 1876, that the pain of pleurisy in children is frequently referred to the belly, and I have noticed abdominal pains as not of infrequent occurrence in the pneumonias of children. Dr. Smith thinks that the reference of pain to the belly is due to implication of the lower intercostal nerves, the ends of which ramify in the abdominal walls."

In addition to the above cases, I have seen several others which do not differ from the usual type enough to justify their insertion under the title of this paper. In one, the fatal extravasation of fæcal matter was the direct result of salines. In another, the onset of the disease was ominous, but rapid recovery followed. The third was saved from a general peritonitis by early drainage. A fourth called the physician on the seventh day for the first time. Nothing could be done for the child, who survived only twelve hours. A fifth was doing very well under medical treatment, when he became collapsed, and died twenty-four hours after an emergency operation by another surgeon. A sixth presented the features of the severest type of intra-abdominal disease not pointing especially to the appendix. Nothing tangible could be made out. Operation was not advised, because no definite indications could be found to guide incision. A day later all unfavorable signs had disappeared. A seventh case is recovering after drainage. In an eighth an appendix was found in violent paroxysmal contractions upon several fæcal concretions. The appendix was removed, its stump covered with peritoneum, and the wound in the abdominal wall tightly closed. The results are on the whole encouraging. Surgical interference, however, must be insisted on in the initial stages of this disease rather than when the patient is hopelessly infected.

RECURRING CASES.

The following cases of appendicitis, in which the appendix was removed during the period of abeyance, present one or two conditions hard to explain, and give rise to doubts, first, as to the probable dependence of the symptoms upon the lesion found, and, secondly, as to the advisability of surgical interference.

I. Removal of thickened and adherent appendix in period of abeyance; rapid recovery; subsequent attack like those previous to operation. (Specimen.)

William T. G., aged twenty-four. I saw this young man on January 30, 1893, at Dr. Hildreth's house in Cambridge. I give in detail the history of this attack, in order to make a comparison with that occurring in December following removal of the appendix.

"Monday, January 30th. Yesterday he felt faint in church. In the afternoon he stayed at home on the lounge, and in the evening came to Cambridge. Was pretty sick in his room that night, suffering from pain through his stomach and bowels. This morning he has vomited. He had a pulse of 90, and a temperature of 99.3°. During the night he vomited two or three times, but did not seem to get much relief from it. The abdomen was flat. The pain was exactly in the region of the appendix, where there was a good deal of tenderness, but no tumor. He has had pain in the region of the appendix before, while playing tennis, but never so severe.

"*Physical Examination.* — Temperature 99.2°, pulse 80. Tenderness over the appendix, without dulness. Rectal examination negative. No operation advised.

"February 7th, Dr. Hildreth wrote that soon after my visit a small bunch appeared in the region of the appendix, which gradually subsided. He has been on the whole in very good condition ever since.

"October 18, 1893, Mr. G. said: 'I have had considerable pain since. In June I had an attack which laid me up two weeks. There was not much fever.' October 20th, he said: 'I am very well now, though at times I have a little pain. Since the attack in January I have had in all about five weeks' disability.'"

Operation at the Massachusetts General Hospital, October, 1893. A small incision was made parallel with the fibres of the external oblique muscle, beginning in the right linea semilunaris over the usual seat of the appendix. The cœcum and the parts about the appendix were much congested. The enlarged and thickened appendix was cut off close to the cœcum. The stump was covered in by peritoneum with interrupted silk stitches. A rapid convalescence followed. He was kept on his back four weeks, to allow the scar tissue to get perfectly firm.

On Tuesday, December 18th, I made an examination. He said that on the preceding Thursday morning he had had the same dull pain in the stomach as before, which grew worse and worse. At first he thought he could bear the pain; but it became so severe that he finally went to the doctor, who sent him to bed. The pain lasted till Friday morning, when it left him quite weak. He did not eat anything until Saturday, for he had no appetite. At first the tenderness was general, but afterwards it seemed to be in the same spot as before. It pained him to lie on that side, or to make any motion from one side to the other. The scar was firm, and there was no tendency to hernia. There was no local tenderness.

When the appendix was removed at the hospital, in October, it was very much thickened. Its peritoneal covering was brilliantly injected, and everywhere attached by old adhesions filled with blood-vessels. The mucous surface was dark, rough and reduplicated. The cavity was filled with thin, muddy fluid of dark color. There was no concretion found.

The attack following the operation differed in no respect from those which preceded it. Had the appendix presented normal, or even substantially normal, features, it might be said that there had been an error in diagnosis, and that the attacks were dependent upon other conditions.

Had enough of the organ been left, we might ascribe the late attack to an appendicular colic or a very limited inflammation; but the silk was applied close to the cœcum. The symptoms, therefore, demand some other explanation. The most reasonable one is that the cœcum shared in the appendicular inflammation, and had not recovered its normal condition. On the other hand, the trouble may have been an acute indigestion similar to the previous attack, but of entirely different origin. The pathological condition found exceeds, in the apparent variation from the normal, all lesions I have been able to observe in this class of cases. As far as one can judge, this appendix invited disaster both by the character of its contents, and by its evident condition of chronic inflammation.

The two following cases are reported not only for their intrinsic interest, but because the condition of the appendices found does not seem sufficient to account for the symptoms for which they were removed.

II. Appendicitis; abscess; drainage; recovery; ten months later an attack like the former, without abscess; removal of appendix which had become almost entirely obliterated; recovery. (Specimen.)

Andrew M. B., aged thirty-eight, shoe-fitter, of Lynn. Drs. Marshall and Lovejoy. Sunday, February 19, 1893.

"I am subject to constipation. When first taken I felt as if some one had hit me in the stomach. After that I had terrible pain. This was a week ago last Tuesday. I vomited several times and have vomited since." There was a rise of temperature for two or three days after the first symptom, the highest being 102°. He had no physician at first and treated himself for colic. He seemed to be doing well. About a year ago he had had a similar attack, which was a very slight one, comparatively. On examination I found a very large tumor in the lower part of the abdomen. The general condition was good. There were no urgent symptoms. Drs. Marshall, Lovejoy, Colman, Little and Harmon were present at the operation. A large incision was made over that part of the tumor presenting in the right iliac fossa. About four ounces of pus of fæcal odor were evacuated through the first incision. The adhesions toward the left were separated with difficulty, and much pus was evacuated from that side. The appendix could be seen in the depths of the wound, large, thick and gangrenous, but so intimately adherent to the surrounding parts that it seemed inadvisable to make any very prolonged efforts for its release. The wound was drained by means of rubber tubes, one deep in the pelvis and another towards the bladder. The whole was packed loosely with sterile gauze.

About two weeks after this there was a discharge of a pint of pus from the wound. The temperature dropped at once to normal. Later it went up to 103°, where it stayed for a week. Nothing could be felt in the abdomen except impacted fæces.

He recovered entirely, and remained well until November, 1893. On November 21st, he came to me and said that "three weeks before he had had a sick spell, coming on like the previous attacks." He had pain in the pit of the stomach; "not a real sharp pain, but a dull sort of pain." With this attack he had a very little fever. In other respects he was well. The pain seemed to go down from the epigastrium to the right iliac fossa, as it did in the attack in February. In answer to the question "How did the last attack begin?" he said: "Well, it is hard to explain. It began with this dull, soft pain in my stomach [indicating the epigastrium.] It kept going down, so that it was a real sharp pain — a stoppage-like pain. Then the trouble would go down to where I was cut. With the last attack there was no vomiting. When I was taken I felt sort of squeamish. It seemed as though I ought to vomit. I have had no other attack since the operation, except that I felt a pain or soreness in my side."

I found a hernia in the scar. There were no other symptoms. I advised first an operation on the hernia, and then, should there be reason for it, an excision of the appendix.

On cutting into the abdomen I found the parts about the cœcum glued together by adhesions, which were easily dissected. The remains of the appendix were found adherent to the outer and lower border of the cœcum. The tip was separated from the base of the appendix by an interval of an inch and a half made up of connective-tissue. I dissected off the tip of the appendix, and cut the stump close to the cœcum. The abdominal wound was closed immediately by interrupted sutures. A very gratifying convalescence followed. He was sent home at the end of three weeks.

III. Recurring appendicitis; removal of remains of extra-peritoneal and adherent appendix. (Specimen.

Joseph H. M., aged twenty-nine, Washington, D. C., January 1, 1894. This patient has always been in good health up to the time of the present illness. About four years ago he had an attack of indigestion, as the physician in New York thought. There was severe pain through the lower part of the abdomen (indicating a spot a little to the right of the median line, between the umbilicus and the pubes.) This pain lasted about a week, accompanied by slight fever. The pain was intense, followed by vomiting. He recovered from this very well. He was not conscious of a bunch in the side at any time. The next attack was about a year after that, and resembled closely the first. The pain was in the same place, was very acute, and lasted about the same length of time. The next one was six months after the second, and was very similar. About six months ago he was taken, after getting tired, with what was again supposed to be indigestion. This was accompanied by pain in the same place. The muscles over this part of the abdomen were rigid and hard. "I was all drawn up, and it was about a week before I could stand up straight. The whole effect of this attack lasted about three weeks." About the middle of November he had another attack, with which there was some fever. The physician discovered a swelling in the right side at that time. "I have lost about three weeks in the last year. Between the attacks I have a great deal of soreness in the same spot."

I found the patient rather pale and spare. In the right iliac fossa there was a tumor about the size of the finger, hard, somewhat irregular, and only slightly movable. This tumor was situated apparently at the outer border of the cœcum, and behind. Its irregularity and hardness suggested malignant disease. The diagnosis of appendicitis was made, and an operation was advised. This operation was performed on January 3, 1894. The parts about the cœcum were extensively infiltrated by an inflammatory mass, in the centre of which the remains of the appendix were found. This mass lined the right iliac fossa and extended under the caput cœci to the brim of the pelvis. The adhesions could be separated only with the knife. The rounded end of the appendix was adherent to the cœcum, its outer border about at a level with the anterior superior spine of the ileum ; the base of the appendix was in its usual position at the brim ; between the two there was nothing but cicatricial tissue ; the whole intervening portion had been obliterated. I removed the tip and the stump of the appendix close to the cœcum. Its lumen was so large that it seemed best not to close the wound at once. The patient has made, thus far (January 17th), very satisfactory progress, and will undoubtedly recover.

The appendices removed in the two last cases show, as you will see, very similar gross appearances. The chief difference is in the size of the remaining fragments. In both, the central portion has disappeared, and its place has been taken by connective-tissue. In each instance the tip is smooth, rounded, and firm. The peritoneum is injected. Internally the mucous surface is velvety and reduplicated. The closed cavity of the tip contained a thin fluid. In Case III no cultures could be obtained on agar-agar.

In Case II ten months have elapsed since the first operation. The micro-organisms have been imprisoned in the cavity of the tip long enough to deprive them of their virulence and activity, though this is not a fact resting upon any bacteriological investigations of the case. The wound was closed immediately in Case II because the appendix was opened only at the base, and extravasation was prevented by covering the stump with peritoneum.

In Case III the opening was so large in the appendix, and the chances of contamination so great, that I packed the parts with gauze and left the wound partly open. The harmlessness of the contents, as shown by sterility of the cultures, proves that this precaution was unnecessary. Drainage is all the more to be regretted because of the increased liability to hernia.

Case II is interesting also because of the trivial remains found after one of the most extensive abscesses in my whole experience. Nothing could be found except a slight induration behind the cœcum, and the contiguous cicatricial tissue in which the appendix was found embedded.

In Case III, on the other hand, in which there was either absorption of the abscess or rupture into the bowel, there was an extensive induration which involved the whole right iliac fossa.

Whether these operations, viewed solely in the light of the condition found, were justified or not may be a matter of opinion. The appendices can certainly do no harm now. From all the evidence to be obtained beforehand, the operative interference was well justified. Indeed, if we remove every appendix which is probably or even possibly diseased, we shall save many lives and prevent much suffering, even if we occasionally perform an unnecessary, though safe, operation.

◆

TWO CASES OF CHANCRE OF THE EYELID, WITH AN ACCOUNT OF THE MANNER OF INFECTION.[1]

BY MYLES STANDISH, M.D.,

Ophthalmic Surgeon, Massachusetts Charitable Eye and Ear Infirmary; Ophthalmic Surgeon, Carney Hospital; Assistant in Ophthalmology, Harvard Medical School.

Cases of chancre of the eyelid are not unknown. There are some thirty cases in medical literature ; but there is every probability that the very rarity of the affection has caused other cases to be overlooked in the haste of large ophthalmic clinics, as the infection, in a large proportion of cases, takes place at the margin of the lower canaliculus, and the amount of swelling which accompanies the lesion is very great, so that as a result the gross appearances counterfeit an ordinary lachrymal abscess so exactly as to easily lead to a mistaken diagnosis.

The two cases I am about to report are of interest from the fact that in each the manner of infection of an innocent person was distinctly traced, and are therefore, of importance from a prophylactic point of view.

The first case was brought to the out-patient department of the Carney Hospital by Dr. F. W. Stuart, with the following history :

H. K , a man thirty-one years of age, married, had first noticed a swelling at the inner angle of the lower lid of the right eye ten days before, attributed by him to a poisoning of the lid from a splash of green paint which he had received in the right eye a day or two before the swelling was discovered. The gross appearance much resembled an active lachrymal abscess. There was a rather large, rounded swelling at the inner angle of the lower lid, red and slightly painful when touched. Upon examination there was discovered in the centre of the tumor a round infiltration, hard and surrounding the opening of the lower canaliculus; no abrasion of the skin or conjunctiva was discovered, but such a condition might have been easily overlooked as the amount of swelling was so great that the lid could not be everted in order to get a good view of the opening into the canaliculus. The patient had always been well and robust, and there was absolutely no venereal history. There was a history of considerable pain locally the past week. There was one small pre-auricular gland to be felt.

---

[1] Read before the Boston Society for Medical Improvement, January 8, 1894.

The patient was admitted to the hospital; and in the course of four or five days not only the pre-auricular glands swelled rapidly but the sub-maxillary glands on the right side became very rapidly enlarged so that in the course of five days there were three glands below the angle of the jaw as large as hen's eggs.

It is but fair to state that during this period he developed a pharyngitis and tonsillitis with a high temperature, and was so ill that he kept his bed.

As soon as the fever subsided, the patient becoming dissatisfied, left the hospital and returned to his home, and came again under the care of Dr. Stuart. Both in the hospital and immediately upon his return home, active mercurial treatment was maintained. The swollen glands diminished in size without suppuration.

The patient was next seen by me a little over two months later, when he came again for treatment. He then had an active syphilitic iritis in the right eye, the same eye upon the lid of which the initial lesion was situated. The pupil was small and its margin attached to the capsule of the lens throughout almost its entire circumference. Under the active use of atropine and hot fomentations, however, the synechiæ were all pulled off, and I again lost sight of the patient; but Dr. Stuart informs me that subsequent to the iritis he had a characteristic secondary eruption appear.

Dr. Stuart was much interested in the case, and undertook an investigation as to the manner in which the original infection was acquired; and by his kind permission I am enabled to report his results.

The patient was, as I have said, a married man and lived with his wife in a small house in South Boston; the only other member of the household was a male boarder. Upon investigation this boarder was found to be suffering at the time of the original infection from a secondary syphilitic eruption. The two men occupied different rooms, and only used one article in common, namely, a roller-towel over the sink in the kitchen. It was their habit upon coming in from their work at noon and night to go to this sink, turn on the water at the faucet and wash their hands and faces in the running water, and then to use the before-mentioned roller-towel to dry their hands and faces. There is no doubt but the disease was transferred from one man to the other by the means of this towel.

The subsequent history of this family is also interesting.

The patient was warned repeatedly, both by Dr. Stuart and myself, as to the danger of infecting his wife; nevertheless, during the secondary stage he did infect his wife. The initial lesion was upon the vulva. At the time of the infection the wife was four-and-a-half months pregnant, and subsequently, at full term, she gave birth to a syphilitic child, which died a few weeks after birth.

The second case which I have to report came also to the out-patient department of the Carney Hospital about four months before Dr. Stuart brought his case there. He was a man twenty-five years of age, unmarried, and a brakeman upon a freight-train on a railroad leading out of Boston. He reported that about two weeks before — he could not fix the exact date — he had gotten a hot cinder in his eye, since which time it had given him more or less trouble. Upon examination, the lower lid was seen to be considerably swollen and reddened; and when the lid was everted, an ulcer, a centimetre long and about half as broad, was found in the conjunctiva of the lower conjunctival sac. This ulcer had sharp edges, a grayish, dirty-looking base, covered with a somewhat viscid, yellowish discharge. The base of the ulcer could be felt through the lower lid to be a dense, firm induration. The pre-auricular glands were found to be hard and about the size of cherry-stones.

A diagnosis of an initial syphilitic lesion was made, and he was given an ointment of the red iodide to put into the eye; and a pill of hydrarg.-protiodid. (gr. $\frac{1}{4}$, t. i. d.) was prescribed. The appearance of the ulcer was such, however, that I did not feel absolutely sure but what it might be tubercular.

The patient was well and strong, and there was no tubercular or syphilitic history to be obtained. Dr. J. J. Thomas was kind enough to make an examination of the material obtained from the base of the ulcer, for tubercle bacilli. None were found. A week later I removed a portion of the tissue itself from the margin of the ulcer. Dr. Thomas examined this also, and reported that after a very careful search he was satisfied that there were no tubercle bacilli in the specimen.

In the course of a week's time from the first visit, the pre-auricular glands became much enlarged, and soft to the touch. Having satisfied myself that the diagnosis was correct, I questioned the man to see if I could determine the source of the infection. I found that our patient was a brakeman upon a local freight-train, the crew of which consisted of two other men and himself; that they occupied more or less a small car carried on every freight-train for the convenience of the crew, called a "caboose"; that in this they changed their clothes and washed up when they were through their work; but that they did not sleep in the car. Upon inquiry, I ascertained that the other brakeman on the train had had of late some kind of an eruption upon his face, which from the described appearance, duration and an acknowledged history of a recent initial lesion was in all probability an eruption of secondary syphilis. All the men upon the train used the same towel upon "washing up" when their work was over.

The patient was a very unreasonable man, hard to manage; and when my diagnosis was finally told him, took offence and ceased to attend the clinic.

I saw him, however, quite by accident, several months after he ceased to come to the hospital; and there was no doubt in my mind but what he then had an eruption of secondary syphilis.

The method of infection in these two cases is, to my mind, of great interest. It is evident that in roughly drying the face the delicate conjunctival surface at the edge of the lids could be easily abraded, as no matter how carelessly a towel is used, every one is sure to dry about the eyes when the face is dripping wet, to prevent water entering the eyes upon opening them.

It seems to me to follow, as corollary, that, if a chancre of the lid can be acquired in this manner, that a chancre of the lips or edge of the nostril could be acquired in the same manner. The moral is evident: A public towel is an abomination, and should be abolished from all workshops, railroad toilet-rooms, and other public places.

◆

ON SPERMATORRHŒA AND INCIPIENT HYPERTROPHY OF THE PROSTATE, AND A PROPOSED METHOD FOR ITS TREATMENT.

BY RICH. HOGNER, M.D., BOSTON.

A LONG time is always necessary to collect facts; and as it is better, moreover, that they be collected from widely-spread sources, I have not hesitated to communicate the few cases noted below (interesting in themselves, but still more through the great groups of diseases to which they belong), in the hope that more attention may be drawn to prostatitis, especially to that form I have found in spermatorrhœa, and to incipient hypertrophy of the prostate.

During the past summer six or seven youths, between the ages of nineteen to twenty-eight years, came at very nearly the same time under treatment for spermatorrhœa, — *post masturbationem.* All had been previously treated by the "usual methods," but without improvement. The "usual methods" were persued also by me with physical and psychical improvement in view, besides exercises in the open air, bathing, encouragement, sedatives, cold-water spinal douche, etc.; moreover, *sond à demeure;* but all in vain.

The cases were in many respects alike but also in some points very unlike.

Concerning the usual symptoms it may be mentioned that the frequency of the ejaculations varied between two or three and ten or twelve a week. The conditions of the prostate were the most interesting part in these cases. Its amount varied considerably, from being increased so that the apex could not be approached with the finger, to being rather diminished so that it was palpable everywhere with a very slight movement of the finger; and the consistency was in the former case more or less fleshy (sometimes giving the impression of swelling around a firmer part); in the latter, more hard, without any swelling at all. The former groups (four or five cases) belonged, as to duration and symptoms, to the milder ones; the latter to those of longer continuation and severity, where the ejaculation often occurred without feeling. In all the cases the prostate was found to have an increased sensitiveness or pain to the touch, either over the whole organ or over a portion of the same, in one case apparently only in the region where the lateral lobes begin to diverge, a pain which I have not yet found in uncomplicated cases of masturbation. The symptoms suggested chronic prostatitis in different stages, occupying most frequently the whole organ, and — with regard to the frequent ejaculations — in my opinion, especially the muscular elements. And why would this not be so? The prostate, an organ both muscular for ejaculations and follicular for secretions, becomes during the spermatorrhœa more strained than under normal conditions. In spite of spermatorrhœa, the "patients" often continue with masturbation; and the prostate muscles, moreover, appear to remain (if I may use the expression) in a kind of "half-primed" state, or one of "constant expectation," and to be in a sickly, irritable condition, with the result that sometimes only the least influence is necessary to produce ejaculation. A hypertrophic gland is in a hyperæmic semi-inflammatory condition; and a muscle which is unnaturally strained often becomes the seat of inflammation. In the spermatorrhœas are found, therefore, the possibility for both a folliculitis and a myositis of the prostate, *per continuitatem* affecting each other. The discharge from prostatic follicles forms a part of the sperma just as certainly as the secretion from the vesiculi seminales; then why should not a follicular prostatitis be primary as well as a spermato-cystitis?[1] The prostate gland has surely a double function (secretive and ejaculatory), while, on the contrary, the vesiculi seminales have chiefly only one (secretive); therefore the prostate becomes strained proportionately in double measure during spermatorrhœa, while the vesiculi seminales are so only in one function. Therefore, it seems to me, that the prostate can be primarily diseased as well as the vesicles.

In his treatise Dr. J. Lloyd says[2]: "In the majority of cases where prostatitis is thought to complicate a urethritis it is the seminal vesicles which are the seat of the inflammation, and not the prostate at all."

When Dr. Lloyd thinks that the urethritis spreads through the ejaculatory ducts, why should it not be carried through the fifteen to twenty excretive follicular ducts which empty below on *pars prostatica urethræ?* I will not speak further on this subject, but maintain that with spermatorrhœa (which is here especially treated of) the prostate gland is just as directly affected as the other genital organs.

The intention is not to draw general conclusions from a few cases; the attempt has been rather to express my impressions and reasons why the prostate began to be treated with massage as in other cases of myositis; while nerve-pressure[3] was given at the same time, and in some cases, moreover, gymnastic movements so applied as to lead the blood from the pelvic viscera.

Massage was given once or twice daily per rectum (while the patient was recumbent with elevated pelvis, at the same time placing his fists under the buttocks), partly while the sound (solid No. 10) lay within, partly after it was withdrawn, and continued as long as possible, that is, only a few minutes, as long as the physician can endure it. As a conductor during the massage the sound is of great value, because it makes the prostate more approachable and steady; moreover, it causes the massage to be so much more effective by reason of the double pressure, which is given by the finger per rectum and the instrument per urethram, a pressure which becomes more local than that between the finger and ramus pubis, against which the organ otherwise is resting when the sound is removed.

---

[1] On Spermato-Cystitis (inflammation of the seminal vesicles). By Jordan Lloyd, M.D., F.R.C.S. Lancet, October 31, 1891, pp. 97, 974, etc.

[2] Loc. cit., pp. 975, 976.

[3] With "nerve-pressure" is meant, a local pressure on a nerve (trunk, branch or plexus), given in such a way that the nerve is pressed for some seconds firmly between the tip of the finger and a more or less deep-lying bone, while at the same time the hand is made to tremble so that under the pressure of the finger the vibration is transferred to the nerve. The movement is intended to create a molecular irritation or change by means of which one seeks to transform the abnormal condition — as far as it can depend on a centro-spinal change — to a normal one.

The cases treated became so much better after two to three weeks that the subjects considered themselves well. The severest was an upholsterer, twenty-eight years old, who had tried "all kinds of remedies" for five or six years, but without success. The patient had a spermatorrhœa appearing each or every second night, and sometimes as many as three times in eight hours. The powers of body and mind were depressed; but the patient was able, however, to continue his work. The prostate was not swollen, but rather small and hard; but what impressed one most was its excessive tenderness, equally spread over the whole organ. Massage and nerve-pressure were employed once daily; also a promenade three-quarters of an hour long before and after each treatment. After two weeks the treatment was discontinued, because one ejaculation a week seemed to the patient to be "nothing." The general health had improved considerably. The tenderness in prostate had disappeared.

In comparison with these cases was one with incipient hypertrophy of the prostate, a man thirty-three years old, who had been married five years, who sought a consultation ostensibly for the reason that for two years past "it had dropped so long" after urination. No stone; no stricture. The urine was clear, passed perhaps more frequently than formerly. The bladder discharged its contents wholly; and still there was a desire soon after to urinate again, so that the patient did not feel comfortable before he had passed some drops more. The prostate gland, of exceedingly fleshy consistency, was considerably enlarged as a whole. The apex of the right lobe was especially difficult of approach by the finger. The lateral lobes felt knurly, especially the right one, in the upper part of which, moreover, a stringy mass of lobes was felt proceeding from the lower inner part to the upper forward part, and gave the impression of enlarged, perhaps somewhat dislocated vesiculi seminales; which mass of lobes as well as the prostate as a whole was noticeably tender to the touch. It took a long time to introduce the catheter; also it had to be inserted deeper than usual, and the posterior part of the urethra was excessively tender, bleeding easily. Gonorrhœa had never existed; neither spermatorrhœa; but the man had, nevertheless, masturbated.

Among formerly employed methods was used — but without success — electrolysis. The treatment now was with massage alone, with and without the sound, on the prostate gland twice daily (except Sundays).

After two months' time the patient's "dropping" disappeared, so that it was "nothing to speak of," and the prostate became diminished so much that it could almost be considered normal, was rather hard and not swelled at all. The knurly character of the left lobe had disappeared, and only a suspicion of unevenness remained in the right lobe. The stringy mass already mentioned had disappeared, and instead somewhat enlarged ordinary vesicles were felt above the right lobe of the prostate. The tenderness had also disappeared.

That especial importance was attached to making the sound, orificium urethræ and the fingers aseptic, scarcely need be mentioned.

Several years ago I had already tried to treat the diseases mentioned, with the use of the sound (then without massage), but no particular success was met. The signal success resulting from last summer's experience may, therefore, be ascribed alone to the massage.

As stated, the changes of the prostate, in the cases of spermatorrhœa examined, have been regarded as a prostatitis and treated as such; and also the condition in the case of incipient hypertrophy of the prostate referred to, in which the prolonged dropping (a symptom common, moreover, to the senile prostatic hypertrophy), seems to me to indicate that the changes in the prostate even spread to the musculi detrusor and sphincter vesicæ, both of which connect with the prostate muscles.

Therefore the case can rightly be considered as hypertrophia prostatæ *præ senilis* or incipiens, which was arrested by massage.

But if, instead, the prostatitis had continued, it is probable that the prostate would have become in time harder, and fibrously hypertrophied, that the urinary troubles would have increased, and that the subject would finally have had a regular hypertrophia prostatæ senilis.

The spermatorrhœa with its abnormally exaggerated secretion and ejaculation (probably from the beginning tropho-neurotic and neurotic, but afterwards just as much musculo-glandular in its pathogenesis), it seems to me that a serious circulus vitiosus is established; a nervous irritation has increased the secretion, and this, in turn, the ejaculations, that is, caused the muscular strata to be unnaturally primed or active, which has an influence on the innervation of the prostate, this on the secretion in the follicles and in the remaining genital organs, etc. To this is now added, moreover, the mental depression and the great loss of the specific "vital energy" of the sperma, which in turn also contributes to the diseased condition. Massage was destined in this case to break a link in such a chain.

If prostatitis has been found in spermatorrhœa, then one must imagine the stages preceding, developed by degrees through the masturbation, that is, stages of irritation which finally (through accidental injuries, taking cold, a hurt, etc., or most commonly through continued straining) merge into a regular inflammation. The condition can be the same after exaggerated, natural ejaculations and even so in the irritated condition of the prostate following gonorrhœa. In short, several causes, especially sexual ones, seem to be found, which very early call forth a condition of irritation in the prostate, which from one reason or another is easily transformed into prostatitis muscularis, which, moreover, as in other cases of myitis, etc., untreated, continue through life and increase by degrees; and herein, I consider lie, in great measure, the causes of the frequently occurring "hypertrophia prostatæ senilis," so much the more, as we can easily imagine here a new "circulus vitiosus." When the prostate has grown to a certain degree, it causes a hindrance to the passage of urine. The walls of the bladder become hypertrophied through a process in all respects like a myitis of exceedingly long duration. The affection of the muscles of the enlarged bladder extends also to the prostate muscles (these muscles being so closely connected), and so the hypertrophy of the prostate increases, also the difficulties of urination. That such a long-continued muscular prostatitis is transformed into hypertrophy and not into atrophy certainly depends on the great quantity of blood, physiologically located in the genital region.

W. White says[4] that one must, from the theories concerning prostate hypertrophies, provisionally accept that of Velpeau (Thompson): "The growth or growths, which make up the enlargement in prostatic hypertrophy are analogous to those fibro-myomata so frequently found in the uterus." It seems to me, rather, they are analogous to metritis hypertrophicans. Either may be the case. But just as the fibro-myomata certainly have been preceded by an irritation, just as the metritis (partialis or universalis) which are treated with massage with the greatest success according to Thure Brandt's method, just so surely have we even seen an incipient hypertrophy or a prostatitis removed by massage. As metritis often depends on something connected with the sexual life (such as, for example, after colds or hurts, especially during, or immediately preceding or following menstruation, after partus, after infectious coitus, etc.), we have here also a similarity between the probable stages of both fibro-myomata or at least of metritis hypertrophicans and the hypertrophia prostatæ senilis; the latter of which, for reasons mentioned, seems to stand in relation to the sexual life, an assumption which is further strengthened by the fact, that a bilateral castration diminishes the senile prostatic hypertrophy.

When White asks, "In what cases is a purely expectant treatment proper?" he answers, "Only in those in which enlargement has produced no symptoms, and catheterism is easy and shows no residual urine." I will answer, on the contrary, that every enlargement, every tenderness of the prostate should be treated, in the attempt to prevent hypertrophy, which the surgeon can so beautifully operate upon, but with uncertainty of cure.

It is unfortunately true that one seldom finds a person willing to be treated — at least for any length of time — for a sickness which has not appeared; but I believe, if my comprehension of the beginning of "old men's troubles" is the right one, both that it is the duty of the physician to warn the young or middle-aged man (who, moreover, has already noticed, perhaps, the dropping and prolonged urination) of what can follow if he lives; and that there will be many who would gladly undergo preventive treatment. If we find, even accidentally, during the examination, the prostate *in stadio irritationis* or in *statu myitico*, then the time has come to attempt a treatment.

At present I know no better treatment than massage; but if science finds a less laborious one, so much the better.

It is assumed that hypertrophia prostatæ senilis must have its curable stages. May attention be called to this, and testimony from many directions throw light on all sides of this important subject!

A French Case of Illegal Practice. — A curious case of illegal practice is reported from the small town of Sarrao in France. A woman dying in advanced pregnancy, the priest, who was present during her last moments, persuaded a person who was at her deathbed to perform Cæsarean section, in order that he might baptize the child. The authorities, considering this practice to be illegal, proceeded against the operator, who was proved guilty of practising medicine without a qualification, and was fined three dollars.

Medical Progress.

REPORT ON DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON.

NEW REMEDIES IN DERMATOLOGY.

We quote from a careful *résumé* of this subject by Dr. A. Strauss,[1] some of the more important items.

Europhen-Bayer. — Gottheil, of New York, saw the best results from the use of this drug in ointment form, in tertiary syphilitic ulcerations. Three cases were quickly healed, one was much improved. Brilliant results were also obtained in tinea versicolor, and in tinea circinata. No effect was produced on acne and folliculitis. Pruritus senilis, alopecia areata, and keratosis pilaris were improved, but no more than by other methods. It proved of value in cases of chronic eczema, of none in acute. Six out of seven cases of psoriasis showed as good results as after treatment by chrysarobin. The remedy was chiefly used in the form of a ten-per-cent. ointment, which proved unirritating and innocuous. An Italian observer has noted better results in venereal ulcers from europhen in powder than from iodoform, while he was less successful in syphilitic gummata. The absence of odor is emphasized, in comparison with iodoform.

Amylum Iodatum. — This has been recommended as an application in place of iodine, in the following ointment:

℞	Amyli iodati.	3.0	
	Lanolin.	30.0	
	Ol. Calami	gtts. iii	M.

Resorcinol. — An amorphous, brown powder, smelling of iodine, compounded of resorcin and iodoform. Dr. Bielajew saw good results from this powder in chancres, ulcers of the legs, scabies, psoriasis, eczema, lichen, and in badly healing wounds. It has a very favorable action on pruritus, but must be used in its purity only in gangrenous, or very torpid ulcers.

℞	Resorcinol.	5.0	
	Talci ven.	20.0	M.

Hydrargyrum Resorcino Aceticum. — A dark-yellow, crystalline powder, insoluble in water and mineral oils. It was used by Ulmann in the form of injections for syphilis, and was found to correspond in local reaction with gray oil and thymol-mercury.

℞	Hydrarg. resorcino-acetici	5.6
	Paraffin. liquid	5.5
	Lanolin anhydr.	2.0

(1 ccm. contains 0,387 of the metal.)

THE TREATMENT OF ACNE.

Jamieson,[2] in an article on the subject of acne, asserts that in treatment local measures are of the first importance, while constitutional regulations are necessary as an adjuvant. The increased secretion of the sebaceous glands must be combated by forcing out the hardened sebum by a watch-key or comedo extractor, taking care, however, to use no force. Afterward douching, spraying or bathing in very hot water is effective. The soap selected should be a neutral or superfatted one, preferably one in which the alkali is potash rather than soda. A superfatted soap with sulphur, or Eichhoff's resorcin and salicylic soap may be cautiously used. The auto-inoculability of the acne pustules may be combated by touching the beginning papules with a solution of ichthyol in water, one part to four, or when pustules have appeared, by painting each with pure carbolic acid, and afterward coating with flexible collodion. [The latter procedure should be used sparingly and with great caution. — Rep.] When the pustules are large and inflamed they may be covered with Unna's mercury and carbolic acid gutta-percha-plaster-muslin, as has been recommended by Malcolm Morris in the case of boils. Lotions are more efficient than ointments. Sulphur is of great value, both for its action in exfoliating the outer layers of epidermis, and in antagonizing the growth of the pus micro-organisms. Precipitated sulphur with spirits of camphor, glycerine and lime-water may be employed, or when irritative effects are feared, the sulphur may be combined simply with calamine lotion. It is usually best to apply the sulphur lotion at night, washing it off with tepid water in the morning, and then dusting the face with a bland powder, as

---

[4] The Present Position of the Surgery of the Hypertrophied Prostate. By J. William White, M.D., Annals of Surgery, August, 1893, p. 156, etc.

[1] Monatsheft. für prakt. Dermatol., Bd. xvi, No. 10.

[2] British Journal of Dermatology, January, 1894.

℞	Acid. borac.	10.0	
	Zinc. oxid.	10.0	
	Talci	80.0	M.
	Boli Armeniæ, q. s.		
	Fiat pulvis colorata.		

For the ordinary case of acne rosacea the sulphur and calamine lotion is advisable. The dilated vessels may be destroyed by the scarifier or by electrolysis with a fine needle. When the pustules are very deep, they may be opened with a fine knife; and when large and obstinate, Unna's salicylic and creosote plaster as used in lupus, is effective. The best are those of the proportion of fifteen to thirty, or twenty to forty. The plaster is cut into strips and accurately applied to the whole area affected. It should be kept in place by a muslin bandage or by a cotton mask. The plasters are removed twice a day, the parts washed with superfatted potash soap and warm water, and then fresh plaster applied. This is kept up until the face is too tender for further application, or until the pustules have flattened down. The raw surface is then covered with Unna's zinc-ichthyol-salve-muslin. Afterward the treatment with lotion and dusting powder may be followed with effect.

Another method, which is hardly so satisfactory is the use of a strong resorcin paste, to exfoliate the epidermis.

℞	Resorcin. alb.	40.0	
	Zinc. oxid.	20.0	
	Kaolin.	2.0	
	Adipis	28.0	M.

It is rubbed on lightly twice a day, without the use of water, and occasions some inflammation and pain. When the latter effect has been produced, a simple powder should be substituted until the desquamation has ceased, when the sulphur lotions may be employed.

Internal treatment consists in combating all errors that can be discovered. A wineglassful of Hunyadi Janos water in a tumbler of hot water taken on rising is an effective aperient, and iron, alone or in combination with sulphate of magnesia, is often indicated. Ichthyol is recommended in capsules containing from three to five minims twice a day.

Diet is to be carefully regulated. Water is to be taken freely midway between meals. Hot liquids and spiced dishes are to be avoided in acne rosacea or when there is a tendency to flush; as well as exposure to heat from the sun, or to the snow or sea. A cold sponge-bath in the morning, with the addition of salt to the water, is a stimulant to the cutaneous muscles. Riding is especially extolled as the best form of out-of-door exercise.

THE INFLUENCE OF SOLAR RAYS ON THE SKIN.

Bowles[8] considers from his observations on sunburn that the subject is of wider scope than might be supposed, and one that must claim the attention, not only of dermatologists, but of physicians, surgeons, physiologists and physicists. A previous paper by the same writer was published in the *Alpine Journal* in November, 1888.

It is admitted that the sun on snow burns more quickly than on rocks or in valleys, although the heat may be felt more in the latter situations. Veils, masks and snow-glasses are only adopted when the snow is reached. This seems singular, in consideration of the fact that the heat rays must be occupied in melting the snow and thus rendered latent. Glass and iron workers do not become burnt, although subjected to an intense heat; and it is maintained that the radiation from heated rocks and valleys causes a far greater heat than can be present on the snow — and yet one is not sunburnt. Hence there must be some other factor in sunburn than heat alone. Tyndall declared that he was never more burnt on the snows of the Alps than he was while experimenting with the electric light at the North Foreland lighthouse.

Instances are enumerated where several people have been sunburnt on the same day (when the heat was not excessive) who had never been burnt before; and these experiences raise the suggestion that the sun's rays are at times acted upon by atmospheric, electrical or other causes in such a way as to make their effect similar to that produced when the rays are reflected from snow. Sunlight reflected from freshly fallen snow has a greater burning force than that reflected from older snow. The writer has made numerous experiments in the Alps that show that when the face is painted there is no burning, and that on snow where one burns most, the temperature is lower than that on rocks and in heated valleys. The experience of an English officer in India, who had shown great susceptibility to the effects of the sun's rays is related. He had noticed that exposure to heat rays emanating from a source of low chemical activity, was never injurious in its effects, while men working with powerful arc electrical lights, as search-lights, were constantly affected in the same way as from direct solar rays, although the radiant heat from the search-lights was comparatively mild. From this he concluded that sunstroke and sun-fever were not due so much to the heat of the sun as to the chemical power of the rays; and hence he argued that if he "treated himself as a sensitive plate, and enveloped his body in any color between yellow and ruby-red, he should protect himself to the same degree as the photographer protects his plate." Acting on this theory, he had all his clothes and hats lined with a cheap material of an orange color, with the result that he was able to bear intense heat much better than his comrades; while if the orange material were removed, the old susceptibility returned.

Rays reflected from the snow have an especial influence in producing pigment changes in the skin. This pigment, which is derived from the vessels, may be regarded as an effort on the part of nature to protect the nerves and vessels of the skin from further irritation. It is asserted that snails, slugs, lizards and other animals assume darker colors the nearer they are to the snow. The people who winter in Davos become much darker than do those who summer there, although the sun is much stronger than in winter. Another peculiarity is the brown color of the châlets of the higher Alps, while those in less elevated regions, which are not touched by rays reflected from snow, are scarcely, if at all, so affected. The writer has investigated this subject with care, and has found that those parts of the châlets so situated that no rays reflected from the snow could reach them, were of a dirty-white color.

---

[8] British Journal of Dermatology, August, 1893.

His conclusions are: (1) That heat of itself is not the cause of sunburn; (2) that there is strong evidence for believing that it is caused by the violet or ultra-violet rays of lights reflected from the snow, which reflected light is not necessarily of the same quality as that which is incident; (3) Captain Abney finds that the violet or ultra-violet rays are very strong at high altitudes, and believes that altitude has much to do with sunburn; (4) that altitude alone does not explain sunburn, for one may not be sunburnt on rocks, say at 10,000 feet, and yet be immediately affected on descending to a glacier 3,000 or 4,000 feet lower down; (5) that sunburn and snow-blindness arise from similar causes, and that sunstroke may be associated with them; (6) that rays from the electric light produce much the same effect as sun-rays reflected from snow; (7) that the bronzing of the skin and the browning of the wooden châlets are probably produced by rays reflected from snow.

The "summer eruptions" of Hutchinson [Bazin's hydroa vacciniforme — Rep.] — eczema solare, etc. — are briefly mentioned at the close as pathological conditions produced by the sun's rays, upon which the bearing of the foregoing observations must be determined by further study.

PATHOLOGICAL ANATOMY OF ERYTHEMA MULTIFORME AND PURPURA.

It has been repeatedly pointed out that erythema multiforme may occur symptomatically in the course of various infectious and inflammatory diseases, especially those of a suppurative character. Among these diseases the most prominent are cholera, typhus, septicæmia, uræmia, endocarditis, diphtheria, gonorrhœa and syphilis. Boeck has noted the appearance of erythema after angina, and abscesses of the tonsils. Finger himself has seen two instances: one of erythema maculatum et figuratum in a severe case of uræmia; the other of erythema annulare of the backs of the hands and forehead, in a case where an extensive ulcerated initial lesion was found in the rectum.

These erythemata may be interpreted in various ways. In the cases of uræmic erythema, we may suppose it a toxic erythema. If in the uræmic cases there is a suppurative process in the kidneys, or if, as in the case of abscess of the tonsils, there are deep-lying, local foci of suppuration, the explanation is twofold. It may be due to the absorption of toxines from the pus into the circulation; and in this case the erythema is a toxic one, belonging in the same class with the erythema ab ingestis, and the drug eruptions. But it may also be surmised that a part of the organisms that were the cause of the pus formation, find their way into the skin, and here exercise a local pathological action. In this case the erythema would be classed as an infectious erythema, caused by a metastasis of bacterial nature. These erythemata are frequently described, and some writers have inclined to the one view, some to the other. Streptococci have been found by Neumann in the urine, in a case of typhoid complicated with erythema maculatum; and in the abscesses of the skin by Laufer in a case of typhoid accompanied by severe erythema multiforme.

Two cases were examined anatomically by Finger. The first case had been diagnosticated as typhus fever, in that, three days before death a thickly-diffused papular erythema had appeared over the body, especially marked upon the backs of the hands and feet. The autopsy showed a disseminated diphtheritic process, beginning on the soft palate and pharynx, and extending down the œsophagus into the stomach. There was pericarditis, double pleurisy and metastatic foci in the kidneys and myocardium. From the latter, pure cultures of the streptococcus pyogenes were obtained.

Histological examination of the papules gave the usual meagre changes seen in an erythema. Bacteriologically, however, large numbers of cocci were found, solely in the vessels. The papillary blood-vessels were so densely packed with them that they gave the impression of injected capillaries. In the reticular layer they were found mostly in clumps, situated along the walls of the larger blood-vessels, and were to be seen also in the vessels about the sweat-glands and in those of the subcutaneous tissue. These cocci were arranged in chains and were constant in their appearance; and as the streptococcus pyogenes was cultivated from the metastases in the kidney and myocardium, it is fair to assume that they were the same species. Finger, therefore, considers that the papules of the erythema papulatum were directly produced by the streptococcus pyogenes, carried to the skin through the circulation. The affection may be described as a metastatic, bacterial dermatitis.

The second case revealed at the autopsy, fatty degeneration of the heart, slight atheroma of the aorta, slight enlargement of the spleen, subacute parenchymatous nephritis of both kidneys, together with numerous spots of purpura on the trunk and the extremities.

Microscopically there were found extravasations of red blood-globules in the papillary and reticular layers of the corium, and a remarkable number of polynuclear leucocytes. The latter were found to be especially numerous in the periphery of the hæmorrhagic foci. Small, round cocci, arranged singly or in pairs, were found scattered through the hæmorrhagic foci, and especially in their periphery. They were also found in numerous blood-vessels. The microscopic examination shows, therefore, that there was not simply a hæmorrhage, but also an inflammation, as proved by the presence of the numerous polynuclear leucocytes. These pus corpuscles point to a local inflammatory irritation, such as extravasated blood cannot cause, but which is doubtless produced by the cocci which are brought to the skin by the blood-vessels, and cause both the hæmorrhages and the inflammatory appearances.

These two cases, therefore, are proved by the microscopic and bacteriological examinations to be neither angio neurotic nor toxic erythemata, but metastatic bacterial dermatitides. It is not possible to predict the frequency of these forms, yet it is probable that

---

[4] Finger: Archiv. f. Derm. u. Syph., 1893, Heft v.

many cases of symptomatic erythema, especially those associated with suppurative processes, as tonsillary abscess, suppurative nephritis, pyelo-nephritis and cystitis, have the same etiology. The same may be said of the erythemata in severe typhoid, endocarditis and puerperal affections. The idiopathic erythemata probably have a different etiology. Pieces of skin from two cases of the latter (which had been in alcohol for a long time) were examined, with negative result. A negative result was also recorded in six cases of purpura, which had appeared in connection with endocarditis, pneumonia and diphtheria.

(*To be continued.*)

◆

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

J. T. BOWEN, M.D., SECRETARY.

Regular meeting, Monday, January 8, 1894, the President, **Dr. C. F. Folsom** in the chair.

Dr. G. W. Gay showed a case of

LIGATION OF BOTH COMMON CAROTID ARTERIES

in a healthy-looking man twenty-seven years of age. When he was seven years old, a small bunch was noticed upon the left side of his neck just above the collar-bone. It grew very slowly, till three years ago, since which time the size had markedly increased, until at the time of operation, it was as large as a small orange. The tumor had always pulsated; this was controlled by pressure upon the artery below.

On July 31, 1892, the left common carotid artery was tied an inch above the clavicle with two silk ligatures half an inch apart, and the vessel was divided between them. No shock or other disturbance of any sort followed the operation. The patient was sitting up in two weeks, and was discharged well in three weeks.

On June 13, 1893, the right common carotid artery of this man was tied in the same manner, as described above, for a small aneurism situated at the bifurcation into the external and internal carotids opposite the top of the thyroid cartilage. This tumor, an inch in diameter, pulsated like the one upon the left side before operation, and had been in existence ten years.

In exposing the artery, a large vein, probably the internal jugular, was wounded with the director, giving rise to a troublesome hæmorrhage from its location at the bottom of a deep wound. On coming out from under the influence of the anæsthetic, it was found that the patient's voice was very hoarse. A laryngoscopic examination by Dr. Farlow showed paralysis of the right vocal cord, due undoubtedly to entanglement of the recurrent laryngeal nerve in the ligature applied to the vein.

The wound healed by first intention, and the man left the hospital in three weeks. Both tumors were free from pulsation. At the present time, the tumor upon the right side has disappeared entirely. The original tumor upon the left side is nearly gone, but about three months ago, that is, three or four months after the last operation, a small pulsating swelling made its appearance over the upper edge of the tumor upon the left side. Evidently a small collateral branch has found its way into the original sac, and will require further attention. The man is well with this exception, and is at work in a dental instrument manufactory. The voice is as good as ever it was, except being a little weak, when he attempts to shout. The hoarseness has entirely disappeared. There were no cerebral symptoms following either operation.

Dr. Myles Standish read a paper on

TWO CASES OF CHANCRE OF THE EYELID.[1]

Dr. Abner Post: I have very little to add to Dr. Standish's interesting account of the two cases. The chancre of the eyelid occurs occasionally in other than ophthalmic clinics. I am pretty sure I have seen two cases. The first was referred to me by Dr. H. W. Williams. The ulceration occurred rather on the external surface of the lower lid, so that its appearance differed somewhat from that described by Dr. Standish, as it would naturally. In Dr. Standish's second case the ulceration was upon the conjunctival surface, where it had that grayish base which is described in all these cases and which resembles more or less closely the surface sometimes seen under the prepuce. In the first case of mine the ulceration was very slight and had that reddish appearance which is common to chancres whose ulcerated surface is exposed to the air. It was surrounded by an indurated areola and resembled the chancre more closely than anything else; and it may be worth while to mention that this woman on whom this supposed chancre occurred was the wife of a railroad brakeman employed somewhere in the vicinity of this city, though her home was either in Vermont or in New Hampshire. The brakeman I never saw. This sore had existed some time, the induration increasing. It had been treated in various ways; and I simply suggest the primary syphilitic source as the most probable solution of its cure. There were no pre-auricular glands to be felt, nor were the glands at the angle of the jaw enlarged at all. It began to diminish very slowly, but very steadily under the influence of mercurials internally, and vanished. She was under my observation for a few weeks; but as soon as the supposed primary sore had disappeared, she disappeared, and whether the diagnosis was ever confirmed in any subsequent history I do not know. She was confined to her bed immediately afterwards by some supposed disease of the chest which was acute. Some time or other I shall know the subsequent history of that case; and if it proves to be syphilitic I shall be very glad to report it.

The other case is the case of a child of five, who was healthy up to the time of her infection. The father and mother had become syphilitic after her birth. They had a syphilitic child in the family, and this little syphilitic child lived with the syphilitic father and mother and baby in close intercourse. Her syphilis was evident from glandular enlargement and syphilitic papules which were particularly prominent about the region of the vulva and about the mouth and nose. The mother gave the history of the appearance of a sore on the eyelid which she supposed was an ordinary stye. That was the first thing. The eruption appeared a few weeks after. When I last saw her the other eruption had disappeared. There still remained on the spot of the supposed stye a certain amount of thickening, such a condition as one finds after primary lesions on other parts of the body. The pre-auricular gland was not enlarged, though the glands about the neck were. I can only say that in her case I believe that the sore on the eyelid was the primary sore, the point at which syphilis entered the system.

---

[1] See page 237 of the Journal.

I am particularly glad to have such cases reported, because it serves to emphasize the fact that syphilis is not simply a disease of venereal origin, but that it is a disease which is communicated from one individual to another, no matter what the contact or whether the contact be immediate or mediate. The primary sores that occur about the face are very numerous indeed; I have within a month seen four primary sores of the lip. Towels are by no means the only media by which such inoculation takes place. During the same time I have also seen four physicians who have been inoculated upon the hand in some shape or other. It is, I think, hardly extending the subject too widely to draw attention to the other numerous cases which exist about us in which syphilis has been contracted in some other than the orthodox manner.

Dr. E. Wigglesworth: I agree entirely in regard to the necessity for such papers as this, and I am sorry that I cannot from memory report any cases occurring in my own individual practice. The public at large are hardly anatomical enough to recognize the distinctions of specialties, and these cases go to the ophthalmologist instead of the dermatologist, as a rule. There is one thing to be said; namely, that these lesions do not always occur at the entrance of the lachrymal duct. They may be found even inside of the lids, as well as outside, or upon the border of the lids. They may be found upon the caruncle itself; and these are, perhaps, the worst cases of all. I recall with reference to the number of reported cases, which Dr. Standish tells us is now about thirty, that when I was in Vienna, in 1866, the cases amounted to only ten. Since then I have not taken the opportunity to look up the number. At that time there were only ten, including those on all parts of the lids, both external and internal. There are now in the Warren Museum three of the preparations of Baretta, which represent very well the appearance of this lesion before, during and after treatment. The sclerosis was upon the upper eyelid of a seamstress.

Our first duty, of course, is to decide whether the lesion is in its nature specific; but even then there is some danger of error as to stage, since papules, or other manifestations of secondary lesions, may occur here as well as elsewhere; and it is not relatively rare to find even gummata in this situation, which belong, of course, to the later stages. The method of infection is by means of the fingers, as the rule. This seamstress had, I think, been sewing some bands to be applied to a person, and perhaps applied them herself, and then carried the finger to the eye. Another case is reported of a man engaged in the "orthodox" practices alluded to by Dr. Post, who felt an itching in his eye, and carried the hand to the eye and rubbed it violently for quite a while. This was followed by a primary lesion. There are other cases where, at accouchements, physicians have infected themselves. But the fact of primary lesions occurring upon the face and other parts, to which Dr. Post alluded, was very well shown this morning in my clinic at the City Hospital. The wife of a laboring man appeared with two primary lesions, which fact is, of itself, relatively rare, just below the angle of the mouth, on the left-hand side; these were of two months' or more duration. She gave a very good history of initial manifestations; that is to say, red spots, and subsequently papules with dry crusts on top; and, what is especially interesting, stated that they passed by degrees from that condition into the secondary stage of mucous papules; and they are now in the condition of mucous papules, and very well marked. The rest of the body is covered with papules. The general treatment is, of course, the same as when the initial lesion is situated elsewhere.

Dr. F. B. Greenough: I have never seen a chancre on the eyelid. Of course, there is no reason why it should not occur there, the only factor being to have the syphilitic virus in contact with the mucous membrane or skin where it may be absorbed, and we see the primary lesion appear in all sorts of places. Dr. Standish does not mention any examination to prove that there was no primary lesion anywhere else. I have no question of the diagnosis or of the primary lesion; but at the same time, in all such interesting cases as this, I think the possibility of primary lesion on the penis or somewhere else ought to be excluded. In the first case he reports I am rather astonished at the size of the glands — as large as a hen's egg. I have seen several chancres about the lips, and one or two on the face, but never saw the glands anywhere near as large as that. I think we owe a great deal to Dr. Standish for his interesting paper.

Dr. Post: May I refer to one remark of Dr. Wigglesworth in regard to the rarity of a double inoculation, or two primary sores at the same time? My own experience differs somewhat from Dr. Wigglesworth's, apparently. It is customary to say that the primary sore of syphilis is single, while non-syphilitic venereal sores are multiple. There is certainly some foundation for this, but I should prefer to say that in the majority of cases the primary sore is single; but it may be multiple, exactly as a man may be vaccinated in one spot or in several. It seems to me that the stress that is laid upon a single sore as a diagnostic point of the initial lesion of syphilis is carried too far, and leads to error.

Dr. Greenough: I should like to endorse Dr. Post's remarks. Dr. Chenery, who was my assistant at the Dispensary, made statistics. I have forgotten the number, but there are certainly quite a number of cases in which there were two primary sores. I think I have seen three.

Dr. Wigglesworth: I merely spoke of the *relative* frequency. Of course, what Dr. Post alludes to is perfectly true. The case was of especial interest, not only from the comparative rarity of multiple lesions, but also from the fact that we had here two (primary) lesions occurring at the same time, and of the same size, close together, upon an unusual situation, and passing by degrees into (secondary) mucous papules. There was a sore on the mouth of the husband, so that there was an explanation of the source of inoculation.

Dr. Standish: Concerning the question of the possibility of these patients having an initial lesion somewhere else, in the first case we had a physical examination, and there was no lesion anywhere else; in the second case the man was very intractable, and no such examination was possible. The glands in the neck were very large in the second case — so much so as to obliterate the concavity under the angle of the jaw, so that the line of the face ran straight down to the shoulder. We must remember he was suffering from pharyngitis and tonsillitis, which may have aggravated matters very much. The situation of these initial lesions, of course, may be anywhere on the outside or inside of the lid.

DR. M. H. RICHARDSON showed

SPECIMENS OF VERMIFORM APPENDICES PRESENTING UNUSUAL FEATURES.[2]

◆

Recent Literature.

Atlas of Clinical Medicine. By BYROM BRAMWELL, M.D., F.R.C.P., F.R.S. Edin., Assistant Physician to the Edinburgh Royal Infirmary, etc. Vol. II, Parts II and III. Edinburgh: Printed by T. and A. Constable. 1893.

The second volume of this very handsome "Atlas of Clinical Medicine" is now completed with the issue of the third part. We have already noticed the previous issues. In the second and third parts of the second volume, the standard promised at the inception of the work is maintained, and the original excellence of letter-press and plates continues to be realized.

The text of Part II is largely devoted to syphilis and Asiatic cholera, and most of the plates are illustrative of the former disease. The active treatment of the primary sore, and the exhibition of internal remedies before the appearance of secondary manifestations, as advocated in the text, has the authority of Hutchinson, but is not generally regarded in this country as having the sanction of our best authorities.

Part III is devoted to exophthalmic goitre, acromegaly, exfoliative epidemic dermatitis, unilateral hypertrophy of the face. The plates illustrative of acromegaly, taken from a so-called "giantess," are very characteristic.

Clinical Lectures on Abdominal Hernia; chiefly in Relation to Treatment, including the Radical Cure. By WILLIAM H. BENNETT, F.R.C.S., Surgeon to St. George's Hospital, Member of the Board of Examiners for the Fellowship, Royal College of Surgeons of England, and Lecturer on Clinical Surgery in St. George's Hospital Medical School. With twelve diagrams. London and New York: Longmans, Green & Co. 1893.

These lectures were delivered at St. George's Hospital, and include the cases occurring in the author's wards. The work has the merit of being what it represents, clinical lectures on hernia. It is a valuable one, in that it records the ideas of the writer, a man of ripe experience, who has paid considerable attention to this subject. It is a book that can be read with interest by all, and may be of value to practitioners who meet obscure herniæ, which are often very perplexing. A good portion of the lectures is devoted to the symptoms of strangulated hernia. Formerly the symptomatology of hernia was of greater importance than now. The pre-antiseptic fear of opening the sac of a hernia is gone, we hope never to return. To-day the conservative surgeon explores any tumor occupying the seat of a hernia if there are present any symptoms suggesting the possibility of strangulation. The danger of this exploration under modern methods is far less than the inevitable errors in judgment of attempting to mentally eliminate strangulated hernia.

---

[2] See page 232 of the Journal.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, MARCH 8, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 WASHINGTON STREET, BOSTON, MASS.

CHRONIC ARSENICAL POISONING FROM WALL-PAPERS AND FABRICS.

THE question as to the form in which arsenic enters the system in cases of chronic poisoning from arsenical wall-papers has been the subject of much controversy. The theory that the symptoms are due in some cases to the irritant action of detached particles of arsenical pigment has received important confirmation in the frequent detection of arsenic in the dust collected from rooms containing arsenical papers. On the other hand, the occurrence of numerous cases of poisoning under conditions most unfavorable to the separation of arsenical dust has led to the theory that, under certain conditions, some gaseous or volatile arsenical compound may be set free from arsenical papers.

Many experiments have been made for the purpose of testing the latter theory, but the results have been, for the most part, adverse, until the recent investigations of Gosio,[1] who found that a volatile arsenical compound could be formed by the action of moulds on organic matter containing arsenic. Hamberg and Bischoff alone of the earlier investigators obtained a volatile compound, which they believed to be arseniuretted hydrogen. The results of Gosio's recent investigations suggest, however, that these earlier views as to the nature of the volatile compound formed were probably erroneous; though it seems quite certain that a volatile arsenical compound of some kind was obtained in the experiments of the two authors mentioned.

Two recent papers by Prof. Charles R. Sanger,[2] of Washington University, St. Louis, who has repeated the work of Gosio and proved its correctness, form, from a chemical point of view, the most important contribution to the literature of this subject which has yet appeared in this country.

In his first paper the author gives a lengthy but interesting review of the investigations relative to the subject which have been made up to the present time, including those of Gosio, and describes very minutely the various experiments which he has himself made, including some earlier ones hitherto unpublished, the results of which were, owing to unsuitable conditions, adverse to the theory of the formation of a volatile compound.

---

[1] The Journal, cxxvi, 201; cxxvii, 195; cxxviii, 540.

[2] Proceedings of the American Academy of Arts and Sciences, vol. xxix.

A description of these experiments cannot be given, for obvious reasons, in the editorial column. The fact, however, that Gosio's results have been substantiated by so careful an investigator as Sanger, justifies the following brief *résumé* taken from Sanger's papers:

It appears that a volatile compound is generated by the action of the following moulds on arsenical organic matter: *Penicillium brevicaule, Mucor mucedo, Aspergillum virens, and Aspergillum glaucum,* a few others having been found which have a slight action. Of these the most intense action is caused by the first, a mould discovered on decaying paper, though *Mucor mucedo,* which is more widespread than the first, is only a little less active. The conditions for development of the compound by these moulds are moisture, a temperature from 15 to 35° C. (60 to 95° F.), and a supply of oxygen, without which no action takes place. A large amount af arsenic retards the growth, which goes on best in a ground containing 0.01 to 0.05 per cent. The best nutritive material is a carbohydrate. The development may take place in presence of arsenious oxide or its derivatives, or of arseniates, though the latter seem to Sanger to have given the best results. Little or no action is obtained from the sulphides.

The nature of the volatile compound is as yet unknown. It is not arseniuretted hydrogen, and indeed it is questionable if *any* arseniuretted hydrogen is formed. Sanger is inclined to the opinion that it is an organic derivative of arsenic pentoxide. It has, however, little resemblance to any of these derivatives thus far isolated.

The author attributes the adverse results obtained in his earlier experiments, and the similar results obtained by some of the other investigators to the fact that there was either too much arsenic for the specific bacteria to tolerate, or else the latter were not present. A partial explanation is possibly found in the fact that many of the earlier investigations were made upon the assumption that the volatile compound formed, if any, must be arseniuretted hydrogen.

The formation of a volatile compound from decaying arsenical matter may now be regarded as settled beyond any reasonable doubt by the investigations of Hamberg, Gosio and Sanger. In this formation we have a complete explanation of those cases of chronic arsenical poisoning which occur under conditions in which the separation of arsenical dust cannot be admitted. Gosio, while admitting that poisoning from arsenical papers may at times be due to the inhalation of solid particles mechanically detached from the paper, believes that in a majority of cases the arsenic is absorbed in the form of the volatile compound.

Sanger's second paper is made up largely of the record of published cases of chronic arsenical poisoning in which analytical work is included, and of cases which have come to his own notice, in which analyses of wall-paper and urine were made. The chief value of this paper is found in the fact that the analyses, both of paper and urine, in the author's own cases were quantitative. He finds that the amount of arsenic eliminated by the kidneys is very small, varying from 0.002 mgr. to 0.068 mgm. per litre. These results are in accord with those obtained by others who have had experience in this class of cases.

The author concludes that the elimination of arsenic by the kidneys in cases of wall-paper poisoning is very slow. He apparently bases his conclusions upon the fact that, in the cases reported by him, the time during which arsenic still appeared in the urine was usually very long. In five cases, for example, arsenic was still detected after the lapse of 60, 96, 100, 127 and 140 days respectively. The author's conclusions on this point are justifiable only in case freedom from exposure to other sources of arsenic during the periods named was secured. There is, however, no evidence whatever of any such freedom in the history of the cases reported by him. The existence of other sources can hardly be denied. There are apparently some which are as yet undetected. For this reason the settlement of the question of rate of elimination is, we believe, attended with peculiar difficulties, and much work must yet be done before the time required for complete elimination can be determined with any degree of accuracy. Sanger thinks that the question of the limit which can be set to the dangerous amount of arsenic in a wall-paper is one which should be considered very carefully, since Gosio's work and his own has shown that a very small amount of arsenic may be quite as good a source of the volatile compound as a very large amount. He does not think, with the chances for the formation of the volatile compound, that 0.1 gr. per square yard can be pronounced with certainty harmless; and suggests that a quantitative analysis of each arsenical paper be made, in order that the physician may himself decide as to whether the paper should be rejected or not.

◆

A NEW BILL FOR THE ESTABLISHMENT OF A NATIONAL BUREAU OF HEALTH.

The new bill, prepared by a Committee of the New York Academy of Medicine, for the establishment of a National Bureau of Health in the Department of the Interior, promises, if it meet with favorable consideration in Congress, to give to the country the most satisfactory national health organization that has yet been proposed.

The Bureau, in accordance with the provision of the bill, would consist of a Commissioner, appointed by the President, and an Advisory Council made up of delegates, one from each State, designated for this service by the respective governors.

If, as might reasonably be expected, the members of the Council are selected from the State Boards of Health, there would then be brought to the support of the national organization the influence of a body of men each of whom has a well-recognized position in his own community, and a legitimate influence upon the representatives of his State in Congress. Their presence on a national board would go far to remove the vague fears that have prevailed in some quarters as to the tendency of a purely central organization to usurp powers, which could more safely and wisely be left to local authorities.

The duties of the Bureau would be to collect and diffuse information upon matters affecting the public health, including statistics of sickness and mortality in the several States; the investigation of experimental and other methods and means of prevention of the causes of diseases; the collection of information with regard to the prevalence of contagious and epidemic diseases, both in this and other countries; the publication of the information thus obtained in a weekly bulletin; to prepare rules and regulations for securing the best sanitary condition of vessels from foreign ports, and for the prevention of the introduction of infectious diseases into the United States, and their spread from one State into another, which rules, when approved by the President of the United States, shall have the force of law; and to ascertain, by a suitable system of inspection, that these rules are properly carried out and enforced; to advise and inform the several departments of the government, and executives and health authorities of the several States on such questions as may be submitted by them to it, or whenever, in the opinion of the Bureau, such advice and information may tend to the preservation and improvement of the public health; and in general to be the agent of the general government in taking such action as will most effectually protect and promote the health of the people of the United States.

The act provides that this Bureau shall be responsible for the making of those rules and regulations which are the foundation of systems of quarantine between the various States of the Union as well as between Nations; yet these rules, having first received the approval of the President, are to be executed, as hitherto, under the supervision and authority of the Treasury Department. While this limitation of the Treasury Department to purely executive functions may be distasteful to the Marine-Hospital Service, it can hardly be claimed, on the other hand, that this body could adequately perform the multifarious duties above set forth.

One function is bestowed upon the Bureau, which is peculiar to this bill, and would probably be of great benefit — the duty of the Bureau to inspect and report upon the conduct of the quarantine establishments formed under the provisions of this act.

State and municipal authorities are permitted to enforce, if they so elect, such measures as are directed by the President, in accordance with the recommendations of the Bureau; but if such authorities fail or refuse so to do, then the President shall enforce the rules by such means as may seem appropriate to him.

The quarantine sections of the bill have, evidently, been very carefully framed and follow closely the provisions of Senator Harris's bill. No member of the Senate has been more interested in public health legislation than the member from Tennessee, nor is there any one whose opinion would have more weight in that body.

The Bureau is especially directed to take such action, by correspondence or conference, as will tend most effectually to secure the co-operation of State and local boards of health in establishing and maintaining accurate systems of notification of the existence and progress of contagious and infectious diseases; and to extend, if possible, such systems to foreign countries.

In general, the motive that appears to have prevailed in the making of this bill is the one which has led to the most useful public health bodies which the country has so far had. That is to say, the intention seemed to have been to create a central health authority, the business of which shall be the collection of all sanitary knowledge and the prompt diffusion of the same.

If this Bureau is able to deserve the confidence of the country, experience with similar bodies tell us that executive functions will from time to time be given to it. The almost hopeless confusion in which the present Congress is involved, may, possibly, prevent this new measure from receiving the consideration it fairly deserves; but the bill has been so carefully prepared and so wisely framed that we hope it may be insistently presented at Washington until favorable action is taken.

◆

MEDICAL NOTES.

YELLOW FEVER AT RIO JANEIRO. — Yellow fever is reported to be rapidly increasing in Rio Janeiro, the deaths being more than twenty each day.

A NEW ORIFICIAL JOURNAL. — A new medical journal has been published in Paris, devoted to orificial medicine. It is edited by M. D. Magitot and is to be known as the *Revue Mensuelle de Stomatologie.*

HONORS FOR PROFESSOR HENOCH. — The Emperor of Germany has conferred the Order of the Red Eagle, of the Second Class, with the crown and oak leaves, on Professor Henoch who has retired from the chair of children's diseases in the University of Berlin.

A PHYSICIAN'S HOUSE INJURED BY DYNAMITE. — The house of Dr. J. E. Baker in Lancaster, Pa., was seriously damaged last week by a dynamite cartridge which some mischievously inclined person exploded under the porch. It is not often that physicians are thus molested, as even the wantonly malicious seem to have a little respect for a doctor.

THE NEW YORK VEGETARIAN SOCIETY DINNER. — The New York Vegetarian Society held its second annual dinner last week, and had a most elaborate menu. Among the courses were *cream* of celery soup;

Brussels sprouts, *cream* sauce; Nesselroude pudding; Stilton, Roquefort, and Camembert cheese. It is to be presumed that these were all made either with cocoanut milk or the juice of the milk-weed.

Death of a Hospital House-Officer. — Mr. Lewis Burrow, a senior house student at St. Thomas's Hospital, London, died recently from septicæmia, resulting from the inoculation of a scratch on one finger while making an autopsy.

The Toledo Medical College. — In accordance with the recommendation of the Committee on the Administration of the Medical Practice Act, the Secretary of the State Board of Health of Illinois has been directed to recognize the diploma of the Toledo Medical College as entitling the holder to a State certificate for practice.

The Eighth International Congress of Hygiene and Demography. — The Eighth International Congress of Hygiene and Demography is to be held at Budapest, Hungary, in the first week of September next. The following is a list of the subjects for discussion in the Hygiene Division:

(1) Ætiology of Infectious Diseases; (2) The Prophylaxis of Epidemics; (3) The Hygiene of the Tropics; (4) The Hygiene of Trades and Agriculture; (5) The Hygiene of Children; (6) The Hygiene of Schools; (7) Articles of Food; (8) The Hygiene of Towns; (9) The Hygiene of Public Buildings; (10) The Hygiene of Dwellings; (11) Hygiene of Communication (Railways and Navigation); (12) Military Hygiene; (13) Red Cross; (14) Saving of Life; (15) State Hygiene; (16) The Hygiene of Sport (Inurement and Care of the Body); (17) The Hygiene of Baths; (18) Veterinary Hygiene; (19) Pharmacology.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, March 7, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 53; scarlet fever 28; measles 7; typhoid fever 6; small-pox 6, and 2 deaths. On the 3d of March the steamer *Venetian* of the Leyland line arrived at quarantine with four cases of varioloid on board, one of which was fatal soon after being removed to quarantine. There were no cases in Massachusetts outside of Boston.

Death at One Hundred and Three Years. — Ann Cauley, the oldest woman in York County, Me., died in South Berwick March 2d, aged one hundred and three years and seven months. She was born in Ireland.

The New Medical Practice Law in Connecticut. — The first semi-annual examination under the provisions of the new medical practice law was held last week in New Haven. Eight candidates were examined by the committee appointed by the State Board of Health, and only five were given certificates.

Connecticut Fertility. — A young married couple in Roxbury, Conn., have recently been reported to have had their family increased by the birth of triplets. The father is sixteen years old, the mother is thirteen; and the three new children, a boy and two girls, are said to have weighed twenty-three pounds!

NEW YORK.

The Board of Health and Family Physicians. — At the monthly meeting of the Medical Society of the County of New York, Dr. Carl Beck read a paper on "Pyothorax and its Treatment"; and Dr. W. M. Seward one on "Ectopic Gestation." Dr. Daniel Lewis called up the following resolution, which had been laid on the table at a former meeting: "*Resolved*, That it is the sense of this Society that if the Board of Health is to preserve its influence in the community in the highest degree, it should extend to the family physician the same consideration which one member of the profession owes to another." In advocating its passage Dr. Lewis said that, although the wording of the resolution was somewhat ambiguous, the members present knew very well what it referred to. Health inspectors frequently visited patients of practising physicians and took occasion at these times to prescribe remedies and counsel treatment at variance with that of the attending physician. This was unprofessional, and should not be tolerated. The attending physician should, at least, be consulted before any change in the treatment of a case was made. In the discussion which followed, Dr. Joseph D. Bryant took exceptions to Dr. Lewis's remarks, and denied that the course of the inspector was, as a rule, such as to warrant the strictures made by him. He thought, however, that individual cases and epidemics sometimes occurred where prompt action was called for, and the exigency of the circumstances compelled the inspectors to violate the letter of the resolution while they followed the spirit of it. He therefore proposed the following addition as an amendment: "Provided that such course shall not conflict with public policy." This was accepted by Dr. Lewis, and the resolution was passed as thus amended.

Small-Pox. — The concealment of cases of small-pox in tenement-houses continues to give the Board of Health serious trouble, and on one day recently no less than ten such cases were discovered. Two or three cases of the disease have occurred at the State prison at Sing Sing, and it is thought that it was brought there by some of the newly-arrived convicts, or else through the rags taken there for sorting by the prisoners. During the week ending March 3d there were reported 30 cases of small-pox in the city, and six deaths; against 29 cases and five deaths the week previous. The total mortality for the week was 857, against 830 in the week ending February 24th.

A Fatal Case of Singultus. — A case of death from hiccough is reported from Newark, N. J. The patient was John Carberry, a bar-tender, thirty-three years of age, and the affection lasted more than thirteen weeks. At the time the hiccoughing commenced, on November 29th, he was seated in a barber's chair getting shaved. After a large number of remedies had been tried in vain, a novel operation was undertaken in the hope of saving the patient's life. Under the hypothesis that the source of trouble was irritability of the inferior dental branch of the inferior maxillary nerve, which was communicated to the phrenic nerve, the inferior dental was cut down upon and severed; but this procedure also proved fruitless, although some temporary improvement in his condition followed. The only thing that seemed to be of any service in checking the attacks was ice-cream, which he took freely. He gradually became weaker, and finally died of exhaustion. At the time the hiccough commenced Carberry was strong and robust, and weighed one hundred and fifty pounds, but just before his death he weighed only eighty pounds. No autopsy has as yet been reported in the case.

Mortality. — The State Board of Health reports 10,948 deaths in the month of January, representing an annual death-rate of 19.70 per thousand of the estimated population. In December, the annual death-rate was 19.20 per thousand. Influenza became epidemic in December, and 1,000 deaths were attributed to it in December and 1,200 in January. This is more than twice the mortality from the disease during the same months in the epidemic of last year. In New York city, however, influenza has thus far been much less fatal than last winter.

◆

Miscellany.

PROFESSOR TYNDALL AND BOSTON RESOURCES.

In an account of Professor Tyndall's visit to this country in 1872, Miss Youmans[1] publishes some letters of the physicist, which give an interesting revelation of the mental state of even a most highly educated Englishman concerning the commercial resources of Boston. Writing for advice as to his arrangements he says:

August 21, 1872.

My Dear Youmans: I am in the midst of my preparations here, and shall have them ready so as to enable me to start in the *Russia* on the 28th of September.

I shall need your friendly aid in getting my apparatus through the custom house. . . .

With regard to the lecture rooms, in all of them I must be able to lower the lights promptly. Most of my experiments will be projected on a screen.

I purpose mixing experiment and philosophy in due proportions.

. . . .

Do your audiences look down upon the lecturer?

I suppose I can borrow an air-pump in New York if I need it.

I suppose if they do not possess ice in Boston, I can have a clear block sent there from New York.

Acids, of course, are to be had everywhere.

Are they in the habit of using compressed hydrogen and oxygen in iron bottles in America; and, if so, could I borrow such bottles?

I am taking one screen with me, but I shall sometimes require two. Is such a thing to be borrowed?

Now, like a good fellow, answer these questions within twenty-four hours, and oblige

Yours, ever faithfully,
John Tyndall.

And again:

Folkestone, September 19, 1872.

My Dear Youmans: . . . I hope they have clear ice in Boston, also nitric and sulphuric acid; if not, I must stock myself from New York. I have written a line to Dr. Draper on this point; but I should be truly thankful to you if you would make this point out for me, and if the acid is not to be had at Boston, send there a carboy of nitric and one of sulphuric acid.

I am quite shocked at the mass of apparatus I have collected round me. Still I thought it best to take light apparatus — batteries, electric lamps and costly optical apparatus — with me, having just given the experiments with them here.

Yours ever,
John Tyndall.

◆

MR. LAWSON TAIT'S USE OF ANÆSTHETICS.

In a letter to the Buffalo *Medical Journal*,[1] Mr. Lawson Tait, in replying to Dr. Robinson's remark that few English surgeons "engaged in abdominal surgery give much attention to the kidney in their work,"[2] says that it is the very care he has given to the study of the effect of anæsthetics on the renal functions which makes him prefer chloroform to ether for abdominal and ovarian surgery. He says that the most important sentences he has ever published in his life are the following:

> "The question of the best anæsthetic for use in abdominal surgery is one to which, of course, I have given a very large amount of attention; and it is very singular that in the class of drugs, the action of which there can be the least doubt about, we are, as yet, certainly very unsettled in our views. Like all pupils of Simpson, I began my professional life with a most profound belief in the advantages of chloroform over all other anæsthetics. I have never seen an accident from chloroform, but, partly by reason of the fear of inquests and partly by the example and teaching of Dr. Keith, a belief grew in my mind that ether was preferable to chloroform, and at first I had the impression that the sickness after ether was less marked than after the use of its rivals. I was not, however, very long in discovering that ether has special risks for people with a tendency to bronchitis; and later on I discovered, and have already published the fact, that during the administration of ether the secretion of urine is completely arrested. It was subsequently very forcibly impressed on me that, for patients with damaged kidneys, ether is a dangerous anæsthetic, and although I cannot say that I have seen any fatal results arising from this peculiarity of its action, I certainly have had abundant cause to fear it. My first alteration, therefore, in my views concerning ether, was to limit its application to patients under forty, but even after this I found my confidence in its safety greatly diminished by the fatal occurrence of bronchitis in a case of hysterectomy in a woman aged thirty. In this case the patient's breathing was embarrassed from the moment she recovered from the anæsthetic, her urine was scanty and became ultimately albuminous, and she died on the fourth day from suffocative catarrh, the post-mortem showing that, so far as the operation was concerned, everything was perfectly satisfactory."

The chief reason why these remarks made little impression when first printed in 1884 was the fact that England is emphatically the land of coroner's inquests, which are things an English practitioner hates above everything else.

---

[1] Popular Science Monthly, February, 1894.

[1] February, 1894.

[2] What kills after Laparotomy, Buffalo Medical Journal, December, 1893.

"Coronors seem always fond of making public inquiry into cases of death under an anæsthetic. Every such death is, therefore, blazoned abroad until the use of chloroform has become a *bête noire* of surgical practice alike for practitioner and patient. Chloroform, when it kills, which it does very rarely, kills on the instant, and, in England, there is an inquest. When ether kills, which it does far more frequently, it kills some days after its administration, and there is no inquest, not even an inquiry.

"To get over the difficulty, I began to use a mixture and soon found that it was a great advance over either of the two anæsthetics used separately. I vary the proportions according to age, increasing the proportion of chloroform from one-third to two-thirds rapidly after forty, and in case there is any suspicion of renal or pulmonary incompetency.

"Twelve years' experience has driven entirely out of my practice all those disasters which ether brought into it. In a number of administrations, now amounting to a great many thousands, not a mistake has occurred, and alarms occur only where some new and inexperienced administrator will indulge in such fantastic tricks as pushing back the tongue by pressing up the jaw, or violating in some other foolish way the simple rules for administration laid down over forty years ago by Simpson, not one of whose methods has yet been surpassed."

◆

WILLIAM JOHN GORDON FOGG, M.D.

SOUTH BOSTON, March 2, 1894.

AT a meeting of the physicians of South Boston the following preamble and resolutions were adopted:

Whereas, Death has removed from our midst our much-esteemed friend and colleague, Dr. W. J. G. Fogg, and whereas, it is fitting that we express our feeling of sorrow at this great loss, therefore,

Resolved, That we gladly testify to our appreciation of his great professional skill, his readiness to advise when called upon by any of us, his honesty of principle toward his medical brethren and toward his patients; all of which we shall ever hold in grateful remembrance.

Resolved, That the death of Dr. Fogg is a loss to the community in which he lived and for which he worked so many years.

Resolved, That a copy of these resolutions be sent to his afflicted family; a copy be published in the local papers, and in the Boston *Medical and Surgical Journal.*

PER COMMITTEE.

◆

NORFOLK SO. DISTRICT MEDICAL SOCIETY.
SAMUEL MAGNUS DONOVAN, M.D.

March 1, 1894.

Whereas, it has pleased Almighty God to remove from us our beloved friend and co-worker, Samuel Magnus Donovan, M.D.,

Resolved, That we, the Fellows of the Norfolk South District Medical Society, mourn the loss of a genial friend and an active member of this organization. Cut off in the prime of manhood and in the noon-tide of a useful and honorable career, we have lost a valued member of this Society; the community in which he lived, a trusted counsellor and a skilful physician.

Resolved, That we offer our kindly sympathy to the family of our deceased brother in this hour of mourning.

Resolved, That these resolutions be entered upon the records of the Society, a copy of the same be forwarded to the family of the deceased, and a copy be furnished for publication to the Quincy *Daily Ledger*, Quincy *Monitor*, and the Boston *Medical and Surgical Journal.*

J. WINTHROP SPOONER, *President.*
JOHN F. WELCH, *Secretary.*

METEOROLOGICAL RECORD,

For the week ending February 24, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..18	30.00	43	51	35	86	46	66	S.W.	N.W.	26	18	R.	O.	0.28
M..19	30.04	40	47	33	66	100	83	S.W.	S.	2	13	O.	R.	0.16
T..20	30.12	34	38	31	68	42	55	W.	W.	22	12	C.	O.	0.14
W.21	30.07	32	37	28	72	53	62	S.W.	N.W.	5	10	N.	O.	
T..22	30.14	26	31	20	50	62	56	N.	S.W.	8	9	F.	C.	
F..23	30.15	20	29	12	46	41	44	W.	W.	14	25	C.	C.	
S..24	30.69	28	6	7	74	48	61	N.W.	N.W.	22	18	C.	C.	
☞	30.17		34	22			62							.58

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, FEBRUARY 24, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diphtheria and croup.	Scarlet fever.	Measles.
New York	1,891,306	830	350	20.04	20.04	8.66	2.40	7.35
Chicago	1,438,000	404	178	11.72	15.36	4.80	.48	.74
Philadelphia	1,115,562	484	160	11.55	17.64	5.25	1.05	2.10
Brooklyn	978,394	372	126	14.58	24.20	7.20	1.08	1.35
St. Louis	560,000	—	—	—	—	—	—	—
Boston	487,397	240	80	5.04	21.42	2.62	1.68	—
Baltimore	500,000	—	—	—	—	—	—	—
Washington	308,431	87	34	7.14	21.42	2.38	1.19	—
Cincinnati	305,000	—	—	—	—	—	—	—
Cleveland	290,000	77	34	11.70	14.30	6.50	2.60	—
Pittsburg	263,709	81	31	14.67	23.37	4.92	3.69	1.23
Milwaukee	250,000	83	42	13.53	24.60	7.38	—	3.69
Nashville	87,754	9	7	11.11	33.33	—	—	11.11
Charleston	65,165	18	6	5.55	5.55	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	96,217	39	14	20.48	20.48	2.56	—	10.24
Fall River	87,411	46	23	2.17	30.38	—	—	—
Lowell	87,191	42	16	14 28	11.90	—	—	—
Cambridge	77,100	24	10	37.44	8.32	16.64	8.32	—
Lynn	62,656	22	3	4.55	4.55	—	—	—
Springfield	48,684	12	1	8.33	8.33	—	—	—
Lawrence	48,355	—	—	—	—	—	—	—
New Bedford	45,886	24	7	8.32	16.64	—	—	—
Holyoke	41,278	13	2	38.45	15.38	—	—	—
Salem	32,233	12	5	8.33	—	8.33	—	—
Brockton	32,140	12	1	—	25.00	—	—	—
Haverhill	31,396	10	2	10.00	20.00	—	—	10.00
Chelsea	30,264	11	2	18.18	9.09	—	—	—
Malden	29,394	4	0	25.00	25.00	—	—	—
Newton	27,556	6	0	—	16.66	—	—	—
Fitchburg	27,146	—	—	—	—	—	—	—
Taunton	26,972	12	2	—	—	—	—	—
Gloucester	26,688	—	—	—	—	—	—	—
Waltham	22,058	3	1	—	—	—	—	—
Quincy	19,642	7	3	—	14.28	—	—	—
Pittsfield	18,802	3	0	33.33	—	—	—	—
Everett	16,585	5	3	20.00	—	—	—	—
Northampton	16,331	4	0	—	—	—	—	—
Newburyport	14,073	5	1	—	—	—	—	—
Amesbury	10,920	—	—	—	—	—	—	—

Deaths reported 3,039: under five years of age 1,149, principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 430, acute lung diseases 577, consumption 342, diphtheria and croup 183, measles 61, scarlet fever 46, typhoid fever 31, cerebrospinal meningitis 29, whooping-cough 28, diarrhœal diseases 23, erysipelas 17, small-pox 6.

From typhoid fever Chicago 8, Philadelphia and Lowell 4 each, New York and Pittsburgh 3 each, Brooklyn 2, Boston, Milwaukee, Worcester, New Bedford, Chelsea and Malden 1 each. From cerebro-spinal meningitis Chicago 7, New York and Brooklyn 6 each, Holyoke 2, Washington, Cleveland, Worcester, Lynn, New Bedford, Chelsea, Pittsfield and Everett 1 each. From whooping-cough New York 9, Philadelphia 7, Chicago 3, Brooklyn and Boston 2 each, Washington, Pittsburgh, Milwaukee, Fall River and Somerville 1 each. From diarrhœal diseases New York 8, Chicago 5, Philadelphia, Lowell and Cambridge 2 each, Brooklyn, Boston, Washington, Worcester and Marlborough 1 each. From small-pox New York 5, Boston 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending February 17th, the death-rate was 18.7. Deaths reported 3,747: acute diseases of the respiratory organs (London) 340, whooping-cough 133, diphtheria 86, measles 74, scarlet fever 49, diarrhœa 42, fever 29, small-pox (Birmingham 7, Bradford 2, West Ham 1) 10.

The death-rates ranged from 11.2 in Croydon to 27.0 in Wolverhampton; Birmingham 16.9, Bradford 16.5, Burnley 17.8, Hull 18.9, Leeds 17.4, Leicester 16.0, Liverpool 25.4, London 18.6, Manchester 22.2, Newcastle-on-Tyne 18.8, Nottingham 14.9, Portsmouth 17.1, Sheffield 16.8, Sunderland 19.9, West Ham 16.6.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 24, 1894, TO MARCH 2, 1894.

Leave of absence for twenty days, to take effect upon the adjournment of the Eleventh International Medical Congress to be held at Rome, Italy, March 29 to April 5, 1894, is granted Colonel Bernard J. D. Irwin, assistant surgeon-general, U. S. A.

A board of medical officers to consist of Major Joseph K. Corson, surgeon; Major Walter Reed, surgeon; Captain Julian M. Cabell, assistant surgeon, is, by direction of the Secretary of War, appointed to meet at the call of the President thereof, at the Army Medical Museum Building, in this city for the examination of First-Lieut. Philip G. Wales, assistant surgeon, to determine his fitness for promotion.

First-Lieut. Wales will report in person to the President of the Board at such time as he may designate.

By direction of the President, the retirement from active service on the 25th of February, 1894, by operation of law, of Captain George T. Beall, medical storekeeper, under the provisions of the act of Congress, approved June 30, 1882, is announced.

The leave of absence granted Captain Reuben L. Robertson, assistant surgeon, U. S. A., is extended one month.

Major John Brooke, surgeon, U. S. A., retired from active service February 22, 1894.

First-Lieut. Ashton B. Heyl, assistant surgeon, relieved from duty at Fort Niobrara, Nebraska, ordered to Columbus Barracks, Ohio, for duty at that depot, on the arrival of First-Lieut. Thomas S. Bratton, assistant surgeon, at Fort Niobrara, Nebraska.

The leave of absence on surgeon's certificate of disability granted Major Edward B. Moseley, surgeon, U. S. A., is extended one month.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MARCH 3, 1894.

Richard Ashbridge, passed assistant surgeon, dismissed from the Naval Service, February 28, 1894, by the President's approval of the sentence of General Court Martial.

A. G. Cabell, passed assistant surgeon, ordered to the U. S. S. "Michigan."

J. S. Sayre, passed assistant surgeon, detached from the U. S. S. "Michigan" and ordered to the Naval Hospital, New York.

R. G. Broderick, assistant surgeon, detached from the Naval Laboratory and Department of Instruction, and ordered to the Naval Hospital, Mare Island, Cal.

THE ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES.

The fourth annual meeting of this Association will be held in Washington, D. C., May 1, 2 and 3, 1894.

This National Organization is composed of medical officers of the U. S. Army, U. S. Navy, National Guard of the United States and the Hospital Marine Service. The afternoon of one day will be set apart for an object lesson from the "Manual of Drill," by the Hospital Corps. The evenings will be given up to social entertainments.

Geo. Henderson, *Chairman Com. of Arrangements.*
Nicholas Senn, *President.*
Eustathius Chancellor, *Secretary.*

THE COLORADO STATE MEDICAL SOCIETY.

To the Members of the American Medical Association.

Members of the American Medical Association are cordially invited by the Colorado State Medical Society to stop over in Denver on returning from the coast and attend the meeting of the Society convening on June 19th and continuing through the 20th and 21st.

Members who expect to return via Denver are invited to correspond with the Secretary, that invitation to participate in the programme and proper entertainment may be arranged.

Edmund J. H. Rogers, *President.*
A. Stewart Lobingier, *Secretary*, Barth Building, Denver.

SOCIETY NOTICE.

Boston Society for Medical Improvement.— A regular meeting of the Society will be held at the Medical Library, No. 19 Boylston Place, on Monday, March 12, 1894, at 8 o'clock, P. M.

Dr. W. F. Whitney: "Cirsoid Myxoneuroma of the Tongue," illustrated by lantern slides.

Dr. C. W. Townsend: "Mild Forms of Nasal Diphtheria." Discussion opened by Drs. A. L. Mason and J. H. McCollom.

Members are requested to show interesting cases and pathological specimens.

John T. Bowen, M.D., *Secretary.*

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The next lecture will be given on Wednesday evening, March 14th, at 8 o'clock, by Dr. John Homans. Subject, "Ovariotomy." Physicians are cordially invited.

RECENT DEATHS.

Joel Seaverns, M.D., M.M.S.S., died in Roxbury, March 1st, aged sixty-five years. He was born in West Roxbury and graduated from Harvard College in the class of 1850, of which he has since been secretary. He received his degree of M.D. from the Medical School in 1854. During the war of the Rebellion he was acting assistant surgeon from May, 1862, to December, 1863, when he was commissioned assistant surgeon of the U. S. Volunteers. In 1864 he was promoted to be surgeon and in 1865 was made Brevet Lieutenant-Colonel for faithful and meritorious service. He had charge of the hospital ships *The New World* and *De Molay* and was for some time post surgeon at Fort Warren in Boston Harbor. Since 1866 he has been in active practice in Roxbury. He was for some years a member of the Boston School Committee and has been actively interested in the work of secret societies, being Medical Examiner-in-Chief of the Royal Arcanum. He has been a Councillor of the Massachusetts Medical Society and President of the Norfolk District Society. He was a man of scholarly habit, keen perception and quiet, unostentatious execution. His literary work was marked by wide research, careful criticism and a clear, attractive style. He won the professional respect as well as friendship of those who were his colleagues.

William John Gordon Fogg, M.D., M.M.S.S., died in South Boston, February 27th, aged forty-three years. He graduated from Harvard College in the class of 1873 and from the Medical School in 1876.

James Parrish, M.D., died in Portsmouth, Va., January 21, 1894. He was a member of the Medical Examining Board and of the State Board of Health of Virginia.

BOOKS AND PAMPHLETS RECEIVED.

Annual Reports of the President and Treasurer of Harvard College, 1892–93. Cambridge: Published by the University. 1894.

Manual for the Use of Boards of Health of Massachusetts, Containing the Statutes Relating to the Public Health, the Medical Examiner Laws, the Laws Relating to the Registration of Vital Statistics and the Decisions of the Supreme Court of Massachusetts Relating to the Same. Prepared by direction of the State Board of Health. Boston: Wright and Potter Printing Co., State Printers. 1894.

Lectures on Auto-Intoxication in Disease, or Self-Poisoning of the Individual. By Ch. Bouchard, Professor of Pathology and Therapeutics, Member of the Academy of Medicine, and Physician to the Hospital, Paris. Translated, with a preface, by Thomas Oliver, M.A., M.D., F.R.C.P., Professor of Physiology, University of Durham; Physician to the Royal Infirmary, Newcastle-on-Tyne; and Examiner in Physiology, Conjoint Board of England. Philadelphia: The F. A. Davis Co. London: F. J. Rebman. 1894.

Original Articles.

THE TREATMENT OF PREGNANCY COMPLICATED BY HEART DISEASE.[1]

BY GEORGE G. SEARS, M.D.,
Physician to Out-Patients, Boston City Hospital.

In reporting the following case I realize that I may lay myself open to severe criticism for hasty action, but I hope to prove that the course adopted was chosen only after full consideration had shown it to be the best method of meeting a complication of pregnancy, whose gravity is universally recognized, but whose treatment seems to have been most inadequately dealt with in the text-books.

The patient was sent to me by Dr. George Haven, in 1889, when she was twenty-one years old, for the relief of cardiac symptoms of over three years' duration. There was no rheumatic history, but she had had both scarlatina and diphtheria as a child. There was little œdema of the feet, considerable dyspnœa on exertion, cough and slight hæmoptysis. The cardiac dulness extended about one finger's breadth to right of sternum, while the apex was in the fifth interspace just within the mammillary line, where a loud presystolic thrill could be heard and felt. She improved greatly under treatment, and after a few weeks discontinued her visits; so that I saw nothing more of her until November, 1892, when she again appeared for advice.

During the intervening three years she had been fairly well; but on several occasions after exercise she had had "fainting spells," which were preceded by severe cardiac pain. During the early part of the summer she had overexerted herself in preparation for her marriage, which took place in August. Her catamenia, which in July were attended by an excessive flow, occurred last on August 27th, since when she has been gradually losing ground, cough and dyspnœa having slowly increased. Hæmoptysis now frequently occurred, vomiting had become very troublesome, and she was very anæmic. Always nervous and somewhat hysterical, her condition had become greatly aggravated by the recent death of a friend during labor, from some cardiac complication, and she was haunted night and day by fear of a similar fate.

The lateral area of cardiac dulness had somewhat extended, as compared with the last examination; and in addition to the presystolic, a short systolic murmur was at times heard a little to the left of the apex beat. Except for œdema of both bases, the lungs were normal, and there was no swelling of the extremities. The urine had a specific gravity of 1,022 and contained a very slight trace of albumen. The pulse was regular but very small and easily compressed. While at rest its rate was only 78, but on the slightest exertion it rose to over 100. Dyspnœa was so great that she spoke only in disjointed phrases, pausing after every few words to catch her breath.

After a month's treatment by rest in bed, a restricted diet, digitalis and tonics, her condition became somewhat better, vomiting grew less frequent, and the pulmonary œdema cleared up; but as the dyspnœa improved but slightly, and the pulse made no gain in strength, I asked Dr. Haven to see her with me.

After a thorough discussion of the case, it was decided to induce abortion; and on December 12th Dr. Haven dilated the cervix and packed the womb with iodoform gauze, this method being chosen in preference to an immediate evacuation as, with her extremely weak pulse, we feared the effects of etherization on the heart. Two days later the packing was removed, and a four months' fœtus found in the vagina, the discomfort of the patient having been very slight. Recovery was uneventful, but her later condition has been such as to confirm the wisdom of our action. She is able to come into town occasionally to report, but can walk only at a very slow pace, and has since had several attacks of pulmonary œdema, in which her condition was critical.

To briefly recapitulate, the problem which confronted us was this: a patient with a double mitral lesion, between three and four months pregnant, who has had for several years alarming symptoms of failure of compensation, and in whom the slightest exertion, after a month's careful treatment, upsets the cardiac balance, is called upon, after passing through a further period of five months, during which increased demands are physiologically made on the heart, to meet the tremendous muscular strain of parturition; What advice should be given her? Or rather, to put the question in more general terms, What advice should be given to any pregnant woman with heart disease? Should she be allowed to proceed toward term, her strength being carefully supported and her progress watched with the possibility always in view of terminating pregnancy if her condition becomes desperate, or should she be at once delivered? Mortality statistics drawn from published cases make the outlook for these patients very bad when nature is allowed to take its course; for Porak,[2] out of 92 cases, found a death-rate of 38.09 per cent.; and Remy,[3] out of 118, found one of 33.8 per cent. Of 77 cases collected by Wessner, 38 died, or 37 per cent. As all these series contain a number of identical cases, including McDonald's, a close similarity in the ratios was to be expected. More recently, Schlayer has reported 25 cases with 10 deaths, and Leyden 20 cases with 11 deaths. Of 30 cases which I have collected, not included in the above, 10 died. These percentages are based upon the number of women, not on the number of pregnancies, and are drawn almost entirely from severe cases, and may therefore approximate the average death-rate when serious symptoms have appeared. That they overestimate the actual mortality in the rank and file of cases is proved by every-day clinical experience, which shows that a large proportion of them pass through pregnancy and labor without the development of any evidence of serious cardiac embarrassment, or even at times of any signs whatever which lead the patient to suspect her disability.

One of these seems of sufficient interest to briefly report, not only on account of the number of pregnancies successfully weathered, but also because the ultimate fate of the children corroborates the grave prognosis which is given of their chances of surviving to adult life. The lesion was one of mitral regurgitation and stenosis. The patient, Mrs. C., thirty-two years old, had had three attacks of chorea as a child, but no distinct history of rheumatism. Between the ages of eighteen (when she was married) and twenty-seven she had six children, and one miscarriage at three months. The first pregnancy was uneventful, no trouble being suspected with her heart, but the second was attended by many stormy symptoms. She then received treatment for the cardiac condition and had much less difficulty with the next three, breathlessness and œdema, however, being more or less troublesome in each; but in the sixth her condition was such that the gravest apprehensions were felt as to her recovery, and the last few weeks were spent propped up in a chair. The labors were all rapid and easy, being terminated within an hour. The third child alone survives, the others all dying within a few months after birth.

---

[1] Read before the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, January 17, 1894.

[2] Thèse de Paris, 1880.

[3] Thèse de Nancy, 1880.

For the sake of simplifying the original question cases of pregnancy complicated by heart-disease may be divided, with reference to treatment, into three classes, according to the severity of the symptoms: the first including all cases where they are wanting or slight, the second those in which they are so severe that the condition of the patient is desperate, and the third those which occupy a position midway between the two. The treatment of the two former may be dismissed in a few words. In the first, general supervision over the patient's manner of life, with the administration of tonics, will probably be all that is required to bring the case to a successful termination, or, at most, it may be necessary to hasten delivery should danger arise from too prolonged a labor. In the second class, the condition of the patient is already so critical that the induction of abortion may seem to give the only chance, though even here a timely venesection may change the aspect of the case, as it has done in several recorded instances, in one or two of which it was repeated several times. In the third class, to which the first case reported above belongs, as well as most of those in which the statistics previously given are based, where the patient still has several months before her, and symptoms have developed which either do not yield, or only partially so, to appropriate remedies, conditions are much more complex; and the question of treatment, whether by hopelessly waiting for nature to act, or by sacrificing the child in the interest of the mother, can only be decided in an individual case by the most careful study, both of her material circumstances and of her previous history and present physical condition, so far as they bear on the probability of an easy or difficult labor, and the preservation or loss of cardiac compensation. Many of these are fully discussed in text-books on heart disease and midwifery; so that only those need be mentioned in which the two conditions react upon each other, although the advantages of general good health and the ability to command every necessary attention may be referred to, as two such circumstances had considerable influence in determining us to induce abortion. These were the intense anxiety caused by the death of a friend under similar circumstances (which was alone exhausting her strength), and her suburban residence (which prevented prompt medical attendance should it have been suddenly demanded). The following points, however, deserve special consideration, namely, the site and gravity of the lesion, the time at which it was acquired, its stationary or progressive character, the period of the present pregnancy at which serious symptoms developed, and, in multiparæ, the history of previous pregnancies and labors.

As was to be expected when dealing with a class of patients, most of whom are under forty, and all of whom are women, statistics show that mitral disease largely predominates. Thus, out of Porak's 92 cases, there were 22 instances of mitral regurgitation, with 3 deaths; 13 of mitral stenosis, with 8 deaths; and 22 of combined mitral lesions, with 10 deaths; in all, 57 cases, with 21 deaths. There were 13 cases of aortic lesions, with 3 deaths; while of 22 cases of complex lesions, 11 died. Remy found 29 cases of mitral insufficiency, with 6 deaths; 19 of mitral stenosis, with 11 deaths; and 15 of double mitral lesions, with 6 deaths; a total of 63 cases, with 23 deaths. Of the aortic cases, there were 12 with regurgitation, of whom 2 died; while 2 with stenosis and 3 with a double lesion recovered (17 cases and 2 deaths). Of complex lesions he found 16 instances, with 3 deaths. Of the cases which I have collected, there were 14 of mitral stenosis, with 4 deaths; 1 fatal case of mitral regurgitation; and 2 with combined mitral lesions, both of the latter recovering. There were 6 aortic cases, with 1 death; and 7 of complex lesions, with 4 deaths. If these latter figures be added to those of Remy, as the larger of the two series just quoted, we find the mortality-rate to be as follows: mitral stenosis, 45.5 per cent.; mitral regurgitation, 23.33 per cent.; double mitral lesions, 35.5 per cent.; and complex lesions, 30.5 per cent. The mortality-rate of the pure aortic cases was but 13.67 per cent., but 3 out of 23 dying, in all of which the valve was insufficient.

As these figures are drawn from the same source as those previously given, the same criticism is applicable, that they represent serious cases only, but so far as any conclusion is justifiable, they show that mitral cases are more apt to terminate fatally than aortic of apparently equal severity, and those with mitral stenosis than those with regurgitation, a conclusion which has its value, though a slight one, in estimating the chances of an individual case.

The means of determining the extent of the cardiac lesion are not altered by the advent of pregnancy; but the point was well made by McDonald, that the probability of its being compensated is much enhanced if it is not of very recent origin, for if the muscular substance of the heart has had opportunity to hypertrophy till it is able to counterbalance the valvular defect, it will be much more liable to prove sufficient under the additional strain than when the double duty is thrown upon it all at once. The prognosis is also better if the first appearance of serious symptoms is postponed until the later months; but in estimating their gravity it is essential not to confound those which are due to the cardiac lesion with those which result from the profound impression sometimes produced by an uncomplicated pregnancy upon the maternal organism, and which, though threatening, may be expected to pass off after the third month.

With the development of the uterus and the growth of its contents, coincident changes in the circulatory apparatus take place, and lead to a physiological hypertrophy and dilatation of the heart, while alterations in the composition of the blood induce a form of anæmia and so impair the cardiac nutrition that fatty and other degenerations of the myocardium are not very infrequent. Such changes occur gradually, and are not usually sufficiently pronounced to give rise to symptoms of failing compensation till between the fourth and sixth months; so that, other things being equal, little reserve power in the heart may be inferred if they appear before that time. The reverse of this proposition, however, that the later the development of symptoms the better the outlook, is only partially true, as cases are occasionally met with where the patient has passed through her pregnancy without exciting any special anxiety, and yet has suddenly died from œdema of the lungs during labor or even in the puerperium. At times, also, death results from postpartum hæmorrhage, a not very infrequent occurrence in these cases, though it is possible that its gravity is often overestimated since it may be a conservative effort of nature, especially in mitral disease, to relieve an over-distended right ventricle.

In multiparæ the histories of their previous experience may give much valuable information, as the tendency of the cardiac symptoms is to grow more severe with each succeeding pregnancy, owing to the extra burdens which have been thrown upon the heart, and also occasionally to fresh attacks of endocarditis, to which pregnant women seem peculiarly liable. But little doubt can exist of the necessity of inducing abortion if there is a history of extreme danger in the previous pregnancy of gravido-cardiac origin, or if, with serious symptoms in the present, the lesion is found to be progressive from a rekindling of the endocardial inflammation. As the period of greatest danger is during the expulsive stage of labor from the participation of the abdominal and other muscles, after the necessity of terminating pregnancy has been once determined, the sooner it is done the greater the chances for the mother, especially if the fœtus is still small and the expulsive force can be chiefly furnished by the uterus. The idea that the induction of labor may be held in reserve until the patient is in a condition of imminent peril and then be resorted to in the anticipation of accomplishing any great measure of relief, does not seem to be justified by facts. Schlayer[4] says that all cases in which premature labor was brought on under these circumstances in one of the obstetrical clinics of Berlin, died either during labor or shortly after, and in the published cases also recovery followed only in rare instances.

Regarding the moral side of the question it must be admitted that the child is apparently sacrificed for the sake of a mother whose health is permanently impaired and whose expectation of life at best cannot be long, but it is a fair question whether too much importance has not been attached to it, if the ultimate fate of the child be considered, when nature is allowed to take its course. Charpentier says that abortion and premature labor are very frequent and the children who are born at term do not live long. So sweeping a statement cannot, of course, be taken without qualification, otherwise it would be an almost imperative duty to induce abortion at the first sign of danger, but he quotes Casanova as believing that in more than half the cases where more or less marked symptoms have manifested themselves pregnancy is not completed, and says that Duroziez noted twenty-one miscarriages among forty-one women with heart disease, and five deliveries at six months, while thirty-seven of the children who were born alive died before reaching five years.

I cannot refrain from referring to a case of advanced mitral regurgitation which I saw yesterday, as it appears to illustrate so well this point; yet it must be admitted that the fate of the fifth child may have been an accidental coincidence. The patient was a woman about thirty-six years old, and had been pregnant six times, the first four children being still alive. After the birth of the third child she had an attack of acute rheumatism, from which the cardiac lesion in all probability dates, although no sign of it became manifest until the fifth pregnancy, when she suffered from cough, dyspnœa and other evidence of cardiac embarrassment, but was delivered at term after a very rapid labor. The baby died eighteen months later of some acute pulmonary affection, which was said to be pneumonia. During the sixth pregnancy she suffered from serious symptoms, and miscarried at the seventh month.

There seems to be little question that the mortality-rate among children born after serious cardiac symptoms have developed in the mother, is high, but statistics are meagre, as the child so often passes from observation after the lying-in period is over. The frequency of abortion or premature delivery, however, can be more closely approximated, though the opportunities for error in determining the ratio of this event are great, as in multiparæ it may be impossible to tell when the cardiac lesion first developed, and many of the earlier pregnancies may have been free from any cardiac complication. However this may be, Porak found that out of 214 labors 88 were premature, or 41 per cent.; while Remy, in 272 labors occurring in 112 women, found 87 premature, nearly 32 per cent., 51 taking place before the seventh month.

The fact that the death of the mother has not always occurred in apparently the most desperate cases, has probably had much to do in producing the conservatism which has heretofore prevailed. Yet it is not enough that the patient should come out alive, her future must also be regarded: and when one considers the loss of *morale* induced by the sense of her critical condition, the extra burden thrown by pregnancy upon a weakened heart, and the strain of parturition, so great that in a case of Simpson's rupture of the aorta occurred, it is not surprising to find that child-bearing has been the starting-point in many of these cases of a downward course soon followed by death, which was as much a result of it as though it had occurred before the puerperium was ended, but which, nevertheless, does not appear in the statistics.

I do not wish to be considered as holding a radical position on this question, nor as advocating so serious a measure as an abortion until other means have shown their probable futility, but would protest against allowing moral considerations to drive us into too great conservatism when the danger to the mother is so great and the future of the child so doubtful. I am inclined to believe that when the probable necessity for an abortion begins to be seriously considered, that in the long run we shall have less to regret if it is done immediately than if it is postponed till worse comes to worst under the delusive idea that it is an efficacious measure when employed as a last resort. Certainly after the seventh month, when the child is viable, the condition of the mother should be the chief guide for action.

The question of the advisability of marriage for women with valvular disease has been the subject of much ardent discussion. While it is true that many such patients have passed through numerous pregnancies without apparent harm, yet so many factors have to be considered, for whose estimation we have most insufficient evidence, that except for very unusual cases Peters's dictum seems to be the safest guide, namely, that such women should not marry, that if they are married they should not become mothers, and if they are mothers they should not nurse their children.

---

[4] Quoted in Sem. Méd., March 30, 1892.

The points which I have wished to emphasize may be summarized in the following propositions:

(1) That many women with valvular disease, even when situated at the mitral orifice, pass through repeated pregnancies without the development of serious symptoms, and at times without suspecting that they are victims of such disease.

(2) That as miscarriages are very frequent, and the chances of the child's surviving more than a few years are doubtful, if the mother's condition during pregnancy has been serious, the probable fate of the latter should take so much more prominence in deciding the question of abortion.

(3) That the necessity of inducing abortion is very probable if grave symptoms have appeared during the early months or are present with an advancing lesion, or if there is a history of extreme danger in the preceding pregnancy.

(4) That if the necessity for an abortion becomes apparent, the sooner it is done the better, while the fœtus is still small and the expulsive force chiefly furnished by the uterus.

(5) That the hope that relief may be given when the case has become desperate by inducing abortion is delusive, as it is possible that it only increases the danger.

(6) That marriage should be forbidden, except perhaps in very unusual cases, to women suffering from cardiac disease.

◆

SIX CASES OF EXTRA-UTERINE PREGNANCY.[1]

One a Pregnancy in Both Tubes at the Same Time, with the Possibility of there also being a Twin Pregnancy in the Left Tube. — Cœliotomy. — Recovery in All.

BY F. W. JOHNSON, M.D.,
Visiting Gynecologist, Carney Hospital; Visiting Gynecologist, St. Elizabeth's Hospital.

Case I. G. F., married, aged twenty-eight, consulted me on Tuesday, September 29, 1891. A diagnosis of extra-uterine pregnancy was made, and I operated on her at the Carney Hospital. The following is the history of the case and the result of the examination:

Dysmenorrhœa since puberty. The pain, situated in front and low down in the abdomen, comes on several days before the flow, and lasts throughout menstruation. For the past year has had quite severe pain in the right ovarian region when unwell. Flows five days. Flows quite freely. Leucorrhœa for years. Had always been regular to the day until August 9th. Instead of menstruating at this time, she went to August 16th, just one week over her time. August 16th flowing began, and continued, at times profusely, for two weeks. In two weeks the flowing again began, and has continued up to the present time. Since August 16th, when the flowing began, until September 20th, has had a dull pain in right ovarian region. The breasts have enlarged.

Sunday, September 20th, was suddenly seized with severe, cutting pain in right ovarian region. This pain lasted one hour, and produced fainting. This severe pain was repeated September 28th, and lasted two hours. Formerly the pain in the right ovarian region was dull in character, but since the severe attack of pain it has been more cutting in character. From August 9th to August 16th, the week following the date of expected menstruation, there was a dull, heavy dragging-down in lower abdomen.

Examination. — From half-way between umbilicus and pubes, extending over the whole of the lower part of the abdomen, there was marked sensitiveness on pressure. By vagina, a soft mass, the size of the fist, excessively sensitive, was found in Douglas's pouch, and on this the uterus rested in a position of retroversion. Bright red blood flowed from the cervix. Uterus measured three inches in depth. Temperature 99°, pulse 110.

Operation. — On opening the peritoneal cavity, dark-colored blood welled up through the incision. The abdominal cavity below the incision contained fluid and clotted blood of a dark color, and no bright blood was found until the right tube and ovary were brought into view. A portion of the right tube towards the ovary was found dilated. This dilatation was about the size of a small English walnut, and from the upper part of it fresh blood oozed out through an opening the size of a pin's head. The right tube and ovary were ligated and removed. On the left side a cystoma of the ovary was found, and it, with the tube, was ligated and removed. The peritoneal cavity was thoroughly washed out with a salt solution, and the abdomen closed. About a quart of fluid and coagulated blood were removed. The mass in Douglas's pouch was composed of coagulated blood, and was dug out with the fingers. Convalescence was uninterrupted.

Twenty-three days after the operation she was discharged well. December 2d, she reported that she felt perfectly well.

Dr. Whitney's Report. — "The following is the description of the ovaries and tubes from the case of Mrs. G. F., received from you October 1, 1891:

"(1) Ovary and Tube. The portion of the tube measured about six and one-half centimetres. About two centimetres from the fimbriated end, which was normal, was a rounded enlargement measuring about two and one-half centimetres by two centimetres, dark red in color, and covered with shaggy, thin adhesions. About the middle of the nodule, opposite the side of the ligament, was a very small rent with a hæmorrhagic, infiltrated edge. The remainder of the tube, about two centimetres, was of normal size and calibre. Sections made through the nodule, and examined microscopically, showed the greater part to be made up of blood clotted among small, villous projections, fibrous in character, and covered with a low epithelium, similar in every way to the villi of an immature placenta. Just beneath the outer surface were large and very thin-walled vascular sinuses. The cavity of the tube was dilated, and its lining membrane was apparently reflected up on to the mass of blood and villi; but whether it was continuous entirely over it could not be determined. Apparently, however, it was not. From the distal end of the nodule there opened a distinct diverticulum from the tube, which could be followed almost to the fimbriated end, where it stopped. The relations were such as to show that the nodule had developed entirely in the main tube, and not in the diverticulum. In none of the sections was there any evidence of a fœtus found. The ovary attached to this tube measured two by two and one-half centimetres, was irregularly shaped, and from one place a reddish nodule projected, which, on section, showed an irregularly festooned outline enclosing a yellow mass of large cells (corpus luteum).

---

[1] Read before the Obstetrical Section of the Suffolk District Medical Society, December 28, 1893.

"(2) Tube and ovary. The piece of tube measured about six centimetres, and was of normal size and structure. The ovary measured about three by four centimetres, and was mostly made up of a cyst, filled with thin fluid, extending deeply into the hilus, where there was a layer of ovarian tissue gradually thinning out over the cyst.

"The case is one of tubal pregnancy with rupture. There are no positive data as to the length of time, but from its size it is probably within two months."

Case II. B. K., married, aged twenty-eight, entered the hospital September 30, 1892.

Menstruation began at thirteen. Regular every four weeks. (Eleven years ago went three months without menstruation.) Flows five or six days. Flows very freely. No dysmenorrhœa. Three children. No abortion. First confinement October 1, 1889. Last confinement March 1, 1892. Nursed her child up to the time of entering the hospital. She had had a bloody discharge from the vagina for four weeks. This had increased very much since the last of August. Since the flowing began there had been bearing-down pains in the back, side and abdomen. There had been interrupted, sharp pains in the left ovarian region for three weeks. Urine and defecation caused pain in left ovarian region.

Examination showed a large movable tumor on the left side, in the region of the left broad ligament.

Operation, October 10th. On opening the peritoneal cavity, a large, grayish-white cyst presented. Eleven and one-half pounds of dark, bloody-looking fluid were removed by tapping. At the upper part of the cyst inside, there was a solid mass as large as a goose's egg, which was papilloma. Directly opposite this, on the outside of the cyst wall, the mesentery, omentum and intestines were adherent. No papillomatous disease could be seen on intestine or omentum. The pedicle was tied, cut and cauterized. There was an hæmetocele between the layers of the left broad ligament, containing eight to ten ounces of dark, clotted blood and *débris*. This was emptied, and as much of the broad ligament as possible was tied off and removed. The cavity was washed out with salt solution and packed with sterilized gauze to stop the bleeding, which was quite free. The right tube and ovary looked healthy, and were left. So much shock, lasting for hours, followed the operation that the gauze was not removed for forty-eight hours. In consequence, a sinus was left; otherwise her convalescence was perfect.

Dr. Whitney's Report. — "The specimen consisted of a portion of the tube and ovary, with a considerable mass of dark, clotted blood. The specimen was considerably torn, and the relations were not readily evident to the eye. Microscopical examination showed the tube to be normal wherever seen; but the layers of the ligament were infiltrated with blood, and there were numerous newly-formed vessels and thin-walled sinuses. A few large, flat cells were found mingled with the blood-clot, recalling the so-called decidual cells. A definite diagnosis cannot be made in this case from the histological condition."

Case III. H. J. O., married, thirty-eight years of age, was operated on October 17, 1892. Had had three children. One abortion with twins, eight years ago, at five months. Two living children since. Menstruation began at sixteen. Always regular every four weeks. Flows seven to eight days. Always flowed excessively, soaking twenty-five to thirty napkins. Until birth of first child had severe dysmenorrhœa, beginning with the flow and lasting the first day. Since first confinement absolutely free from all pain at menstrual periods. Last child was born November 12, 1891. Good getting-up, except that it took her a long time to get her strength. There was a bloody discharge from the vagina for three weeks after confinement. There had been a great deal of leucorrhœa since marriage. March 6th, four months after confinement, menstruation returned. Flowed eight days. No pain. Flowed profusely. Unwell every five weeks until the menstrual period was due in October. When four days over her time, October 10th, was taken with severe pain in the lower abdomen. Fell to the floor, and was unconscious for several minutes. Large doses of morphine were required to relieve the pain. The face was pale, and she felt faint and was very thirsty. Wednesday, October 12th, she was taken with severe pain in both ovarian regions, and begun to flow. There was but a show, and the pain lasted but five minutes. There was no return at all of a bloody vaginal discharge. Saturday, October 16th, during the evening, she had a return of the severe pain in the lower abdomen. She grew very pale, felt faint, and was thirsty. The pain lasted one hour, although morphine was given twice. Monday, October 17th, during the forenoon, she was seized with severe pain in the lower abdomen. As before, she grew pale, felt faint, and was very thirsty. On the arrival of the family physician, Dr. E. S. Boland, the feet, hands and nose were cold. The face was white, the lips colorless. She was restless, with now and then sighing respiration. Temperature 99°, pulse 120. Dr. Boland made a diagnosis of internal hæmorrhage, probably a ruptured extra-uterine pregnancy.

Dr. Fogg saw her in consultation, and agreed with Dr. Boland. I saw her with Dr. Boland a few hours after the onset of the pain and collapse. Reaction had set in. The temperature and pulse were normal. The severe pain in the abdomen had ceased, although there was marked tenderness on pressure over the abdomen below the umbilicus. Resonance was present, but over the right ovarian region there was slight dulness. On the right side, nearly on a line with the umbilicus, there seemed to be a line of resistance, but this was less marked when the patient was etherized. Nothing could account for the symptoms more perfectly than an ruptured extra-uterine pregnancy. She was sent into St. Elizabeth's Hospital, and a coliotomy was done as soon as she reached there. The abdomen was full of blood, fluid in the region about and above the incision, clotted in the lower abdomen and Douglas's pouch. Owing to the dulness over the right ovarian region I expected to find the rupture on the right side; but it took but a minute or two to run the right tube between the thumb and finger, and thus prove that there was no rupture on the right side. On feeling for the left tube, the fingers came in contact with a shaggy mass. On drawing this up to the incision the rupture in the tube was seen, from which was squeezed out an embryo in an unbroken sac filled with clear fluid. It was a beautiful specimen. The right tube and ovary were not removed. On entering the hospital the temperature was 100°, and the pulse 115. Owing to her very weak condition, no attempt was made to wash out the peritoneal cavity. The clots and fluid blood that could be easily reached were sponged out. No drainage. For hours after the operation, shock demanded constant attention. Her recovery was uninterrupted, and she was discharged twenty days after the operation.

Dr. Whitney's Report. — "The specimen consisted of about six or seven centimetres of the Fallopian tube with the ovary attached, and an embryo about three centimetres long in an unbroken sac filled with clear fluid. About two centimetres from the fimbriated end the tube was dilated into an egg-shaped enlargement about three centimetres in its longest diameter. The free surface was torn, and from this a shaggy tissue infiltrated with blood projected. Microscopic examination showed this to be made up of branching fibrous filaments (chorionic villi). The ovary, to which the end of the tube was slightly adherent, contained a large corpus luteum."

Case IV. S. F., married, aged twenty-nine, entered the hospital November 20, 1892. Has had seven children, the youngest being six years old. Nine years ago had two miscarriages at about six months. Ten years ago miscarried at eight months. After her first labor had puerperal trouble of some kind, and was in bed seven weeks. From her first pregnancy until six years ago never menstruated, as she was either pregnant or nursing. Since then she has been regular every thirty days. Has flowed two to three days, and the amount has been small. Constant leucorrhœa since her last confinement. Last unwell four months ago. During the first two months of this period had no trouble except "morning sickness." Then came loss of appetite, epigastric pain and constipation. Six weeks ago begun to have attacks of sharp pain in the lower abdomen, chiefly in the left ovarian region. About this time a bloody discharge made up of fluid blood and clots begun from the vagina. The abdomen was distended, and everywhere below the umbilicus it was sensitive to pressure. Pulse and temperature were elevated. She had lost much flesh and strength. By vagina, a soft elastic mass, the size of a small orange, was felt in the right ovarian region. On opening the peritoneum dark-colored blood welled up. There was a large quantity of fluid blood and clots in the abdominal cavity, but it was dark-colored. On pressing the hand down to the right tube, an embryo, head presentation, was grasped, and drawn out of a rent in the tube. When placed on the table, it moved. Both tubes and ovaries were removed. The peritoneal cavity was thoroughly washed out with a salt solution. No drainage. She made a good recovery.

Dr. Whitney's Report. — "The specimen consisted of both ovaries and tubes. The right tube measured about ten centimetres in length. The outer eight centimetres of this was occupied by a flattened oval enlargement about six centimetres in diameter. On the free border there was a small opening with a hæmorrhagic, infiltrated edge connected with an irregular rent (made by the finger at the time of operation). This opened into a cavity lined by a smooth membrane. Microscopic examination showed the lumen of the uterine end of the tube partially closed by a fibrous mesh-work, the partitions of which were covered on either side by a layer of columnar epithelium. The enlarged part of the tube showed villi of the chorion mixed with blood-clot. The embryo which came with this measured seven and five-tenths centimetres. The ovary connected with this measured two centimetres, contained a small dark cyst, and a large corpus luteum. The other tube and ovary showed little change from the normal."

Case V. W. W. R., married, aged twenty-four, was sent to me by Dr. J. F. Croston, of Haverhill, January 24, 1893. The following is the history of the case:

Never pregnant. Menstruation began at thirteen. Regular every five weeks. Flows seven days. Flows moderately. Never any dysmenorrhœa. September 11th menstruation began, but the quantity was less than usual. Seven weeks after this menstrual period she was seized with severe, excruciating pain in the lower part of the abdomen, in the median line, extending through to the back, and vomiting. The pain lasted one hour. In two weeks the pain and vomiting returned, and lasted two hours. Between these attacks there was nausea and vomiting, but they were not confined to the morning. The third attack came on ten days after the second. When three months over her time ptyalism began, and lasted six weeks. The fourth attack came on twelve days after the third. The fifth attack began seven days after the fourth, and was accompanied with a show. November 26th, pain with flowing. December 3d, began to flow quite freely. Went to bed, and flowed one week. December 10th, severe pain and profuse flowing, followed by collapse. Four weeks later, with no flowing, passed a "cast of the womb." Stayed in bed until January 10th. No flowing since the collapse. Sore feeling in the left ovarian region. If pregnant, would be four plus months. Nausea and vomiting lasted until the cast of the womb came away. Six years ago she was in bed six weeks with peritonitis, and has had several less severe attacks since.

The history of the case was so typical that I made a diagnosis before examining her.

A smooth, elastic tumor was found behind and to the right of the uterus. Uterus was quite firmly fixed. The examination caused considerable pain.

Sunday, January 29th, the abdomen was opened. There was no blood in the abdominal cavity. Between the layers of the right broad ligament there was a tumor the size of an orange. I tried to tie off the ligament so as to remove the tumor intact, but I was unable to get more than half round owing to very thick abdominal walls, and a poor light. A hole was then dug through into the tumor, which contained a fœtus, placental tissue, and blood. The cavity in the broad ligament was thoroughly cleaned out with fingers and sponges, then washed out, and packed with gauze to arrest the oozing. The tube had ruptured on the under side, and the ovum, as it grew, made for itself a place between the layers of the broad ligament. A small cystoma was removed from the left side. The tube and ovary in the right side were removed. She returned home in about three weeks. Menstruation returned two months after the operation, and has been regular every four weeks.

The fœtus was given to Dr. Whitney, who was present at the operation.

The blood and *débris* had begun to break down, and had so softened the fœtus that it was not preserved.

With some difficulty the sex was made out. This would bring the age of the fœtus up to about the fourth month.

Case VI. This is the only case on record, as far as could be found in the literature on the subject, of pregnancy in both tubes at the same time.

Mrs. H., aged thirty-six, entered the Carney Hospital November 16, 1893. No children. Had aborted three times at about two months. There had been an interval of about one year between each abortion. Last abortion two years ago.

Menstruation began at sixteen. Always regular. Flows three to four days. Uses five to six napkins. Only slight discomfort when unwell.

October 25th, having gone six weeks without menstruating, passed a small blood-clot. "Labor" pains were present to a slight degree, being mostly in front. October 27th, had a severe attack of colicky pain in the lower abdomen, obliging her to go to bed. The pain was severest in the right ovarian region and extended up the side under the ribs. This pain was relieved by applications of heat. There was slight flowing. October 28th, she was up and about. October 29th, the severe pain again returned, and she was obliged to stay in bed until November 1st. During this time she was in constant pain. On getting up November 1st, she was seized with severe colicky pains in the lower abdomen and fainted. At this time she began to flow quite freely, and had a "pressing-down" feeling in the rectum. From this time until November 16th she was in bed. The pain was less, but at times it was severe and of a colicky nature. Examination showed an enlarged uterus (four inches in depth), chronic endometritis, a smooth elastic mass in the left ovarian region, and a soft boggy feeling mass in the right ovarian region.

Operation. — The uterus was first thoroughly curetted. About one-half pint of dark-colored fluid blood was found in the peritoneal cavity. On the right side a ruptured tubal pregnancy was found, and it was from this rupture that the hæmorrhage had taken place. The dilatation of the tube was at the fimbriated end. On the left side the fimbriated end of the tube was occupied by another extra-uterine fœtation. This was removed unruptured. Both tubes and ovaries were ligated and removed. The abdominal cavity was thoroughly washed out. No drainage. Her convalescence was uneventful.

Dr. Whitney's Report. — "The specimen from the case of Mrs. H., removed by you at the Carney Hospital, November 21, 1893, consisted of a portion of both Fallopian tubes with the ovaries attached.

"(1) Right tube and ovary.

"Tube. A piece about five centimetres long had been removed. This was about normal for one centimetre from the cut end, when it suddenly enlarged to a dark-red, egg-shaped mass, four by three centimetres in diameter. The fimbriated end was drawn up against the swelling and spread out upon its surface. There was no free blood coming from it. The surface of the mass was marked by small, arborescent, injected blood-vessels, and was more or less covered by a thin layer of dark, coagulated blood.

"The right ovary measured four by two centimetres, was flattened and very much corrugated, and covered on the surface by thin, quite adherent blood coagula. At the end nearest the fimbriated end of the tube was a yellow opaque body with a more or less convoluted outline. This measured about one centimetre in diameter.

"Microscopic examination showed that the blood-clot contained thread-like masses, which were evidently villi of a chorion.

"(2) The left tube and ovary.

"Tube. About four centimetres had been removed. The cut end was normal, and the tube continued so for about one centimetre, when it dilated into an irregularly rounded mass about two and a half centimetres long by one and a half in diameter. It contracted again just before the fimbriated end, which was normal. The surface of the enlargement showed injected arborescent vessels like the other, and was also roughened by thin adherent coagula. But quite close to the fimbriated end was a rounded projecting clot about one centimetre high, which section showed to be directly continuous with a dark-red mass filling the interior of the tube. Section through the tube showed a small blood-clot in the wall of the tube near the uterine end, which contained numerous small, branching villi, like those of the chorion. This clot was continuous into the cavity of the tube. The clot which projected from the surface was not connected with this one in any way, and was a perfectly independent affair, which had passed entirely through the wall of the tube. In this were structures recalling very poorly-formed chorionic villi.

"The left ovary measured four and a half by two centimetres, and was of the same flattened and corrugated shape as the right. Its surface was also covered with blood-clot and some fibrous adhesions. At the end next the fimbriated end of the tube was a corpus luteum one centimetre in diameter. The other end of the ovary was occupied by a cyst with bloody contents, the size of a small cherry.

"January 5, 1894. Further study of this remarkable specimen is necessary. But as far as the investigation has gone, it shows with certainty the fact of a pregnancy in each tube, with the possibility of their also being a twin pregnancy in the smaller tube. It is probable that the age of the pregnancy in the two tubes is not the same."

(1) The cause of extra-uterine pregnancy seems to be due to an absence of the ciliated epithelium in the tube. This condition allows the spermatozoa to ascend the tube and there meet with the ovum. It also retards the ovum in its downward migrations. This theory will not hold if the modern idea is true, namely, that *normally* impregnation takes place *in the tube*.

(2) All extra-uterine pregnancies are primarily tubal, the point of rupture and circumstances determining the variety that will be found after the rupture, provided gestation goes on after rupture takes place.

(3) Rupture of the tube takes place when the limit of its expansibility is reached, and this is usually between the second and third months of pregnancy, usually at the second month.

(4) In this class of cases there should be no delay in opening the abdomen.

New Potencies for Permanganate of Potash. — Permanganate of potash is fast becoming a popular antidote for all kinds of poisons. Not only is it efficacious against snake-bite and morphine, but now an Alsatian, M. J. Austal, claims that it acts as an antidote for phosphorus, muscarine, strychnine, colchicine, oil of sabine and oxalic acid; at least in dogs, rabbits or frogs.

CASES OF EXTRA-UTERINE PREGNANCY, WITH OPERATIONS.

BY J. W. ELLIOT, M.D.

CASE I. Unruptured tubal pregnancy.

This case was reported in part in the Boston *Medical and Surgical Journal*, February 2, 1893, by Dr. Prior, of Malden, with whom I saw it. An abstract is here included to make my report complete.

The patient, aged thirty-five, was married to a second husband. She had had pelvic peritonitis several years before her present illness. She finished a normal menstruation at the end of June, 1891. About six weeks later, at the end of August, she had a show of blood, which lasted a day or two and ceased. This sort of flowing continued intermittently to the end of September. She had the same pain she usually had at regular menstruation, and thought this was simply a prolongation of that process.

She consulted Dr. Prior for a nose-bleed on October 18th. He found the uterus slightly enlarged, and the left Fallopian tube large and tender. One week later the flowing returned. She was put to bed with more pain and a temperature of 100°. There was no nausea.

I saw her, in consultation, on November 1st. There was a boggy swelling in the region of the left tube. The diagnosis was chronic tubal disease, either gonorrhœal or tubercular, with hæmorrhage from the tube coming out through the uterus. Extra-uterine pregnancy was considered and thought less probable.

Operation, November 25th. The abdomen being opened, the pelvic contents were found matted together by old and new adhesions. Both tubes were found inflamed and enlarged, especially at their outer ends, forming with the ovaries the so-called tubo-ovarian cysts. In dissecting out the left side I noticed that it was very vascular; four or five arteries spurted in different directions. When removed, this proved to be the unruptured sac of a tubal pregnancy. The patient made a good recovery.

The following is Dr. Whitney's report on the specimen:

"The specimen consisted of about three inches of the Fallopian tube with an ovary attached. The tube was of normal size and appearance, till close to the fimbriated end, where it suddenly dilated into a round mass about the size of a robin's egg. The color was a dark red, and the surface was slightly roughened.

"Sections made at right angles to the long axis of the tube showed greatly dilated and sinus-like blood-vessels among the clots, in which were portions of chorionic villi; and in the midst of the mass which occupied the centre of the tube an embryo, slightly curved, and measuring about four millimetres in length, which would place it between the eighteenth and twentieth days.

"In the ovary a well-marked corpus luteum with deeply festooned edges."

CASE II. Tubal pregnancy of five months' standing; rupture, causing pelvic peritonitis.

The patient, aged thirty-two, had been married several years, and had had no children. The catamenia had always been regular. In September, 1892, she passed her period, and had occasional nausea in the morning during the last of the month. Two or three weeks later she had an attack of pain in the abdomen, with flowing, and went to bed. After a fit of coughing a membrane came away from the vagina. The flowing continued through October, and in November she had an attack of pain and tenderness in the abdomen. During December she felt somewhat better, but still had slight flowing and pain.

She entered the Massachusetts General Hospital January 30, 1893. She was well nourished, fat and ruddy. On examination, a tender, fluctuating mass was found on the right side of the uterus extending down into Douglas's fossa. There was also a smaller mass on the left side.

Operation, February 6th. The patient was placed in the Trendelenberg position. When the abdomen was opened, the pelvic cavity was found walled off from the general peritoneal cavity by old and new adhesions. When opened, it was found full of dark, clotted blood, with a quantity of shreddy, placental-looking tissue. The right ovary and tube dilated, tortuous and ruptured, was tied off and removed. The left tube, being diseased, was also removed. The pelvis was sponged out, and the abdomen closed with a glass drainage-tube in the pelvis. The patient made a rapid recovery.

Unfortunately, I have been unable to find the pathological report on this specimen, but have a record from the hospital, that it was evidently a case of ruptured tubal pregnancy of several months' standing.

CASE III. Tubal pregnancy; sudden rupture, with alarming symptoms and collapse.

The patient, aged thirty-two, was unmarried, but was exposed in the last of December, 1893, about one week after the cessation of a period. She then went five weeks without any menstruation. A flow then began, which continued each day for three weeks, and was always preceded by pain.

On February 11th Dr. Lena Ingraham examined the patient at her office, and made a diagnosis of extra-uterine pregnancy. The next morning the patient was suddenly taken with weakness and vomiting and a pain in her left side. The pulse became rapid, and she was in a critical condition. She was sent to the Massachusetts General Hospital on February 12th. When seen there she was pale, with sunken eyes and a bad expression. The abdomen was swollen and tympanitic, and slight pressure caused pain. The uterus was enlarged, and there was a fulness in Douglas's fossa. During the night she vomited frequently, and the abdominal tenderness and distention increased, but the pulse improved. February 13th, the patient looked badly, being of a yellowish-white color.

The operation was done in the Trendelenberg position. The abdomen was found full of black clotted blood. The bleeding came from the right tube, which was markedly dilated. The ovarian artery was enlarged. In the clots removed from the pelvis there was a little sac the size of a bean, which looked like an embryo, (unfortunately this was not examined microscopically). Both tubes and ovaries were removed The abdomen was sponged out, and a glass drainage-tube placed in the pelvis.

The patient rallied from the operation, and made a slow recovery. One year after the operation she was found to be in excellent health.

The following is Dr. Whitney's report on the tubes removed: "The specimen consisted of both tubes and ovaries, and a mass of blood-clot, at one part of which was a more or less shaggy membranous patch. One tube and ovary presented nothing markedly abnormal. The other ovary had a portion torn away from it, which on section was found to be a corpus luteum. The tube was thickened and dilated towards the fimbriated end. In the walls there were no greatly dilated blood-vessels or hæmorrhagic infiltration. The section through the clot showed masses of well-marked chorionic villi.

"Although there is no absolute microscopic evidence that the conception had taken place in the tube, still it is probable that the ovum developed there to a degree and then an abortion took place into the abdominal cavity, sufficient time having elapsed to allow retrograde changes to have taken place in the tube."

Case IV. Tubal pregnancy; rupture, with serious symptoms.

The patient, aged thirty, entered the Massachusetts General Hospital in November, 1893. She had had two children, the youngest being six years old. Her catamenia had continued regularly throughout her second pregnancy. From that time on there had been no irregularity. The month before entrance the regular flow had been much more profuse than usual, and had been accompanied with darting, cutting pains in the lower abdomen. This pain had recurred every three to four days since that time. The week before coming to the hospital the pain had become very severe, and the uterus had been curetted. Catheterization then become necessary. She had had occasional slight chills, one quite severe. She thought herself three months' pregnant, and had cravings and a great appetite.

On examination the uterus was found to be somewhat enlarged, and there was a tender mass, the size of a fist, in Douglas's fossa. On the following day this mass was found to have filled the pelvis and to have extended nearly up to the umbilicus. The patient was suffering great pain, had a poor pulse and a very bad general expression. As Dr. Warren, in whose wards she was, happened to be out of town, I operated at once, fearing that any delay might be fatal.

The patient being placed in the Trendelenberg position the abdomen was opened by a large incision. The whole pelvis and lower third of the abdominal cavity was full of dark, clotted blood. This hæmatocele was walled off from the rest of the abdominal cavity by recent adhesions; the enlarged, flattened and much displaced uterus formed a part of this barrier. The adhesions were separated and the blood scooped out. The right tube, enlarged to the size of a lemon, and containing a mass of tissue and clotted blood had been ruptured. The other tube showed the effects of chronic salpingitis. They were both removed. The ligated pedicles were markedly œdematous. The blood cavity was sponged out, and the abdomen closed without drainage. The patient made a good recovery.

Dr. Whitney's Report. — "Specimen consisted of about fourteen centimetres of the Fallopian tube, with part of the ovary attached; two centimetres of this were of normal size, then dilated suddenly into an elongated sac about three centimetres in greatest diameter, and then contracted again at about two centimetres from the fimbriated end, which was quite open. In the dilated part of the tube was a firm, dark-red mass interspersed with whitish, fibrous-looking things, and in the centre a cavity, one centimetre in diameter, lined with a smooth membrane. This mass was adherent at the part next the normal tube, and was only slightly attached elsewhere; it was directly continuous with a clot the size of the end of the thumb protruding from the rent in the tube opposite the line of attachment of the tube and close to where it commenced to contract again at the fimbriated end. There was no blood found in this part of the tube. Microscopic examination showed the white strings to be made up of branching and club-shaped villi of the chorion. No remains of an embryo were found. Tubal pregnancy, with rupture."

Case V. Probable tubal pregnancy; rupture, with sudden and alarming symptoms.

The patient, aged thirty-seven, gave the following history: She had one child fourteen months old. Since the birth of the child she had been regular until four months before I saw her, since which time the monthly flow had not appeared. She had a large appetite and the breasts were large and tender; she therefore supposed that she was pregnant. One month before I saw her, she was taken with sudden and severe pain in the lower abdomen, and with vomiting; while kindling the fire she fell on the floor in a faint. After this she remained in bed for a week or ten days, suffering much pain. When she got up she had a heavy and sore feeling in the lower abdomen, and there was an irregular, bloody discharge from the vagina.

The night before I saw her, she had another attack like the one just described. She again fainted, with sudden severe pain in the epigastrium; there was also vomiting and diarrhœa. Dr. F. B. Lund saw her, and considering it a case of extra-uterine hæmorrhage, sent her to the Massachusetts General Hospital, where I saw her and operated a few hours later.

On entrance the patient had a yellowish-white color; was languid and sluggish in her movements; and could not talk intelligently. She had the look of a person in a critical condition, although the pulse and temperature were about 100.

When the abdomen was opened, the pelvis was found to be filled with an hæmatocele, which had ruptured (causing the second attack of pains) and was filling the abdominal cavity with blood. About a quart and a half of blood was scooped and washed out of the pelvis and abdomen. Fresh bleeding was seen coming from the region of the right tube. Both ovaries and tubes were involved in the adhesions of the hæmatocele, and were therefore removed. The abdomen was closed without drainage. The operation was quickly finished, and the patient suffered no shock; a large amount of salt solution was given by rectum. The patient made a slow recovery, convalescence being interrupted by a pelvic abscess.

Dr. Whitney has not finished the report on the specimen.

◆

IMPURE ICE.[1]

BY F. A. DUNBAR, M.D., CAMBRIDGE, MASS.

During the past year my attention has been drawn to the purity, or rather impurity, of the ice supplied in this city, and I have made quite a number of analyses of ice taken from the ice-wagons while they were delivering to customers their daily supply, as well as from the ice stored in the ice-houses. I have also looked over the sources of supply of many of the companies who cut ice near by, and as the results of these examinations have been quite interesting to me, I thought the Society might be interested by a short account of the present condition of ice as supplied here for domestic use.

---

[1] Read before the Cambridge Society for Medical Improvement.

The first thing I had to determine was how many companies deliver ice, and where they get their annual supply; this after considerable inquiry I was able to find out. The companies are the Fresh Pond Ice Co., the H. D. & W. S. Durgin Ice Co., the Boston Ice Co., the Independent Ice Co., the Drivers' Union Ice Co., the Harvard Ice Co., and the Cambridge Ice Co.

On writing to these different companies, asking them to give the source of supply of their ice, I received replies as follows:

The Fresh Pond Ice Co. cut all their ice at Berlin, N. H. The Durgin Ice Co. get their supply from Spy Pond in Arlington, and from Smith Pond in Belmont; the latter pond is only a few hundred yards from Spy Pond. The Harvard Ice Co. buy their supply from the Fresh Pond Co. The Cambridge Ice Co. cut their ice on Spy Pond in Arlington, and on Little Fresh Pond in North Cambridge. The Boston Ice Co. cut their supply at Milton, N. H., Woburn, Mass., Wakefield, Mass., N. Chelmsford, Mass., and South Weymouth, Mass. The Drivers' Union Ice Co. cut on Wenham Lake in Beverly, Chebacco Lake in Essex, Waushakum Lake, South Framingham, and Lovell's Pond in Wakefield, N. H. The Independent Ice Co. cut on Mirror Lake in Hudson, Mass.

Thus it is seen that the ice sold here comes not only from ponds within a few miles of Boston, but also from points more or less distant, both in this State and from New Hampshire. I also discovered that each company seems to have a certain district which it supplies; and though in some parts of the city these districts overlap, in other parts only one company furnishes ice; and there seems to be a sort of understanding between the different companies that each one will keep to its own district.

I next proceeded to collect and analyze samples of ice. The samples were taken, if possible, from a block of clear ice, broken up, washed under a faucet, and put into clean glass jars. When the ice had melted, the appearance of the water was noted, and it was then submitted to an ordinary water analysis. The amount of solids, organic and inorganic, was determined by evaporating to dryness a known quantity of water in a platinum dish, over a water bath, weighing and subtracting the weight of the dish; then heating the dish to redness for a few moments, and again weighing when cool.

The amount of chlorine, which occurs almost entirely in the form of chloride of soda, was determined by adding to a known quantity of water a few drops of a solution of potassic chromate, as an indicator, and then adding, drop by drop, a standard solution of nitrate of silver until the yellow color of the water changed to red; from the amount of silver solution used to decompose the chlorides, as shown by the change of color, the amount of chlorine was calculated. Free and albuminoid ammonia was determined by distilling a known quantity of water, until a certain amount had come over and Nesslerizing this distillate, then continuing the distillation of the same sample after adding a solution of potassic permanganate and potassic hydrate and Nesslerizing this second distillate the same as the first. The full details of this analysis may be found in Wanklyn's Water Analysis.

I made a good many such analyses during the summer and fall, and the results were as varied as possible. The ice coming from New Hampshire was mostly quite pure, the analyses showing water of such purity as is considered suitable for drinking; some of that cut in this State and even from ponds quite near by was also of excellent quality; but other samples were evidently cut from ponds contaminated with sewerage, or filled with decomposing vegetable matter; the water from the melted samples in some cases smelt badly; in others where there was no bad odor, there was so much dirt of one kind and another floating through it, that no one would for a moment think of drinking such water. One small pond quite near by which I visited in the summer, has no apparent outlet of any kind, and is used for bathing during the warm weather by the people living around it; an analysis of the water of this pond showed it to be contaminated with sewerage. Other ponds are situated in the midst of thickly settled districts, so that the early winter rains must necessarily wash filth of one kind or another into them; and still others have already been condemned as sources of water-supply, though still considered good enough to furnish ice. In fact the ice offered for sale seems to be of all degrees of purity, from that of excellent quality to that so much contaminated that it must be considered wholly unfit for domestic use.

A few of the analyses may be of interest; they are as follows:

Locality.	Parts per 100,000.			
	Solids.	Chlorine.	Free Ammon.	Alb. Ammon.
Spy Pond, Arlington, Mass., H. D. & W. S. D. Ice Co.	5.00	0.87	.004	.006
Smith Pond, Belmont, Mass., H. D. & W. S. D. Ice Co.	3.00	0.70	.002	.010
Brookline, N. H., F. P. Ice Co.	5.70	0.43	.001	.008
Wolfboro' Junc., N. H., D. U. Ice Co.	3.00	0.35	.001	.008
Wenham Lake, Mass., D. U. Ice Co.	4.00	0.50	.003	.006
New Hampshire, C. Ice Co.	4.30	0.43	.001	.005
New Hampshire, H. Ice Co.	5.70	0.43	.001	.008
Little Fresh Pond, N. Camb., Mass., C. Ice Co.	4.20	1.30	.002	.008
Horn Pond, Woburn, Mass., B. Ice Co.	3.40	0.70	.005	.053
Hudson, Mass., I. Ice Co.	15.70	1.10	.003	.063
N. Chelmsford, Mass., B. Ice Co.	7.10	0.43	.001	.011
New Hampshire, H. Ice Co.	3.00	0.59	.020	.023
Mirror Lake, Hudson, Mass., I. Ice Co.	5.70	1.90	.060	.020
Spy Pond, Arlington, Mass., H. D. & W. S. D. Ice Co.	5.70	0.43	.006	.014

Of course, if ice never came in contact with food or drink, its condition of purity or impurity would be a matter of no consequence; but during the summer, at any rate, it is almost universally used so as to contaminate certain articles of food. Water and milk are cooled by placing pieces of ice in the vessels containing them; butter, tomatoes, lettuce, etc., have pieces of ice placed directly upon them; and doubtless every one can think of further examples of its direct use. Now, some recent examinations of Hudson River ice made by Prudden have shown that many kinds of bacteria are not much affected by freezing; in some samples they were found to be very numerous, and, when placed in favorable conditions for growth, none the worse for their imprisonment. We also know from this and other sources, that many harmful kinds of bacteria, among them the bacillus of typhoid fever, can survive freezing, often for long periods; and even when the bacteria themselves may be destroyed, it is probable that their spores may be more resistant than the bacilli to cold, just as they are to heat. Cases of typhoid fever, as we all know, are most numerous in the fall; and some epidemics have already been traced to the use of water contaminated by previous cases.

It does not require a great stretch of the imagination to suppose a small pond contaminated in the late fall or early winter by the washing into it of typhoid discharges from cases occurring on its banks. If this pond should shortly after freeze over, it does not seem beyond the bounds of possibility that the ice cut from it might give rise to fresh cases. I do not know that any cases of typhoid or other diseases have been traced directly to the use of impure ice, and indeed the difficulties in the way would be so great that it may never be done; but it seems to me that until we have fewer cases of infectious diseases, for which we can ascribe no cause, the chance of some of them originating from the ice-supply should not be ignored, and if it is considered necessary for a town to have a pure water-supply, the source of its ice should no longer be left to chance.

The State Board of Health have made an investigation into the condition of the ice-supply throughout the State (an account of which may be found in the report of 1890), and have also made numerous experiments to see how far water could purify itself by freezing. These experiments resulted somewhat as follows:

Different parts of the same cake of ice may differ greatly in purity; the snow-ice is always the most impure; and of the clear ice, the more air-bubbles it contains, the more impure the ice is found to be; moreover, the bacteria are found to be far more numerous in snow-ice and around a layer of air-bubbles in clear ice. When a pond freezes over, the first inch of ice seems to be about as impure as the water; if snow falls on the ice so as to sink it, and then holes are cut so as to flood the snow, as is generally done, this upper layer is found to be as impure as the water, plus whatever impurities the snow may have derived from air. If now the ice forms rapidly underneath, so that few air-bubbles collect, it is found to be much more pure than the water from which it is formed; whatever impurities it contains are largely composed of the matter held in suspension by the water, the matter in solution being more or less completely removed. As a result of the experiments made, the Board concluded that while clear ice from polluted sources may contain so small a proportion of impurities as not to be considered injurious to health, the snow-ice — and any ice, however clear, formed by flooding — is likely to contain so large a percentage of the impurities of its source, together with some of the disease germs that may be in its source, that no ice can be recommended for domestic use that is cut from a source which would not be considered as suitable for drinking-water.

When one comes to the question of how best to prevent the use of impure ice, and what legal restrictions have been put upon its sale, it is found that scarcely anything has been done in this respect.

There is a statute, passed some years ago, to the effect that if twenty-five consumers of ice supplied by one dealer, and cut in this State, think the ice unfit for use, they may ask the State Board of Health to investigate the matter. The Board may then order a hearing, and put whatever restrictions may seem necessary on the sale of such ice. If the ice-dealer feels aggrieved, he may take the matter into court and have it tried before a jury. Dr. Abbott, the Secretary of the State Board of Health, tells me that only one such complaint has ever been brought before the Board; and this one was brought by an ice-dealer in order to enable him to break a contract.

There is also a city ordinance on this subject, to the effect that all persons intending to sell ice for domestic use must give notice to the Inspector of Milk some time during the month of April of each year, together with information as to the source of the ice. A penalty of twenty dollars is imposed for non-compliance with this order. The inspector is then directed to make such analyses and examinations of the ice and its source as he may deem necessary, in order to determine its purity, and to give copies of such analyses to the Board of Health and the City Clerk, the latter to be kept open for public inspection. This gives no one the power to prevent the sale of ice, however impure; probably not one person out of one hundred knows that ice analyses can be seen at the City Hall; and even if it were known, not one person out of one hundred would, after looking at them, be any the wiser. As a matter of fact, no one has ever asked to see them. This is not a very good showing, either for the public interest in the matter of impure ice, or for the means at hand to prevent its sale.

◆

Medical Progress.

REPORT ON DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON.

(Concluded from No. 10, page 244.)

CYSTICERCI IN THE SKIN OF MAN.

Lewin's article on cysticercus cellulosæ, in Eulenberg's "Real-Encyklopädie," has remained up to the present time the most complete exposition of the subject that we have. In the *Archiv. für Dermatologie und Syphilis*, Heft 1 and 2 for 1894, he again takes up the pen on this subject. He repeats what he has previously said, that cysticerci in the skin often simulate tumors of a different nature, for example, gummata, and are not always recognized. He also asserts that few cases have been recorded where the recognition of the cysticercus in the skin has made the diagnosis of the parasite in other organs possible, although he has had numerous instances of this in his own practice. His cases, which are described in this article, he divides into (1) those in which the cysticerci cause little or no local disturbance; (2) those which have been taken for gummata, and treated by antisyphilitic remedies; (3) those which also caused disturbances of other tissues or organs, especially of the brain, and which have been considered of syphilitic origin also.

Lewin concludes, from his historical researches, that from the discovery of the cysticercus down to 1875, namely, during two centuries, it was only found eight times in the living subject. Since 1875, about 50 cases have been published, yet this number falls below its actual occurrence.

The eggs of the tapeworm inhabiting the small intestine contain the numerous embryos of the future cysticercus. The infection of man with these embryos may take place directly through the eggs of the tænia of his own intestine, or indirectly through the eggs of a tapeworm belonging to another person, although the direct mode is denied by Virchow.

The comparative infrequency of the discovery of cysticerci in the skin is partially due to the slight symptoms caused, which do not lead the patients to seek medical help. Symptoms do, however, occur, but their appearance is very gradual. They may cause more or less severe rheumatic pain, sometimes even suggesting the paroxysms of gout, or numbness, or neuralgic pain, stiffness of the affected part, etc.; sometimes there are also inflammatory appearances. These are indicated by pallor, or sometimes a dark brown color of the affected tissue, and capillary hæmorrhages. This inflammation may result in abscess; but whether the suppuration is caused by organisms transported by the cysticercus, or by ptomaines produced by the parasite, can only be conjectured.

With regard to diagnosis, the tumor formed by the cysticercus surrounded by its connective-tissue capsule is always more or less *movable*. The degree of this depends upon the depth of its location, and whether it is fastened by fibres from an adjacent muscle. The nodule is sometimes prominent, often not. The size is variable. On the average they are from a lentil to a hazel-nut in size. It is either round or oval in shape, the former especially in those lying in the subcutaneous tissue, the latter in those contained in the muscles. The consistency of the tumors is characteristic, being almost as hard as cartilage, and in this way it is distinguished from syphilitic gummata. Its surface is smooth. The parasite appears in man both singly and in great numbers. In most instances, there are at least several. The extirpation of the tumors is the decisive test. The bladder-like covering is seen, with a firm, whitish, round body, the size of a pin's head, in its interior, the embryo itself.

Cysticerci may be confounded with tumors of various kinds. Gummata, however, are most frequently diagnosticated, and several cases are related of tumors in syphilitic subjects, which were at first taken for gummata and afterwards proved to be cysticerci. In some cases the differential diagnosis may be extremely difficult, if not impossible. The writer believes that many of the cases of intractable gummata may have been cysticerci, and mentions the fact that Hebra describes no case of the disease in 80,000 cases of skin affections, and makes no mention of it in his work on dermatology. The hand-books on pathological anatomy also accord it scant recognition.

The recognition of the cysticercus in the skin is often of great importance in the diagnosis and treatment of diseases of the internal organs. Sometimes it occurs both in the skin and in the viscera, and its discovery in the former will often lead to its diagnosis in the latter situation. This is especially true of cysticercus of the brain, which is comparatively common, as statistics show, and which cannot be diagnosticated unless cysticerci are found externally. A number of such instances are related.

A cysticercus in the eye is naturally of equal importance in the diagnosis of visceral troubles. Von Gräfe was the first who made this diagnosis, followed later by others.

HIDROCYSTOMA.[6]

In 1884, in a paper upon malaria and sudamina, Dr. Robinson described a peculiar affection, seen especially upon the faces of washerwomen and those who perspire freely upon the face, which was evidently related in its anatomy to the sweat-glands. The affection was described, in his manual of dermatology, under the heading "Sudamina," but has been since referred to by Jackson and others as "dysidrosis."

Robinson has found the affection of not infrequent occurrence in New York City, as he has seen not less than thirty or forty cases since 1884. All these cases, with one exception, have been in women of middle age or older, although he can give no reason for this restriction. In one case it occurred in a young man of twenty-eight, on the lower half of the right side of the nose. Most of the women had been "doing general housework," and most of them attributed it to washing; although some did very little of this work. It occurred also in cooks who did not wash, and in people who neither cooked nor washed; but in the majority of cases the subjects were middle-aged women who perspired freely and did considerable washing over tubs. The cases were all worse in summer than in winter, and in some the affection almost entirely disappeared in cold weather. The lower part of the forehead, orbital region, the nose and cheeks, are the favorite seats of the eruption. The lesions are either discrete or situated closely together, and are "tense, clear, shiny vesicles, obtuse, round or ovoid in form and varying in size from that of a pin's head to that of a pea." They are rather deeply seated and project somewhat above the level of the skin. The smaller ones look like boiled sago-grains, the larger have a dark bluish tint. There are no signs of inflammation. The subjective symptoms are slight or wanting. These vesicles contain a perfectly clear fluid, which never becomes turbid, and is of a slightly acid reaction. The lesion, if unruptured, dries up and disappears after lasting from one to several weeks.

A careful microscopical examination of a number of these lesions showed them to be due to a cystic dilatation of the sweat-duct within the corium. The epidermis was not concerned in the process. A cyst is found in the corium, whose connection with an excretory sweat-duct may be verified by the sections. As the vesicles always contain a clear acid fluid resembling sweat, and as the connection between these cysts and the sweat-duct may be traced, we have here a proof that the theory that the sweat-glands are only fat-producing and not sweat-producing glands, is not true.

Robinson is not able to explain why the lesions form, but he assumes that there must be some abnormal condition in the excretory tube, or surrounding connective-tissue, causing obstruction to the outflow of sweat.

The word sudamen has been used to describe the condition caused by retention of sweat within the corneous layer of the epidermis. This condition rarely appears on the face and is very superficial. As in sudamen the sweat is not retained within an excretory duct, and as in the disease that has been described there is a proliferation of epithelial cells so marked as to cover the whole inner lining of the cyst formed by dilatation, Robinson considers that it is entitled to a distinct name and proposes the term "hidrocystoma" as unobjectionable and fairly descriptive.

The term "dysidrosis" that has been applied to this condition is deplored, as tending to confuse it with the dysidrosis of Fox and Hutchinson, or pompholyx, which is an acute inflammatory affection occurring upon the palms and soles.

---

[6] A. R. Robinson: Journal of Cutaneous and Genito-Urinary Diseases, August, 1893.

THE TREATMENT OF CERTAIN SKIN AFFECTIONS BY THYROID FEEDING.

In the Dermatological Section of the British Medical Association held at Newcastle-on-Tyne, August 2, 1893, Dr. A. T. Davies read a paper on the above subject, which is printed in the *British Journal of Dermatology* for September, 1893.

It has been noticed that when the thyroid gland is given medicinally in myxœdema, the skin and glands regain their normal condition and there is a new growth of hair. In illustration of the influence of thyroid feeding on the skin, a case is cited that was shown at the Hunterian Society in April, 1893. The woman had, by accident, taken ten thyroids at once. The result was an acute dermatitis, with a "peculiar sticky secretion," followed by peeling of the entire hands.

The following four cases of skin disease were treated by Davies with tablets of thyroid extract:

Case I. A blacksmith, suffering from psoriasis, which had begun three weeks previously on his left arm and had gradually affected the rest of the body. One tablet of thyroid extract a day was given, and the improvement was immediate. In eight weeks the patient was cured. He had taken, before the thyroid extract, a simple alkaline tonic for three weeks, which had had no effect upon the skin. There has been no relapse.

Case II. A boy of sixteen, with psoriasis of three years' duration. This patient had been for some time using chrysophanic acid externally and taking arsenic internally, but in April, was put on thyroid tablets also. There was so marked an improvement after the thyroid was added, that the arsenic and chrysophanic acid were discontinued. After taking the tablets for three months he was practically cured.

Case III. A woman of forty-three, with ichthyosis; which is congenital, and other members of her family are affected. After taking a thyroid tablet every day for a month, she was very much improved. At first the desquamation was increased, but soon began to diminish, and the skin generally to assume a more natural condition. Perspiration of face and head has also increased.

Case IV. A woman of fifty-nine, who had had a chronic eczema for twelve years, with acute exacerbations, and who had been treated by Davies for seven years. During the last acute attack one thyroid tablet a day was given in conjunction with the other remedies, and the improvement was much faster than it had ever been before. Davies concludes that thyroid extract has a powerful effect in altering the condition of the skin, and hence of assisting the action of the remedies used.

At the same meeting Dr. Byrom Bramwell presented a paper on the "Value of Thyroid Feeding in Psoriasis and Skin Affections," illustrated by photographs of the cases. Seven cases had been treated, and there had been great improvement in all but two.

A Chair of Public Health at Edinburgh. — The University of Edinburgh has recently established a chair of public health with an endowment of five thousand pounds.

Reports of Societies.

OBSTETRICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

G. H. WASHBURN, M.D., SECRETARY.

Regular Meeting, Thursday, December 28, 1893, Dr. Edward Reynolds in the chair.

Dr. F. W. Johnson made a report of

SIX CASES OF EXTRA-UTERINE PREGNANCY.[1]

Dr. W. F. Whitney: These cases of Dr. Johnson's are most interesting and he has kindly placed them at my disposal for microscopic examination. With one exception there was no doubt of the diagnosis. In the others there were evidences of the fœtus itself or the chorionic villi which showed them to be cases of tubal pregnancy. As regards the case of double pregnancy, there is an abstract of one in the *Gynæcological Centralblat*, in which, however, the account is not perfectly clear that it is of pregnancy occurring in both tubes. So that as far as the literature goes, throwing out this possible double case, Dr. Johnson's statement that his is unique, is correct.

Dr. E. W. Cushing: I think we have to thank the reader of this paper for the very lucid exposition of the subject. It is a pleasure to listen to it as a paper apart from the facts, and the facts are of such great importance that I sincerely hope they will receive the attention from the profession in general which they deserve. It has often been said to me by my friends in Philadelphia, "What are the men of Boston doing that they do not have more extra-uterine pregnancies reported?" There is hardly a meeting of the Philadelphia Obstetrical Society but one or two are reported. There is no great reason to suppose that more cases occur in Philadelphia in proportion to the population than occur in a city like Boston. The inference is that there are many in this part of the country which are not diagnosed and not operated upon, and which die unrelieved. Dr. Johnson evidently is doing his share; and if all the practitioners in all parts of the State, or in this part of the State, would find them as readily, and report them, and get them operated on, I think we should see a good many more.

My own experience is comparatively limited. I have had in years gone by several cases of what we then called hæmatocele, which I have no doubt now were really extra-uterine pregnancies. In 1887 I had and reported a case which was not operated on, but got well without operation. It came very near my household, and attracted my attention very much to this subject. The lady was taken in the theatre suddenly with pain and collapse; got home with difficulty; went from one collapse into another; and nearly died after various attacks of severe pain in the side. Nevertheless convalescence occurred, with slight elevation of temperature, and formation of a collection of fluid in the left iliac region. Dr. Fitz thought that the mass which formed at that time was a serous cyst. On the strength of that case I went into the Museum at Harvard, and picked out every specimen there. These I photographed, with Dr. M. B. Parker, and published in the *Annals of Gynæcology*, February, 1888. Since then I have been in the way of seeing and publishing a good many cases; and, as far as I have been able, I have continually turned attention to this question.

---

[1] See page 256 of the Journal.

In regard to the escape at the end of the tube, I remember distinctly at least two of Price's cases where the blood was escaping from the end of the tube in large amount.

My own operated cases number three. One, which I have published[2] was at nine months. I will not devote attention to it here except to say that the placenta there lay in the end of the tube, implying that the tube must have been open at the end and the placenta lay in the middle of it. That was done in Peabody two years ago, and the woman made an excellent recovery. I have had two other cases. One was brought to me by Dr. Galvin, where the principal symptoms were supposed to be probably caused by a pus-tube, namely, pain and high temperature; there was a skipping of the menstruation, irregular hæmorrhages; and it is not always easy to make a diagnosis in such cases. On opening the abdomen blood was not free, but was encapsulated on the side. Separating the intestines, I got into a mass of blood, and removed a tube, which I have here, and which I presume is an extra-uterine pregnancy, I also removed a number of old clots of blood. The other case was brought to me by Dr. Garceau, Jr., and had been seen by Dr. Chadwick and Dr. Homans. Dr. Homans was to operate on it, but had to go to Chicago; and so the case came to me. It proved to be an extra-uterine pregnancy, and the sac unruptured; but it shows that the contention that H. A. Kelly made before the British Medical Association, namely, that a case could be diagnosticated before rupture, at least with great probability, is well founded. I believe Drs. Chadwick and Homans agreed with Dr. Garceau that it was in all probability extra-uterine pregnancy. Of course, if the tube is not ruptured, it is the easiest thing in the world to remove.

The only thing of interest which I should wish to bring up for debate is the question as to the location of this blood. Dr. Johnson reports in one case that it was between the layers of the broad ligament. Dr. Whitney also refers to the same, and I know it is Tait's theory that in the cases which do not die the rupture occurs between the layers of the broad ligament, and that the blood is coagulated there. The pregnancy may go on further; or if the fœtus lives, the broad ligament forms a nest for it, in which it can grow, the layers of the broad ligament being separated. The question is, whether that is so in anything except a very rare number of cases. It is, of course, a very beautiful and ingenious theory; but those who have done a great many of these operations have not found that that condition existed. Price reports that he has never found it so, and at last accounts he had had ninety cases. He says that in all cases, whether the fœtus was big or little, the broad ligament was not separated, but the blood was behind the broad ligament, roofed off by adhesions to the bowels, and was free, or in fact a hæmatocele; that the old division of hæmatocele into that which is in the cavum peritoneale and cavum subperitoneale does not exist in his experience as seen at the operating-table in a large number of cases. Others have told me the same thing. In my own case, where it had gone on to nine months, it was not in the broad ligament; it was free in the abdomen, and the end of the tube was a cup. In those cases where the symptoms were not those of acute rupture, but those of high fever from the beginning of the deposition of this clot, the blood being firmly coagulated, it was in the same place that you get a collection of pus such as was formerly supposed to be in the folds of the broad ligament; it is now agreed that it is in the tube or leading from the tube. I throw out the question for discussion, whether we are passing through the same change of theory in regard to the location of this mass of blood, and instead of believing that it is between the folds of the broad ligament that we shall recognize the fact that the blood has escaped from the tube, that not all cases bleed to death, that in the cases we used to call hæmatocele the hæmorrhage was a small one. Tait states that if it is between the folds of the broad ligament they may not bleed to death. He implies that if it is free in the cavity, they are sure to bleed to death; but, in point of fact, there may be a little opening, leaking enough to start up a little inflammation; it may roof itself off; and the very tubes in which this occurs are apt to be tubes in which there is adhesion about it. So that you get your collection of blood behind the broad ligament; at any rate, that is where I have found it; and other men have found it there without exception. I would like to ask Dr. Johnson if he feels very sure in regard to the point as to where the blood was located in that case, because it is a matter of urgent debate at present.

DR. JOHNSON: In both those cases where there was what I called hæmatoma in the broad ligament, there was no question about it at all. Seven or eight saw it. There was no blood in Douglas's pouch at all. It was bulging out on both sides of the broad ligament. When I bored through, I bored through cellular tissue. It was in the broad ligament in both cases, and those present agreed with me.

DR. INGRAHAM: I desire to say a few words as to the early symptoms which were observed in my case operated on by Dr. Elliot. A woman, thirty-two, single, came to my office one evening about nine o'clock, and said she was suffering very severe pain in the lower part of the abdomen, and had been flowing profusely for one week. She had been regular in her menstruation up to six weeks before her visit. At this time, six weeks before, the menstrual period was delayed one week; then she began to flow every day about an hour. This, I think, continued about three weeks; then she stopped flowing, and did not flow again until a week before she came to the office. The flow at this time was very profuse, and she was so weak that she could not do her work. On examination, I found a good-sized mass on the left, with the uterus quite a little enlarged and the cervix pushed down. The abdomen was so tender that I could make very slight counter-pressure. I told her to go home and report at once if she had pain or felt faint. I suspected it might be an extra-uterine pregnancy. At seven o'clock the next morning she sent for me. I found she fainted at midnight, when she got up to go to the water-closet, and when she recovered she did not know how long she had been on the floor. She was chilly when she got up, and crept into bed. When I saw her, her pulse was 150, temperature 97°, and she had all the symptoms of collapse. That was Sunday morning. We had no bed vacant in the Vincent Hospital, and I telephoned to Dr. Pratt of the Massachusetts General Hospital. He sent an ambulance, and we moved the woman there. Dr. Elliot operated the next morning. The abdomen was full of blood. The case was one of extra-uterine pregnancy. I think that such cases should be reported, to impress upon the minds of physicians that the symptoms of collapse from any intra-abdominal hæmorrhage are just the same in the case of hæmorrhage in tubal pregnancy. It is difficult, I think, to make a diagnosis of tubal pregnancy unless one takes into consideration all the circumstances. This young woman was single, and stoutly denied any cause. She had been ill so long, that is, she meant she had suffered severe pain every time she was unwell, she thought she had some tumor, and tried to impress me with this idea. The mass was very soft and doughy. When I examined her the next morning at seven o'clock, I found that the abdomen was dull on percussion in the lower part; there was distinct bagging of the walls of the vagina; and the change from the night before in the relation of parts in the vault of the vagina convinced me there was no question whatever of the trouble.

---

[2] Annals of Gynæcology and Pædiatry, January, 1891.

Dr. Edward Reynolds: The Chair thinks Dr. Ingraham's remarks raise an important point. We hear frequently accurate rules for the diagnosis of extra-uterine pregnancy. The specialist and operator knows there are a very large number of cases in which the diagnosis is determined principally by the operation. I think a great many cases are lost because the general practitioner feels that before turning them in for operation he ought to make a more accurate diagnosis than is in reality possible; and I hope we shall hear something on that point.

Dr. J. W. Elliot: The case Dr. Ingraham mentions was certainly a very good case and a very good diagnosis. She came to the hospital in the condition Dr. Ingraham describes. The next morning she reacted somewhat. I opened the abdomen in the Trendelenberg position, and found a large amount of blood and a ruptured tube which had ceased bleeding. After washing out the abdomen and taking out all the clots, I put in a drainage-tube, and she made a slow but perfect recovery.

Dr. Johnson's paper interested me very much in various ways. One was that he seemed to have made the diagnosis in four out of six cases; which I think is very encouraging, because when the subject came up a few years ago our ideas were so vague that very few diagnoses were made. As time goes on the diagnosis seems to be easier; in fact, I begin to feel now that it is moderately easy to make in most cases. I do not mean to say there are not extremely difficult cases for diagnosis. In the last year I have operated on three cases and the diagnosis was made in two out of the three. One other case was diagnosed as hæmorrhage from the tube with probable extra-uterine pregnancy, which it was. Another case was of long-standing, and the diagnosis was not made and probably could not be made. The prognosis, also, is much more favorable than we used to think. All of Dr. Johnson's cases got well. The four I mentioned got well. They all should get well, of course, for hæmorrhage is not a disease but an accident, and should get well if the antiseptic precautions are observed. Cases like the one described by Dr. Ingraham, where the hæmorrhage is severe and stops of itself, are wonderfully tolerant of the hæmorrhage as well as of the operation.

The diagnostic point that impresses itself on me most of all, is the pain they have. All the cases that I have seen have had pain. Pain with collapse and tenderness, even if one cannot feel anything in the vagina, would be sufficient reason for opening the abdomen if there had been the slightest irregularity of menstruation. In the cases where the rupture has taken place, one cannot feel anything by vagina, for there is simply extravasation of blood in every direction. As to the question of whether rupture takes place into the broad ligament or not, I have never had a case where it did; but I have supposed it did, because I have read so many cases described by good observers. I do not see why it should not escape into the broad ligament.

This subject is a very important one and I think every one ought to report the cases they see, so that the community may become familiar with the subject, because it is a kind of malady where lives can be saved by good knowledge and prompt action.

Dr. W. L. Burrage: I have operated on five cases, all of them since October of last year. My first case was a neglected one, and the blood had gone on to suppuration and septic infection. The case was septic, and the specimens were so disorganized that they were in no condition for pathological examination. The specimens of the other cases are in Dr. Whitney's hands; and he has said with reference to them that in two he has completed the examination, and there is no doubt as to the diagnosis. Of the other two, from the preliminary examination and the gross appearances, he thinks there is little doubt. The cases all got well. The first case I reported before the Alumni Association of the Woman's Hospital in New York last January, and published in the New York *Journal of Gynæcology* for May. The second case I saw with Dr. C. W. Townsend, and operated for him afterwards. That case he reported before the Obstetrical Society of Boston; and it was reported in full in the *Medical and Surgical Journal*, November 2d, last. The other cases have not been worked over enough yet for report. In three of the cases I made the diagnosis. In the fourth, extra-uterine pregnancy was thought of, but nothing at all sure; and in the fifth it was quite unexpected.

As regards the situation of the hæmorrhage in my cases, I do not think it was in the broad ligament in any of them. It seemed to me to be behind and encapsulated in some, and in others, free; but, as Dr. Elliot says, I can see no reason why it should not be in the broad ligament.

I quite agree with the other speakers in the importance and gravity of the condition, and that the cases should be operated on as soon as the diagnosis is made. Of course, it is very difficult to make a diagnosis in this affection. Pus-tubes are the principal condition with which it is likely to be confounded, but the operation is generally indicated in either event; and, of course, in the case of acute abdominal emergency, operation is the only thing.

The case in which the diagnosis was not made was a hospital case. The patient was thirty years old, married one year for the second time, mother of four children; catamenia always regular, lasting three days, using four or five napkins; backache constantly, worse at catamenia. Entered the hospital August 15th. In July flowed three weeks, passing a great many clots, and had sharp pains in the left lower abdomen that lasted one-half to one hour at a time. Ever since that time she had had, once or twice every week, rather bad pains; but in her estimation the pain was secondary in importance to a feeling of prolapse at the vulva. There was a mass in the pelvis on the left side, the size of a closed fist; and I thought more than likely it was a pus-tube. The abdomen was very sore. She complained of bearing-down feelings. She had a bad tear in the cervix and another in the perineum. I found this mass in the pelvis, and advised operation. She consented, and we found extra-uterine fœtation of about six weeks. When she went home, I believe she complained bitterly because she still had the feelings of prolapse for which she came in, and thought the right thing had not been done.

Dr. W. M. Conant: Since November, 1893, I have seen seven cases of what I thought were extra-uterine pregnancy. Six of them have been pronounced extra-uterine by the pathologist's report; the other one, which was a fatal case, I supposed without question was extra-uterine. It proved to be a hæmorrhagic condition in the tube with pus. That case at the end of a week developed septic peritonitis, and died. The other six lived, and got well. In four the diagnosis was made before operating. The first case which I saw was sent to me as a simple cyst of the ovary, and I so diagnosed, and operated and found a simple cyst. On the other side, I found something which looked like an extra-uterine pregnancy as large as the thumb. So it proved. The other case, perhaps, ought to have been diagnosed, but was not; it was an unruptured tube, and I have been in the habit, from my own experience and the cases I have been able to collect, of dividing the subject into two heads: those that are acute, (and I agree with Dr. Elliot that in the majority of these acute cases you can readily make the diagnosis); and those in which the tube is not ruptured, and are not acute. The diagnosis oftentimes is not accurately made until it is in the hands of the pathologist. The case I lost presented the symptoms which Dr. Elliot spoke of as being the cases he would operate on without question, — there was irregularity of flow, tenderness and a mass in the pelvis. The last case I had was one in which I very nearly made a mistake. The woman presented all the symptoms of acute rupture. I saw her in consultation about ten days before I operated. She had had two or three previous attacks of sharp pain, relieved by rest in bed and opium. I made an examination, and found a mass which felt much like a pelvic abscess. I think this is the only case in which I have been at all tempted to aspirate in the last three years. She was not in a position to have proper care at home, and I advised immediate removal to the hospital. She waited about ten days, and then entered the hospital. I got a history of more or less continuous flow since my last visit.

I found the mass much enlarged, and at once changed my diagnosis from pus-tube to extra-uterine pregnancy, and advised immediate operation. She had that night another attack of sharp pain, with fresh exudation; and the next morning when we opened the abdomen, the blood was fresh. I can verify the statement Dr. Elliot made, that the blood comes out in spurts, because I felt as if I had torn away a part of the iliac vein. It was not until I got hold of both tubes and applied a clamp, that I could get a look. In this case there was a very speedy recovery, in spite of the fact that at the operation the pulse was at 160. She rallied immediately, and now, two weeks afterwards, she is sitting up. We must remember the possibility of so profuse hæmorrhage that death may follow from exhaustion.

Dr. W. F. Whitney: In regard to the bleeding from the end of the tube, I do not wish to lay that down as an absolute fact, that it does not occur. But I have found in some cases, where the ovum is situated at a distance from the fimbriated end, there has been a space perfectly free from blood. In the case Dr. Elliot referred to, I also think there is the possibility of mistaking blood which has gone into the fimbriated end from that which has come out. As to the occurrence of blood or pus in the layers of the broad ligament, I do not see any anatomical reason why it may not occur. Of course, as Dr. Cushing rightly states, a great many of the old hæmatoceles are so walled off by thick layers of fibrin and partly organized tissue that it is difficult always to recognize the difference between that and the true connective-tissue of the broad ligament. I have had one case where, I am positive, the pus entirely surrounded the tube and was entirely beneath the peritoneum.

◆

MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

HENRY JACKSON, M.D., SECRETARY.

Regular Meeting, Wednesday, January 17, 1894, Dr. F. C. Shattuck in the chair.

Dr. G. G. Sears read a paper on

PREGNANCY AND HEART DISEASE.[1]

Dr. George Haven: I had the pleasure of seeing this case with Dr. Sears, and the fact that after a month of care and rest this woman had grown worse instead of better, and that her condition seemed to be a very critical one, led me to think the safest thing was to empty the uterus. It has always seemed to me that where the life of the mother was in imminent danger, the life of the child should be sacrificed. It is, I think, a mistaken idea of humanity to wait until the mother is in the last stages of disease before the operation is undertaken in cases where pregnancy is a serious complication of her trouble. This, I think, is true, not only in cases where the heart may cause the trouble, but also where the trouble is due to kidney disease, or the complication is such as eclampsia occurring in pregnancy, so that I have always considered the better thing to do, where the opinion is very distinct that the life of the mother can be saved by sacrificing the life of the child, to sacrifice the life of the child. I think in this case the after-result proved the wisdom of her delivery.

It seemed to me that, in this case, it was unwise to give ether, and Dr. Sears thought so also. The cervix was rather soft and patulous, and was dilated sufficiently to put in a certain amount of iodoform gauze. The vagina was washed with soap and corrosive beforehand, and gauze introduced into the body of the uterus and the vagina packed with iodoform gauze. This was left in the vagina two days, when, upon removing it, the fœtus and the placenta were found in the vagina. I should prefer this to the introduction of a catheter or any foreign substance of that kind, believing, as I do, it is a much cleaner method and a much surer method. I have seen cases where catheters have been put in, and left in position forty-eight hours, without any result whatever. I have seen cases where the result was disastrous. They are tied outside, and may lead to septic condition of the uterus which may prove fatal to the mother.

---

[1] See page 253 of the Journal.

Very little mention is made in any text-book on obstetrics or gynæcology which I have seen, about the complication of pregnancy and heart disease; and for that reason Dr. Sears's paper is of peculiar value.

Dr. Edward Reynolds: I wish to speak particularly of the question of interrupting pregnancy or of allowing it to go on, not of the conservative treatment of the heart lesion. I would divide the question, for convenience of discussion, into the three periods of pregnancy; when serious symptoms appear in the first three months, there will always be a strong probability of an ultimate necessity for a resort to interference; but in that period due care must be taken to eliminate the depressing effects of the nausea, salivation and other troubles of early pregnancy; to estimate properly the fact that the first three months of pregnancy is a period of depression of the general health in the majority of cases of normal pregnancy, and that after the woman has passed three or three-and-a-half months her condition normally becomes better, so that if the woman with heart disease can be carried successfully past that period, there is then some prospect of an improvement in her general condition, and from that of better toleration of the heart lesion; remembering what I believe to be the fact, that the question is how fully compensation takes place.

In view of the effect of pregnancy upon the normal heart, in which the increase of compensation is necessary to overcome the normal added load, if the serious symptoms first appear in the second three months, I think the prognosis will always be tolerably grave. That is the period of well-being in normal pregnancy. If the heart gives out then, it gives out under a load which must be expected to increase constantly towards the end of pregnancy.

In the third three months I should feel inclined to give the benefit of doubt towards letting the pregnancy go on undisturbed. If the woman has come up to the full six calendar months in tolerably good condition, there must certainly be a good prospect of carrying her to the viability of the child at seven months. After she has reached seven months in anything like good condition she does better, as far as my experience goes, than one would expect. I should be inclined toward conservatism during the last three months.

If it is necessary to interfere with pregnancy in heart disease, a word must be said as to the method. I do not think that it would be wise in cases of heart lesion sufficiently serious to require operation to adopt the method which I should prefer for most other conditions — etherizing and finishing the operation, to the removal of the last atom of the ovum, at a single sitting. I think the method by introduction of a foreign body, and preferably of a strip of iodoform gauze, into the uterus, followed by a tamponade of the vagina, almost invariably works well. A tamponade of the vagina is not sufficient by itself, but with the introduction of a foreign body into the uterus, tamponade of the vagina, in my experience, has always resulted in the favorable and tolerably rapid progress of labor. I remember especially a case I saw a year or more ago with Dr. Folsom, where a woman with a serious heart difficulty, which rendered etherization distinctly inexpedient, started to miscarry spontaneously at about the sixth month. I inserted a little iodoform gauze, and packed the vagina, and at the end of about twelve hours, there being some labor pains present, and the woman becoming greatly distressed, I removed the packing, and found that the os had dilated so far that it was easy to remove the ovum with the curette without pain to the patient and without ether. Even if labor under such circumstances should become distressing, the fact that there has been a preliminary attempt at the induction of labor would probably render it possible to clean out the uterus with the curette, with a moderate amount of pain, without ether, and much more easily than if there had been no preliminary tamponade.

As to the general principle of the treatment of pregnancy complicated by disease of serious import to the mother, I think that the profession in the past, one and all, its most prominent as well as its less prominent members, have been misled by an undue concern for the prospects of immature fœtuses. The history of the profession teems with examples in which, when the question of abortion came up, conservatism has been persisted in until still more threatening symptoms supervened; then the abortion has been undertaken, and both mother and fœtus have been lost. I think that when this question comes up, that it is usually not, Shall abortion be done now or at some future time? it is almost always, Shall abortion be done now, or shall pregnancy go on to term? Taking the condition I refer to, cases in which the question is properly before us, in which the symptoms are sufficiently grave to bring up the question whether abortion shall be done, it must be decided whether abortion shall be done early. Abortion done for any serious complication of pregnancy is a very simple and safe matter if it is done early; it is followed by the promptest relief to the condition, so far as that is dependent on pregnancy. Abortion done after the woman is anything that approaches moribund is almost hopeless; and the physician should never shirk the responsibility of doing the operation while the mother is in good condition. I think that when we consider the difference between the value of the life of a woman, mature, occupying a place in society, the mother of children, the wife of a man dependent on her for the comforts of his home; when we compare the value of her life with that of a fœtus at three months, which is exposed to especially great danger from the condition of the mother, which, even though it be born, runs a strong risk of never attaining maturity, and in heart disease a risk which is again already compromised by the condition of the mother, — I think, under those circumstances, a serious risk to the life of the mother is of far more importance than the termination of the life of the child.

Dr. A. L. Mason: The case of Dr. Sears is very interesting, and I have no doubt his course was wise. It must be easy in such cases to wait too long, as it is in the dangerous vomiting of pregnancy, until the operation is too late. When the question arises whether a woman with heart disease should marry, it sometimes is very difficult to decide that in the negative. The cases Dr. Sears has referred to were probably of a very severe description, because the milder cases of cardiac lesion, in which pregnancy occurs and labor goes off without accident, are not reported, and there must be very many such. The existence of a murmur, provided that there is a good compensation, and has been for a long time, I should think might frequently be no bar to matrimony. Advice is not always asked in such cases; sometimes it is, and it may be hard to decide. The murmurs, which, perhaps, are congenital, or those with perfectly good compensation of many years' standing, where patients are able to take the usual amount of exercise, and can walk up hill without dyspnœa, must be present in many women who can marry with comparative safety. It seems to me Dr. Sears's statement was a little sweeping. I think he said that women with heart disease should not be allowed to marry; if they married they should not become pregnant, and they should not nurse their children. The question is, what degree of heart disease or what conditions of the heart would be sufficiently grave to oblige us to advise that women should not marry.

DR. REYNOLDS: Although I did not have the pleasure of seeing this case of Dr. Sears, I was consulted about it by Dr. Sears and Dr. Haven shortly before the operation was done; and then, as now, I said that while it is always difficult to judge of a case without seeing it, yet, from the symptoms detailed, I should support abortion in that case.

DR. F. C. SHATTUCK: The paper reminds me strongly of a bit of my own experience. Five years ago I was asked to go out of town to see the wife of a gentleman, the subject of mitral disease. She had one child a few years old, and had had a very alarming time at its birth. She seemed to be so well — I think it was in November or December I saw her — that in the previous spring she had been authorized by her family physician to become pregnant. The murmur was reported as slight, the cardiac condition as comparatively unimportant at that time. When I saw her I think she was four months' pregnant. She had then serious cardiac symptoms. Her husband said they had been distinctly advancing — shortness of breath, inability to walk, etc. The murmurs and the evidences of insufficient compensation were distinct; and it was my opinion, which I expressed, that it was best to terminate the pregnancy. That opinion was based upon the belief that we had to do with an advancing cardiac lesion as far as could be told from the symptoms. This woman was so well the previous spring that her heart lesion was considered trifling. It was not trifling when I saw her. They were extremely anxious to have children, and in this matter other counsels prevailed. Soon after she had an attack of influenza with pneumonia, and miscarried without difficulty. Then she went along pretty well; and a year or two later she became pregnant, went to term, was delivered without very serious trouble, but died within two weeks after the labor from cardiac failure.

To-day I saw a lady with a very bad heart who is said to have had valvular disease all her life, as long as anybody knew anything about it. She is about forty years of age. She has had two children, the youngest twelve, both children born without any great difficulty. The doctor was very much alarmed about her first confinement, but she went through it perfectly well. At her second confinement she had one pain, and that lasted three-quarters of an hour without interruption; otherwise the confinement was uneventful, and the symptoms of failing compensation she now presents are of comparatively recent origin.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, MARCH 15, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 WASHINGTON STREET, BOSTON, MASS.

ECTOPIC GESTATION.

THE report of a large number of cases of tubal pregnancy occurring in this vicinity[1] brings up the pertinent question whether this peculiar condition is really more frequent now than in years past.

This can be surely answered in the negative, as it is not only from here but from all over the world that a great increase in the number of cases has been recorded. During the past fifteen years, seven hundred and eighty cases have been reported, of which about five hundred occurred within the last four years. This great apparent increase is due simply to the attention which has been directed to the subject (just as in the case of appendicitis) and to aseptic surgery, which has rendered successful abdominal operations possible.

The study of the cases from the clinical and anatomical sides has added much to the certainties of diagnosis, the best line of treatment and points of theoretical interest in the way the ovum acts on the surrounding parts.

The diagnosis is often very difficult, especially in the early stages, when it is all important. But the cardinal points of irregularity of menstruation, in a person previously regular, often with a slight persistent flow from the uterus, one or more attacks of sharp pain and syncope, and a tender swelling on one side of the uterus, are now beginning to be so well understood that fewer cases will be overlooked in the future.

There are but two lines of treatment, either the expectant or operative. The real mortality under the former cannot be surely determined. In a series of two hundred and sixty it was found to be sixty-three per cent.; but from the difficulty of diagnosis we are inclined to think a disproportionate number of fatal cases is always recorded. But even placing it as low as fifty per cent., the patient has then but an equal chance. The statistics from the operated cases are more reliable, as the diagnosis always can be verified.

---

[1] See pages 256, 260 of the Journal.

In a series of five hundred and fifteen cases there was a mortality of twenty-three per cent., thus showing twice as many recoveries as under the expectant treatment; and, moreover, the period of convalescence is greatly shortened. If the zeal of the operator can be restrained from removing everything in the pelvis when he has it once open under his hand, the chances of future sterility are no worse in one case than the other.

The anatomical study has brought out many interesting facts. The most important to the patient is that the first hæmorrhage is rarely fatal, and if the warning thus given is early heeded, the life can be saved. The bleeding occurs in two ways, either from one of the thin-walled sinuses in the wall of the tube directly into the abdominal cavity, or indirectly, first into the fœtal membranes and then through the open fimbriated end of the tube or a hole in its thinned wall into the abdominal cavity. But in none of the cases which we have had an opportunity to examine, now over fifty in number, has the hæmorrhage been from elsewhere than the placental site, about which there was formed no protective thickening of the wall. The rupture directly into the abdominal cavity is naturally the more serious for the patient. When it occurs into the membranes, the death of the fœtus results, but this does not prevent a repetition of the hæmorrhage. This is proved from the examination of specimens showing that the period of development of the embryo corresponds to a much earlier date than would be the case if it had lived during the entire time the clinical symptoms had indicated. This shows how irrational any treatment is, which is directed alone to killing the fœtus (morphine, electricity); for, granted the death is brought about, there is no proof that the tendency to subsequent hæmorrhage will be stopped.

As yet no satisfactory cause has been found that covers all cases; various theories have been advanced to be abandoned. The first thing that bars the way is our ignorance of the place where the ovum is fecundated in the human species. If, as is generally assumed, this is in the uterus, then the accidental meeting of the vitalizing elements at a point elsewhere is a sufficient explanation. If, on the other hand, this should be shown to occur normally before the uterus is reached, as is the case in some of the lower animals, then a hindrance to the onward passage of the egg will be the best explanation. Under any circumstances a normal mucous membrane will be more favorable for the future development than a diseased one. And the facts bear out this assumption.

The possibility of the migration of the ovum from the ovary of one side into the tube of the other side, has been proved by the cases of tubal pregnancy. The best explanation is that by Hasse, who finds that the ends of the tubes are closely approximated behind the uterus during life in many cases, and not widely separated as they are usually described and figured by the anatomists.

The majority of observers agree that when pregnancy occurs in the tube there is very little, if any, decidua formed, and but a minimum hypertrophy of the wall, and in most cases a decided atrophy. The examination of our specimens makes us coincide with this view. At the same time the decidua is formed in the uterus, and it hypertrophies as if the ovum was present there. This has suggested to us that the fecundated ovum exerts a double action on the organism, which may be designated as sympathetic and local. From the former would come the uterine decidua and hypertrophy, the true corpus luteum, and changes in the mammary glands. It acts, no matter where in the body the ovum is vitalized, but by what subtle influence is unknown. Naturally a reflex action of the nervous system would be the first to suggest itself. The second action, which may be regarded as the local one, is shown by the rapid development of vessels at the point where the ovum locates. In the uterus this action has been lost sight of from its association with the other changes due to the sympathetic action. But it comes clearly into the foreground when we study the condition in the tube, for here an atrophy of the wall and adjacent mucous membrane are the associated phenomena, due to the mechanical pressure of the growing ovum, while it is in the blood-vessels alone that there is any indication of a marked increased activity in growth, which may be best classed as a process due to an irritation.

◆

THE BACTERIA OF PERITONITIS.

The interesting subject of the bacteria associated with peritonitis has received a new and important contribution in a monograph by Drs. Tavel and Lanz, in a recent issue of the *Mitteilungen aus Kliniken und Medicinischen Instituten der Schweiz.*

The authors have given in this report the results of their study of seventy odd cases of inflammation within and about the peritoneum or neighboring organs. But only a part of this number fall within the usual acceptation of the term peritonitis. The material for this study, with the exception of a very few cases, has been obtained at operations in the clinic of Professor Kocher, and has, therefore, the great merit of having been secured intra-vitam, thus excluding the possibility of a post-mortem migration of intestinal bacteria into the peritoneum, a possibility which has been brought forward as an objection to the results of E. Frænkel and Predöhl in their work on peritonitis.

The cases have been of the most varied character and diverse etiology; but if considered analytically they may be fairly well divided into several groups. In considering the bacteria met with in their examinations we shall only mention those which are recognized as having pathogenic significance, and shall neglect the less important forms of which as many as a half-dozen or more species have been observed occurring together in some cases.

Perhaps the most important class of cases are those in which there is inflammation in or about the vermiform appendix. Of these, nineteen cases were studied.

The results may be given as follows: of seven cases of purulent formation within the appendix, the bacillus coli communis was found in six, the streptococcus in two, and the pneumococcus in one case. None of the cases were sterile. In fifteen cases of peri-appendicitis, the examination of the exudate or abscess showed the presence of the bacillus coli communis in eight; the streptococcus in five; the staphylococcus citreus in one; the pneumococcus in one, and actinomyces in three cases. Two cases were sterile. The number of species found varied in the different cases from one to nine in number. It is interesting to note that the examination in seven cases of the interior of the appendix, where the contents were to be considered as normal or not affected with the inflammatory process in the neighborhood, showed no bacteria in two cases. This result is surprising in view of the enormous number of bacteria always present in the large intestine. Of three cases of peritonitis diffusa, secondary to appendicitis or peri-appendicitis, the bacillus coli communis was found in two, the bacillus pyocyaneus in one, and one case was sterile. In this group of peritonitis diffusa are also three cases which had their origin in the gall-bladder, one being secondary to a choledochotomy. In two of the cases the bacillus coli communis was found, and in the third the staphylococcus albus.

In this connection it may be mentioned, that of three cases of gall-stones, the bile contained staphylococcus albus in one case, bacillus coli communis in one case, and the remaining case was sterile.

Of six cases of peritonitis from various causes, in two bacillus coli communis, in two streptococcus, in one bacillus pyocyaneus were observed. In a single case no bacteria were present. Four cases of intestinal obstruction formed another group of cases, in three of which there was a fibrinous exudation in the peritoneum. Of the four cases but one yielded an organism of any significance, namely, the staphylococcus albus. Two were apparently sterile.

The last group of cases are those in which the fluid of hernial sacs was examined for bacteria. Of seventeen cases all were sterile except two, and these positive cases were from four of beginning or advanced gangrenes of the gut. The absence of bacteria in the other two cases of gangrene, where the conditions for their migration through the wall of the gut were apparently favorable, is surprising. On the other hand, in the sac fluid of two out of three epiploic herniæ, where bacteria from the intestine were scarcely to be expected, bacteria could be demonstrated. In two hernial hydroceles the fluid was sterile. These results are of interest as showing that we are as yet ignorant of all the causes which determine the migration of bacteria through the intestinal wall. It is also interesting to note that the examination of the contents of a hernial loop of the small intestine accidentally opened at operation showed few bacteria. This is another proof of the relatively small number of organisms in the small intestine as compared with those in the larger gut.

In addition to the foregoing cases, the authors have included in their list of examinations a number of other cases more or less germane to the subject of peritonitis, but which have no special interest. Among these, however, should be mentioned a case of sub-peritoneal abscess, and a case designated as empyema of a hernial sac, in both of which tuberculosis originating in the vertebræ has not been sufficiently excluded. The latter case especially serves to emphasize how desirable it is for the bacteriologist who works with pathological processes to have some knowledge of pathology.

The technique employed in the work is, on the whole, satisfactory. The study of the biology of the different bacteria is perhaps, in general, as thorough as is necessary. A feature of their investigation, which is of especial interest from a bacteriological point of view, is the study of thirty representatives of the bacillus coli communis with reference to their various cultural peculiarities, number of locomotor organs and other characteristics.

The results would seem to show that scarcely any two of them are exactly alike. The differences, however, in many cases, are only such as one would encounter in studying parallel cultures of almost any organism, and we do not think that the writers are justified in considering many of such differences as constant. It is well known that different varieties of the bacterium coli exist, but the division of these thirty representatives of that group into as many as twenty varieties does not seem warranted from the observations. Of the thirty, two at least are clearly not to be classed within this group of the bacterium coli, as would appear from a consideration of their cultural peculiarities as given by the writers. In several cases bacilli somewhat resembling the Klebs-Löffler organism have been observed. To these, however, no pathogenic significance is ascribed. We cannot agree with the writers that this is probably the pseudo-diphtheria bacillus of Löffler. The cultural peculiarities of that organism are too little known for it to be identified, and our own experience has seemed to show that there may be nearly as many pseudo-diphtheria bacilli as there are observers.

In addition to the results of their own experimental work, the speculative and historical aspects of various questions connected with the subject of peritonitis have been well considered by these investigators. As to prognosis, they state that no conclusion can be drawn from the species of bacteria present. In those cases, however, where no bacteria are to be demonstrated, it would seem that the result is, in general, more favorable than in those where bacterial forms are present.

Therapy also receives due attention. Especially valuable and noteworthy features of this contribution are thirty-two excellent reproductions of micro-photographs of some of the bacteria observed.

"Man is a part of collective nature; his development proceeds not by leaps and bounds, but slowly out of past and present." — *Billroth's Autobiography.*

MEDICAL NOTES.

Chicago Small-Pox Statistics. — During the month of January there was 128 cases of small-pox in Chicago, 29 of which were fatal, some before they could be removed to the hospital. There was seven cases of hæmorrhagic variola, none of the patients having ever been vaccinated. There were many confluent cases, all in unvaccinated persons. A few of the fatal cases had been vaccinated in infancy, but never re-vaccinated.

A Hospital for Tuberculosis in Vienna. — The Emperor of Austria has made the anniversary of the death of the late Crown Prince Rudolph the occasion of giving a sum of 10,000 gulden towards the establishment of a home for tuberculous patients in Vienna.

The Royal Commission on Vaccination. — In an editorial upon the first volume of the long-expected report of the Royal Vaccination Commission, the *Lancet* says: "The evidence published in the volume shows that the difficulty that really has to be met is the readiness with which well-intentioned people can be misled. Perhaps one thought impresses the reader more than any other in studying the volume which has been issued. If one tithe of the pains had been taken to make known the risks of small-pox and the value of vaccination that have been expended on endeavors to prejudice the public against vaccination, it is not probable that the appointment of a commission of inquiry would ever have been deemed necessary."

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, March 14, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 30, scarlet fever 36, measles 12, typhoid fever 5, small-pox 7 (no deaths). Two cases of small-pox have been reported to the State Board of Health from places outside of Boston; one from Waltham and one from Lynn (which is the first case in that city since 1873).

A Warning to Boston Physicians. — During the past week a sneak-thief has been plying his trade among physicians' houses, if given an opportunity to be left alone in the reception-room. He is a man about forty-five years old.

Notification of Chicken-Pox in Boston. — The Board of Health of Boston has given notice that in addition to Asiatic cholera, small-pox, scarlet fever, typhus fever, diphtheria, measles, typhoid fever, yellow fever and membranous croup, chicken-pox will hereafter be regarded as a disease within the meaning of Section 79, Chapter 80, of the Public Statutes, and that physicians will be expected to report all cases coming under their notice within the city.

A Centenarian. — Mrs. Abigail Hobart, Nashua, N. H., passed her hundredth birthday last week, and with the exception of slight deafness is in possession of all her faculties. She has had nine children, five of whom are living, with sixteen grandchildren and twenty-five great-grandchildren.

Death at nearly One Hundred and One. — Mrs. Sally Sawyer Case, who died in Wellesley Hills, Mass., last week, was one hundred years and ten months old. She was present at the funeral services of George Washington.

Miscellany.

AMERICAN GOUT.

Lithæmia is so preëminently the form in which gout shows itself in this country, that Da Costa has characterized it as "American Gout." As he has, by his former contributions to the subject, done very much towards giving us clearer views upon the pathology and therapeutics of this hydra-headed morbid state, a brief abstract of an unpublished address which he recently delivered, by request, before the students at the University of Pennsylvania, will prove especially interesting at this time.

By the term lithæmia is understood the morbid condition closely allied to gout, in which lithic or uric acid and other waste products, accumulate in the blood, and cause certain toxic effects, as well as interfere with normal metabolism. Symptoms like those of lithæmia have been found where the urine shows neither uric acid nor urates in excess, nor oxalates. They might be accounted for, perhaps, by the presence of waste products in the urine, such as acetones and peptones, though as yet no accurate chemical researches have been made on this point. It is convenient to retain the term lithæmia as broadly covering the state of the system associated with waste products, even though not specifically uric acid until we find a better name for the whole malady. The title "uricæmia," or even "uric-acidæmia," which has been suggested as a synonym for the older term, is not an improvement, since it implies that the symptoms are due entirely to excess of uric acid, which is taking quite too limited a view of its pathology. In fact, after referring to the theories of Murchison, Roberts, Haig and others with regard to the pathology of the lithæmic or gouty diathesis, Professor Da Costa declared that we must return to neuro-humoral views like those of Sydenham, which are more in consonance with the clinical phenomena than any of those recently proposed. The suggestion of Roberts that a less soluble form of uric acid salts is formed in gouty states (that is, bi urates instead of normal quadrurates) is highly plausible, and may well account for the tendency to uric acid deposits, which, however, are very much less liable to be encountered in lithæmia than in typical gout. The urine of lithæmic patients, moreover, does not present exactly the same characters which it does in typical gout. It is, as a rule, dense, high-colored, and of higher specific gravity than normal urine. After over-indulgence at the table, the urine may deposit lithates and oxalates, and become darker in color and of higher specific gravity. It may become less abundant than normal, and, by concentration, cause albumin and even casts to appear for a time. This does not, however, indicate the presence of the well-known form of gouty, or contracted, kidney; on the contrary, the kidney is remarkably free from inflammation in lithæmia, and both albumin and casts rapidly disappear under appropriate treatment. The heart may be irregular and palpitation be complained of. It is apt to have a weak or muffled first sound; and this is followed by an accentuated, valvular second sound, due to increased arterial tension, which is also indicated by the sphygmograph. In lithæmia, however, cardiac degeneration and valvular disease, such as is common in gout, are remarkably rare, and cannot be said to belong to the clinical history.

The nervous and cerebral symptoms of lithæmia commonly found, are gloom, depression of spirits, irritability of temper, restlessness at night, drowsiness during the day, with disinclination to intellectual effort, jerking of muscles, myalgia, pains in tendons and neuralgia. There is also indisposition to muscular exercise, and the patient is quickly tired; flying pains may appear in various portions of the body, or actual cramps occur. Dyspeptic symptoms are common, though not constant, and there is a tendency to excess of acid in the stomach. Functional derangements of the liver are of frequent occurrence. Vertigo and migraine are prominent symptoms; and the vertigo, like that of stomach disorder, usually appears early in the day; while to increase of acid in the system the attacks of migraine may be ascribed; and the lecturer stated that, for prompt relief of the latter symptom, nothing could excel the effects of administration of hydrochloric acid. This, however, might be like applying ice-water to a gouty inflamed joint, which would promptly relieve the pain, but was attended by some risk of further injury to the patient.

The most prominent causes of lithæmia and gout are excessive eating and drinking, the body is burdened by an undue amount of nitrogen and carbo-hydrates, which the excretory organs cannot remove as fast as supplied, and waste material accumulates in the blood. This is less apt to occur, when active open-air exercise is kept up, than when the life is sedentary or inactive and oxidation is imperfect. The gastronomic achievements of the Emperor Charles V, as detailed by Roger Ascham, were quoted; and the gloom, depression of spirits and increasing melancholy, which finally led to his abdication and retirement to a monastery, were shown to be directly due to lithæmia and gout from excessive eating. Here, gluttony and consequent disease had an important influence upon history. If the emperor had not been lithæmic and gouty, he would not have been so gloomy and melancholic, and he would not have retired to a monastery; if he had not thus retired the Netherlands would not have been given up, and there would have been no Armada. And so great results may be traced to a monarch's self-indulgence.

Lithæmia may be inherited as well as acquired. It may be manifested early in life, and among adults is as frequent among women as men. Exceptionally the symptoms become those of ordinary gout, but joint inflammation does not, as a rule, occur, though there may be some painless enlargement of a distal joint of the little fingers of slow development, possibly several joints may be affected, or the finger-ends may become clubbed.

In the treatment, diet occupies the first place. In many cases restricting the diet to vegetables, especially the green vegetables, will be sufficient to dissipate all the symptoms. In most cases, it will not be advisable or necessary to adhere strictly to a vegetable diet, and a moderate allowance of meat, if exercise be taken, is permissible, especially the white meat of poultry and fish, may be indulged in without harm. Fats are to be restricted in amount, and carbo-hydrates are to be excluded as much as possible, allowing patients to take only a small quantity of stale bread or biscuit. Most lithæmics declare that sugar does them harm. It is advisable to use especial caution against all articles which the patient finds by experience readily undergo fermentation in the stomach, as the acid aggravates the condition. The drink of the lithæmic should be water only, and enough water should be drunk to keep the kidneys flushed. All forms of alcoholic drinks are bad; but in elderly subjects, accustomed to their use, a very moderate quantity of old whiskey, or of a good claret, may be allowed with the meals. Champagne is particularly bad because it is generally acid in reaction, besides containing much sugar. The importance of fresh-air exercise has been already insisted upon, as the means of increasing metabolism and oxidizing waste. The skin should be kept in good condition, and the sweat-glands rather active. Woollen clothing is advantageous.

In conclusion, the medical treatment may be summoned up in a few words. Laxatives, especially salines, are highly useful. Mineral waters are important adjuncts, these waters being better diuretics for these cases than drugs, which irritate or increase still further the blood-tension in the kidneys. To neutralize waste matters in the blood, carbonate of lithia (gr. ii) in capsules, with extract of nux vomica (gr. $\frac{1}{6}$), given several times a day, had been found very efficient, the nux acting as a general tonic, as well as affecting the heart. Piperazin is still under trial; it has been found of some service in lithæmic conditions.

As regards prognosis, a very favorable view can be taken. Living in accordance with the regimen above-indicated, reducing the quantity of the food to the actual demands of the system so that the in-come shall not be greater than the out-go, restricting the nitrogenized food, carbo-hydrates and fats; drinking only water, avoiding alcohol, and taking daily out-door exercise — this is the road to health for lithæmic sufferers, by pursuing which they will escape their threatened ills, and may in time feel themselves entirely cured of their malady.

◆

THE INTERNATIONAL SANITARY CONFERENCE.

The result of the International Sanitary Conference thus far has been to make more evident than ever before the difficulties attending any satisfactory control of the out-put of cholera from Mecca at the time of the pilgrimages. The committee on this subject has recommended that a system of medical inspection of pilgrims landing at ports of the Persian Gulf be established; but how it is to be organized, or in what way it is to be controlled, was not mentioned. The chief attention has been directed to the sea routes, although the greatest danger has in most years been from the land routes, over which there has been little or no control thus far.

The French and English delegates have differed a good deal over the conditions of port quarantine, the position of the British representatives, that to stop healthy passengers and a healthy ship does not prevent but actually creates danger, being strengthened by Dr. Arnaud's description of the quarantine station at the island of Camaran in the Red Sea, where the accommodation is so bad that the disease is spread to passengers and crews detained there. "It is simply a dépôt of cholera, and there have been more epidemics since the opening of this quarantine station than there were previously." Great distrust is felt as to the intention or willingness of Turkey to carry out any agreement and as to the ability of the Persian Government to do so.

The inquiry of one of the United States delegates whether the Conference could not establish rules by which emigrants could be watched, examined, or controlled in such a manner as should prevent them from carrying over to the United States the germs of cholera, small-pox, and kindred diseases, opened up a wide field for discussion. He said, very fairly, that it was all very well to impose medical inspection on Mahommedan pilgrims embarking for Mecca, but why not take similar precautions with respect to emigrants embarking for America? The action of the Conference on this proposition will be watched with interest.

Socially the Conference has been an unprecedented success. The delegates have been entertained at dinners, balls and fêtes by public and private persons, with untiring hospitality.

◆

Correspondence.

THE DIAGNOSIS OF SMALL-POX.

Boston, March 13, 1894.

Mr. Editor: — The rare occurrence of small-pox in Massachusetts during the past twenty years (and since the great epidemic of 1872–73) makes it more than probable that scarcely one in ten of the physicians now in active practice has ever seen a case of this disease. When cases occur in the practice of young physicians, it not unfrequently happens that an error in diagnosis is made, especially during the first week of illness and when the disease is of a mild type. In consequence of such mistaken diagnosis, undue exposure has occasionally taken place, and the health of the community has suffered.

The writer has known several such instances during the past six months, and would therefore respectfully suggest to all young practitioners who have not had a considerable experience with small-pox, that they should in every doubtful case, request a consultation with some older practitioner who has had opportunity to see cases of this character. Such a course might not only prove advantageous to the young practitioner, but also to the community at large.

Respectfully yours, Senex.

◆

ARRANGEMENTS FOR ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

Boston, March 10, 1894.

Mr. Editor: — Elaborate arrangements are being made in San Francisco for the reception and entertainment of the American Medical Association at its annual meeting in June. Special trains will run from Chicago, leaving on May 28th. It is expected that round-trip tickets will be furnished at the price of a single fare, with choice of returning by other routes. If a sufficient number attend from New England, special cars will be furnished from Boston. Members may be accompanied by friends.

Further information may be obtained by addressing,

Henry O. Marcy, M.D.,
180 *Commonwealth Avenue, Boston.*

METEOROLOGICAL RECORD,

For the week ending March 3, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S..25	30.70	8	23	6	33	47	40	N.W.	S.W.	7	7	C.	O.	
M..26	30.14	23	29	17	87	50	68	N.E.	N.	10	18	O.	O.	0.11
T..27	30.43	26	31	20	53	72	62	N.	S.E.	12	7	C.	C.	
W..28	30.31	34	44	25	74	80	77	S.W.	S.W.	5	10	O.	C.	
T.. 1	30.16	39	44	34	76	82	79	S.W.	S.W.	6	4	F.	C.	
F.. 2	29.92	44	55	32	74	61	68	S.W.	W.	6	14	F.	C.	
S.. 3	30.16	44	50	39	65	54	60	N.W.	N.W.	15	15	C.	C.	
☞	30.25		39	23			65							0.11

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week

RECORD OF MORTALITY

For the Week ending Saturday, March 3, 1894

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Diphtheria and croup.	Scarlet fever.	Measles.
New York	1,891,306	857	343	15.51	18.81	6.93	1.65	2.75
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,115,562	—	—	—	—	—	—	—
Brooklyn	978,394	431	153	16.79	23.46	7.82	1.84	.69
St. Louis	560,000	—	—	—	—	—	—	—
Boston	487,397	231	73	12.47	10.81	7.74	.43	.43
Baltimore	500,000	—	—	—	—	—	—	—
Washington	308,431	145	44	4.14	26.22	1.38	—	—
Cincinnati	305,000	133	45	7.50	18.75	3.75	—	—
Cleveland	290,000	98	44	18.54	18.54	5.15	2.06	1.03
Pittsburg	263,709	—	—	—	—	—	—	—
Milwaukee	250,000	89	45	11.20	13.44	2.24	2.24	3.36
Nashville	87,754	32	11	9.39	12.52	—	—	—
Charleston	65,165	—	—	—	—	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	96,217	27	8	7.40	40.70	—	—	3.70
Fall River	87,411	26	10	15.40	19.25	7.70	—	—
Lowell	87,191	32	5	18.78	18.78	3.13	3.13	—
Cambridge	77,100	39	15	5.12	22.04	—	5.12	—
Lynn	62,656	19	7	21.04	10.52	—	—	—
Springfield	48,684	11	3	9.09	18.18	—	—	—
Lawrence	48,355	—	—	—	—	—	—	—
New Bedford	45,886	22	5	9.10	9.10	—	9.10	—
Holyoke	41,278	—	—	—	—	—	—	—
Salem	32,233	6	2	16.66	—	—	—	—
Brockton	32,140	—	—	—	—	—	—	—
Haverhill	31,396	8	2	12.50	25.00	12.50	—	—
Chelsea	30,264	—	—	—	—	—	—	—
Malden	29,394	10	2	—	—	—	—	—
Newton	27,556	12	1	8.33	8.33	8.33	—	—
Fitchburg	27,146	9	4	11.11	22.22	—	—	—
Taunton	26,972	9	3	11.11	—	—	—	—
Gloucester	26,688	—	—	—	—	—	—	—
Waltham	22,058	6	2	—	16.66	—	—	—
Quincy	19,642	—	—	—	—	—	—	—
Pittsfield	18,802	3	0	—	66.66	—	—	—
Everett	16,585	4	2	50.00	—	50.00	—	—
Northampton	16,331	5	1	—	—	—	—	—
Newburyport	14,073	2	1	—	50.00	—	—	—
Amesbury	10,920	2	1	—	50.00	—	—	—

Deaths reported 2,303: under five years of age 849; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 552, acute lung diseases 469, consumption 258, diphtheria and croup 137, measles 34, scarlet fever 34, diarrhœal diseases 27, whooping-cough 20, small-pox 18, cerebro-spinal meningitis 18, typhoid fever 18, erysipelas 11, malarial fever 3, puerperal fever 1.

From diarrhœal diseases New York 10, Cleveland 4, Milwaukee 3, Washington and Fall River 2 each, Brooklyn, Boston, Springfield, Somerville, Salem and Fitchburg 1 each. From whooping-cough New York 7, Brooklyn 4, Cleveland and Nashville 3 each, Washington and Cincinnati 2 each, Boston 1. From small-pox Brooklyn 8, New York 6, Boston 4. From cerebro-spinal meningitis New York 7, Brooklyn and Lynn 4 each, Boston, Worcester and Marlborough 1 each. From typhoid fever New York 5, Brooklyn and Lowell 4 each, Boston 3, Cleveland 2. From erysipelas Brooklyn 4, New York 3, Boston 2, Cleveland and Taunton 1 each.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 3, 1894, TO MARCH 9, 1894.

Leave of absence for one month is hereby granted **Captain R. B. Ball**, assistant surgeon, U. S. A., Fort Monroe, Va.

Captain R. W. Johnson, assistant surgeon, U. S. A., will proceed to Fort Monroe, Va., for temporary duty, during the absence on leave of **Captain R. B. Ball**, assistant surgeon. Upon the return of the latter from leave, Captain Johnson will return to his station, Washington Barracks, D. C.

First-Lieut. Charles Willcox, assistant surgeon, U. S. A., is relieved from temporary duty at Boise Barracks, Idaho, and ordered to return to his proper station, Presidio of San Francisco, Cal. Par. 7, S. O. 54, Hdqrs. of the Army, A. G. O., March 5, 1894.

Leave of absence for one month is granted **Major Timothy E. Wilcox**, surgeon, U. S. A.

The leave of absence granted **Major John D. Hall**, surgeon, U. S. A., is extended one month.

Leave of absence for four months, to take effect on or about August 10, 1894, is granted **Captain Henry I. Raymond**, assistant surgeon.

Major John Van R. Hoff, surgeon, U. S. A., is hereby assigned to the charge of the office and duties of the medical director, Hdqrs. Department of the East, during the temporary absence of **Colonel Joseph R. Smith**, assistant surgeon-general, medical director of the Department.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MARCH 10, 1894.

F. W. Olcott, passed assistant surgeon, from Naval Hospital, New York, and to the "Richmond."

S. S. White, passed assistant surgeon, from the "Richmond" and to the Naval Academy.

L. W. Curtis, passed assistant surgeon, from the Naval Academy, Annapolis, and wait orders.

G. T. Lumsden, passed assistant surgeon, from the "Kearsarge" and wait orders.

W. H. Jones, medical inspector, ordered before the Retiring Board.

C. E. Riggs, assistant surgeon, from Naval Hospital, Mare Island, Cal., and to Naval Laboratory and Department of Instruction, New York.

D. N. Bertolette, surgeon, and **J. M. Moore**, assistant surgeon, ordered to the "Atlanta."

J. E. Page, assistant surgeon, ordered to examination preliminary to promotion.

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The next lecture will be given on Wednesday evening, March 21st, at 8 o'clock, by Dr. J. J. Putnam. Subject, "The Present Status of the Therapeutics of Nervous Diseases." Physicians are cordially invited.

AMERICAN SURGICAL ASSOCIATION.

The annual meeting of the American Surgical Association will be held in the lecture-room of the Medical Department of the Columbia College, Washington, D. C., May 29, 30, 31 and June 1, 1894. The special subjects for discussion so far arranged are:

I. "The Surgical Treatment of Empyema," by John Ashhurst, Jr., M.D. Discussion opened by Drs. N. P. Dandridge, C. B. Nancrede, T. F. Prewitt and DeF. Willard.

II. "Methods of Teaching Surgery," by J. S. Billings, M.D. Discussion opened by Drs. J. C. Warren, N. Senn, W. W. Keen, E. M. Moore, W. T. Briggs and Hunter McGuire.

III. "The Surgery of the Kidney," by L. M. Tiffany, M.D. Discussion by Drs. M. H. Richardson, H. H. Mudd, C. H. Mastin and Ford Thompson.

IV. "Methods of Controlling Hæmorrhage in Amputation at the Shoulder," by W. W. Keen, M.D. Discussion by Drs. Roswell Park, C. B. Porter and J. William White.

Fellows who desire to present volunteer papers are requested to send the titles of the papers to the address of the Business Committee, 1429 Walnut Street, Philadelphia, not later than April 18, 1894. **J. R. Weist**, M.D., *Secretary*.

AMERICAN MEDICAL ASSOCIATION.

San Francisco Meeting, June 5–8, 1894.

The Committee of Arrangements has secured Odd Fellows' Hall Building, Corner of Market and Seventh Streets, for the meeting June 5, 1894. Assembly Hall will be used for the general meeting, the twelve smaller halls for Section work. The engagement carries three of these rooms on Monday for accommodation of associate organizations, as that of the Editors, Colleges, etc.

Headquarters for the Association have been located at the Palace Hotel, corner of Market and Montgomery Streets, only four blocks from the place of meeting.

Post-Office Section K is located in the Palace Hotel, on the office floor, adjacent to the registration room, where members can receive all mail matter by having it so addressed.

R. H. Plummer, *Chairman.*

Section on Surgery and Anatomy.

It is proposed to devote a portion of the time of this Section to the systematic consideration of a few selected subjects, upon which papers, each not occupying more than ten minutes will be read. It is hoped that speakers discussing these papers will confine their remarks to brief addresses of five minutes' length.

The topics and papers to be so presented are as follows:

(1) Malignant Growths; (2) Tubercular Disease of Joints; (3) Hernia; (4) Hemorrhoids, Fistule and Fissure; (5) Fractures; (6) Obstruction to Urination in the Male."

Members who have specimens or patients to exhibit bearing on these topics or who wish to make remarks in the discussion of them are cordially invited to be present during the meetings of the Section. The titles of other papers to be presented to the Section will be published when the programme of the meeting of the Association is issued by the Committee of Arrangements. **John B. Roberts**, *Chairman*,

1627 Walnut Street, Philadelphia.

Lloyd W. McRae, M.D., *Secretary*, Atlanta, Ga.

RECENT DEATHS.

Francis Flint Forsaith, M.D., M.M.S.S., formerly of Weymouth, Mass., died in Providence, R. I., March 10, 1894, aged sixty-nine years.

Dr. Albert Lucke, Professor of Surgery in the University of Strassburg and the colleague of Billroth in editing the *Deutsche Chirurgie*, died February 28th.

Dr. Don Vincent A. Garcia, President of the Medical and Natural Science Society of Bolivar, Columbia, died recently.

BOOKS AND PAMPHLETS RECEIVED

The Young Man in Business. By Edward W. Bok. Philadelphia. 1894.

The Forms of Peritonitis, Their Relation to Appendicitis and the Etiology of Each. By Roswell Park, A.M., M.D. Reprint.

A Critical Review of the Seventh Decennial Revision of the Pharmacopœia of the United States of America. By George M. Beringer, A.M., Ph.G. Reprint. 1894.

A Practical Treatise on the Diseases of the Hair and Scalp. By George Thomas Jackson, M.D. New, revised and enlarged edition. New York: E. B. Treat. 1894.

A Speech on the Principles of Finance. By Victoria C. Woodhull, delivered at Cooper Institute, New York City, Thursday, August 3, 1871, and throughout the United States of America. London. 1894.

The Strike at Shane's. Goldmine Series No. 2, Sequel to Black Beauty. A Prize Story of Indiana. Written for, and revised, copyrighted and published by The American Human Education Society. Boston, 1893.

The Physician's Wife and the Things that Pertain to Her Life. By Ellen M. Firebaugh. Illustrated with forty-four photo-engravings of sketches from life. Philadelphia: The F. A. Davis Co. London: F. J. Rebman. 1894.

Atlas of Clinical Medicine. By Byron Bramwell, M.D., F.R.C.P., Edin., F.R.S., Edin., Assistant Physician to the Edinburgh Royal Infirmary, etc. Vol. II, Part III. Edinburgh: Printed by T. & A. Constable at the University Press. 1893.

Supplement to the Reference Handbook of the Medical Sciences. By various writers. Illustrated by chromolithographs and fine wood-engravings. Edited by Albert H. Buck, M.D., New York City. Volume IX. New York: William Wood & Co. 1894.

A Treatise on Headache and Neuralgia, including Spinal Irritation and a Disquisition on Normal and Morbid Sleep. By J. Leonard Corning, M.A., M.D. With an appendix. Eye-strain, a Cause of Headache. By David Webster, M.D. Illustrated. Third edition. New York: E. B. Treat. 1894.

Original Articles.

THE DIAGNOSTIC AND PROGNOSTIC IMPORTANCE OF LEUCOCYTOSIS.[1]

BY RICHARD C. CABOT, M.D.,
Medical Interne, Massachusetts General Hospital.

The material for this paper consists largely of blood-counts, 332 in all, which I have made at the Massachusetts General Hospital within the last year; and for all of it I am indebted to the kindness of the visiting physicians and surgeons of the hospital, who have given me the freest access to their cases at all times. I am under special obligations to Dr. F. C. Shattuck and Dr. R. H. Fitz.

It is important to know exactly what leucocytosis is before we attempt to estimate its diagnostic or prognostic value. It is a very difficult idea to define. Not one of the authors whom I have consulted have seemed to me to give a satisfactory definition, that is, one which sufficiently distinguishes it from leucæmia. Von Jaksch,[2] for instance, distinguishes it from leucæmia by its transitoriness, but it may last as long as leucæmia. Virchow defined it as an increase in the white cells of the blood due to a stimulation of the lymph glands, but in typhoid the increased glandular activity causes no leucocytosis.

Eichhorst, Jürgensen, Seifert, Müller, Strümpell, Vierordt and Pée[3] in their text-books give it to be understood that leucocytosis is transitory, symptomatic, and less in degree than leucæmia; but counts as large as those in leucæmia have repeatedly occurred in cases where none of the characteristic lesions of leucæmia were present, especially in connection with malignant disease and the anæmiæ of children (Von Jaksch).

Very probably many of the reported cases of acute leucæmia where nothing was found at autopsy, were simply leucocytosis. The reported developments of pseudo-leucæmia into leucæmia were probably all leucocytosis. At any rate, I have not been able to come across a single such case where the crucial test of the differential count was applied. The mere increase in the white was held to constitute leucæmia.

On the whole, the best definition that I have been able to arrive at is this: Leucocytosis is the presence in the blood of an increased number of white cells of the same varieties morphologically as those in normal blood, a plurality and generally an overwhelming plurality being polynuclear.

In leucæmia many of the varieties of white cells present have never yet been found in normal blood, although every one of them has now been found in diseases other than leucæmia.

In leucæmia the polynuclear cells are never increased, and are generally in minority. In leucocytosis the polynuclear cells are generally much increased, and are never in a minority.

But we cannot say, as Friedlander[4] does in his short and pungent definition, that: "Leucocytosis is an increase in the polynuclear or other varieties of white cells present in normal blood"; for in pure lymphatic leucæmia there are no varieties other than those found in normal blood, the diagnosis being made on the overwhelming majority of lymphocytes, or small mononuclear white cells, taken in connection with the other physical signs.

Practically, 90 out of 100 leucocytoses are perfectly easily distinguishable from leucæmia by their enormous percentage of the polynuclear varieties, 90 to 98 per cent. being the rule.

We cannot, then, make the distinction from leucæmia simply by the count. As an example of this, let me cite a case occurring in the wards of Dr. Maurice H. Richardson last summer, in which a mistaken diagnosis was made for lack of a differential count.

A. M., single, age twenty-one, entered with a diagnosis of malignant tumor. She was so pale that an examination of the blood was made. This showed an overwhelming number of white cells, 1 to 39 red; and taking this fact in conjunction with the position and nature of the tumor, a diagnosis of leucæmia was made. The tumor was in the region of the spleen, projecting below the left ribs, and it was thought that a notch was felt upon its upper surface. The patient was transferred to a medical ward; and here, after considerable delay, a triple stain and differential count of the blood was made, which at once showed that it was not leucæmia, for 95 per cent. of all the white cells present were of the polynuclear type. Not long after this, the tumor began to assume a position near the median line, and a zone of resonance appeared between the left ribs and the tumor. During her stay on the medical side she had several well-marked chills. She was transferred to the surgical wards again, and the tumor was tapped in several directions, nothing but a little fæcal matter being obtained.

She failed rapidly, decided to go home, and was lost sight of; but her death was reported in the papers within a few weeks. No autopsy. This was probably a case of large malignant new growth and the count, 1 to 39, was not higher than has been repeatedly found in large abdominal tumors. I have collected eight cases of malignant growths from literature in which the count was 1 to 50 or greater.

On the other hand, we may have leucæmia with no increase in the number of white cells. A few months ago Dr. Hubbard, of Taunton, sent me some blood-slides from a case of leucæmia, Mrs. S., which I had seen and counted in the hospital a year before in the service of Dr. Shattuck and which is now under Dr. Hubbard's care in Taunton. *They showed no increase at all in the white cells;* but on making a differential count, a large proportion of the white cells present were found to be myelocytes, so large a proportion as could only occur in leucæmia. The patient has still all the other signs and symptoms of leucæmia. In leucocytosis then, as distinguished from leucæmia, we have only those varieties of white cells present which are found in normal blood.

We have said that leucocytosis is an increase in the white cells over the normal number. This normal number has been somewhat disputed; but the majority of careful observers in late years agree in placing it at or near 7,500. Any variation, of more than 1,500 above or below this number is to be considered abnormal.

Now, leucocytosis is found in a considerable number of physiological conditions. This must be carefully borne in mind if we are to rightly interpret its significance in disease.

Digestion. — We have in the first place leucocytosis during digestion. This has been doubted by many authors; but the weight of authority is in favor of it, at any rate under certain conditions. Two and one-half hours after a meal rich in proteids the blood of most normal persons shows an increase of white cells varying from 1,000 to 7,000 above the normal.

---

[1] Read before the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, January 17, 1894.

[2] Von Jaksch: Klinische Diagnostik, 1889.

[3] Pee: Untersuchungen über Leukocytose; Inaug. Dissert, Berlin, 1890.

[4] Friedländer: Microscopische Technik.

Rieder,[5] who has made a most thorough investigation of the subject, says that in adults the digestion leucocytosis rarely if ever goes above 13,000. Von Jaksch states that it may be so great as to cause a ratio of 1 white to 100 red, but he gives no cases in support of his assertion; nor does Klein,[6] who asserts that the white cells may reach 20,000 simply from digestion.

In children it may be a good deal higher, but never, I think, so high as the estimate of von Jaksch. My own investigations of this matter agree entirely with those of Rieder. In 21 cases, on various diets, I have never seen it rise above 13,000. In 13 of these it was absent altogether.

Pregnancy. — Next may be mentioned the leucocytosis of pregnancy and the puerperal state, which occurs in about two-thirds of all cases; it is generally moderate, not over 14,000. The leucocytosis of pregnancy might be of value in excluding those cases of phantom tumor simulating pregnancy. This has not been done as far as I know.

Children. — New-born children have a very considerable leucocytosis; which falls gradually, until at the sixth year the count becomes normal. At no time during the first year is 12,000 abnormal. Besides these physiological conditions, we must bear in mind hæmorrhage, which, if large, may cause considerable increase soon after the loss of blood; also the leucocytosis occurring just before death, so-called leucocytosis of agony. If these causes are excluded, any leucocytosis may be called pathological.

Typhoid. — Taking up now the diseases in which the count of leucocytes is important, I shall begin with typhoid. Most febrile diseases are accompanied by leucocytosis; and Strümpell, in the edition before the last, of his "Text-Book of Medicine," makes the mistake of saying that leucocytosis is present in typhoid. In this he only follows the lead of such authorities as Virchow, Vierordt and others, who, judging apparently from *a priori* considerations, have stated that in all diseases accompanied by increased activity of the lymph glands, increase of white cells should be found. As a matter of fact, however, the overwhelming majority of observers, and almost all the facts, are on the other side. As mentioned in Osler's text-book, Thayer has counted nearly 150 cases, not reported in detail as far as I know, in which no increase was found. Rieder, v. Limbeck,[7] Pick [8] and others have come to similar conclusions. Leucocytosis occurring in typhoid points to some complication, such as thrombosis, pneumonia, abscess, etc. The diagnosis between relapse and some of these causes of temporary rise of temperature may, perhaps, be assisted by the blood-count. In a patient of Dr. Shattuck's, who had just recovered from a thrombosis during convalescence of typhoid, the temperature began to rise again. The question arose, whether this was due to the smouldering remains of the thrombosis (which, when active, had caused both fever and leucocytosis), or whether the patient was having a relapse. The blood-count was normal; two days later rose-spots appeared, and the subsequent course of the case confirmed the diagnosis of relapse as indicated by the blood-count.

In the last few months I have counted 79 cases of typhoid fever. In only one was leucocytosis present, and that was in a child of four, where the normal number of white cells was so great that the count in this case, 1 to 300, may not be really leucocytosis at all. In 49 of my cases the number of white cells was less than the normal, and this agrees with most of the latest observations. Lack of time prevented my making more than one count in each case of typhoid.

Cold baths, as recently observed by Thayer, may produce a temporary increase. In two of my cases I was able to confirm this observation.

Now this fact, the absence of leucocytosis in typhoid, is a very important one in the diagnosis of that disease, for a large number of affections with which typhoid is likely to be confounded *do* show leucocytosis. Local suppurations, for instance, which are sometimes difficult to distinguish from typhoid fever, almost always produce leucocytosis. Purulent meningitis has shown in every case which I have been able to find in literature (only seven in all) a very marked leucocytosis. I have only one case to add to this.

Last September, a man entered the Massachusetts General Hospital with a diagnosis of typhoid fever. He had the typical "typhoidal" aspect. Low, muttering delirium, heavy coated tongue, temperature 104.2°, pulse 115, respiration 22. He could give no account of himself, and complained of nothing in particular. Physical examination was generally negative. No rose-spots were present, no spleen was felt, and there was no distention. The diazo reaction was present. In the absence of any other obvious diagnosis, the case was considered one of typhoid. The blood-count, however, showed 22,000 white cells. Next morning the patient's brother arrived, and stated that the patient had been suffering for years with middle-ear catarrh. There was no discharge from the ear; but Dr. Green found purulent otitis, with perforation in the left ear, and made a diagnosis of meningitis. The patient became unconscious within a few hours, and died two days later. No autopsy.

Ewing reports a number of cases in the New York *Medical Journal*, December 16, 1893, where the diagnosis was very difficult between pneumonia and typhoid until an examination of the blood cleared it up. No such difficulty has occurred in the cases I have seen, but, should it arise, the blood would undoubtedly decide in the great majority of cases.

Typhoid vs. Appendicitis. — A diagnosis between typhoid and appendicitis has presented considerable difficulty in several cases which I have seen at the hospital this year. As is well known, the pain of appendicitis may be very slight, and the tenderness no greater than is occasionally found in typhoid. The histories in a certain number of cases are not markedly different. In two such doubtful cases where I have found no leucocytosis, a diagnosis of typhoid has been confirmed by the subsequent course of the disease.

Three years ago, I saw in the hospital, in the service of Dr. Shattuck, a case in which the diagnosis between typhoid and some internal suppuration was for several weeks doubtful, until at last an abscess of the liver came to the surface and was opened. In such a case as this I think the blood examination would have settled the difficulty at once.

---

[5] Rieder: Beiträge zur Kentniss der Leukocytose, Leipzig, 1892.
[6] Klein: Volkmann's Sammlung Klinische Vortrage, Dec. 1893.
[7] Von Limbeck: Grundriss einer Klin. Path. des Blutes, Jena, 1892.
[8] Pick: Klin. Beobachtungen über die Entzundl. Leukocytose Prag. Med. Wochenschrift, 1890, No. 24.

Grippe. — Between grippe and typhoid the blood does not help us, for in neither are the white cells markedly changed. I have counted but five cases of uncomplicated grippe, but in none of these, and in but few of those which I have found in literature, has increase been present.

Between general sepsis and typhoid a blood-examination was of value in a case occurring this autumn in Dr. Shattuck's service. Patient presented symptoms and signs of acute polyarticular rheumatism with fever. The fever came down under salicylates, but soon rose again, and the man became wildly delirious. His delirium persisted after the salicylate was stopped. Several joints continued swollen and tender. The fever was very moderate, ranging between 99° and 101°. There were no rose-spots and no spleen. The question arose as to whether it was a case of sepsis with localization in the joints, or whether it was a case of typhoid supervening on an arthritis of some kind. The blood-count, which was repeated several times, showed always a perfectly normal blood except for a slight anæmia. The subsequent course of the case, during which he remained for nearly three weeks more or less delirious, convinced Dr. Shattuck that it was a case of typhoid fever.

Tubercle. — As between typhoid and incipient pulmonary tuberculosis or tubercular meningitis, the blood does not give us any help. For in pulmonary tuberculosis all observers agree that leucocytosis is present only in advanced cases with high fever (that is, I suppose, in those where the infection is mixed) and in tubercular meningitis there is no leucocytosis, so far as observed. My own counts in tuberculosis in eleven cases have coincided with the results obtained by others. In two cases of galloping consumption and two cases of empyema with phthisis, leucocytosis has been present. In the other cases, consisting of two cases of tubercular peritonitis, two of early phthisis, two of tuberculosis of the kidney and one of general miliary tuberculosis, no increase has been present. I have only been able to find four cases of miliary tuberculosis in literature where counts have been made. In none of these was there any increase, so that in these cases of tuberculosis which would be likely to be confounded with typhoid the blood does not help us. The same is true of malaria, where a normal blood-count is found.

I stated before that the majority of cases of typhoid show by the second week leucopenia, or lack of white cells. Cases of debility with fever, and with or without gastro-intestinal symptoms, which are sometimes difficult to tell from typhoid, may, perhaps, be distinguished from it in some cases by their normal count. Two cases of acute gastro-intestinal catarrh with fever, which I counted with a view of finding out the cause of the fever, both showed a decided increase in white cells. This might be of use in a diagnosis of typhoid.

Pneumonia. — It has long been known that pneumonia shows a marked increase in white cells. I published the blood-counts of 48 cases last summer, in all but 5 of which leucocytosis was present.[9] I dwelt then upon the prognostic significance of the absence of increase in the white cells, for all of the 5 which had no increase died. Since then I have counted 24 more, or 72 in all.

I will speak first of the diagnostic importance of blood in pneumonia. In the cases that I have seen it has helped mostly in distinguishing pneumonia from grippe, or rather in anticipating the complication of pneumonia in grippe. In three cases seen last month where no physical signs of pneumonia were present, where the history might do either for grippe or pneumonia, the high leucocyte count made me suspect pneumonia, and this was verified in each case by the appearance of signs of consolidation within thirty-six hours.

It is important before any treatment or any prognosis to make this distinction between grippe and pneumonia as early as we can, especially if we are in the habit of treating grippe with phenacetine.

Ewing, in the article mentioned above, says that he found a connection between the count and the amount of physical signs, and also between the count and the vigor of the systemic reaction. In my cases I have not been able to establish any such connection. High counts have been present in sthenic and in fatal cases repeatedly; low counts in those with much lung substance involved. Of the 24 new cases since my last report on pneumonia, two have had no leucocytosis. One of these died. The other did not; but the course of the case was so interesting that I think it will be worth reporting in a little more detail.

The patient, L., was seen in Dr. Fitz's wards a few weeks ago, and was evidently a very mild case of pneumonia. Temperature and pulse were not high; there was no cyanosis, and but little lung involved. The man was perfectly sensible; and after the count, which showed a normal number of leucocytes, I felt as if the theory were certainly at fault in this case. The man was evidently going to get well. Within twelve hours the temperature rose to 105°; the pulse to 160, and became so weak as to be almost uncountable. The man became much cyanosed and wildly delirious. He seemed almost moribund, and remained in this condition for forty-eight hours. At the end of this time he began to improve a little. The count was repeated, and found to show a marked increase in the white. He ultimately recovered. Now here was a case where from ordinary appearances a good prognosis would have been given; but if we could have anticipated what his condition would be twenty-four hours afterwards, the prognosis would have been the very reverse. *The blood did anticipate* it; so that this case does not seem to me to be one which tends to upset the prognostic importance of the absence of leucocytosis in pneumonia. Of my 72 cases, 7 had no leucocytosis; 6 of these have died; and the other came so near it that if it had been foreseen what his condition would be, a very unfavorable prognosis would have been given. It is interesting here to see that when his condition began to improve, the leucocyte count rose.

Phthisis and *Pneumonia.* — Between pneumonia and phthisis in the early stages the blood-count might be of value, but it is not in this stage of phthisis that the difficulty of diagnosis would be likely to occur. Pleurisy with serous effusion shows, according to v. Limbeck and Pick, moderate leucocytosis in febrile stages, none in the quiescent afebrile stage. I have counted six cases, two in the febrile stage and four in the afebrile stage; and my results are entirely in accord with those of the writers above mentioned. Rieder thinks (on the evidence of a very small number of counts) that tubercular effusions give no increase in leucocytes, even when febrile.

---

[9] Cabot: Boston Medical and Surgical Journal, August 8, 1893.

In three cases of empyema, I have found moderate leucocytosis, but not greater than that present in the febrile stages of serous effusions, so that no help is given by the blood-count, as between empyemas and serous effusions in the febrile stage.

Scarlet Fever and *Measles.* — Between these two diseases the blood is said by several authors to be of greater diagnostic importance, leucocytosis being present in scarlet fever and not in measles. I have had no personal experience in these diseases. According to Koczetkow, leucocytosis is present in scarlet fever in the incubation stage early as six days before the eruption.

In ***Rheumatism*** but few counts have been made. In the febrile stages the white cells are apparently increased. The same is true of erysipelas. In two cases I have found marked increase.

Diphtheria shows as high a count as any febrile disease. According to v. Limbeck the higher the count the worse the prognosis.

In ***Follicular Tonsillitis*** Halla has found moderate leucocytosis; and I have found the same in three cases, all febrile ones.

Experiments in the inoculation of animals with cultures of various pyogenic cocci show that those animals in which no leucocytosis is present generally die. This has been observed in a number of cases in the inoculation experiments at the Pasteur Institute last year.

Malignant Disease. — Leucocytosis occurs in a certain proportion of cases of malignant diseases. Just what that proportion is and what relation the count bears to the presence of the disease in one or another organ, or to the kind of disease, does not seem to me to have been settled as yet.

V. Limbeck found it most frequently in soft, growing tumors, and constantly in osteo sarcoma. Here the count may be of great importance in helping the diagnosis between malignant disease or some other form of joint affection. Tuberculosis, for instance, as before mentioned, does not cause an increase in the white cells; nor does chronic arthritis sicca., nor gonorrhœal arthritis.

Gastric Cancer and *Ulcer.* — Schneider has, during the last year of two, maintained the thesis that the examination of the blood is of great importance in the diagnosis between cancer and ulcer of the stomach. He has found leucocytosis in all of 12 cases of cancer of the stomach and failed to find it in a number of ulcers. It is important here, however, to rule out all these cases of ulcer where profuse hæmorrhage has taken place, or where a long-standing chlorosis is present, for chlorosis and hæmorrhage both may cause leucocytosis. In cases of ulcer not dependent on these causes, it seems that the count might be of diagnostic value. I have counted only two cancers of the stomach, and there leucocytosis was present. I have counted no ulcers. In the diagnosis between anæmia secondary to malignant disease, and the simple primary or pernicious anæmia, the count is certainly of importance; for in these latter forms of anæmia, no considerable increase is often found, and although the absence of leucocytosis would not be of any great diagnostic importance, its presence might be. Moreover, Klein, the latest and most enthusiastic writer on the subject, states that in malignant disease, even where no leucocytosis is present, a differential count shows a marked increase in the percentage of polynuclear cells. In cancers of the uterus it has been found less often, and in cancer of the gullet it apparently does not occur, the white cells being decreased.

I have counted 19 cases of malignant disease and found leucocytosis in 12. In my cases a leucocytosis was present wherever cachexia was present, without any particular reference that I can trace to the position or nature of the tumor. The 7 cases where no increase has been present have been mostly small tumors, and all in persons where no cachexia was present. Thus, in a small cancer of the lip, a sarcoma of the testis, and a sarcoma of the abdominal wall, there was no increase. In all of these cases the tumors were small, and there was no cachexia. In one case of cancerous growth filling the whole pelvis, and in another case of very large sarcoma, probably of both suprarenal capsules, both without cachexia, there was no increase. The last of these two cases became cachectic, and several months after the first count the leucocytosis rose proportionally. In one case of multiple sarcoma of the skin where the tumors were very small, although fairly numerous, there was a large increase; but here again the patient was markedly cahectic.

Appendicitis. — I have counted 24 cases of appendicitis, and have been specially interested in these counts, because leucocytosis if constant in appendicitis would be a diagnostic factor of some value. In every case except two where pus was found at operation, leucocytosis was present, the size of the count having, as far as I could judge, no relation to the amount of pus found. In three cases of appendicitis proved at operation to be catarrhal, no increase was present, as was the case in several others whose course made the diagnosis of catarrhal appendicitis probable, although this was not actually verified by operation. The count has seemed to me of real value in some cases where the diagnosis was difficult, between simple colic due to constipation (with or without gastro-intestinal symptoms) and true appendicitis. Two cases where symptoms and signs pointed decidedly towards appendicitis, but where no leucocytosis was present were relieved of all these symptoms within forty-eight hours, by clearing the bowels. The count may be of use, it seems to me, in deciding us whether an enema ought to be given. It is sometimes desirable to give an enema in cases simulating appendicitis to help clear up the diagnosis, but some physicians are afraid to do so for fear of causing a walled-off abscess to break into the general peritoneal cavity. In such cases, if no leucocytosis were present, we might go ahead with a clearer conscience.

Mr. B. entered the Massachusetts General Hospital September 20th, with a diagnosis of appendicitis. For twenty days he had been having pain and tenderness in the region of the appendix, pain being controlled by morphia. The bowels had been loose, he said. There was dulness and tenderness and a distinct tumor in the region of the appendix, with slight pyrexia. The blood-count showed only 8,000 leucocytes. He was given a compound cathartic pill, had a large movement of the bowels, and all symptoms and signs disappeared. V. Limbeck, Rieder, Pick and Koblauck[10] all state unconditionally that leucocytosis is present in general septic peritonitis with fever. But in three cases of general peritonitis, two of them with appendix pus present, no increase of white cells has been present. I do not know how to explain these cases. It is possible that they may be explained in the same way as the absence of leucocytosis in some fatal cases of pneumonia. All these three cases of peritonitis died within twenty-four hours. It may be that the lack of leucocytes is a point in prognosis, pointing to a feeble systemic reaction. It is interesting also that in none of these three cases was there any pain, while in every one of those cases where I found leucocytosis, pain was a marked feature. This would suggest that pus under tension is more likely to cause leucocytosis than where free. The same thing is suggested by counts that I have made in felons and small abscesses in the Out-Patient Department. In three felons, one of which contained less than half a drachm of pus, I found well-marked leucocytosis. In a paronychia with great pain, but without pus, no increase was present.

---

[10] Koblauck: Inaugural Dissertation, Berlin, 1889.

Pus-Tube. — In 15 cases of pus-tube or pelvic abscess I have never once failed to find leucocytosis. This fact may serve to help in the diagnosis between pus-tube and pelvic abscess, on the one hand, and those pelvic pains with no anatomical basis, and other non-suppurative and non-malignant pelvic affections, such as extra-uterine pregnancy, pelvic hæmatoma, and small ovarian cyst, on the other. In two cases of extra-uterine pregnancy I have found a normal blood-count. I may mention here two interesting cases of severe inflammation under the scalp, following scalp wounds. In one of these I found normal blood-count; and at operation no pus was found, only boggy, water-soaked tissue. In the other I found leucocytosis, and plenty of pus appeared on making a cut.

Septic Hands, etc. — I have counted three septic hands and one septic foot, and always found leucocytosis. The same is true of three buboes and two small abscesses of the neck. One case of mumps showed normal count.

Osteomyelitis. — Two cases of osteomyelitis with deep seated suppuration (as proved by subsequent operation) showed marked leucocytosis, while one with similar symptoms, but normal blood-count, turned out to be rheumatism. Three cases of otitis media were counted. Two of them were purulent and had leucocytosis; one was serous and had none. In one case of housemaid's knee in which the general constitutional symptoms were more marked than usual, so that the presence of pus was thought of, I found large increase in leucocytes; and a few hours after pus was found at operation. Two joint cases, one of the elbow and one of the knee, where before operation the question of pus was seriously entertained, showed normal counts, and no pus was found in either. Besides the three cases of general peritonitis mentioned above, where the indication of the blood-count was wrong, there should be mentioned a large abscess, apparently originating in the liver, which burrowed forward and was evacuated in the epigastrium, and which showed a normal blood-count. I have no idea why the blood-count failed in this case.

Obstruction. — In three cases of intestinal obstruction, one of them so closely simulating appendicitis that it was sent in by a surgeon of the Massachusetts General Hospital with that diagnosis, no leucocytosis has been found.

Carbuncle. — Two cases of carbuncle showed, as was expected, marked leucocytosis.

Cystitis, etc. — Two cases of cystitis, and three cases of endometritis showed normal count, as did two cases of so-called urethral fever following operation on bladder.

Healing Wounds. — On the whole, the cases where the blood has seemed to me of greatest importance have been those where after the operation, the wound having been sewed up tight, the question has arisen whether pus was forming inside. I shall speak of these somewhat more in detail.

Case I. Frank B. was a case of appendicitis operated on by Dr. Richardson at the end of an attack. A little pus was found, the appendix was excised, and the wound nearly closed, a small strand of gauze, however, being left in. Several days after the operation, there being at the time no external discharge, the temperature rose. The wound seemed perfectly clean. The man was very nervous about himself, and much stirred up at each dressing; and as the temperature never went higher than 101°, there seemed to be considerable doubt as to what the cause of the temperature was. The blood-count in this case showed 52,000 leucocytes; and on opening the wound a large amount of broken-down blood-clot was evacuated, and the temperature came down to normal.

Case II. Mrs. S. was a case of pus-tube shelled out and sewed up tight. Ten days after the operation the temperature began to look a little like pus. Here again the patient was exceedingly nervous; and, as so often happens, the question was asked and re-asked, whether she was keeping up her own temperature by the state of her mind. The blood-count, however, showed marked leucocytosis, which led to a careful ether examination, revealing a fluctuant mass behind the uterus, from which pus was obtained by puncture.

Case III. Mr. R. entered the Massachusetts General Hospital in December, under the service of Dr. Porter, with a compound fracture of the thigh. Some days after it had been put up, the temperature began to look like pus, the wound, however, remaining perfectly clean. I counted the blood, and found a marked leucocytosis. A more thorough exploration of the wound revealed a pocket of pus, the evacuation of which brought down the temperature. I was not sure in this case whether the absorption of the blood-clot, such as takes place, I suppose, after any compound fracture would be sufficient to cause leucocytosis. I therefore counted several cases in which there was fever and presumably blood-clot absorption, namely, a hæmothorax, a pelvic hœmatocele, two compound fractures and a crushed foot; in none of these was any leucocytosis present.

Case IV. Mr. S. was operated on by Dr. Warren for traumatic epilepsy. Nothing special was found, and the wound was closed. Ten days after the operation the temperature rose to 104°, and the patient complained of severe headache and pain in the back. I counted the blood, and found no leucocytosis. Next day the temperature was down. The patient apparently had the grippe.

There is no time to report more cases in detail, but these last cases have seemed to me to be very suggestive and interesting.

CONCLUSIONS.

Only in typhoid and in pneumonia does the number of counts which I have made warrant any conclusion. The absence of leucocytosis in typhoid and its presence in pneumonia (except in the severest cases) seem to me fairly well established and of some diagnostic and prognostic importance.

The number of cases counted among the surgical affections is too few to warrant any conclusions; but they are sufficient, it seems to me, to make it important that the subject of leucocytosis in surgical cases should be studied much more carefully, with a view to its practical diagnostic value. If a felon with half a drachm of pus in it will cause marked leucocytosis, it certainly seems as if the diagnosis of deep-seated suppurations of larger size might be helped out by blood-examinations, as apparently it was in some of the appendix and osteomyelitis cases I have quoted.

Into the interesting and possibly important subject of the diagnostic importance of qualitative changes in the varieties of white cells, which is being so eagerly pushed in Germany just now, I have not undertaken to enter. Its advocates say it is even more important than the quantitative variations dwelt on in this paper.

TECHNIQUE.

In most of the cases reported above I have used the Thoma-Zeiss counter with Hayem's or Gower's solution and a dilution of 1 to 200. So great a dilution is condemned by German writers, as affording too small a number of leucocytes for computation, and so increasing the chance of error. To avoid in part this difficulty, I measured the field of my microscope, using always the same lenses. It happens to measure almost exactly one-quarter of a square millimetre, so that four fields of my microscope are just equal to the whole four hundred ruled squares of the Thoma-Zeiss instrument. By taking four fields in each of the four directions away from the sides of the ruled space of the instrument, we have counted as many leucocytes as we should have done by taking four additional drops from the pipette and counting only the ruled space. As the lines extend out some distance beyond the squares on each side, we can use them as a guide to start us in the right direction; and by using a movable stage, we can be sure of not getting off the track and into fields already counted. After counting one field, the eye is fixed on a corpuscle at the side of the field most distant from the central ruled squares, and then by means of the moving stage the slide is moved until that corpuscle is on the inner edge of the field, that is, that nearest the ruled squares. By counting four fields in four directions, I had with the central ruled space twenty thousand squares as a basis of computation. In each count I did the whole process over with a second drop as well, making forty thousand squares in all. This gives us in most cases from fifty to one hundred leucocytes as a basis of computation, which makes the error considerably smaller.

I have used also the one-third per cent. acetic-acid solution, which makes the red corpuscles invisible, and can therefore be used with much less dilution than the other solution, 1 to 20 being that generally used abroad. I have used generally 1 to 50, and found the results obtained by counting the same blood first with Gower's solution (1 to 200) and then with the acetic acid to be so nearly the same that I have fallen back onto the 1 to 200 dilution, which has the advantage (besides that of needing less blood) that it does not deprive us of the count of red corpuscles, whereby we may check any mistake in our mixing by reference to the ratio of red to white. If the red are invisible (as with the acetic-acid method) we are deprived of this advantage.

Mikulicz, of Breslau, is under consideration as the successor of Billroth at Vienna.

TWELVE CONSECUTIVE AND SUCCESSFUL OPERATIONS FOR APPENDICITIS.

BY JOHN W. KEEFE, M.D., PROVIDENCE, R. I.,
Visiting Surgeon to St. Joseph's Hospital, Surgeon to Out-Patients at the Rhode Island Hospital.

More has been written upon the etiology, pathology and treatment of appendicitis during the last five years than upon any other disease. Even the daily press has taken up the subject, and expatiated with more or less correctness upon the many phases of this so-called "fashionable disease." The operative treatment is, without doubt, *the* method of procedure in the large majority of cases. In Bull's collection of cases, treated without operation, there was a mortality of 47.67 per cent.; in Noyes's collection of 100 cases, treated by the Willard Parker operation, there was a mortality of 15 per cent.; while the mortality in the early operation, or during the first three days of the disease, is only 15 per cent. It has been shown that about 34 per cent. of those who die, do so within the first five days. I am fully convinced that the early operation by a skilful surgeon, will save the greatest number of lives. When the disease is of several days' duration, and the symptoms and signs continue, the Willard Parker operation is the operation of election. The mortality is about one per cent. in cases operated upon between the attacks in recurrent cases of appendicitis.

Case I. J. W., male. Age nineteen years, telegraph-operator and switchman on the N. Y., P. and B. R. R.

May 4, 1891, while witnessing a base-ball game, felt a slight pain across the abdomen. The pain continuing, his mother administered a dose of castor oil, which produced a small movement.

May 5th. Remained in bed all day, and was attended by a homœopathic physician, who prescribed some medicine to relieve pain.

May 6th. About 4 a. m. he had a very severe paroxysm of pain, which was almost unbearable. Tincture opii was given, and he experienced some relief. Nausea and vomiting. I saw him for the first time at 10 a. m.; his temperature was 103.5°, and pulse 120. He had pain over McBurney's point, and tympanitic percussion over right iliac region. Evening temperature 103.5°.

May 7th. Temperature 103°, pulse 120. Dulness on percussion, and sense of resistance in right iliac region. Rigidity of right abdominal muscles.

May 8th. No marked change in symptoms. Temperature 102.2°, pulse 110.

May 9th. Temperature, morning 100.6°; evening, 101.8°. Mass in right iliac region defined. Consultation with Dr. Noyes. Operation advised.

May 10th. Operation at 10.30 a. m. Present, Drs. Noyes, Mitchell and Collins. A vertical incision four inches long was made, two inches to the left of the anterior superior spinous process of the ileum, through the abdominal wall, which was not more than three-eighths of an inch in thickness, into a circumscribed intra-peritoneal abscess. About four ounces of very fetid pus was evacuated. A counter-opening was made in the loin, and a drainage-tube drawn through both openings. Coils of aglutinated intestine could be felt through the opening. The cavity was washed out with a 1 to 2,000 bichloride-of-mercury solution, and an antisepsic dressing applied. Four silk sutures were used to partially close the anterior wound.

May 11th. Patient rallied well from the effects of the operation. Morning temperature 101°, evening, 102.2°. The wound was irrigated daily with a 1 to 2,000 bichloride-of-mercury solution, and an antiseptic dressing applied.

May 12th. Morning temperature 99.5°, evening temperature 99.8°.

May 13th. Free fæcal discharge from wound. Morning temperature 98.8°, evening 99.5°.

May 14th. Two of the sutures were removed. Morning and evening temperature 98.8°, and pulse 96.

May 15th. Temperature and pulse normal. Only a slight discharge of pus. Two remaining sutures removed.

May 22d. Drainage-tube removed.

June 2d. Wounds entirely healed.

June 5th. Able to sit up.

June 6th. Four weeks from the day of operation; went out of doors.

July 6th to 15th. Had an attack of cholera morbus.

August 31st. Ventral hernia, about the size of a walnut, near the centre of the anterior wound. Truss recommended.

December 6th. Hernia scarcely perceptible.

Case II. F. E. P., male, age twenty-eight, baker. This man was taken with severe general abdominal pain and vomiting, October 2, 1892. Next day pain was present on deep pressure over McBurney's point. Occasional attacks of vomiting.

October 4th. Consultation with Dr. Noyes. Dulness on percussion in right iliac region; localized point of pain and circumscribed sense of resistance. General condition good. No pain on hyperextension of right thigh. Vomiting ceased. Temperature and pulse slightly elevated.

October 19th. Dr. Noyes in counsel. Symptoms and physical signs have not varied a great deal during last two weeks. Mass can still be detected in right iliac region.

October 22d. Same symptoms and signs with sweats. Dr. Noyes again in counsel. Operation agreed upon.

October 23d. I operated, being assisted by Dr. Noyes and Dr. McCusker. An incision three inches long was made, the centre of which was over the most prominent point of the mass in the right iliac region, parallel with the outer border of the rectus muscle. When the transversalis fascia was reached an aspirator needle was introduced twice, without entering the abscess cavity; a third time by causing the needle to enter obliquely and just to the left of the median line pus was found. An incision was made with the needle for a guide and five ounces (estimated) of fetid pus evacuated. Two silk sutures closed the angles of the wound. Coils of intestine could be felt in the cavity but not the appendix. The wound was irrigated with 1 to 2,000 sublimate solution and a double drainage-tube inserted and an antiseptic dressing applied.

December 1st. Patient made an uneventful recovery. Wound entirely healed, August, 1893.

Case III. W. R. P., male, aged thirty-five, married.

I saw this case in consultation with Drs. P. H. Keefe and Wheeler, of Worcester, and McCusker, of Providence, on December 7, 1892. This patient gave a history of having had an attack of appendicitis one year previously, by which he was confined to the room ten days. He has had slight pain in the right iliac region occasionally since then.

November 30th. During the night he was taken with slight general abdominal pain and vomiting. He had been working during the day and went to bed feeling as well as usual.

December 1st. Temperature 102°, pulse 120. General abdominal pain.

December 2d. Resting comfortably. Temperature 100°, pulse 110.

December 5th. Pain, dulness and rigidity of muscle in right iliac region. Pain most intense over McBurney's point. Temperature 99.4°, pulse 100.

December 6th. Conditions same as previous days. Bowels regular every day.

December 7th. Pain over McBurney's point, sense of resistance and dulness on percussion over an area four inches in diameter, just to the left of the right anterior superior spine of the ileum. No pain on moving right thigh. No chills or sweats and no fluctuation could be detected. Temperature 99°, pulse 84. Operation recommended. Assisted by Drs. Keefe, Wheeler and McCusker, I made an incision three inches long over the centre of the area of dulness and parallel with the median line. The skin, fat, external oblique, internal oblique and transversalis muscles, with the transversalis fascia were divided. An aspirator needle was then introduced and pus withdrawn. The peritoneum was now incised and three ounces of fetid pus evacuated. Appendix not found. The cavity was irrigated with 1 to 2,000 corrosive sublimate solution, a rubber drainage-tube introduced and an antiseptic dressing applied.

January 12, 1893. The wound was entirely healed.

August 26th. The patient works every day and has had no hernia or trouble since January last.

Case IV. J. H. S., male, aged nineteen.

I saw this young man December 19, 1892, at the request of Dr. O'Keefe, his attending physician. The patient was in good health until ten days ago, when he was taken with pain in the "pit of the stomach" while at work. The pain continued and two days later was localized in the right iliac region. The third day a mass could be detected in the same region. The treatment consisted of warm poultices, anodynes and laxatives. On examination, pain was present on pressure over McBurney's point, an area of dulness about three inches in diameter with the above point as a centre and a feeling of resistance over the same area. Fluctuation could not be detected. Temperature and pulse slightly elevated. Operation advised.

December 20th. Patient etherized by Dr. O'Neil. Assisted by Dr. O'Keefe, I operated by making an incision three inches long, parallel with the outer border of the rectus muscle, and over the most prominent point of the mass. The skin, abdominal muscles and peritoneum were divided and five ounces of pus (estimated) removed from a cavity which presented. The intestines forming the inner wall of the abscess cavity could readily be felt, but a careful search failed to reveal the appendix. The cavity was irrigated with a 1 to 2,000 corrosive-sublimate solution. A rubber drainage-tube introduced, two silk sutures to close the angles of the wound and an iodoform and corrosive-sublimate gauze dressing applied. The wound was irrigated daily for a time and dressed as before mentioned. The patient made an uninterrupted recovery.

September 6, 1893. Patient has had no recurrence of the disease.

CASE V. A. F., female, age eighteen, domestic.

March 3, 1893. Patient was seized with severe pain, localized in the right iliac region. In a few hours she vomited a greenish fluid. A few hours afterwards she had a chill. She was confined to her bed until March 11th. She then rode in the steam and horse cars about six miles to her home, where she again went to bed suffering severe pain in the right iliac region.

March 14th. She was admitted to St. Joseph's Hospital. Examination shows greatest point of pain over McBurney's point; circumscribed area of dulness two inches in diameter. Sense of resistance on palpation over same area. Temperature 100.8°, pulse 112.

March 15th. Operation. Present, Drs. Collins, Noyes, Mitchell, Chesboro and O'Neil. Bichloride-of-mercury poultice over abdomen during the night. Field of operation rendered aseptic. Patient etherized. An incision about three inches long was made over tumor, parallel with the median line, down to the peritoneum. Fluctuation could be detected at the bottom of the wound, and the finger was passed through into an abscess cavity. About two ounces of fetid pus was removed, and the abscess cavity irrigated with boiled water. Appendix was not found. A counter-opening was made in the loin, and a rubber drainage-tube passed through the wounds. A glass drainage-tube was also passed into the primary wound. Irrigation again with boiled water, and two sutures of silkworm-gut at angles of primary incision. Iodoform and sterilized gauze, cotton and a bandage applied. Patient rallied well from operation. A warm-milk diet.

March 16th. Patient restless during night, and slight pain during the day.

March 17th. Dressing removed. Wound irrigated with corrosive-sublimate solution (1 to 2,000). Antiseptic dressing applied. Temperature, A. M., 99.9°; P. M., 99.6°. Pulse, A. M., 88; P. M., 96.

March 19th. Dressed. No pain.

March 22d. Dressed. Rubber drainage-tube removed. Glass tube allowed to remain. Temperature and pulse normal.

March 25th. Dressed. Slight amount of fluid fæces escaped through wound.

March 31st. Dressed. Drainage-tube removed. Counter-opening entirely healed.

April 3d. Dressed. Enemas for constipation.

April 18th. Wound entirely healed.

May 4th. Patient allowed to sit up.

May 10th. Patient discharged cured.

CASE VI. H. F. R., male, East Providence, R. I. Age fifty, gardener.

This man I first saw at noon, June 27, 1893, in consultation with Dr. Mahoney. He had been at work the previous day, but had to leave his work in the afternoon on account of pain in the abdomen, most severe in the right iliac region. He had more or less abdominal pain for the last week. Temperature 100°, pulse 96. Sweats. Pain on pressure over McBurney's point. Dulness on percussion over an area three inches in diameter in right iliac region. Circumscribed sense of resistance. Could not feel a distinct tumor or fluctuation. Operation advised.

At 5 P. M., Dr. Mitchell concurred in the diagnosis, and advised operation. Assisted by Drs. Mahoney and Mitchell, I made a four-inch incision, parallel with the median line, over the area of resistance and through the abdominal wall. When the peritoneum was reached, by the aid of an aspirator, some pus was withdrawn, and with the needle as a guide, the abscess cavity was opened. The cavity was only about one inch in diameter, and contained about two drachms of pus. The appendix was not found. Intestine formed the inner wall of the abscess. A rubber drainage-tube was introduced to the bottom of the wound, and two silkworm-gut sutures to partially close the incision. Irrigation with corrosive-sublimate solution (1 to 2,000) and an antiseptic dressing. Recovery uneventful.

August 28, 1893. Scar firm. No evidence of hernia. Patient walks about, and is in good condition.

(To be continued.)

Clinical Department.

A CASE OF CONCEALED ACCIDENTAL HÆMORRHAGE DURING THE FIRST STAGE OF LABOR, WITH RECOVERY OF MOTHER UNDER CONSERVATIVE TREATMENT.

BY EDWARD REYNOLDS, M.D.

ON the 31st of last December I was asked by Dr. F. C. Murphy to see with him a primipara of thirty-eight, who had been subject to asthma and in poor health for some time, but had been in unusually good condition throughout her pregnancy. Labor began in the evening of December 29th; a few hours later Dr. Murphy was called, and found the cervix extremely long and rigid, the external os patulous, and the internal os about the size of a ten-cent piece; a little later in the evening the pulse rose suddenly to 160, and the patient felt faint, but as she gradually rallied somewhat, no treatment was adopted. During the night of the 29th and the day and night of the 30th moderate labor continued, and the pulse decreased gradually in rapidity. During the day-time of December 30th the patient became jaundiced, and began to look highly cachectic.

When I saw her at 10 A. M., December 31st, the pulse was 110, the skin was extremely sallow, the conjunctivæ slightly yellow. The patient was feeble and apathetic; the cachexia was marked, and her appearance resembled that of advanced malignant disease. The appearance of the abdomen was very peculiar. The uterus was rather small and extremely prominent, the epigastrium sinking rapidly away behind the fundus. On palpation, the fundus was tonically firm and rounded, suggesting the presence of unbroken membranes. The head presented. There was a tonic contraction of considerable intensity, accompanied by feeble exacerbations. On vaginal examination, the external os was soft and thin, about half dilated, and hanging away from the head; while the internal os, slightly larger, was hard and rigid, and pressed firmly against the head. The fœtus was moderately macerated, and a portion of its scalp, filled with fluid, occupied the cervical canal. Under ether, Dr. Murphy easily extracted a six-pound child by forceps. With the first attempt at expression the placenta was forcibly expelled, and was followed by about a quart of dark, old-looking clot.

The patient rallied well from the ether, and subsequently made a rapid convalescence.

Though forceps are not strictly applicable to much macerated heads, they were used here, on the ground of my belief that the extraction would be easy, and that the head was sufficiently firm to offer a secure grasp, a belief which was justified by the result. I think it probable that the blood was extravasated behind the placenta on the evening of the 29th, at the time of the sudden rise of pulse. The fœtal heart had not been listened for at that time, and it is impossible, of course, to state that the death of the child was due to the hæmorrhage and the consequent detachment of the placenta; but as the mother had felt active movements shortly before that time, and as some previous experiences lead me to believe that maceration may become well advanced in a period of forty-eight hours in utero after the death of the child, I am inclined to believe that the hæmorrhage was the cause of the fœtal death in this case. It is an interesting question whether the apparent jaundice could be hæmatopoietic and due to the hæmorrhage. The case is, at all events, well worthy of record from its extreme rarity.

◆

INTESTINAL ANASTOMOSIS (WITH SENN'S PLATES) FOR CANCEROUS OBSTRUCTION.

BY J. W. ELLIOT, M.D.

The patient was a feeble man, sixty years old. In August he had an attack of vomiting and diarrhœa. In September he began to lose his strength and to have attacks of dizziness. He also had a serious stoppage of the bowels, with pain on the right side, which was relieved by castor oil. He soon found that solid food gave him colic, he therefore took only liquids. In October he had more pain on the right side of the abdomen, and the movements became more difficult. Then the abdomen began to swell.

In November all his troubles became worse; he eat less, and had more pain. He then entered the Massachusetts General Hospital. There he vomited for four days, eat nothing, and was kept alive by nutritive enemata. He improved somewhat in his general condition, but had absolutely no movements of the bowels. No tumor could be felt.

Operation. — On December 15th the abdomen was opened, and the bowel was found to be completely obstructed by a cancerous mass in the cæcum. An anastomosis was then made, with Senn's plates, between the colon and the ileum. The operation did not take more than fifteen or twenty minutes; the patient, feeble as he was, had little or no shock. He made a rapid recovery. His bowels moved in twenty-four hours, and he took solid food on the fourth day.

It is now nearly three months since the operation. He has free and natural movements of the bowels, and has gained twenty-two pounds. He has no pain, and feels perfectly well. The growth has increased in size, and can be plainly felt in the abdomen. I should advise its removal if he were a stronger man.

I consider intestinal anastomosis one of the greatest advances in surgery; and it is difficult to understand why this very valuable operation has not yet been taken up in Boston, Dr. Homans's case being the only one on record. The operation is very quickly and easily done; and Dr. Senn deserves great credit for perfecting the technique. The advantages to the patient of an intestinal anastomosis over an artificial anus are enormous.

Medical Progress.

RECENT PROGRESS IN THORACIC DISEASE.

BY GEORGE G. SEARS, M.D.

TUBERCULOSIS AS A CAUSE OF PLEURITIC ADHESIONS.[1]

Schleuber gives the results obtained from 106 autopsies, but 21 of which showed no pleural adhesions. Among the remaining 85 the adhesions could be attributed in a number of cases to affections of the lungs other than tuberculosis, or to cardiac disease. Leaving these cases out of consideration, there remained 57, in 33, or 57.9 per cent., of which the adhesions, from the macroscopic examination, could be referred in all probability to a tuberculous cause. Schleuber is of the opinion that these figures would have been increased rather than diminished by the use of the microscope.

PECULIAR ODOR OF THE BREATH OF TUBERCULOUS PATIENTS.[2]

Rosenbach calls attention to a peculiarity of the breath of tuberculous patients, slightly resembling that of mild cases of putrid bronchitis, but differing from it in having a disagreeably sweet quality. It may become apparent in the neighborhood of the patient even in the absence of expectoration. It adheres to expectorated matter but feebly, being probably dependent on some volatile substances. It is only present in the exhaled air, and thus becomes most evident when the patient coughs or breaths with open mouth. It is a sign of unfavorable prognostic significance, even though the other manifestations in the case appear favorable. It is often present when the destructive process is not marked, and is most noticeable when the physical signs are unobtrusive. It is almost always an associated manifestation of disseminated broncho-pneumonic consolidation. It is wanting in cases of extensive infiltration, when cavities have formed and also when the sputum is copious. In a large number of cases in which this symptom was observed hæmoptysis occurred. Night-sweats, anorexia and febrile exacerbations were also frequently noted. The phenomenon is of diagnostic significance as it early indicates the occurrence of a morbid process in the lungs, and should therefore be sought for in all doubtful cases. To insure against a possible source of error the mouth and teeth of the patient should be first thoroughly cleansed.

THE DISINFECTION OF TUBERCULOUSLY-INFECTED HOUSES.[3]

Delepine and Ransome give the result of their efforts to disinfect rooms in which a phthisical patient has lived by chlorine, or more correctly euchlorine. Pieces of paper were carefully sterilized in glass capsules, and then infected with tuberculous material, either sputum or pure cultivations of the bacillus (human in most cases, avian in a few). The capsules were sealed, the sputum or cultivation being allowed to dry on the paper, and were not opened until just before the acid was poured on the chlorate of potash, and were again sealed when the room was reopened. Rabbits and guinea-pigs were then inoculated with small pieces of infected paper or superficial scrapings mixed with sterilized bouillon. In nine experiments made with three different kinds of sputum the results were unsatisfactory; in some cases complete disinfection seems to have been obtained, but the control experiments showed that some sputa were not as virulent as others. In six experiments made with pure cultures of the bacilli of human tuberculosis distinct evidences of the disease were observed within three or four weeks after inoculation. They therefore conclude that this method of disinfection, as well as that with sulphurous acid, which they have also investigated, is ineffectual. From some laboratory experiments with an old method of disinfection (not given) they hope before long to give practical means of effectually disinfecting places that have been contaminated with tuberculous products.

---

[1] Arch. f. path. Anat., etc., Bd. 134, Heft i.

[2] Wien. Med. Presse, 1893, No. 28; American Journal Medical Sciences, October, 1893.

[3] British Medical Journal, November 4, 1893.

CONSUMPTION HOSPITALS AND TUBERCULOUS DUST.

The *British Medical Journal* (September 16, 1893) says that "the steady drift of opinion, especially among the younger of our physicians, in favor of the infectious nature of tuberculous phthisis has led us to make some inquiry at the hospitals especially devoted to the treatment of consumption as to the nature and extent of the precautions which they have thought well to take, or the warnings which they have thought it desirable to give to their patients, with the object of preventing or limiting the spread of the disease." The methods adopted by the various hospitals are severally reported, but are too long for reproduction here. They unite in stating that the chief way in which the infectious material enters is with the inspired air in the form of dust, and are strenuous in their efforts to keep the sputum wet until it is removed, some antiseptic, usually carbolic acid or occasionally a solution of caustic soda if the expectoration is very adhesive, being used in the cups. The stools are also quite generally disinfected. They are much less united in their treatment of the handkerchiefs, which by some authorities are prohibited altogether, while by others they are allowed, even though the danger caused by them is admitted. No precautions are generally taken regarding the soiled clothes; though in one care is taken that the dirty linen used by the officers, nurses, etc., is not sent to the same laundry as that of the patients, "an arrangement probably more satisfactory to the officers than to the general public." They are equally illogical in their dealings with the general dust of the institutions, which is removed by dry cloths and brooms, reliance being chiefly placed in an abundance of fresh air for rendering it innocuous. The journal mentions with approval the position taken by some of the provincial authorities, the Lancashire people, for example, not being content with the expression of a pious opinion on the subject, but print and distribute warnings, and in some places receive an informal notification of cases of tuberculosis, and even go to the expense of free disinfection of houses where consumptives dwell.

TUBERCULOSIS OF THE BRONCHIAL GLANDS AND ITS RELATION TO THE TUBERCULOSIS OF CHILDHOOD.[4]

Neumann sums up an interesting paper on this subject as follows:

Tuberculous infection in children is usually at first localized in the bronchial lymph glands. It is very common in the first years of life, and results from inhalation of the infectious material. This method of infection may be prevented by proper hygienic regulations, which, though at times difficult to obtain in private practice, should be demanded in all public institutions. From the bronchial glands infection either rapidly spreads through well-known anatomical paths or it remains latent for an indefinite period, until its activity is finally excited by some condition (catarrh or inflammation of the respiratory tract) in which the glands are secondarily affected. At times, however, it may remain permanently latent or cure result from calcification. Diagnosis is only possible in advanced cases, and only then when the condition of the gland is not masked by affections of other organs. So long as they are simply tuberculous, but not enlarged or adherent to neighboring organs, they give rise to no signs or symptoms, while, on the other hand, the process which started from them may have produced such marked pathological changes in their neighborhood as to conceal the original trouble. Even when an autopsy has shown that diagnosis was possible, it has not always been made; nevertheless, cases comparatively frequently appear where a consideration of the possibility of an earlier infection (heredity, measles, etc.), combined with the rational and physical signs, makes their presence more or less probable. Especial weight is to be laid on the presence of a peculiar cough resembling pertussis in its paroxysmal character, and the presence of a very loud, indeterminate, though usually bronchial, respiratory murmur in the neighborhood of the upper thoracic vertebræ. The difficulty in diagnosis is well illustrated by a case reported by Stoll,[5] occurring in a girl ten years old, in which the symptoms were so obscure that it was impossible to determine the seat of the disease until the autopsy, which showed a perforation of the trachea on a level with its bifurcation, through which a gland about the size of a walnut emptied itself. Beneath this large one were several others with softened centres. The trachea itself was obstructed by a plug of pus, situated above the perforation, which filled up the whole lumen and was probably the immediate cause of death.

CURE OF EMPYEMA.[6]

Aufrecht describes his progress through the various methods which have been devised for the treatment of empyema. After an experience with four cases he discarded aspiration as a means of cure, and practised incision and drainage, but has now reached the conclusion that resection of a rib is by far the most satisfactory proceeding, as it obviates the danger of hæmorrhage, allows free exit for masses of fibrin and prevents the too rapid closure of the opening, which by the simpler method could sometimes be kept open only by a silver tube. He selects a rib near the angle of the scapula, unless contraindicated by pleural adhesions or by the very weak condition of the patient. In the latter case he chooses the axillary line, as there is much less chance of death during the operation if the dorsal position be maintained. Beside the preliminary puncture to ascertain the presence of pus, he is accustomed to make a second after resection through the free pleura. He recommends at first daily irrigation. Cure results from the fact that with each inspiration the lung collapsed by the operation must dilate if the size of the opening in the chest-wall is smaller than that of the primary bronchus leading to the part. In addition, however, it is necessary that the pleura itself should be in a condition to allow adhesions to form between its two surfaces. The slow subsidence of the pleural inflammation in some cases to the point where this is possible, explains their occasional protracted convalescence.

---

[4] Deut. Med. Woch., 1893, Nos. 9–17.

[5] Centralblat f. klin. Med., 1894, No. 3.

[6] Deut. Arch. f. klin. Med., Bd. lii, Heft 1 and 2.

LEUCOCYTOSIS IN CROUPOUS PNEUMONIA.[7]

Laehr reports sixteen very carefully studied cases of pneumonia in reference to the relationship of the leucocytosis present in them to the temperature, amount of infiltration and the severity of the infection, as well as in its significance in diagnosis, prognosis and treatment. The cases showed a marked correspondence between the height of the fever and that of the leucocytosis, in that they rose and fell together, but the correspondence did not go so far as to show that the greatest number of leucocytes was always associated with the highest temperatures. A certain parallelism was also observed between the former and the amount of infiltration, but that other factors were present is shown by two cases, both powerfully built men, in one of whom the whole right lung was affected and yet the leucocytes numbered only 10,000 to 14,000, while in the other, though but one lower lobe was attacked, 51,000 were counted. This dissimilarity Laehr accounts for by the individual peculiarity of the patient and the force of the infection. Regarding diagnosis, a blood-count may prove of great value in distinguishing early cases of pneumonia from typhoid, meningitis, influenza and probably miliary tuberculosis, in which little or no increase of the white elements has been found. In prognosis it may with probable safety be said that if the number of leucocytes does not diminish with the fall of temperature that the process has not come to an end, or if it sinks with the temperature to normal, but rises by several thousand later, a recrudescence of fever, or the appearance of some complication, may be confidently looked for. In the most severe cases his experience is in accord with that of Haller, Rieder and von Jaksch, in that either no leucocytosis was observed or else a very slight increase.

Whether these observations will prove of value in indicating a method of treatment, such as the administration of drugs like jaborandi, antipyrin, antifebrin or nuclein, which are said to increase the number of white corpuscles, as recommended by von Jaksch, is yet to be proved, as it is not yet known how far an inflammatory leucocytosis is protective against disease germs, much less then an artificially produced one. The usefulness of cold baths in pneumonia receives support in this respect from Winternitz, who claims that they too increase their number.

INCISION AND DRAINAGE IN PYOPERICARDIUM.[8]

Sievers gives the histories of the eleven cases of purulent pericarditis treated by incision and drainage, which have been previously reported, and adds one of his own occurring in a woman twenty-two years old, who died thirteen days after operation.

He draws the following conclusions:

(1) That the operation is a proper one, that it produces no disturbance of the heart's action and offers the only chance of cure.

(2) That in many cases it may lead to full recovery (five cases out of twelve), and that in complicated pyæmic conditions it may at least better the condition of the patient or prolong his life.

(3) That the incision is best made in the fourth or fifth interspace, a few centimetres to left of sternum, and drainage introduced, but irrigation should be omitted.

CYSTIC DEGENERATION OF THE MUSCULAR FIBRES OF THE HEART.[9]

Meigs describes a form of myocardial degeneration in which "the destructive process, in its most extreme form of development, removes the whole of the muscular substance from the centre of the fibre, no part of which, when examined by the microscope, will present the usual appearance of muscular tissue except the thin outer walls, and even these may show only in places the cross-markings characteristic of heart muscle." The muscle nuclei often lie loosely in the cavities without attachment to the remaining tissue. The hollowing-out, when most extreme, is apt to be near the ends of the fibres toward their point of origin or insertion, but will be unmistakable in all parts of the heart. "The fact that the muscular fibres of the heart are penetrated by capillaries and are not, therefore, truly solid bodies, together with the appearance of these spaces, leads to the almost inevitable conclusion that the process is one of cystic degeneration," a capillary becoming blocked in two places, the portion between them dilating and thus forming a cyst. The assumption that they are minute aneurisms is negatived by the nature of the material lying within the cavities, which is amorphous and granular or consisting of yellowish pigment in irregularly-shaped flakes. It is impossible at present to predict from clinical manifestations which cases will present this curious change, as it was absent in cases of brain syphilis, sarcoma, general miliary tuberculosis, Bright's disease, pulmonary phthisis, typhoid fever, pneumonia, dysentery, epithelioma of the bowel and aneurism, and present in what was clinically recognized as organic heart disease, Bright's disease, typhoid fever, ulcerative endocarditis and in young infants that died of wasting.

BRADYCARDIA DURING CONVALESCENCE.[10]

In speaking of the slow pulse (60 or less) which is sometimes met during convalescence from acute diseases Dehio says that we have little positive knowledge of the cause of its appearance or the anatomical changes which accompany it. With the establishment of convalescence the pulse falls with the temperature, but the fall continues below the normal rate until its beats number only sixty a minute or even decidedly less. This condition in mild cases lasts but a few days to a week, and, with this exception, the patient presents no noteworthy symptoms. The heart seems normal though the apex beat is weak, the pulse is easily compressed and often dicrotic, at times, also, slightly irregular. In the severe forms, however, the patient shows signs of great prostration, the lateral area of the heart's dulness is increased, its action is irregular and intermittent, and a systolic murmur is heard over the left ventricle. In order to determine whether this resulted from some change in the heart itself or was of central origin, Dehio injected hypodermically one-sixtieth to one-thirtieth of a grain of atropine, which has the power of paralyzing the cardiac terminations of the vagus nerve. In a mild case he found that the number of beats was increased to the same degree as under normal circumstances, while in the more severe forms this increase was much less marked. He, therefore, concludes that the cause is to be found in the heart itself and not in some change in the nervous mechanism, such as an increased irritability of the vagus or an atonic condition of the medullary centre of the accelerator sympathetic fibres, and is, therefore, an evidence of cardiac weakness, and of the same import as other symptoms (intercurrent attacks of rapid pulse, irregularity, palpitation) of this condition, many of which were present in his cases. The occurrence of this symptom is comparatively rare as he only met with eight cases in his hospital clinic during the past semester. He suggests the probability of its being due to the toxic action of some specific material produced in the organism during the course of an infectious disease which causes no anatomical change in the heart, but considers it probable that an individual predisposition also exists, otherwise it would be difficult to explain why it was not present in all convalescent patients and why it was not more common after severe infectious cases than after mild ones.

---

[7] Bul. klin. Woch., 1893, Nos. 36 and 37.

[8] Zeitschrf. klin. Med., 1893, Bd. xxiii, p. 26.

[9] Transactions College of Physicians, Philadelphia, 3 s., vol. xiv.

[10] Deut. Arch. f. klin. Med., Bd. lii, Heft 1 and 2.

THE SCHOTT METHOD OF TREATING CHRONIC HEART DISEASE.[11]

Babcock, who has had a personal experience as a patient, gives a brief account of the so-called Schott Method. In theory, it is the same as that of Oertel, the production of cardiac hypertrophy through increase of its physiological function, but can be much more generally applied, as it is contraindicated only in aneurism of the heart or large vessels, or in advanced arterio-sclerosis. Nevertheless, as the powerful stimulation produced by the baths is capable of doing great harm, care and experience are necessary in its employment.

The method consists in the administration of warm baths, either simple saline, or containing a large percentage of carbonic-acid gas, the amount of the saline constituents and the carbonic acid being gradually increased as the patient becomes accustomed to them. The temperature varies between 92° and 86° F., and the duration from five to twenty-five minutes, being short at first, and gradually lengthened. The baths are occasionally omitted for a day. The patient is under general hygienic and dietetic restraints, and, in connection with the baths, gymnastic exercises, consisting of resisted movements of the extremities and body, are given by, preferably, a trained assistant. A single movement should not be immediately repeated, and each one should be followed by a short period of repose, and should not be made in such a way as to cause acceleration of the pulse or respirations.

As a result of the baths there is a slowing of the pulse and an increase in volume and strength, while its irregularity lessens, or even disappears. The increased vigor of the cardiac contraction permits a positive diminution in the size of a dilated heart, which can be demonstrated by accurate percussion practised before and after a bath. Among other effects is a sense of well-being, particularly of ease and lightness in the chest, relief of dyspnœa and increased diuresis. The effect of the gymnastics is similar to that of the baths on the pulse and heart, but the favorable effects are less lasting.

Functional as well as organic disorders, are strikingly benefited, Schott claiming highly satisfactory results in cases of exophthalmic goitre. Although Schott's results are obtained by the natural waters of Bad Nauheim, there seems no reason why artificially-prepared waters should not prove efficacious.

FUNCTIONAL INSUFFICIENCY OF THE VALVES OF THE LEFT HEART.[12]

Dombrowski, in commenting on the usual explanation given for inorganic insufficiency of the mitral valve, that it results from distention of the orifice, the flaps being unable to completely close it, says that such dilatation is by no means invariably found, and, besides, the orifice is surrounded by a tendinous ring whose resistance is not easy to overcome, as he has proved by several experiments. He removed the heart from the cadaver, ligatured the aorta, and then, through an opening made at the apex, forced in water under strong pressure, in spite of which the valve allowed no leakage. Only when the cardiac dilatation became very considerable did the valve prove insufficient, and even then the orifice preserved its normal dimensions. Moreover, Wulf has shown that the surface of the flaps greatly exceeds the size of the orifice, while Kirschner and Garcin claim that the aortic half alone suffices to cover it, even when considerably dilated. Clinical experience is also opposed to the view usually held; for the transitory character of the insufficiency — as shown by the behavior of the murmur, which disappears, and then, perhaps, reappears after a certain time — does not accord with a distention of the orifice. The cause of the insufficiency must, therefore, be sought in the muscular dilatation producing a separation of the insertions of the papillary muscles, which in systole cannot approach each other near enough to allow the valves to close, the contraction of the papillary muscles only increasing the difficulty. He would, therefore, prefer the term "functional" to that of "relative insufficiency."

The aortic valve is no exception to the general rule that all the valves of the heart may become insufficient, but it seems to be a rare event, as he has been able to find but a few cases reported in literature. He adds two others proved by autopsy from his own experience.

In contrast to the functional insufficiency of the mitral valves, that of the aortic is always relative, and depends on a dilatation of the aorta, resulting from increased blood-pressure followed by atheromatous changes in the artery. It is a terminal symptom, the precursor of death, and its recognition clinically is, consequently, of considerable importance. It is not always possible to distinguish it from a true aortic lesion but in the differential diagnosis stress should be laid on the age of the patient (it never occurs under fifty), the signs of general atheromatous changes, its slow and insidious development with probably a long history of symptoms of increased blood-pressure, oppression, palpitation and vertigo, to which should be added the signs characteristic of dilatation of the aorta, pulsation in the neck, dulness under the manubrium, and the metallic quality of the second cardiac sound.

A Strong Man, on exhibition in London, lifts two horses with their riders at the same time, the total weight being about four thousand pounds.

---

[11] Journal American Medical Association, November 11, 1893.

[12] Rev. de Méd., September 10, 1893.

Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Thirty third Annual Meeting, January 13, 1894, the President, Dr. Charles M. Green, in the chair.

Dr. W. L. Burrage read by invitation a paper on

THREE YEARS' EXPERIENCE WITH ELECTRICAL TREATMENT OF FIBROID TUMORS OF THE UTERUS, WITH A REPORT OF FORTY-FOUR CASES,

of which the following is an abstract:

In the three years from October 18, 1890, to October 18, 1893, he had seen, in hospital and private practice, 98 cases of fibroids; 44 of these had been treated with electricity after the method of Apostoli, and had received at least six treatments each. Apostoli had been followed rigidly, and the cases had been kept under personal observation for as long a time as possible, in order to arrive at accurate conclusions as to permanent results. The records of the 44 cases were presented to the Society in tabular form. All cases of doubtful diagnosis had been excluded from the tables, and a majority of the whole number had been subjected to an ether examination. For details of treatment the members were referred to a previous paper on technique by Dr. Burrage, published in the Boston *Medical* and *Surgical Journal* for November 26, 1891. Most careful measurements of abdominal girth and uterine depth were taken with the same steel tape in every case.

It is impossible to take absolute measurements of the size of fibroids, owing to the varying condition of emptiness or fulness of the intestines, bladder and rectum, the changing thickness of the fat of the parietal walls and omentum, and the changing shape of the tumor. Fibroids vary in size even from day to day, owing to temporary engorgement or depletion. It is a well-known fact that they are smaller just after the catamenia and larger before and during. The relative size must be determined by tactile sense and by repeated examinations (an anæsthetic is an advantage) under as nearly similar conditions as possible.

Tonics and other forms of treatment were studiously avoided, so that the results might be fairly attributed to electricity.

Thirty-five of the cases are analyzed with reference to anatomical results. Each had at least six treatments with galvanism, either intra-uterine or by puncture, and with intensities rising fifty milliampères, and, in addition, had been under observation for at least four months from the beginning of electrical treatment, a majority from one and one-half to two years. The entire 44 cases are later analyzed as to symptomatic results.

First, as to anatomical results, the effect of electricity on the size of fibroids:

Of 35 cases, 9 (25.7 per cent.) showed a decrease in size at the end of periods varying from one to eight months from the beginning of treatment; but in six of these nine, at the end of periods of time varying from one to two and one-half years, the tumor was as large as at the beginning or larger. The other three were lost sight of, one in four and the other two in eight months. The tables furnished no positive evidence that any of the tumors were permanently lessened in size as a result of electrical treatment. Seven cases out of 35 (20 per cent.) were somewhat larger at the end of one and one-half to two and one-half years. Deducting from 35 these 7 cases, and the 3 in which the tumor was smaller when the patient was lost sight of, and we have 25 as the number of cases in which the tumor remained of the same size, or 71 per cent. The writer had failed to observe rapid disappearance of fibroids, but had noticed marked decrease in the size of separate nodules following puncture. Electricity clears up pelvic inflammation; a fibroid previously fixed becomes movable; a mass made up of exudate and ovary and tube disappears under treatment. The fat in the abdominal wall is increased in thickness. Measurements of uterine depth are not materially affected. Intra-uterine applications of galvanism have a temporary curative effect on the endometritis of fibroids, but not a permanent effect, the endometritis returning after several months, just as it does in most cases after curetting.

A case illustrative of the above was that of a patient treated with intra-uterine galvanism for three months, eleven treatments, 40°–70°. On doing a hysterectomy, a year later, the uterine cavity was found lined with soft, velvety tissue easily scraped off a glistening white base.

Cervical stenosis following high intensities occurred in a certain proportion of the cases. It is to be guarded against by beginning treatment with the tip of the electrode, as near the fundus uteri as possible. Stenosis prevents subsequent treatment with larger electrodes. It has not caused dysmenorrhœa.

Second, the symptomatic results. The thirty-five cases are classified under four heads:

I. Those that were relieved of pain permanently.

II. Those that were relieved of flowing permanently.

III. Those in whom there was permanent improvement of general strength and ability to work.

IV. Those that experienced no permanent benefit.

Of I, there were 11 cases out of 19, in which pain was a prominent symptom, or 60 per cent.; of II, there were 7 cases out of 23 cases, in which flowing was a prominent symptom, or 30 per cent.; of III, there were 21 cases out of 25, where relief was possible, or 84 per cent.; of IV, there were 8 cases, or 23 per cent. Adding together I, II and III, and subtracting 12 for the cases inserted more than once, and the result is 27, the number of cases that received permanent symptomatic benefit, or 77 per cent. An analysis of the entire 44 cases with reference to temporary symptomatic relief gives 84 per cent. as benefited by electrical treatment. The figures make a very satisfactory showing when it is taken into account that the cases were treated for the most part in an out-patient clinic; that many of them, preferably treated at their houses, were obliged to travel long distances and wait their turn for treatment, and then go home often after a tedious ride in the cars and in inclement weather.

As to particular symptoms, electricity had no effect on a watery leucorrhœa in two cases. In two patients, it cured the uterine cough spoken of by French writers.

Summing up, we may say, that, on the whole, the anatomical results were unsatisfactory. Assuming that fibroids, if untreated, have a tendency to increase in size, we are justified in the conclusion that galvanism has an inhibitory effect on a majority of these tumors; 71 per cent. of the tabulated cases remained stationary. Until we know more of the conditions that favor increase or diminution in their size, the laws of their pathological growth, we cannot say more. The symptomatic results, on the other hand, present a highly satisfactory showing, 77 per cent. being permanently cured. The low percentage of cures of hæmorrhage is to be attributed to the distorted shape of many of the tumors, making thorough intra-uterine treatment impossible, and to the fact that endometritis, the source of the hæmorrhage, will return if the cause is still present, whether the treatment has been by caustics, carbolic acid, etc., by curettement, or by positive intra-uterine galvanism. Intra-uterine galvanism for hæmorrhage has the advantage over curettement and the application of caustics, that it does not necessitate the administration of an anæsthetic with its attendant discomforts and risks, and is followed by no reaction. It is preferable to ergot and hydrastis, as it has a tonic instead of a depressing influence on the digestion, and its effect is more durable. Galvanism often succeeds where ergot and hydrastis have failed.

As regards the alleged danger of electrical treatment, it must be concluded that, if properly applied, it is without danger. It is contraindicated in pregnancy and acute inflammation, and that is all. An illustrative case of acute salpingitis confirmed by cœliotomy is cited. That galvanism causes abscesses and adhesions the writer believes to be false. Cases of pus-tubes treated for months with galvanism, with no change in symptoms and verified by subsequent abdominal section, are referred to; also cases treated with galvanism, intra-uterine, vaginal and by abdominal puncture, in whom, on opening the abdomen, no adhesions were found. Sensitiveness to galvanism has not been an indication of the presence of pus, although considered so by Apostoli.

As to puncture, the writer advocates vaginal puncture, but thinks this in many instances contraindicated, because of the likelihood of wounding the ureters, bladder and rectum. Intra-uterine treatment is to be preferred. All treatment should be begun gradually and with vaginal application, because intra-uterine and puncture treatments are more or less painful, and our women are not as phlegmatic and insensitive as the women who attend the foreign clinics. Faradism from the coil of fine wire is of great service in relieving the pain caused by high intensities of galvanism.

The results obtained in the cases included in the third classification — those permanently improved in general health and rendered better able to work — are extremely satisfactory, and alone justify the time and labor necessary for the proper application of electricity. The results are out of all proportion to those obtained from general electrization, and besides, it is more rational to apply the electricity as near the seat of disease as possible. The writer believes that fibroid tumors are not the harmless tumors they have been thought to be; although they seldom kill quickly, they wear out slowly, and many a woman leads a life of misery and suffering because the profession has believed and advised that nothing but hysterectomy could relieve.

As we learn more and more about these tumors, and appreciate better the symptoms to which they give rise, their laws of growth, the danger to the economy from long-continued pressure, and, as the technique of hysterectomy is improved, the speed in operating increased, and the mortality lowered, it is the writer's opinion that total removal will be practised oftener and oftener and earlier and earlier in the life-history of fibroids. When such a radical measure is inexpedient, and it always will be in a certain proportion of cases, our duty is plain, we must relieve suffering. Electricity, on account of its safety, on account of its proved ability to relieve hæmorrhage and pain, and on account of its surety to improve the general health and strength, is the best means at our command with which to treat this distressing condition.

Conclusions. — (1) Hysterectomy is contraindicated in a majority of cases of fibroids, because of the high rate of mortality, and because it unsexes the patient, an important consideration in younger women.

(2) Electricity is the best therapeutic means at our disposal to combat pain, hæmorrhage, and impaired health and strength.

(3) Intra-uterine galvanism is most useful.

(4) We must not look for a permanent reduction in the size of the tumor.

(5) Galvanism, vaginal, intra-uterine, or by puncture, does not cause abscesses or adhesions.

(6) Galvanism is of no use as a means of diagnosing the presence of pus.

(7) Treatment by electricity, after the Apostoli method, is absolutely safe.

(8) Every case of fibroid tumor of the uterus should be under competent medical observation, because of the danger of malignant degeneration, kidney disease from pressure, complications during pregnancy, and the liability of the occurrence of pain and hæmorrhage and functional nervous disorders, especially during a delayed and protracted menopause.

Dr. G. H. Washburn said he had watched a number of the cases reported by Dr. Burrage, and had himself treated a number of other cases. He recalled one case where a rapidly growing fibroid diminished rapidly after the second treatment by electricity. The first application had no effect except to make the patient more comfortable. After the second application there was a diminution in size, of one-third or one-half. This was the only case where he saw such marked diminution. In another case there was some diminution in size after six months' treatment. The results in other respects were most satisfactory. He would agree most thoroughly with Dr. Burrage's conclusions, that as our ability to operate on these cases increases so would the number of operations; and the careful statistics of Dr. Burrage shows us the scope of electricity, and that it is of great value within certain limits.

Dr. M. H. Richardson said that he had had no personal experience in the electrical treatment of fibroid tumors, for this was a branch of medicine in which he preferred to send his cases to the medical electrician. Patients had frequently come to him in whom the symptoms were so severe that the tumor could be removed only with the greatest danger. In such cases the patient's strength is so reduced by hæmorrhage and long suffering that the formidable manipulations of a hysterectomy are almost surely fatal. To leave the tumor untouched, however, means gradually increasing weakness, suffering and death. When the brilliant results of the electrical treatment of fibroids were first published, a safe middle course seemed at hand, by which the strength of the patient might be increased enough to enable her to undergo with comparative safety the radical operation, — even if we made allowances for the usual exaggerations of the merits of new methods of treatment. While the brilliant results from this method of treatment which were at first published have not been fully realized, yet the use of electricity in many advanced cases has so diminished both the pain and the hæmorrhage that the patients have been enabled to undergo successfully total extirpation. From the standpoint of the operating surgeon a hysterectomy for fibroids carries a considerable mortality. Deaths are due, first, to the weakened condition of the patient; and, secondly, to peritonitis from unavoidable contamination during the operation. With the patient in good condition, the results of the operation at the present time are very satisfactory indeed. Dr. Richardson's mortality is constantly decreasing, and yet he does not expect ever to be able to avoid fatal results in this class of cases.

Puncture of the tumor for the application of electricity the speaker regards as dangerous, because he has seen at times excessive hæmorrhage from small perforations of the enormous veins which sometimes ramify in the capsule of the tumor. He is now more inclined to advocate the early removal of these tumors than he was formerly, chiefly because of the vast increase in the dangers which attend advanced cases. On the other hand, he believes that one may easily go to the other extreme and become dangerously meddlesome in his efforts. Total extirpation of the uterus for a fibroid of small dimensions which is causing no trouble is unjustifiable except in the rarest instances. Even if the tumor is of considerable size, so long as it produces no symptoms except those of weight — so long as there is no excessive hæmorrhage, no pain or discomfort, and no evidence of pressure upon the ureters — the operation is unjustifiable, even with the present excellence of technique. Yet there is one consideration which must be borne in mind in advising against operation in these cases, and that is the possibility of malignant degeneration. This danger is always present, and is the only good reason for interference in the class of cases which is referred to. Dr. Richardson has rarely seen a malignant tumor of the uterus which has resulted from the degeneration of a fibroid. Certainly there have not been as many cases of hopeless malignancy as there have been of unnecessary death — if among unnecessary deaths are included those cases of fibroid which died after an operation that was not imperative. In his experience there have been two deaths after the removal of fibroids in which the symptoms were not distressing. In both, the operation was undertaken at the urgent solicitation of the patient for the relief of pain and disability; in both, life — endurable though not enjoyable — might have been prolonged for many years by palliative treatment.

As far as the speaker's observations have gone in his own practice and in that of his colleagues, the removal of a fibroid tumor of the uterus by hysterectomy is one of the most formidable of procedures. Even with the greatest skill and experience in operating, the mortality is considerable. He would welcome, therefore, any method by which either the operation might be rendered unnecessary, or the patient could be so improved as to enable her to undergo more safely the inherent risks of the radical operation.

Dr. E. J. Foster spoke of a case he had seen in consultation, where there were two fibroid tumors of the uterus, one subperitoneal and one submucoid. These were treated by electric puncture. The subperitoneal tumor disappeared, the other tumor sloughed. The patient has since become pregnant.

Dr. Edward Reynolds said that his experience with electricity in other gynæcological affections accords with Dr. Burrage, that it is of great value and as safe as any method of treatment. Its use tends to a surprising degree to relieve reflex nerve troubles.

Dr. J. W. Elliot believes in very early operation on fibroids in those cases of rapid growth, with frequent hæmorrhage, and debarring the patient from earning a living. Early operations give a very low mortality from fibroids. As the passing of a uterine sound may in careless or unskilled hands cause septicæmia, so may and has the application of the electrode. In specialist's hands, as with Dr. Burrage, this can be done safely.

Dr. G. Haven would agree with Dr. Burrage that an exudate was absorbed by means of the electricity.

Dr. F. H. Davenport said that the use of electricity in these cases needs, of course, special apparatus and much time; and it is a question whether this method should supersede the other methods we are in the habit of using. He had for two or three years been treating fibroids with electricity, and although he has had good results, he is not sure but that as good results might be obtained by other methods. Two series of cases treated in the two ways would be of great interest.

Dr. Burrage: I should like to ask Dr. Elliot if the case of peritonitis he has referred to was following puncture through the vagina or through the abdominal walls? As I said in my paper, I consider that the latter procedure involves too much danger to recommend it.

With reference to the danger of sepsis following intra-uterine treatment, I regard it as trivial. I have had no trouble with my cases, nor do I have constitutional disturbances after passing the sound. I attribute this to painstaking and constant care in cleansing my electrodes and sounds each time before introducing them, and also to the fact that it is my habit to either douche or wipe out the vagina with a strong antiseptic (corrosive, 1 to 2,000; creolin, 1 to 500; lysol, one per cent.) previous to any intra-uterine instrumentation, whether electrical or otherwise. To this fact, more than to great gentleness in passing the instrument, I attribute my immunity from septic trouble. Although the micro-organisms in the vagina are not all destroyed by the antiseptic, their number is lessened and their activity diminished, and fewer are carried into the uterine cavity. The antiseptic action of the positive pole is also a factor in guarding against sepsis. Apostoli has proved this.

Dr. Davenport has spoken of the good results he has obtained by the use of methods other than electricity. It seems to me that the profession is in need of facts and figures bearing on this matter. I, for one, wish that some one, having in view the object of reporting results, would follow up for a reasonable length of time a series of cases treated by these methods, and also cases not treated at all. The data so gained would be of the greatest value. Personally, I place reliance on electricity.

As Dr. Richardson has said, if electricity can be used in getting patients who are worn out by years of suffering in proper condition for operation — patients, who, if operated on at once, are almost sure to die — it has great value. I can assure him that electricity has been many times so used. It is a means of lowering the mortality of hysterectomy. Many patients are so much improved after a course of electrical treatment that they do not need hysterectomy, whereas others do not receive permanent benefit. Electricity does no harm and may do great good.

In treating fibroid tumors, we have to face a complicated and difficult problem. It is seldom that we can say, the first time we see a patient, hysterectomy or nothing. We must do the best we can to relieve suffering. Because too much has been claimed for electricity is no reason why we should refuse to avail ourselves of the good that it surely can do.

Dr. Edward Reynolds reported

A CASE OF CONCEALED ACCIDENTAL HÆMORRHAGE DURING FIRST STAGE OF LABOR, WITH RECOVERY OF MOTHER UNDER CONSERVATIVE TREATMENT.[1]

Dr. A. Worcester wished to ask whether the reporter considered the mother's jaundice due to the absorption of the coloring matter in the blood-clot in the uterus. He did not see how that was possible.

Dr. C. W. Townsend said that in regard to the rapidity of maceration after the death of the child, he had seen a case of transverse presentation where the child was alive and where the mother refused to have any operation done. He saw the case twenty-four hours later when she was brought to the Lying-in Hospital. Here, the child was delivered by version and was not only dead, but the skin was slightly macerated. The speedy maceration here might be due to the fact that the membranes had ruptured early.

Dr. A. Worcester said he could go even further than this, for he had once delivered a child whose skin was macerated that lived.

◆

MASSACHUSETTS MEDICAL SOIETY.
SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

HENRY JACKSON, M.D., SECRETARY.

Regular Meeting, Wednesday, January 17, 1894, **Dr. F. C. Shattuck** in the chair.

Dr. R. C. Cabot presented a paper on

THE DIAGNOSTIC AND PROGNOSTIC VALUE OF LEUCOCYTOSIS.[1]

Dr. M. H. Richardson: I should like to say a word in regard to the application of this method to surgical diseases. Dr. Cabot examined the blood in many of my cases this past summer, and his conclusions were almost invariably correct. Several of the cases which he has quoted were in my wards. With one exception we found pus every time the blood-count indicated it. Of course, in many instances we can tell well enough whether there is pus present or not without any such investigation; in other cases we cannot be sure, especially in the secondary abscesses which sometimes follow the drainage of appendicitis, in which one is very unwilling to stir up the abdomen without good reason. In one case referred to by Dr. Cabot, in which an appendix was removed at the end of the attack, there was a small amount of pus. Dr. Cabot is mistaken in regarding this case as aseptic. The patient, a young man, had developed very serious symptoms some time after the appendix had been removed. There was nausea and vomiting, with pain and tenderness. The pulse and temperature were elevated. Yet beyond the probability of pus deeply seated somewhere, we could form no definite opinion. Dr. Cabot examined the blood, and found a leucocytosis that indicated pus. We therefore felt justified in exploring the wound — an operation which should be undertaken only when clearly indicated. Dr. Conant operated for me twice, and the boy recovered. The amount of pus was very large; it was deeply seated and gave no physical evidence of its situation. The only instance in which we were mistaken was a case of general peritonitis following appendicitis. My diagnosis the first day was appendicitis, and I advised immediate laparotomy. The others thought it was some acute condition not demanding interference; moreover, Dr. Cabot found no leucocytosis. Inasmuch as he had been invariably correct in previous cases, I decided not to operate. On the following day, for other reasons, we opened the abdomen. Dr. Shattuck on that day made the correct diagnosis of appendicitis with general peritonitis; I, meantime, changed my opinion. The patient's abdomen was distended with a very septic fluid; there was a gangrenous and perforated appendix, with a general purulent peritonitis. He died in the course of twenty-four hours.

From the surgical standpoint this subject is a very promising one. There is a very intimate connection between a leucocytosis and the presence of pathogenic micro-organisms. From the valuable work that Dr. Cabot has done, the treatment of patients has already been very materially improved. Further researches will undoubtedly give this method of investigation a still greater value in its practical application.

A question that arises frequently is, whether or not there is pus in the abdomen or in some of the closed cavities beyond reach. Now, if by such an examination as this we can be sure that, for instance, there is a perforation of the appendix or pus deeply seated in the abdomen, the vexed question of interference is decided at once. Moreover, if an expert examination of the blood is able clearly to demonstrate a condition of septic absorption; if, in connection with other symptoms, it can show unmistakably that there is a deep-seated focus of pus in the abdomen, in the thorax, in the head, or in a joint, it seems to me that we have added to our resources in diagnosis one of the most important and valuable aids of recent years.

Personally, I feel much indebted to Dr. Cabot for the work which he has done.

Dr. F. C. Shattuck: I cannot forbear adding a word in expression of my appreciation of and interest in this paper. As I have watched Dr. Cabot's work in my ward and among my patients, I have learned to attach much value to this study which seems to me to promise great things for us in the future when thoroughly worked up.

Dr. Mason: The very great interest of this subject is certainly apparent, and I have listened with great pleasure to the paper. There are one or two questions I should like to ask. In speaking of purulent meningitis, I suppose that would include the epidemic cerebrospinal form?

Dr. Cabot: Only two counts were made.

Dr. Mason: In that affection there is a good deal of purulent secretion within the head and spinal canal.

---

[1] See page 277 of the Journal.

[1] See page 284 of the Journal.

Cases are rare with us now; sometimes there is difficulty in determining the diagnosis with accuracy. I should think that blood examination would be very valuable. In one other affection I lately have been interested in having the blood counted; that was in a case of Graves's disease; and I should like to ask Dr. Cabot if, in his researches, he came across any statement with regard to that affection. Of course, it is pretty well known that internal abscesses give rise, as a general thing, to a greater or less degree of leucocytosis. In one case last year, or the year before, a liver abscess was explored for two or three times, and finally found, the blood-count having shown a high degree of leucocytosis. In the one case of Graves's disease I have observed there was no increase in the white elements.

Dr. Cabot: I have counted only one case of Graves's disease, and in that the blood was normal. In those about which I have read the blood has been normal as far as the quantitative changes of the red to white were concerned.

◆

Recent Literature.

Hand-book of Insanity. For Practitioners and Students. By **Dr. Theodore Kirchhoff**, Physician to the Schlerwig Insane Asylum and privat-docent at the University of Kiel. New York: Wm. Wood & Co. 1893.

Text-books on insanity are often abstruse through the use of new or unfamiliar terms, technical expressions and complicated classifications, which make them heavy reading for the student and general practitioner. When one appears, therefore, that is practical, simple and concise in statement, well arranged, accurate and complete in the consideration of the various aspects of mental disorder likely to interest the general physician, we have the model book for instruction. Such is the hand-book before us — a scientific work by an alienist of ability and experience and powers of observation and insight of a high order. It is up-to-date, clear in style, brief and correct. At the same time, its 358 pages are more complete in the number of subjects and points considered than any work we call to mind that is not an elaborate treatise on the disease. It is also a decided advantage that the space devoted to each subject is for the most part in direct proportion to its importance. The fact that it contains no allusion to the jurisprudence of insanity may be accounted for by the class of readers for whom the work is designed. The author's classification of the forms of insanity is a brief clinical one, which, if possibly too simple, has no more flaws than are common to all attempts to bend partially understood pathological conditions of the nervous system to a natural system of nosology.

The numerous illustrations are well executed and more than usually characteristic of the different forms. As a rule, there is more than one picture of the same patient in different aspects or stages of the disorder. These, with the explanations given in detail of the cause and import of the expressions and attitudes depicted, greatly enhance the value of the text.

To condense from the original so extensively, and at the same time to preserve and perhaps improve upon its simplicity and clearness, shows no ordinary skill in translating and book-making. It is indeed surprising that under the circumstances so few obscurities have crept in. It is unfortunate that a poor index should mar, as it does, such a serviceable book.

The publishers contribute generous pages, good paper and clear type.

Supplement to the Reference Hand-book of the Medical Sciences. By various writers. Illustrated by Chromo-lithographs and fine Wood-engravings. Edited by **Albert H. Buck**, M.D. Vol. IX. New York: William Wood & Co. 1893.

The original eight volumes constituting the "Reference Hand-book" were published between 1885 and 1889. In some departments of medical knowledge — notably in Pathology, Materia Medica and Therapeutics — there have been very considerable changes in and additions to our knowledge since then. The present supplement was undertaken in order to bring the hand-book as far as possible up to date without superseding the original work. In addition to a revision of previous articles, some articles on entirely new subjects, not previously discussed, have been incorporated. This volume contains 1,100 pages. There are 122 contributors. Many of the illustrations are very good. As a rule, the standard attained in the original volumes has been well maintained. The editor's work has been done with judgment and discretion.

The Theory and Practice of Medicine. Prepared for Students and Practitioners. By **James T. Whittaker**, M.D., LL.D., etc., with a Chromo-lithographic Plate and three hundred Engravings. New York: William Wood & Co. 1893.

The author of this book is the professor of the subject about which he writes, in the Medical College of Ohio. The volume is an octavo of eight hundred pages. The first part is devoted to general diseases, takes up nearly half of the book, and is the most thorough. The second part is devoted to diseases of organs. Diseases of the nervous system occupy three chapters; and this is perhaps the least satisfactory part of the volume. The illustrations are numerous and of varying merit. The letter-press and paper are very good. A number of the chapters are condensed or adapted from the author's previous contributions to hand-books, systems or text-books of medicine.

Diseases of Childhood (Medical). By **H. Bryan Donkin**, M.A., M.D.Oxon., F.R.C.P., East London Hospital for Children, at Shadwell; Physician and Joint Lecturer on Medicine and Clinical Medicine, Westminster Hospital. New York: William Wood & Co. 1893.

In his new work on the medical diseases of children Dr. Donkin has made a most valuable contribution to our literature. It is in no way a compilation, but is the result of the author's own clinical observations, well put together and carefully analyzed. He has indeed adhered to his personal experience so closely as to omit any account of variola and the general subject of cutaneous affections, with which he says he has had but little to do. He has, however, in an appendix given us a summary of the conclusions from the latest report of the Clinical Society of London, and the incubation and contagious periods of the commoner infectious diseases, which is an admirable addition.

The fine press-work of this neat volume renders it all the more attractive.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, MARCH 22, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 WASHINGTON STREET, BOSTON, MASS.

PROPOSED REDUCTION OF THE ARMY MEDICAL DEPARTMENT.

THE following are extracts from the draft of a proposed Army Appropriation Bill for the fiscal year beginning July 1, 1894, as submitted to the full Committee on Military Affairs by the Sub-Committee:

"*Provided*, That hereafter no appointment shall be made to the office of assistant surgeon-general with the rank of colonel until the number of such assistant surgeons-general shall be reduced below four, and thereafter the number of officers in that grade in the Medical Department shall be fixed at four; and no appointments shall be made to the office of assistant surgeon-general with the rank of lieutenant-colonel until the number of such assistant surgeons-general shall be reduced below six, and thereafter the number of officers in that grade in the Medical Department shall be fixed at six; and no appointments shall be made to the office of surgeon with rank of major until the number of such surgeons shall be reduced below thirty, and thereafter the number of officers in that grade in the Medical Department shall be fixed at thirty; and no appointments shall be made to the office of assistant surgeon until the number of assistant surgeons shall be reduced below ninety, and thereafter the number of officers in that grade in the Medical Department shall be fixed at ninety."

Fortunately the House Military Committee has listened to reason, and admitted the weight of argument against this proposal, and has abandoned the idea of reducing the number in the upper ranks of the medical corps; but it still proposes to cut off thirty-five assistant surgeons, bringing these down to ninety. This is by no means so bad (at least in its immediate action) as the original bill submitted by Mr. Outhwaite, of Ohio, Chairman of the Committee, from which we have quoted above. That bill, had it become law would have reduced the medical department two colonels, four lieutenant-colonels, twenty majors, and thirty-five junior officers; would have stopped all promotions and appointments in the corps for about eight years; and would have greatly injured the department. The present modified proposition, however, is bad enough, and is, from an economical point of view, unwise. There are now barely enough medical officers to supply Posts, and it is forbidden to employ acting assistant surgeons. Moreover, when a competent physician has served in the army thirty-two or thirty-three years, as the ten senior army surgeons ranking as majors have done, he ought not only to have the chance to be paid a lieutenant-colonel's salary, but he also ought to feel secure in his position.

It is very desirable to have first-rate men in the army medical corps, men who may be detailed for important and delicate services; but to such the corps is already none too attractive. It now has six vacancies. Under such circumstances that is poor economy which threatens to lower the standard.

The idea of the promoter of this measure (for we credit him with some other purpose than simply posing as a watch-dog of the treasury) seems to be to retain merely a skeleton of an army medical corps in times of peace, and to supplement its deficiencies in time of war by surgeons drawn from civil life. This would be very poor economy. The civil surgeon may be available when wanted; he may know how to amputate a leg, dress a wound, or extract a bullet as well as the army surgeon, but he does not know the routine (call it red tape if you will) of the army service and of government bureaus. He does not know and cannot be expected immediately to know, how to provide and care for those under him. He is summoned when the emergency is great and immediate action is required. The hopeless and costly confusion existing in some of the government pension rolls to-day is partly due to this very thing. It has cost our taxpayers millions of dollars, which would have paid the salaries of many medical lieutenant-colonels, majors, etc., and still left much over to be appropriated in those forms of gross extravagance, such as river and harbor bills or sugar bounties, which are less vexing to the pious souls of Congressmen. There are two members of Congress from New England upon the House Military Committee, Mr. Gillett from Springfield, Massachusetts, and Mr. Lapham, from Rhode Island. We hope they may hear from their constituents in regard to this proposal. This is a matter in which the medical profession at large ought to interest itself.

◆

RECENT INVESTIGATIONS OF THE BRITISH GOVERNMENT UPON THE INFLUENCE OF CERTAIN TRADES OR OCCUPATIONS UPON HEALTH.

DURING the past year special committees have reported to Parliament upon different industries of a dangerous character in which legislation seemed to be necessary for the protection of persons employed in them. The industries which were the subjects of report were the lead industries, lucifer-match works, potteries, chemical works and stone quarries.

Lead Industries. — This committee was directed to inquire (1) into the conditions under which lead smelting, the working of blue lead, and the production of white lead, red lead and yellow litharge are conducted, with the object of diminishing any proved ill-effects upon the health of the work-people engaged therein; (2) whether the special rules which already exist with regard to the manufacture of white lead are sufficient; and (3) to suggest any precautions necessary to the industries specified for the protection of life or health. The committee was also charged with conducting further special inquires, including an investigation of the cause of death of a young woman engaged in lead-works.

In summing up the recommendations, which are very numerous and minute, the committee calls attention to the fact that the works in which the largest number of cases of lead-poisoning has occurred are those in which there has been the least expenditure of money and care in precautionary measures for the health of the operatives.

The greatest change which is recommended is the exclusion of females from all direct contact with white lead. The committee also records, as the result of its experience, the fact that lead, and all its compounds are in a greater or less degree poisonous, and that the handling or use of each or all of them is attended with danger.

Potteries (*China* and *Earthenware.*) — This committee concludes that the potter's trade is attended with injury to health and life. The ill-effects are due to two causes: dust, and the poison of lead. The former is of wider action, since it pervades all the operations or processes wherein potter's clay and flint powders are in use. The latter prevails in the departments of work concerned in the glazing and coloring of the ware, after it leaves the hands of the potter. A third but less potent cause exists in the operations necessary to the completion of the ware by firing.

The committee presents statistics in support of their conclusions, showing that the inhaling of the noxious dust of clay and flint is a fruitful cause of diseases of the respiratory organs. The mortality returns of Stoke-upon-Trent for 1890 show that, of the males over fourteen years of age who were potters, 42 per cent. died of bronchitis, 8 per cent. of pneumonia and pleurisy, and 21 per cent. of phthisis. In a general way it was also shown that only 4.5 per cent. of potters died of senile decay, and 12.5 per cent. of persons who were not potters, a fact which shows that potters generally die young.

The committee found that much of the mortality from lead-poisoning was avoidable, although no code of regulations could entirely obviate the effects of the poison to which the workers were exposed.

The following modes were indicated by which the poison gains access to the body: (1) by eating food with unwashed hands, or partaking of it in the rooms where lead is dealt with; (2) by neglect of cleanliness of clothing; (3) allowing glaze and colors to drop about, become dry, and so form dust which is inhaled; (4) holding the pencil used in painting, in the mouth, as is done by women employed in majolica painting; (5) rubbing the eyes with dirty hands; (6) near-sightness, causing the workers to be too close to their work; (7) constitutional idiosyncrasy, producing excessive susceptibility to lead-poisoning.

The committee formulated a code of regulations which, if established and enforced in every pottery, would greatly diminish the injurious effects of the different processes of manufacture. These rules had reference mainly to personal cleanliness, and the cleanliness and ventilation of the work-rooms, the employment of females and children under fourteen, and the eating of food upon the premises.

Lucifer-Match Works. — The special danger to which persons engaged in the manipulation of phosphorus are exposed, is necrosis. The committee appointed to consider this trade recommended several rules. These provided for the isolation of certain processes from other parts of the factory, with thorough ventilation in apartments where such processes were conducted; that hot and cold water, soap, nail-brushes and towels should be furnished, and the operatives required to use them; that all workers should be examined, at least once a month by a surgeon, who should have power to order temporary suspension or total change of work for any one showing symptoms of incipient necrosis; that all persons complaining of toothache or swelling of the jaws should be examined at once; that no person should be permitted to work in the processes of mixing, dipping, drying or boxing, after the extraction of a tooth, without the certificate of a duly qualified medical practitioner, that the jaw is healed. Penalties were recommended for neglect to comply with these rules.

Chemical Works. — The committee upon these industries was charged with duty of inquiring "into the dangers to life, limb and health attending employment in chemical works," with a view to discover "(1) how far the manufactures, as at present carried on, injuriously affect the health of the work-people, and how far the injurious effects depend on the age and sex of the operatives; (2) what means can be adopted to abate the injurious effects of the manufacture; (3) what special regulations should be adopted to protect vats and other dangerous places and utensils used in the manufacture."

The manufacture of bleaching-powder is by far the most harmful to the operatives, of any department of chemical work. Lime is treated in chambers with chlorine gas, which is absorbed by the lime. At the end of four days the doors are opened, and men enter the chambers to pack the lime. In disturbing the powder free chlorine gas is let loose. The packers are obliged to wear respirators or muzzles of thirty folds of damp flannel, tightly tied over the mouth, the nose being free; the men inhale through the muzzle and exhale through the nose. If they happen to reverse the process they became "gassed." The exertion of breathing through the thick folds of flannel shows itself in the red and puffed state of the men's faces and profuse perspiration in coming out of the chambers, which they are obliged to do at intervals. The lime-dust also injures the eyes. None but robust men could endure this work. The sufferings of these operatives are vividly portrayed in the "minutes of evidence."

Question 22,515. What you suffer from is the escape of chlorine gas, I suppose?

Yes, that is what we suffer from. When we go into the chamber, sometimes we are not able to stop there five minutes, sometimes a quarter of an hour, sometimes half an hour, sometimes you cannot stop two minutes.

Question 22,556. Have you anything further you would like to say to the Commission?

I have got the muzzle with me. (Witness puts on the muzzle.)

Question 22,557. Whenever you are packing in a hot chamber you are obliged to use that?

Yes.

Question 22,558. And no man could enter the chamber without it?

No! they could not put their noses inside.

Question 22,559. It is nothing but ordinary flannel?

Yes.

Question 22,560. Several folds of ordinary flannel?

Yes; it must be the best flannel. It has to be renewed; it gets eaten away with the gas.

In another inquiry of the same character, made by an English trade-journal, a workman said: "Every man is liable to a visit of the gas right through the muzzle." Gassing is such a common matter that the men readily describe its symptoms. "Is it ever fatal?" — "Yes, sometimes."

A workman's clothes-bill for a fortnight amounted to fifteen shillings. The shirt was torn, and in several parts hung in strips. It was hardened by acid or powder, and tore freely. This shirt had seen two days' work, and was now good for nothing.

"If a premium of £100 were to be offered by the alkali magnates, there would be clothing (diving-suits) put together in no time, with proper air-pumps, and an anti-corrosive coating which would resist the rasping and tearing of the dust and gas. The directors might do worse than keep the photographs of the powder-packer's head, which appeared last week, on their breakfast-tables and in their board-room, just as a reminder."

In the salt-cake (sulphate of soda) department, the danger is from the escape of hydrochloric-acid gas. Many workmen have had their teeth entirely destroyed by its effects.

In the manufacture of caustic soda, the danger results from the splashing of the liquor, and frequent injury to the eyes.

In the manufacture of chlorates, the chief danger is from explosions, and the saturation of the clothing with the dust and its taking fire.

In making bichromate of potash and soda, the committee found that almost all the men working where dust was prevalent had either perforation of the septum of the nose, or had lost the septum altogether. These results often cause partial or complete loss of the sense of smell, with irritation and ulceration of the throat, trachea and bronchial tubes. Many of those employed suffer from what are called "chrome holes" in their hands and arms, caused by dust or liquor acting on the broken skin, or by handling the crystals.

The medical officers of the commission suggested the following as means of lessening the evils of working in the bleaching-chambers:

(1) Free and thorough ventilation in and about the bleaching-chambers.

(2) Oiling or greasing the exposed parts of the body before beginning work, the wearing of "goggles," and the introduction at intervals of a few drops of oil into the eyes for their protection.

(3) Let the respirators be moistened from time to time with a solution of sulphide of soda. If this suggestion were carried out, the "muzzles" might be made much thinner than at present, and the men could breathe with greater freedom and safety.

To obviate the evils caused by the inhalations of the dust of chrome compounds, the following is advised: Let the sponge or other absorbent material of the respirator be moistened with a solution of bismuth (Liquor bismuthi, B. P.). The chrome dust coming in contact with this is decomposed. The same result might be attained by plugging the nostrils with cotton-wool, moistened in the same solution. Frequent washing of exposed parts of the body is desirable, and protection of the hands with water-proof gloves.

Stone Quarries. — The committee upon this subject was required to report upon the dangers to life, limb and health, attending employment in open quarries. The field of inquiry included operations conducted in nearly every county of the kingdom, the number of persons thus employed in 1891 being 121,637; but the sessions of the committee of which the minutes of evidence are published, were mostly held in the quarry-regions of Wales.

Dr. Ogle, of the Registrar General's Office, who appeared before the committee, stated that the mortality of quarrymen from phthisis and respiratory diseases was very high (three times as high as that of fishermen), and that, in his opinion, this excessive mortality was due to the inhalation of stone-dust.

◆

MEDICAL NOTES.

The Medical Department of the University of Pennsylvania. — There are 801 active students in the Medical Department of the University of Pennsylvania this term, 45 less than last year, which was the largest number yet registered.

The Death of Mrs. Charles L. Dana. — Dr. Charles L. Dana, of New York, will have the sympathy of his personal and professional friends in his recent bereavement in the loss of his wife, who died in Bermuda on March 8th, from injuries received in a carriage accident.

The Possibilities of Chemical Nomenclature. — The possibility for a chemist to tell all that is in a substance by its name, is well illustrated by one of the new synthetic remedies, which has the simple cognomen of monosodic methylamido brommethyl propylamine-benzol.

Cholera in Tripoli. — Cholera is officially reported to have broken out at Tripoli. Several cases of the disease have occurred in the military hospital outside the town.

Influenza at Genoa. — During the past month the influenza has been violently epidemic at Genoa. Over twenty thousand cases have been reported to the health authorities, and the daily mortality of the city has risen from twelve to fifty.

Small-Pox on a United States Warship. — Information has been received from China that the United States warship *Monocay* reached Woe Sung from Chin Kiang on the 11th of February with several cases of small-pox on board. Six of her crew were taken to the general hospital at Shanghai.

The Chicago Cursing Doctor. — A "Doctor" McFadden died recently in Chicago, who had not a little reputation as a cursing doctor. His sole method of treatment was by laying on of hands and swearing at the evil spirit or disease until it left the patient. His cursing was not a simple exorcism, but was genuine Billingsgate, unpurged and unrefined. He had a large and rather lucrative practice.

The Diagnosis of Appendicitis in a Tiger. — A tiger in a Wisconsin circus was recently operated upon for "appendicitis." According to the newspaper account, "He clawed his abdomen so that it was guessed he had the disease. He was securely chained and muzzled, and a doctor cut into him. In the inflamed sac was found the rim of a pair of spectacles. The tiger foamed with rage while the operation was in progress."

Cholera Insurance for Russian Physicians. — In the Russian province of Wiatka, a resolution was recently adopted at a general meeting of the citizens for insuring the lives of medical and surgical practitioners against cholera. From the funds of the province on deposit in the imperial bank, the family of a physician practising within the province will receive upon his death by cholera the interest on 5,000 roubles, or on 8,000 if he has practised within the province ten years. A surgeon's family will receive the interest on 1,000 roubles.

Canned Vegetables containing Poison. — In the course of investigations made last year by the Chemical Division of the Department of Agriculture 80 samples of canned and bottled peas were examined, 43 of American and 37 of foreign origin. All of the foreign brands, except two, contained copper; one contained zinc. Fourteen of the 43 American samples contained copper; 29 did not. Salicylic acid was present in five French and 10 American samples. Tin was present in 50 samples, lead in 50, and zinc in 15. In all, 248 samples of all sorts of vegetables were examined, and in no less than 121 was salicylic acid detected. Zinc was found in 40, copper in 88, and lead in 132.

The New York Pasteur Institute. — The statistics for the preventive treatment against hydrophobia of the New York Pasteur Institute for 1893 show that there were 26 patients who were bitten by animals in which hydrophobia was evidenced by experimentation or by the death of some other person or animal bitten by them; 11 patients who were wounded by animals recognized as rabid by clinical or veterinary examination; and 43 bitten by animals in which rabies was suspected, but who were killed or lost sight of before any proof was obtained. No deaths occurred in any of the patients. Forty-five of them had had the wounds cauterized before entrance, but in all cases in an insufficient and non-efficacious manner. The 104 patients treated in 1892 have all remained free from disease up to the present time.

Another Dangerous Pastime. — Another good out-door sport has been added to the list of dangerous games, fortunately before it has become so deeply rooted in the affections of our youth that they cannot be kept from its harm. Golf-playing is the cause of severe gluteal strain, with possible rupture of fibres in the anterior portion of the muscle which is made overtense in the position of "driving strokes." Two such cases have been reported already in the *Lancet*.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, March 21, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 31, scarlet fever 33, measles 26, typhoid fever 13, small-pox 6 (2 deaths). There are now 15 patients in the Canterbury Street Small-pox Hospital. During the week 9 cases of small-pox were reported to the State Board of Health from Holyoke.

A Scholarship in Memory of Dr. Charles Pratt Strong. — A number of friends of the late Dr. Charles P. Strong, of Boston, have given to Harvard University the sum of $3,750 to found a memorial scholarship in the Medical School. For the present, all income from this sum over one hundred dollars is to be added to the principal until that reaches five thousand dollars.

The Medical Registration Bill before the Massachusetts Legislature. — A majority of the Committee on Public Health have reported to the Legislature a bill to control (?) the practice of medicine in this State. A minority, among whom is Senator Harvey, of Worcester County, have offered an adverse report.

Measles, Judgment and Discretion. — A suburban board of health offers the following piece of wisdom, as advice to the people whom it is called upon to protect: "The Board is of the opinion that it is not wise to try and stop the spread of measles among children, for it is one of the diseases that a large majority of the people are liable to have during their lives, and it is a well-settled fact that it is more dangerous and troublesome with older people than with the young." And furthermore the same board says: "It is very important that men of *experience*, *judgment* and *discretion* should be selected," as members of boards of health.

How does the foregoing statement appear in the light of the following facts, taken from the State Registration Report for the year 1890 (page 321)? Number of deaths from measles in Massachusetts, for the twenty-eight years ending with 1890, 5,649; of this number 5,073, or 89.8 per cent., were children under ten years of age; and 4,581, or 81 per cent., were children under five years of age.

BEQUESTS TO MEDICAL CHARITIES. — The will of the late Rufus S. Frost bequeaths the sum of one thousand dollars to the Chelsea Day Nursery, and five thousand dollars to the R. S. Frost General Hospital for the establishment of a free bed.

A GENEROUS BEQUEST TO YALE UNIVERSITY. — The will of Mr. Richard S. Ely of New York, after leaving many bequests to charitable institutions, creates of the remainder of his estate a trust for Yale University, the income to be used to found professorships in the medical, law and academic departments. The estimated value of this trust is between fifty and one hundred thousand dollars.

NEW YORK.

TWO DRACHMS OF MAGENDIE'S SOLUTION GIVEN BY MISTAKE. — At the New York Hospital one of the female nurses recently gave a patient two drachms of Magendie's solution of morphia by mistake, in consequence of which he died. The man, whose name was Conway, was suffering from fracture of the skull and other injuries, the result of a fall from the elevated railroad, on which he was employed as a trackwalker. It is believed, however, that the injuries would have proved fatal had the morphia not been given. At the inquest the nurse stated that at about 8.30 P. M., one of the house-staff of surgeons administered a hypodermic injection of Magendie's solution to a patient in the bed next to Conway's, after which the bottle was handed to her to place in a medicine cabinet. A few minutes later she administered to Conway two teaspoonfuls of what she supposed to be the old U. S. P. morphia solution of the strength of a grain to the ounce. When he had swallowed it she discovered that she had given him Magendie's solution instead, and notified the doctor. The stomach pump was employed and other appropriate measures taken, but during the night the man died. Dr. Donlin, the coroner's physician who made the autopsy in the case, expressed the opinion that Conway could not possibly have survived his injuries, and stated that he found that the base of the skull was badly fractured and the tissue of the brain severely lacerated; in addition to which the clavicle and four of the ribs were broken.

A BILL TO ESTABLISH A STATE COLONY FOR EPILEPTICS. — There was a hearing March 7th on the bill now before the legislature, to establish a State colony for epileptics. The scheme as perfected in the pending bill has the strong endorsement of the State Board of Charities, the State Charities Aid Association, the State Commission in Lunacy, and the Convention of Superintendents of the Poor.

AN OUTBREAK OF TYPHOID FEVER AT BUFFALO. — A serious outbreak of typhoid fever has occurred at Buffalo. Up to March 15th there were reported 236 cases and 20 deaths. There seems to be no doubt that the disease is due to the impurity of the water supplied to the city, and on March 13th the Mayor called an emergency meeting of the Board of Health to take measures to suppress the epidemic. It seems that three weeks before the cases of typhoid commenced to develop, the Water Department, in filling a new reservoir, took water from what is known as Bird Island inlet, a source of supply which is contaminated by city sewage, and which was last autumn condemned on this account by Health-Commissioner Wende.

A BEQUEST TO ST. LUKE'S HOSPITAL. — By the will of the late Richard S. Ely, the sum of $90,000 is left to various charitable objects. The largest single bequest is that to St. Luke's Hospital, amounting to $20,000.

◆

Miscellany.

THE DERMATOLOGY OF TO-DAY.

IN his presidential address delivered before the Harveian Society of London,[1] Mr. Malcolm Morris, reviewing the progress recently made in dermatology, said:

"The change, not merely in details, but in fundamental principles of treatment, is the result of the new light which experimental pathology has thrown on the nature of disease-processes and on the factors concerned in their production in the skin as in other organs. . . . We now recognize the precise microbic agents which produce lupus, scrofuloderma, impetigo, leprosy or glanders. It is not only as primary causes, however, that the importance of the part played by micro-organisms in the genesis of skin diseases has come to be acknowledged, the effects of their activity as secondary causes are now seen to be still more far-reaching. . . . In the domain of practice the teachings of bacteriology have borne fruit in the extensive use of parasiticide agents. There is hardly a case of skin disease in which at some period or another of its course antiseptic and antiparasitic remedies are not indicated. The ideal antiseptic still remains to be discovered. I have so often found the latest products of the chemical laboratory fail to come up to the expectations that I had been led to form of them, that I can only conclude that the power of a substance to destroy or check the growth of micro-organisms in a test-tube is no measure of its therapeutic potency when applied to the human skin.

"It is not so much in the discovery of new remedies as in the improvement in the means and manner of applying those already known that progress has chiefly been made in recent years. . . . The introduction of superfatted soaps, and cleanly pastes and jellies has been of the greatest value. These methods of applying medicaments to the skin are as superior to those used by our predecessors of not many years ago, as the Henry Martini's and magazine guns of the present day are to the muskets with which Wellington's battles were won. I do not say that we are better men than those who have gone before us, but assuredly we are better armed.

---

[1] British Medical Journal, January 27th.

"All this has led to a truer understanding of the insufficiency and folly of dietetic treatment of skin diseases and to a more intelligent control of the general medication. In the application of local treatment, for which we have better vehicles and better remedies, there are two essential conditions of success: first, the strength of the remedy must be carefully tempered to the disease; and, secondly, the application must be not only thorough but continuous."

Of massage, he says:

"Wherever there is effusion that cannot find an exit on the surface; wherever there is pain from pressure of imprisoned fluid or thickened tissues on the nerve ends; wherever there is stagnation of the blood stream, there massage is likely to be useful by its mechanical action on the parts to which it is applied. That, however, is the limit of its therapeutic virtue. . . .

"Almost the only distinct evidence of progress apart from local treatment to which I can point, is the fuller recognition which has been arrived at of the influence of the nervous system in the production of skin affections. . . . The knowledge of the intimate pathological connection between the nervous system and the skin gives the key to the successful treatment of many cases which defy all local measures."

◆

AN ECCENTRIC RUSSIAN PHYSICIAN.

Professor Zakharin, of Moscow, one of the physicians in attendance on the Emperor of Russia, and since the death of Dr. Botkin, the leading consultant in Russia, is renowned for his eccentricities as well as for his skill.[1]

On entering a house he requires all the doors to be left wide open, all the clocks stopped, and dogs to be securely fastened away from his presence. He removes his over-garments gradually and never all in one place, his furs in one room, his over-shoes in the next, his gloves in a third, and so on. He insists on absolute silence on the part of the patient and the family, and will have no question answered save by "Yes," or "No." His dread of over-influence is almost a monomania; and his attention to detail is such that even in the simple cases he investigates the whole family history and social relations before directing treatment. His examination of the patient is sometimes three hours long — even in ordinary conditions.

One of his favorite theories is that of an idiopathic hypertrophy of the heart, upon which he has based a rule of living: "It is necessary to rest *before* getting tired." Accordingly he has the habit of sitting down every seven or eight steps.

Zakharin is now sixty-five years old, has been professor of clinical medicine at Moscow for thirty-five years, and is reported to have acquired over a million dollars.

---

[1] La Médecine Moderne, No 15, 1894.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 10, 1894, TO MARCH 16, 1894.

Leave of absence for six months, to take effect on or about May 1, 1894, with permission to go beyond the sea, is granted Captain Walter W. R. Fisher, assistant surgeon, U. S. A.

By direction of the President, the retirement from active service, March 13, 1894, by operation of law, of Major John H. Bartholt, surgeon, U. S. A., under the provisions of the act of Congress, approved June 30, 1882, is announced.

First-Lieut. Paul F. Straub, assistant surgeon, U. S. A., is relieved from duty at Fort Riley, Kansas, and ordered to report in person to the commanding officer, San Carlos, Arizona, for duty at that post, relieving First-Lieut. Harlan E. McVay, assistant surgeon, U. S. A.

First-Lieut. McVay, on being relieved by First-Lieut. Straub, will report in person to the commanding officer, Whipple Barracks, A. T., for duty at that post.

A board of officers to consist of Lieut.-Col. Charles R. Greenleaf, deputy surgeon-general; Lieut.-Col. Albert Hartsuff, deputy surgeon-general, U. S. A.; Major Benjamin F. Pope, surgeon, is appointed to meet at the call of the president thereof, at San Francisco, Cal., for the examination of Captain William R. Hall, assistant surgeon, with a view of determining his fitness for promotion, as contemplated by the acts of Congress approved October 1, 1890, and July 27, 1892.

Captain Hall will report in person to the president of the board for examination at such time as he may designate.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MARCH 17, 1894.

L. W. Spratling, surgeon, ordered to the U. S. S. "Alert."

E. J. Derr, surgeon, ordered to the U. S. S. "Raleigh."

E. M. Shipp, assistant surgeon, ordered to the U. S. S. "Raleigh."

W. C. Braisted, passed assistant surgeon, ordered to hold himself in readiness for U. S. S. "Columbia."

G. E. H. Harmon, surgeon, from the U. S. S. "Yorktown" and three months' leave.

G. P. Lumsden, passed assistant surgeon, ordered to the U. S. S. "Yorktown."

APPOINTMENTS.

At the last regular meeting of the Board of Managers of the Massachusetts Charitable Eye and Ear Infirmary, Dr. Henry L. Shaw was elected as consulting surgeon; Dr. Frederick E. Cheney was elected as ophthalmic surgeon; Dr. Alexander Quackenboes was elected as assistant ophthalmic surgeon and Dr. Almon G. Morse as ophthalmic house officer.

Dr. Paul Thorndike has been appointed surgeon to outpatients at the Boston City Hospital.

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The next lecture will be given on Wednesday evening, March 28th, at 8 o'clock, by Dr. J. J. Putnam. Subject, "The Present Status of the Therapeutics of Nervous Diseases." Physicians are cordially invited.

SOCIETY NOTICES.

Boston Society for Medical Improvement. — A regular meeting of the Society will be held at the Medical Library, No. 19 Boylston Place, on Monday, March 26, 1894, at 8 o'clock, P. M.

Dr. E. H. Bradford: "Sprains and Disabled Joints." Discussion opened by Drs. W. M. Conant and R. W. Lovett.

Dr. A. Coolidge, Jr.: "Deviations of the Cartilaginous Septum." Discussion opened by Dr. J. W. Farlow.

John T. Bowen, M.D., *Secretary.*

Norfolk District Medical Society. — The Brookline Fellows of the Norfolk District Medical Society cordially invite the Society to a Meeting for Scientific Improvement, to be held at the Town Hall, Brookline, on Tuesday, March 27, 1894, at 7.45 P. M.

Subject for discussion, Tuberculosis. "The Natural History of the Tubercle Bacillus," S. A. Houghton, M.D. "Tuberculosis in Cattle, its Detection, Prevalence, etc.," F. H. Osgood, M.R.C.V.S. "The Treatment of Laryngeal Phthisis," S. W. Langmaid, M.D. "Tuberculosis in Mental Disease," W.

Channing, M.D. "Home Treatment of Phthisis," G. K. Sabine, M.D. "The Application of Climatic Therapeutics to Pulmonary Tuberculosis," E. O. Otis, M.D. Dr. F. C. Shattuck will open the discussion.

Lunch at 9.45 P. M.

J. C. D. PIGEON, M.D., *Secretary.*

RECENT DEATHS.

DR. GUISEPPE DAGNA, Emeritus Dean of the Medical Faculty of the University of Pavia, died February 3d.

SURGEON-COLONEL ARCHIBALD HAMILTON HILSON, M.D., C. I. E., late inspector-general of Civil Hospitals, Bengal, and one of the heroes of the Sepoy Revolt of 1857, died January 4th, aged fifty-nine years.

BOOKS AND PAMPHLETS RECEIVED.

Dartmouth Medical College Catalogue, 1893–94.

Massachusetts Institute of Technology, Boston, Annual Catalogue, 1893–94.

Massachusetts Institute of Technology, Annual Report of the President and Treasurer, December 13, 1893.

Society of the Lying-in Hospital of the City of New York, Midwifery Dispensary Medical Report. 1893.

Enterorrhaphy; Its History, Technique and Present Status By N. Senn, M.D., Ph.D., LL.D. Reprint. 1893.

The Discovery of Anæsthesia. By Whom Was It Made? A Brief Statement of Facts. By Dr. Laird W. Nevins.

Treatment of Depressions in the Skull of the New-born. By David D. Jennings, M.D., New York. Reprint. 1894.

Cleft of the Hard and Soft Palates. Naso- or Retro-Pharyngeal Growths. By J. Ewing Mears, M.D., Philadelphia. Reprints. 1893.

Transactions of the Medical Society of the State of North Carolina, Fortieth Annual Meeting held at Raleigh, N. C., May 9, 10 and 11, 1893.

Longevity, with a List of Persons Known to have Lived One Hundred Years or More. By Archer Atkinson, M.D., of Baltimore, Md. Reprint.

The Year-Book of Treatment for 1894; A Critical Review for Practitioners of Medicine and Surgery. Philadelphia: Lea Brothers & Co. 1894.

Transactions of the American Pediatric Society, Fifth Session. Edited by Floyd M. Crandall, M.D. Volume V. Printed by Bailey & Fairchild. 1893.

Studies from the Department of Pathology of the College of Physicians and Surgeons, Columbia College, N. Y. Vol. III. For the Collegiate Year, 1892–93. Reprints.

Grundriss der Histologie für Studierende und Aerzte. Von Dr. Bernhard Rawitz, Privatdozenten an der Universität, Berlin. Mit 204 Abbildungen. Berlin: S. Karger. 1894.

Studier öfver Transitorisk Albuminuri Hos Till Utseendet Friska Personer. Af Thorbjörn Hwass, Med. Dr., Docent, Stockholm. Stockholm: P. A. Norsteat & Soner. 1893.

Die Infectious-Krankheiten, ihre Entstekung, ihr Wesen und ihre Bekämpfung. Für Aerzte und Verwalthungs-Beamte von Dr. W. Plange, Kgl. Kreisphysikus. Berlin: S. Karger. 1894.

Cases to Illustrate the Relationship which Exists between Wryneck and Congenital Hæmatoma of the Sterno-Mastoid Muscle. By D'Arcy Power, M.A., M.B., Oxon., F.R.C.S., Eng. Reprint. 1894.

Report of a Case of Cerebral Tumor, Diagnosed by Focal Symptoms, with Operation, Successful Removal of Tumor and Exhibition of Specimen. By D. A. K. Steele, M.D., Chicago. Reprint. 1894.

A Manual of Therapeutics. By A. A. Stevens, A.M., M.D., Lecturer on Terminology and Instructor in Physical Diagnosis in the University of Pennsylvania, etc. Philadelphia: W. B. Saunders. 1894.

The Relation of Peripheral Irritation to Disease; Considered from a Therapeutic Standpoint. Therapeutic Reflections; A Plea for Physiological Remedies. By Simon Baruch, M.D. Reprints. 1890–93

Pain, Pleasure and Æsthetics, An Essay Concerning the Psychology of Pain and Pleasure, with Special Reference to Æsthetics. By Henry Rutgers Marshall, M.A. London and New York: Macmillan & Co. 1894.

Congenital Affections of the Heart. By George Carpenter, M D., Lond., Member of the Royal College of Physicians; Senior Physician to Out-patients at the Evelina Hospital for Sick Children, London. London: John Bale & Sons.

Tables and Notes on Human Osteology, for the Use of Students of Medicine. By Sebastian J. Wimmer, M.A., M.D., with a preface by Prof. William F. Waugh, A.M., M.D. Philadelphia: The Medical Publishing Co. 1894.

Scarlatina and Scarlatinal Sore Throat; A Record of Milk Infection. By Arch. K. Chalmers, M.D., Ph.D., P.H. (Camb.), one of the Medical Officers of Health for the County of the City of Glasgow. Glasgow: Robert Anderson. 1894.

Excision of the Hip-Joint in Tubercular Disease. Circular-Saw Injury. The Early Removal of Tubercular Foci of the Bone. Primary Syphilis and Gonorrhœa in Children. By B. Merrill Ricketts, M.D., Cincinnati, O. Reprints. 1893.

Pigmentation of the Whole Surface of the Body, Occurring Suddenly during the Treatment of a Case of Psoriasis; Warty Growths upon the Palms and Soles following the Internal Use of Arsenic. By Albert E. Carrier, M.D., of Detroit. Reprint. 1894.

Modern Homœopathy; Its Absurdities and Inconsistencies. By William W. Browning, A.B., LL.B., M.D., Brooklyn, N. Y., Lecturer Upon and Demonstrator of Anatomy, Long Island College Hospital, etc. Philadelphia: Press of Wm. F. Fell & Co. 1894.

Tumors, Innocent and Malignant, Their Clinical Features and Appropriate Treatment. By J. Bland Sutton, Assistant Surgeon to the Middlesex Hospital, London. With two hundred and fifty engravings and nine plates. Philadelphia: Lea Brothers & Co. 1893.

Hospital Dispensaries and Nursing; Papers and Discussions in the International Congress of Charities, Correction and Philanthropy, Section III, Chicago, June 12 to 17, 1893. Edited by John S. Billings, M.D., Henry Hurd, M.D. Baltimore: The Johns Hopkins Press. 1894.

Syllabus of the Obstetrical Lectures in the Medical Department of the University of Pennsylvania. By Richard C. Norris, A M., M.D., Demonstrator of Obstetrics, University of Pennsylvania; Assistant Obstetrician, University Maternity, etc. Third edition. Philadelphia: W. B. Saunders. 1894.

A Practical Treatise on Medical Diagnosis for Students and Physicians. By John H. Musser, M.D., Assistant Professor of Clinical Medicine in the University of Pennsylvania, etc. Illustrated with one hundred and sixty-two wood-cuts and two colored plates. Philadelphia: Lea Brothers & Co. 1894.

Suicide and Insanity; A Physiological and Sociological Study. By S. A. K. Strahan, M.D., Barrister-at-Law; Fellow of the Royal Statistical Society; Member of the Medico-Psychological Association of Great Britain and Ireland; Member of the Medico-Legal Society of New York, etc. London: Swan, Sormenschein & Co. 1893.

Essentials of Physics, Arranged in the Form of Questions and Answers, Prepared especially for Students of Medicine. By Fred J Brockway, M.D., Assistant Demonstrator of Anatomy at the College of Physicians and Surgeons, New York. Second edition, revised, with one hundred and fifty-five illustrations. Philadelphia: W. B. Saunders. 1894.

Medical Jurisprudence, Forensic Medicine and Toxicology. By R. A. Whitthaus, A.M., M.D., Professor of Chemistry, Physics and Hygiene in the University of the City of New York, etc., and Tracy C. Becker, A.B., LL.B., Counsellor-at-Law, Professor of Criminal Law and Medical Jurisprudence in the University of Buffalo. Vol. I. New York: William Wood & Co. 1894.

Total Extirpation of the Uterus; Cases Illustrating Various Indications for and Different Methods of Performing the Operation; Remarks upon Removal of the Uterus in Diseases of the Appendages. The Technique of Total Extirpation of the Fibromatous Uterus. The Operative Treatment of Complete Prolapsus Uteri et Vaginæ. By George M. Edebohls, A.M., M.D. Reprints. 1892–93.

Politzer's Text-Book of the Diseases of the Ear and Adjacent Organs, for Students and Practitioners. Translated by Oscar Dodd, M.D., Assistant Surgeon at the Illinois Charitable Eye and Ear Infirmary, etc. Edited by Sir William Dalby, F.R.C.S., M.B., Cantab., Consulting Aural Surgeon to the St. George's Hospital. With three hundred and thirty original illustrations. Philadelphia: Lea Brothers & Co. London: Baillière, Tindall & Cox. 1894.

Syphilis in the Innocent (Syphilis Insontium), Clinically and Historically Considered with a Plan for the Legal Control of the Disease. By L. Duncan Bulkley, A.M., M.D , Physician to the New York Skin and Cancer Hospital; Consulting Physician to the New York Hospital, etc. The essay to which the College of Physicians of Philadelphia in 1891 awarded the Alvarenga Prize for the best Memoir on any medical subject. New York: Bailey & Fairchild. 1894.

An American Text-book of the Diseases of Children, Including Special Chapters on Essential Surgical Subjects; Diseases of the Eye, Ear, Nose and Throat; Diseases of the Skin; and on the Diet, Hygiene and General Management of Children. By American Teachers Edited by Louis Starr, M.D., Physician to the Children's Hospital and Consulting Pediatrist to the Maternity Hospital, Philadelphia, etc , assisted by Thompson S. Westcott, M.D., Attending Physician to the Dispensary for Diseases of Children, Hospital of the University of Pennsylvania, etc. Philadelphia: W. B. Saunders. 1894.

Original Articles.

THE OPERATIVE TREATMENT OF UTERINE FIBROIDS.[1]

BY E. W. CUSHING, M.D., BOSTON, MASS.

Of all the advances in surgery achieved during the last few years none has been more surprising or more gratifying than the improvement in the methods and in the results of the operative treatment of fibro-myomata of the uterus; while at the same time the more accurate knowledge of the clinical history and morbid degenerations of the neoplasms, which has recently been obtained, has introduced entirely new views as to the indications which call for operation and as to the dangers which are incurred by neglecting such growths until the life of the patient is actually endangered by their presence.

It is not very many years since, on the one hand, a uterine fibroid was regarded as a wholly benign growth almost sure to cease increasing, or to diminish, at the menopause; while, on the other hand, the results in the few cases subjected to operation were so unsatisfactory that there was but little encouragement for surgeons to persevere in attempting to remove these growths. Thus Mathews Duncan could say, "Whoever heard of any one dying of a fibroid tumor?" while physicians everywhere sharing his views created a body of professional sentiment which has come down to the present day, regarding such growth as comparatively innocuous, and strongly discouraging all operative interference, even in extraordinarily severe cases, until the life of the patient was in imminent danger. On the other hand, as good operators as Sir Spenser Wells, a man already distinguished in abdominal surgery and experienced in the removal of ovarian tumors, would entirely refuse to interfere with uterine fibroids; and if by chance one was disclosed on opening the abdomen for the removal of an ovarian tumor, far from proceeding with the removal of the growth, they would close the abdomen and in confusion lament the error of their diagnosis.

As the natural consequence of these views and conditions, hysterectomy was only performed as a last and desperate resort in patients who were sinking from hæmorrhage, or from exhaustion incident to the growth or degeneration of the tumor. And it is little wonder that the mortality was high. The pioneer work in this operation was done in Massachusetts by those determined operators, Burnham and Kimball, of Lowell. Burnham's first operation was performed June 26, 1855, the patient being still alive in 1884. It is conceded that this was the first removal by abdominal section of the uterus and appendages for fibroid disease. Burnham operated 15 times with 12 deaths, a mortality of 80 per cent.; while his mortality in 338 cases of abdominal section of all kinds, including the hysterectomies, was 25 per cent., that from 238 complete ovariotomies being 20 per cent.[2]

By improvement of technique, and by the growth of institutions where a large number of cases could be operated upon under improved conditions by trained surgeons, the mortality from hysterectomy was gradually reduced from 80 per cent. to 60 and 50 per cent. and finally to about 35 per cent., where it stood some ten years ago at the beginning of the era of advances in abdominal surgery. Since then the reduction of mortality has gone on progressively; but it is of the utmost importance to remember that the improved results are not all due to the improvement of surgery, but are due to the fact that the operation is now performed before the patients are so reduced as to have thrown away most of their chances of recovery.

Nevertheless, grim and lamentable cases still occur too often, where, either from timidity on the part of the patient, or oftener from bad advice and mistaken ideas on the part of her medical adviser, the time for favorable operation has passed by. The chances of recovery have been cruelly thrown away by miserable delay and worse than useless treatment, until the patient is delivered to the surgeon sinking under her burden, a subject for a hazardous and gruesome operation, and likely then to die, leaving grief to the friends, blame to the surgeon and discredit to the profession.

We are passing through the same change in theory and practice in regard to fibroid tumors which has already been accomplished in regard to ovarian growths. With the gradual enlightenment of the profession and of the public, it is now rare to find the formidable cases of huge neglected ovarian tumors which were formally so frequently brought to surgeons for operation. No one will now maintain, as was formerly done, that an ovarian cyst should not be removed until its presence actually threatens the life of the patient. Instead of throwing away the chances of the patient by delay, by treatment, by repeated tappings, all competent physicians now recommend removal of an ovarian cyst as soon as its presence is detected, with the result that the operation in these early cases has become practically free from mortality; it is approached with confidence; it is accomplished with facility; it is a grateful interlude between the serious acts of important abdominal surgery.

Now, in regard to uterine fibroids a similar course of reasoning will apply, *mutatis mutandis;* like ovarian tumors, they are apt to grow, and when of large size they are very likely to degenerate and to cause the death of the patient; unlike ovarian tumors, they are peculiarly apt to injure the health and exhaust the vitality of the patient by repeated and protracted hæmorrhage, and they are liable to slough and to suppurate. In a considerable proportion of cases the myomatous uterus becomes affected with malignant disease. The tumor is liable to cause dangerous symptoms or fatal consequences by pressure on the ureters or on the intestine. If, therefore, there were any such certainty or probability of the continued growth of fibroid tumors that there is of the increase of ovarian tumors, the rules which are applicable to the latter class would at once govern our practice in regard to the former; the immediate removal of uterine fibroids as soon as discovered would be the rule. But here is precisely the difference between the two classes of tumors. Many women have fibroids which are small, which do not grow, and which cause no symptoms. In many others the tumor slowly increases during the years of functional activity of the uterus, but ceases to grow (or even diminishes) after the menopause. It is, therefore, obviously not necessary to operate on every tumor of this kind; and the establishment of the indications for surgical interference becomes in the highest a matter of individual judgment and experience, to be determined by the nature of each separate case. Wherever there is a chance for difference of opinion, it is safe to assume that doctors, like other people, will disagree; but the more opinion can be founded on sound pathological knowledge and on the records of wide observation, and the more questions in dispute are illuminated by experience and elucidated by discussion, the nearer shall we approach to a consensus of opinion and to the establishment of definite rules of practice. In nothing is this more evident than in the treatment of fibroid tumors, and in no department of surgery is professional opinion crystallizing more rapidly into definite rules of procedure, based on accurate knowledge.

---

[1] Read before the Obstetrical Section of the Suffolk District Medical Society, November 24, 1893.

[2] A full report of Burnham's 338 cases was published by his grandson, Dr. H. P. Perkins, Jr., in the Annals of Gynæcology, May, 1888, vol. i, page 339.

The latest aspects of this question are not as yet presented in the text-books, but are earnestly discussed in medical societies and medical journals in this and in other countries. Particularly, at the last two meetings of the American Gynecological Society and at the Pan-American Congress a great deal of attention was devoted to the subject of uterine fibroids; and while there are numerous individual differences of opinions, yet it is plain that those most interested in the subject, and whose opinion is based on the widest experience, have modified their views greatly within the last few years and are now approaching unanimity of opinion.

In the first place, it is practically conceded that electricity is powerless to prevent the growth of fibroid tumors; and it has been abandoned by many very competent men who, a few years ago, were adopting the new treatment with enthusiasm. It will, in many cases, arrest and control hæmorrhage; in many others it will allay pain and nervous symptoms; in not a few, however, it will set up very serious suppuration, or cause peritonitis of various grades, leaving adhesions which afterwards seriously complicate any operation which may become necessary.

It is substantially agreed that tumors, even of moderate size, require operation if they are growing, if they cause hæmorrhage, if they occasion pain or pressure symptoms, or if they are complicated by salpingitis. There is some difference of opinion as to the size which a tumor should have obtained to warrant removal. One would operate on growths as large as the fist, another on nothing smaller than a cocoanut, but none would countenance waiting until the tumor was larger than the adult head as was so frequently done only a few years ago, and as is still advised by some conservative, but ill-informed practitioners. It is agreed that the dangers of operation increase in direct proportion to the size of the tumor, the age of the patient, the reduction of vitality caused by repeated hæmorrhage and disturbance of the nutrition; that the fatal cases are usually the neglected ones; that the difficulties of operation and consequent dangers are enormously increased by the presence of adhesions, by the complications of salpingitis, of pyo-salpinx, or of cystic or purulent degeneration of the ovaries; that incarcerated tumors may press on the ureters and bladder, while large ones drag these organs out of place, often leading to serious and fatal disease of the kidneys; that a very large proportion of tumors commence to grow or continue to grow after the menopause; that even a larger proportion of those which, having arrived at large size at the time of the menopause, then cease to grow, do not diminish but degenerate, becoming soft and decomposed, and by sloughing or septic absorption lead to the death of the patient or to an operation *in extremis*. It is agreed that an operation for removal of an ordinary fibroid of the uterus by a competent surgeon upon a healthy patient is not much more dangerous, if at all, than is the removal of an ovarian cyst, and that all improvements of technique tend to reduce the danger of operative interference in uterine tumors to such an extent that they are more and more coming under the rules which are applied to ovarian tumors.

Another consideration is worthy of mention here, namely, that the diagnosis of pelvic growths is frequently so obscure; and the examinations on which it is based are even more frequently so insufficient that growths are often called fibroids which really belong to other and more dangerous categories. I have seen not a few cases where supposed fibroids of the uterus were really cases of cancer of the ovary, cancer of the uterus, solid ovarian tumor, pyo-salpinx with induration of the pelvic roof, impacted dermoid cysts, etc. Other surgeons have had similar experiences. The chances of operation have been lost or the results of surgical interference unduly jeopardized in these cases by well-meant delay based on the supposition that the growth was a fibroid of the uterus and therefore required no operation.

Having now noticed at some length the indications for operation in fibroids of the uterus, we may consider the different operations proposed for their relief or their removal. Those which have received any extended trial are:

(1) Removal of the uterine appendages (Hegar, Tait).

(2) Tying uterine arteries from vagina (Franklin Martin).

(3) Myomectomy or removal of the tumor, leaving the uterus intact.

(4) Removal of submucous fibroids through the os uteri and vagina.

(5) Vaginal hysterectomy.

(6) Supra-vaginal hysterectomy: *a*, stump fixed in abdominal wound; *b*, stump fixed just below abdominal wound, but outside of abdominal cavity (Kelly); *c*, stump turned forward into vagina (Byford); *d*, stump intra-peritoneal (Schrœder); *e*, modified by Martin, Zweifel, etc.; *f*, stump extra-intra-peritoneal, the arteries being tied in broad ligament and the stump covered by peritoneum (Eastman, Chrobak, Dudley, Goffe, Baer).

(7) Total extirpation: a combined operation, tumor from above and cervix from below, with clamps below (M. D. Jones); with ligatures (A. Martin, Boldt). Total abdominal extirpation (A. Martin, L. Stimson, Krug, Polk and others).

The time at our disposal this evening will not suffice for the discussion of the technique of these various forms of operation; and probably such a treatment of the subject would not be of general interest. As may naturally be supposed, opinions are somewhat divided as to the choice of methods and as to certain details of operation and procedures which on the whole are essentially similar. Nevertheless, I believe it will be of interest to point out the indications which would govern me in selecting one method or another, omitting here historical details and questions to priority or invention.

(1) As to the removal of uterine appendages. This operation, introduced by Hegar and Tait, and resting

very largely on the authority of these names, and especially on the strong recommendation of Tait, gives excellent results in the case of small tumors where the principal difficulty is monthly hæmorrhage. Few operators, however, at present are willing to trust to it where the tumors are large and rapidly growing. It is hard to see how the artificial induction of the menopause will do more than the natural change of life; and this, as stated above, notoriously does not control the continual growth of tumors which are large and show a tendency to increase rapidly. Even Tait does not claim that it is of any use in cases of solitary soft myoma or in fibro-cystic tumors.

In the light of facts recently placed in evidence concerning Tait, his statistics have far less weight with the surgical world than was the case a year or two ago. The chief objections to this method, when the tumor is large, are, first, the possibility of degeneration of the growth, and, secondly, the difficulty of employing drainage. My own experience with this method has been very satisfactory. I have used it a good many times for small tumors, but only once for one larger than a cocoanut, which was firmly bound in the pelvis. This case died; and I have always been sorry that I did not perform a hysterectomy, inasmuch as I could not use drainage when the tumor was in the pelvis. In all the other cases menstruation ceased entirely, and the growth diminished or gave no further trouble. Other surgeons, however, report cases where the tumors continue to grow in spite of this operation, necessitating subsequent hysterectomy. The chief indication for the choice of this operation is the fact that the tumor is growing in the fold of the broad ligament, leaving the appendage readily accessible.

(2) As for tying the uterine arteries from the vagina hoping thereby to check the growth of the tumor, this is an operation recently suggested by Martin, of Chicago, but I have no personal experience of it. As the procedure is easy and safe, it seems not unphilosophical to try it in cases where the tumor is not so large that there would be danger of its degenerating or sloughing from the sudden cutting off of most of its blood-supply.

(3) Myomectomy, or removal of the tumor, leaving the uterus intact, may be a very simple or a very formidable operation. according to whether the growth is pediculated or is imbedded in the wall of the uterus and inclosed by a capsule consisting of uterine tissues. In the first case it is a safe and quick operation to constrict a pedicle and fasten it with pins in the angle of the abdominal wound. It is not so easy to treat the pedicle intra-peritoneally. As is the case in ovarian tumors, if the growth is cut away, the stump of the pedicle retracts, the vessels are hard to isolate and secure, the wound in the uterus gapes, and stitches used to close it are apt to bleed. The best method of intraperitoneal treatment is to reflect the peritoneum from the pedicle, commencing at the lower part of the tumor, then to sew through the pedicle the shoemaker's stitch of catgut before cutting it, tightening and tying the ligature as the tumor is cut away, and covering the stump with reflected peritoneum.

The removal of large myomatous nodules from the uterus has been principally practised and recommended by Martin of Berlin, and is fully described in his work. It is not often that suitable cases occur for this operation, since usually the large nodule is accompanied by smaller ones; and where it does not seem that the patient will be cured by the removal of the uterine appendages, surgeons perform hysterectomy rather than to make and then close considerable cavities in tissues as retractile and vascular as are those of the uterus. The singular celerity and dexterity of Martin enables him to obtain results which are satisfactory, while those less gifted would not suceed as well.

(4) I shall say little concerning the removal of submucous fibroids through the os uteri. There is little new in this question, except that the ecraseur and the wire loop have fallen into innocuous desuetude, being replaced by simpler and more surgical methods of cutting and tying the pedicle, if there is any. While sublimate irrigation and packing with iodoform gauze have diminished the dangers of sepsis from cavities left in the uterine wall by the enucleation of submucous nodules, the difficult and hazardous operations which were formerly performed for the removal of large submucous growths have mostly been supplanted by hysterectomy. My experience would lead me to believe, however, that where a fibroid tumor of the uterus in the abdomen is complicated by the presence of a sloughing fibrous polyp which has been extruded from the uterus, it is the safest to remove the polyp first by vaginal operation, leaving the hysterectomy to be performed at a later date when the cavity of the uterus is free from infection.

(5) Vaginal hysterectomy offers an easy and safe way of treating cases where the uterus is of moderate size and where there is much hæmorrhage which is not easily relieved by curetting. It may also become an operation of necessity, when in attempting to remove a submucous growth, the uterus is perforated. Vaginal hysterectomy may fairly be considered as a rival of the removal of the appendages, as in suitable cases it is just as easy, is fully as safe, and because the uterus is of no use after the removal of the appendages, but may be very annoying to the patient, since it is heavy and is apt to become retroverted.

(6) A discussion of the various methods and modifications of supra-vaginal hysterectomy would alone form a voluminous paper. Of the two great varieties into which it is divided, the extra-peritoneal treatment of the stump by fixing it in the angle of the abdominal wound has been popular, and on the whole has given the best results of any method devised. Keith, Bantock, Tait, in England, and in this country Price and his followers, use a wire loop to constrict the pedicle, which is tightened by a small ecraseur or *serre-nœud.* The Continental operators, and some in this country, prefer the use of an India-rubber constrictor made of an ordinary piece of tubing; and if this is properly used, it is in my judgment far superior to the wire loop. The principal point to be observed is that it should pass twice around the pedicle, above one pin and below the other; in this way it can be made to lie on the skin instead of being buried in the wound. If the pedicle is properly made, it is slender; by exposure to the air it becomes entirely dry, does not slough nor smell badly, and when properly adjusted the dressings need not be touched at all until about the tenth day, when the constrictor and the stump are removed together. The other points to be observed are infinite care in cleansing the vesico-uterine fold of the peritoneum, the accurate coaptation of the abdominal peritoneum around the stump and below the constrictor, and the use of the glass drainage-tube in all complicated cases. The tube should be separated from the stump by two

or three stitches, that is, by an interval of about three-quarters of an inch, and can be removed as usual on the second day without interfering at all with the stump. With these precautions the objections to this treatment, which have been the principal cause of the introduction of other methods, are not well founded. There is no need of having a bulky pedicle or a sloughing stump or a large opening predisposing to hernia. Contrary to the general opinion on the subject, it requires a higher degree of real surgical skill, care and perfection of technique to treat the pedicle in this way properly than to remove the uterus entirely; but the saving of time, of shock, of hæmorrhage and exposure of the intestines, which can be obtained by this method, must weigh strongly in its favor as against the more recent methods of operation which have lately come in fashion and which are considered more ideal. The method has served me well in all sorts of difficult cases — in big tumors, in adherent tumors and in tumors complicated by pyo-salpinx, and even where there was perforation of the intestine; and I know that in feeling that it should not be abandoned lightly in favor of other methods, I have the full support of Bantock, of Price, and of many other operators, whose excellent results entitle their opinions to the utmost consideration.

In spite of the good results obtained by the extra-peritoneal method of treating the stump, some operators have always insisted that this was not the best procedure that could be devised, but that like the corresponding treatment of the pedicle in ovariotomy, it was merely a temporary method and a halting-place in the march of progress towards an ideal method. First, Schrœder, and then Martin, of Berlin, were the great maintainers of this theory; and their method, as is well known, consisted in making the stump with an anterior and posterior flap which were brought together by silk or catgut sutures. Unfortunately, owing to the treacherous nature of uterine tissue, the stumps would slough if tied too tightly, while if tied less firmly they would ooze or bleed; so that the results would not compare with less ideal but more practical methods. Zweifel has now so modified this method by an interlocking stitch of silk in the broad ligament and of catgut across the cervix, that he has obtained admirable results; while Martin has abandoned it in favor of total abdominal extirpation. The intra-peritoneal method of Schrœder has, however, also been modified in this country in such a manner that the uterine arteries are tied in the broad ligament outside (but near) the uterus, when the cervix is cut away low down, and is then either dilated, burned or drained after the method of Eastman, which has been followed by Chrobak and others on the Continent, or is simply left untouched according to the method of Baer; in either case the peritoneum is united above the stump. The only difficulty with this operation is that there is a tendency to suppuration below the peritoneum; and if much of the stump is left, it is very apt to slough, owing to the entire deprivation of nutrition of the part. This not unnaturally leads to the conclusion, that where the uterine arteries were so securely ligated as to make the stump liable to slough, it was best to remove it *in toto;* and this method has been adopted with great enthusiasm by Martin in Germany, and by L. Stimson, Krug, Polk, Boldt, Edebohls and others in this country. As one step in arriving at this operation, the body of the uterus was removed from above and the cervix from below, as in vaginal hysterectomy, but with the introduction of the Trendelenberg posture it is so easy to remove the whole from above, that it is now usually done in that way. Martin attaches the vagina to the peritoneum all around with catgut sutures, the ends of all of which are brought out through the vagina. Stimson and Polk use simply four sutures, one each in front and behind and one on each side, the ends of these are brought out from the vagina and the space between is occupied with a packing of iodoform gauze. Polk and Mann strongly recommend the additional use of a glass drainage-tube in the abdominal wound. Other operators close the vagina with catgut and unite the peritoneum above it with a sero-serous continuous catgut suture. Many consider a glass drainage-tube desirable in all these cases, although not all consider it essential.

This, then, at last would seem to be the ideal operation for the removal of fibroids, the only objections being the time required and the resultant shock. The abdomen is widely open for from one to two hours, according to the dexterity of the operator and the character of the case; this is a very serious consideration, and without desiring to depreciate the march of progress toward the ideal, I will say that this operation is not one for beginners, but for dexterous, experienced and skilled surgeons.

A *résumé* of my experience may prove interesting. From January 1, 1890, to November, 1893, I performed hysterectomy for fibroid tumors of the uterus 33 times at the Charity Club Hospital; and from June 25, 1892, to November 1, 1893, I performed the same operation 14 times in my private sanitarium, and three times in private houses, making a total of 50 cases, of which I have accurate records, with 10 deaths, or 20 per cent. Of these cases there were: extra-peritoneal stump, 29, with 4 deaths, or 13.7 per cent.; extra-intra-peritoneal stump, 18, with 4 deaths, 22.2 per cent.; abdominal total extirpation, 3, with 2 deaths, or 66.6 per cent. Besides these, I have had one case of vaginal hysterectomy for fibroids, which recovered; two cases where the operation was primarily to remove large, sloughing, fibroid tumors which had been extruded through the uterus, and in which it seemed at the time best to remove also the body of the uterus from which the growth originated, and which was the seat of other myomatous nodules. Both of these cases died: one on the second day, from uræmia caused by long pressure of the tumor on the ureters and secondary disease of the kidneys; the other sank on the third day after operation, without rise of temperature, dying apparently from cardiac failure due to repeated hæmorrhages, septic absorption before the operation, and the shock of the delivery of the tumor, which, when I first saw the patient, was hanging between her thighs, larger than a child's head, and extremely offensive. During the same period I have removed the uterine appendages some ten times for small uterine fibroids, often combining the operation with ventro-fixation of the uterus. All of these cases recovered, except one who died of chronic sepsis four weeks after the operation. Besides these cases I have had a number of ordinary fibroid polyps, which were removed without difficulty; but I have not taken the trouble to look up the exact number.

Now, in considering the results obtained by the different methods of operation, it is necessary to examine the causes of death in those cases of each class which ended fatally, in order to discover which operation offers the best chance of recovery, and which is best adapted for any particular class of cases. And first, as to the four deaths which occurred in 29 cases where the stump was treated extra-peritoneally. Three of these occurred at the Charity Club Hospital, and two came close together, and were accompanied by three other deaths from sepsis following particularly simple operations. I think that all these deaths were due to the poisoning of the house by one of the cases of sloughing fibroid above referred to, although they occurred some time after the death of that patient; it seemed impossible to get good results, and I was compelled for a time to suspend abdominal work in that place. It was on the presentation of these facts to the management of the Charity Club that it was decided to build a new building adapted to the serious work which had to be performed there. I am happy to say that the new hospital gives such facilities as can never be obtained in an old dwelling-house used as a hospital, and that there is but little danger of an occurrence of an epidemic of sepsis within its walls. This leaves two deaths to be accounted for among the 29 cases where the stump was treated extra-peritoneally; of these, one occurred at the Charity Club Hospital after the removal of a very large tumor from a woman considerably passed the menopause. The other case was at my sanitarium, in a patient who had a large myoma complicated by pregnancy, requiring a Porro operation; in each case the death was due to obstruction of the bowels. The occurrence of these two deaths set me to reflecting on Keith's remarks concerning the tension of the broad ligament which is occasioned by the traction of the stump when treated extra-peritoneally, and led me to try the intra-extra-peritoneal treatment which was so warmly advocated by Eastman, Chrobak, Baer and others.

Eighteen cases treated by the latter method gave four deaths, or a mortality of 22.2 per cent.; these deaths all came near together, and were particularly painful to me because three of them occurred in patients where there were no particular complications, where the tumors were not inordinately large, and where the operation could have been performed by the extra-peritoneal method with excellent prospects of success.

These four deaths occurred after a series of 13 consecutive recoveries by the intra-extra-peritoneal method, and just when I was flattering myself that I could remove fibroids without fatal results. Besides the cases that died, one other had a considerable discharge of pus from the vagina, no doubt coming from the cervix uteri. The study of these cases revealed one important point in all of the first ten, that is, in nearly all of those who recovered, so much of the uterus was removed that very little of the cervix was left; this was widely dilated, the canal thoroughly burned with the thermo-cautery, and occupied by a twist of iodoform gauze providing free drainage for the space left below the peritoneum and leaving very little of the cervical tissue to be nourished indirectly by anastomosis. In all of the cases that died the dilating and burning of the cervix was omitted; and although gauze was drawn through the undilated cervix from above downward, it is probable that drainage was not sufficient. Probably, too much cervical tissue was left to be properly nourished after the ligation of the uterine arteries. We are thus met with the same difficulty as in Schrœder's operation where a cervical stump is left; if the blood-supply is entirely checked, it sloughs, otherwise it bleeds. One of these cases was of a nature that probably could not have been saved as the tumor had degenerated; the patient was some fifty-four years old, and she had suffered from a series of very severe chills, fever and profuse sweats at intervals of two or three days for three months before she came into my hands. Her physician, Dr. Thurlow, had recognized the nature of the trouble and insisted on the necessity of operation, but the patient obstinately maintained that she had chills and fever, and would not consent to surgical interference until she was evidently failing. The tumor was removed without accident, but the patient showed symptoms of shock while on the table, and did badly from the first. She had a severe chill and sweat the day after the operation, had almost complete suppression of the urine, and died on the fourth day. The tumor weighed over seventeen pounds, and contained over a quart of pus and much broken-down tissue. At the autopsy there was a little purulent-looking fluid on the stump; no signs of general peritonitis. There was multiple abscess in one of the kidneys. Neither of the ureters had been included by the ligatures. Leaving this case out of consideration, I have ten cases of the Eastman-Chrobak operation where the cervical stump was short and was dilated, burned and drained; all of these recovered. There were six cases which were meant to be done by Baer's method, without dilating or burning the stump; and three of these died, besides the hopeless case above reported.

The results of the latter cases, which occurred last summer, lead me to try total abdominal extirpation, in order to get rid of the stump entirely, as advised by so many advanced operators of the day; although I have tried this three times, and lost two cases, yet here again the studies of the causes of the deaths show how misleading are percentages which give only the mortality, without describing the cases.

The first patient had cardiac disease, with compensatory hypertrophy of the heart. She had a large fibroid, which was growing rapidly in a young woman under thirty years of age, and occasioned very profuse and exhausting hæmorrhages, leaving the patient in a deplorable state. She entered the Charity Club Hospital last summer, and insisted on operation in such a way that I could not refuse it, although the extra risk was pointed out to her. The tumor rose high in the abdomen and was freely movable, and it seemed probable that it could be removed in a few minutes with extra-peritoneal treatment of the stump. On opening the abdomen, however, it was found that the tumor had lifted up the broad ligament on each side, and that to make a stump it must be widely separated from its investment of peritoneum. When this was done, the stump was so small that it was a very little matter to remove it entirely. The patient, however, did not react well. She suffered no pain whatever, but was ominously quiet, with a slightly subnormal temperature, and died on the third night, her temperature rising that very evening.

The next case was an ordinary one and recovered without any trouble whatever.

The last case was in a middle-aged woman who had carried a small fibroid tumor for several years, and until past the menopause; during the seven months preceding operation, it had begun to grow very rapidly, so that the specimen, which I showed at the last meeting of the Suffolk District Society, weighed some twenty-five pounds. The tumor was firmly adherent to the abdominal wall and to the omentum, obtaining nourishment chiefly from the latter through a multitude of vessels of which the veins were dilated and looked like bunches of earth-worms. The ovaries were cystic, and with the tubes were firmly bound down to the pelvis. From the rapid growth I feared that the tumor was sarcomatous, and thought the safest way was to remove all. The patient never rallied well from the long operation, never got fairly warm in her hands and feet, although everything possible was done for her; and she died septic on the third day.

The conclusions of my own experience briefly summed up are as follows:

(1) That electricity is useless and dangerous, and has no place in the armamentarium of the surgeon.

(2) That no method will compare with that of extra-peritoneal treatment of the stump in favorable cases, that is, where the abdominal walls are not too thick and the tumor can be lifted out so that a constrictor can be applied around the whole pedicle, including the uterine appendages; that the advantages of this method lie in its rapidity, in the short time during which the abdomen is open, in the entire protection of the intestines from exposure and from handling, and in absence of shock; that with proper care there need be no sloughing of the stump, and little or no suppuration of the wound. I show here two stumps, each removed on the tenth day, with the ligature still in position; they are perfectly dry, hard and inoffensive. This, then, for me is the operation of election for the present, especially in private practice and in all cases where patient is not strong and is ill prepared to withstand the shock of the longer operation required by other methods of treatment of the stump.

(3) For the intra-extra-peritoneal treatment, I should always in future leave as little of the cervix as possible, dilate it, burn it and drain it. This method is applicable to cases in which it is difficult to apply the former one, owing to thickness of the abdominal walls or the rigidity of the pelvic floor, or the presence of dense adhesions requiring drainage. I see little advantage to be gained from leaving any cervix. To avoid the great danger of sloughing of the stump, it must be amputated well below the level of the internal os, after separation of the bladder from the cervix and ligation of the uterine arteries. When all this has been done, there is no difficulty or loss of time in removing all the uterine tissues. Drainage should usually be employed, both through the vagina by gauze and by a glass tube at the bottom of the pelvis, as there is pretty sure to be free oozing.

The fact remains, however, and must never be forgotten, that for either of these methods of operation, by intra-extra-peritoneal treatment or by total abdominal extirpation, the operation is prolonged from half an hour to an hour. During this time the pelvis is exposed to the air and to much handling; considerable blood may be lost, which runs in among the intestines; there is an added shock from the large amount of ether consumed; and the whole burden of proof is, in my judgment, still on those who would use these operations in cases in which the extra-peritoneal treatment can easily and quickly be performed.

ACCORDING to Dr. Squibb, American chloroform is on the whole purer than that used in Europe.

TWELVE CONSECUTIVE AND SUCCESSFUL OPERATIONS FOR APPENDICITIS.

BY JOHN W. KEEFE, M.D., PROVIDENCE, R. I.,
Visiting Surgeon to St. Joseph's Hospital, Surgeon to Out-Patients at the Rhode Island Hospital.

(Concluded from No. 12, page 284.)

CASE VII. M. O'G., male. Age thirty, weaver. First case operated upon in Rhode Island between the attacks.

Admitted to St. Joseph's Hospital May 7, 1893. Family history good. No evidence of transmitted disease; good moral habits. He has since infancy been delicate, although he has had no serious illness until August, when he was taken with pain while at work; pains at first general abdominal, later becoming localized in the right iliac region. He has had attacks since, on an average, every two weeks. Some attacks lasted ten days, while others but one or two days. He was obliged to remain from work so often that he finally had to give up his position in the factory. He had a cyanosed and anxious expression of countenance, weak pulse and poor general appearance. There was pain on deep pressure over McBurney's point.

May 9th. Patient's abdomen made aseptic previous night, and bowels evacuated. Ether breakfast.

Operation. Patient etherized. Present, Drs. Collins, Day, Mitchell, Noyes, Black, Mahoney, Barry and O'Neil. Abdomen scrubbed again with soap and water, ether and corrosive-sublimate solution. Sterilized towels about the field of operation. Instruments sterilized by steam. An incision three inches long was made, a little to the right of and parallel with the border of the rectus muscle, through the abdominal wall. After considerable search the appendix was found, very much enlarged and bound down by firm adhesions to the inner and posterior aspect of the cæcum. Following the longitudinal muscular fibres of the cæcum materially aided in finding the base of the appendix. The adhesions were so firm that I removed three-quarters of an inch of the appendix, thinking that was all there was left of it; but with the finger I was able to break up the adhesions between the appendix and cæcum, disclosing one and one-half inches of appendix still remaining. A catgut ligature was tied around the base of the appendix, and allowed to remain; the appendix was severed with scissors, and a Paquelin cautery used to sear the end of the stump. While searching for the appendix several mesenteric glands were noticed having the appearance of tubercular infiltration. All of the coats of the appendix were thickened. The abdominal cavity was flushed with boiled water and sponged dry. A catgut continuous suture was used to approximate the peritoneum, and four silver-wire sutures through the entire abdominal wall. Silkworm-gut sutures through skin completed the operation. An iodoform dressing was applied. Patient made a good recovery from the operation. Patient rested well during the night. Treatment consisted in giving a drachm of hot water every fifteen minutes.

May 10th. Temperature, morning, 101°, pulse 103; evening, 102.5°, pulse 104. No nausea. Patient of a nervous temperament, discontented, and worries a great deal. He has a cough, with slight expectoration.

May 11th. Temperature, A. M., 101°; P. M., 102°. Peptonized milk, one drachm every fifteen minutes. Pulse strong.

May 13th. Patient slept but little, exceedingly nervous and fretful.

May 15th. Bowels evacuated by rectal injection of a few drachms of warm glycerine.

May 17th. Temperature normal at noon. Coughs a great deal, and expectorates considerable thick mucus.

May 18th. Dressings removed for first time since the operation. Union perfect. No tympanites or pain on pressure, as before operation. The four silver-wire sutures were removed. Another aseptic dressing applied. Diarrhœa in afternoon, controlled by bismuth and opium.

May 23d. Silkworm-gut sutures removed. Firm union present. Flexible collodion painted on wound, and an abdominal binder applied. Forcible pressure in the right iliac region now gives no pain, and all symptoms which he complained of before the operation have disappeared.

May 25th. Temperature, P. M., 103°. Delirious at night. General weakness.

May 28th. Examination of chest shows dulness at both apices and increase in vocal resonance. Sputum examined, and found to contain tubercle bacilli.

May 31st. Diarrhœa. Temperature 103.5°, pulse 130. Patient takes considerable nourishment.

June 5th. Still weak, cough and expectoration. Appetite improving.

June 6th. Discharged at own request.

September 6th. Patient has improved a great deal. Is able to go about out-of-doors, but still has a cough, and expectorates a thick, yellowish mucus. Has had no trouble, since the operation, in the right iliac region.

Case VIII. E. M., male. Age seven and one-half years.

This boy I saw in consultation with Dr. Payan on the ninth day of last August. He gave a history of having injured his right side while playing with another boy some weeks previously. Dr. Payan saw him for the first time August 2d, when his temperature was 103°, pulse 120. Pain referred to right knee.

August 3d. Pain in right lumbar region.

August 8th. Temperature and pulse elevated. Slight nausea last few days. No vomiting at any time. Bowels regular. Chills and sweats for last four days. Dulness over right lumbar region, and sense of resistance. Dr. Payan introduced a needle, but did not detect pus. Poultices locally and anodynes.

August 10th. At 10 A. M., the boy was restless and hypersensitive. Temperature 100°, pulse 110. Anxious expression. Right thigh flexed. On inspection of abdomen, a fulness was seen in right loin. Sense of resistance. Pain and dulness on percussion over this prominence. Pressure over McBurney's point produced pain, which was referred to right loin. Operation advised.

At 4.30 P. M. an operation was performed. Dr. Payan etherized the patient, and I made an incision, one inch above and parallel with the crest of the ileum, two inches long, cutting through the skin, muscles, fascia and peritoneum, into an abscess cavity which extended from the region of the right kidney to the iliac fossa. Intestines formed the inner wall of the abscess cavity. The appendix was not found. About six ounces of very fetid pus escaped. A second opening was made in the right iliac region by cutting down upon a finger introduced into the abscess cavity through the original wound, and a rubber drainage-tube passed through both openings. The cavity was sponged out with a solution of corrosive sublimate (1 to 2,000), and an antiseptic dressing applied. The patient's recovery has been uneventful; the wounds are entirely healed.

September 6th. Boy attends school; no trouble from wound.

Case IX. W. S., male. Age forty-two, grocer.

Admitted to St. Joseph's Hospital August 13, 1893. Father died of phthisis; he, however, was the only one of his family to have the disease. Mother's family noted for longevity. Until within two years patient was an exceptionally healthy man, weighing 200 pounds. He has gradually failed, until at the present time his weight is only 130 pounds. Last January patient had a severe intestinal hæmorrhage, the cause of which was diagnosed by his attending physician as duodenal ulcer. He then gained in health and strength until two weeks ago, when he was seized with severe pain in the right iliac region. Four days later he could feel a swelling in same location. Pain on walking or stooping or pressing over swelling. A surgeon was called, who accompanied him to Boston, where an eminent surgeon of that city was consulted. A second consultation of surgeons from Providence and Boston was held at patient's home on August 11th, and an unfavorable prognosis given the patient's family. No operation advised.

August 14th. I saw patient for the first time. Temperature 100°, pulse weak; sweats; anxious countenance. Inspection showed slight prominence in right iliac region. Circumscribed area of dulness, with sense of resistance about five inches in diameter just below and to the right of the umbilicus. No fluctuation could be detected. Diagnosis, appendicitis with circumscribed intra-peritoneal abscess. Operation advised.

August 15th. Operation. Present, Drs. Collins, McCusker, O'Neil and Barry. Patient etherized. Field of operation rendered aseptic. An incision about three inches in length was made over the most prominent portion of the tumor, and parallel with the median line, through the abdominal wall, and into an abscess cavity walled off by firm adhesions to the parietal peritoneum. About six ounces of greenish pus was evacuated. The abscess was irrigated with a corrosive-sublimate solution (1 to 10,000), and two silkworm-gut sutures introduced to close the angles of the wound. A rubber drainage-tube was passed into the abscess cavity, and an iodoform dressing applied. Patient rallied well from the operation. Warm peptonized milk and whiskey given in small doses. At night patient complained of abdominal pain, unrelieved by morphia. An enema of soap-suds and turpentine produced a discharge of fæcal matter and a large quantity of gas with great relief.

August 16th. More abdominal pain, relieved by enema. Wound dressed, considerable discharge. Evening temperature 100°, pulse 120.

August 17th. Patient's general condition improved. Drainage-tube removed. Temperature normal.

August 19th. Patient sleeps and takes nourishment well. Diet: milk, egg-nog and beef-tea. Wound looking well. Slight discharge.

August 24th. Wound dressed every second day. Sutures removed.

August 27th. Edges of wound brought in apposition with strips of adhesive plaster.

August 29th. Notwithstanding the patient has strict orders not to leave his bed, he went out twice to the closet.

September 2d. Two silkworm-gut sutures were introduced to bring granulating edges of the wound in apposition, and antiseptic dressing applied.

September 4th. Wound nearly healed. Area of dulness has disappeared, with the exception of a slight amount of dulness in close proximity to the incision. Patient eats, sleeps and looks well. Says he feels as well as he ever did in his life.

October 1st. Patient has gained in weight. No pain in right iliac region.

Case X. D. C., male. Age fourteen years, messenger boy.

Patient has been strong and robust until the present illness. He is an exceptionally well-developed boy. On August 13, 1893, after playing base-ball, he was seized with pain in the right side of the abdomen. On the following day the pain increased, and he was obliged to remain in bed. The family physician was called. Diagnosed the disease as appendicitis, and ordered anodynes and ice applied locally. He obtained considerable relief, and the case looked like one that would terminate by resolution. I saw the patient for the first time August 21st. His temperature was 100°, pulse 130. Abdomen distended and tympanitic on percussion, except just above the crest of the right ileum where there was an area of dulness three inches in diameter, and tenderness on pressure. Deep pressure over McBurney's point produced pain in area of dulness. The boy's general appearance was poor, and his anxious expression denoted serious trouble.

August 22d. Boy admitted to St. Joseph's Hospital. No marked change in symptoms.

August 23d. Tympanites has disappeared. Temperature 100°, pulse 98. Area of dulness, and pain on pressure above crest of right ileum. No sense of resistance. No fluctuation; mass could be detected on palpation. Assisted by Drs. Day, O'Neil and Barry, I operated by making an incision three inches long in the right lumbar region, commencing just above highest point of the crest of the right ileum and continuing toward the ribs; the incision being parallel with the median line. The several layers of the abdominal wall, namely, integument, superficial and deep fascia, the external and internal oblique muscles, transversalis muscle and transversalis fascia, subserous areolar tissue and peritoneum, were all readily recognized and divided with the knife. There was no œdematous condition of these tissues, such as is commonly found in this disease. Owing to the thickness of the abdominal wall, fluctuation could not be detected, even when the peritoneum was reached. About five ounces of greenish and fetid pus was evacuated. Coils of intestine could readily be felt forming the inner wall of the abscess cavity. Appendix was not found. The cavity extended from the lower border of the right kidney to the cæcum. The abscess cavity was irrigated with boiled water, a rubber drainage-tube inserted, and an iodoform dressing applied.

August 24th. Patient slept well last night. Warm peptonized milk in small doses. Wound dressed. Considerable discharge in dressing.

August 25th. Dressed. Tube cleansed, reinserted. Enema produced copious evacuation from bowels.

August 27th. Diet, milk and gruel. Wound dressed every day. Discharge is decreasing and cavity becoming smaller.

August 31st. Tube removed. Wound looks well.

September 6th. Patient eats and sleeps well. General appearance good. Wound gradually closing.

October 1st. Wound entirely healed.

January 1, 1894. Patient in good health. No return of disease.

Case XI. A. C., male. Twenty years of age, single, carpenter.

Admitted to St. Joseph's Hospital September 9, 1893. Good family history. Three years ago patient had an attack of diarrhœa and vomiting, with severe abdominal pain, most intense in the right iliac region. He recovered in a few days, and has had two attacks since, the last occurring last summer. His temperature then ranged from 100° to 102°. Pain severe, localized in right iliac region. Vomiting and constipation were also accompanying symptoms. His temperature on admission to the hospital was 99°, and he complained of pain on firm pressure over McBurney's point. No mass or sense of resistance could be felt. Removal of appendix advised.

September 13th. Operation, under ether. Asepsis aimed at in preparations. An incision three inches in length was made, parallel with the median line, the centre of the incision being over McBurney's point. The abdominal cavity was opened, and the appendix was found bound down by slight adhesions behind and to the left of the cæcum. It was three-quarters of an inch thick and two and one-half inches in length. Coats thickened. The appendix was excised about three-sixteenths of an inch from the cæcum. The mucous and muscular layers of the stump were drawn outwards, and a ligature of fine sterilized silk placed about them. The peritoneal coat of the appendix was now drawn over the ligatured mucous and muscular coats, and united by three fine silk, Lembert sutures. Four silver-wire sutures through abdominal walls, and several silkworm-gut sutures through skin and superficial muscles closed the abdominal wound. No drainage. An aseptic dressing applied. Patient had a comfortable night. Scarcely any pain. He took only drachm doses of hot water every fifteen minutes during the first twenty-four hours.

September 14th. Drachm doses of peptonized milk, alternated with hot water. No nausea at any time.

September 18th. Bowels moved for the first time since the operation by an enema.

September 22d. Silver-wire sutures removed. Primary union.

September 26th. Silkworm-gut sutures removed. Discharged from the hospital cured.

December 20th. Patient in good health.

Case XII. E. H., male. Aged twenty-seven years, horse-car driver.

Admitted to St. Joseph's Hospital October 16, 1893. Patient's family history is good. Until one year ago he was in good health; then he was seized with severe abdominal pain, more intense on the right side, accompanied by fever. In a few days he was better, but occasionally had pain in the right iliac region, but not severe enough to prevent him from attending to his work. Last March he had a similar attack to the first seizure. Ten days ago he had more severe pain than in previous attacks, with pain localized in right iliac region. Vomiting and rise in temperature. He was treated by ice locally and opium internally, until these symptoms subsided so that he was able to walk about for past few days. He has pain on complete extension of thigh, and greatest tenderness on pressure just below and to the right of McBurney's point. There is a small area of dulness and a sense of resistance over the same region.

October 17th. Operation, under ether, with strict asepsis. An incision three inches long, parallel with the median line, was made over the area of dulness. The various abdominal layers were incised until the peritoneum was reached, when it was found that the cæcum was adherent to the abdominal wall below the site of the incision. The wound was enlarged upwards until the abdominal cavity could be opened above the point of adhesion of cæcum to the abdominal parietes. By careful manipulation the adhesions, which were on all sides of the cæcum, were severed by the fingers, and the appendix was found by following the longitudinal fibres of the cæcum. The appendix was bound to the cæcum throughout its entire length. Its coats were thickened, and near the junction of the appendix and cæcum its cavity was obliterated and its walls gangrenous. A silk ligature was passed around the stump of the appendix and tied. Owing to the inflammatory process which had occurred, the peritoneal coat of the appendix could not be united over the remaining stump; neither could a fold of the adjacent peritoneum covering the cæcum be employed to cover the stump of the appendix, as the coating of lymph so thickened the peritoneum that it was not readily pliable. The abdominal wound was closed with thirteen silkworm-gut sutures, and an aseptic dressing applied. A drachm of hot water was given every fifteen minutes during the next twenty-four hours.

October 18th. Pain relieved by sulphate of morphia (gr. $\frac{1}{8}$), hypodermatically given. No nausea. One drachm of peptonized milk every half-hour. Patient feeling well.

October 24th. Bowels moved by enema. Temperature normal. Sleeps well. Takes plenty of milk.

October 27th. Seven of the sutures removed.

October 30th. Six other sutures removed. Highest temperature since operation 99.5°, which was on the third day. Wound has healed by primary union.

December 15th. Patient in good health.

None of the cases reported have had recurrence of the disease. Two cases developed small hernia at the seat of the cicatrix. My observations lead me to say that while some of the cases require a very simple operation, others call into action all the skill and ingenuity of an expert. I am convinced that the aspirator may be very harmful, and should never be used in cases of appendicitis. Early operation, that is, within the first forty-eight hours, by a skilful surgeon, will save the greatest number of lives.

Aluminum for Surgical Instruments.—A physician who got rid of some of his steel instruments and bought others made of aluminum, says that he is sorry that he changed. The aluminum probes, sounds, tongue-depressors, and that sort of thing do not oxidize, to be sure, but he finds that they are deficient in elasticity and stay bent after pressure. He declares, moreover, that he likes to feel that he has a hold on something when he uses an instrument, and aluminum is so light that he can put no trust in it.

PATHOLOGY OF DIABETES MELLITUS.*

BY ELLIOTT P. JOSLIN A.B., PH.B.

Diabetes mellitus is now considered by many authors to be a disease of more than one type and in this paper the classification of Lancereaux [1] will be adopted. He divides the disease into three forms, (1) constitutional, (2) nervous and (3) pancreatic. The symptomatology, pathology and experimental work which has been lately done on these varieties of diabetes will be here discussed, and an account of Chauveau's recent work given.

(1) The constitutional or fatty diabetes is the common form of this disease, and is well known to you all. It is most apt to occur in middle life, and frequently comes on in successive generations of a family, and cases are on record where it has been traced through four generations. Schmidtz [2] has traced heredity in 248 out of 600 cases of diabetes, and probably they were mostly of this variety. Obesity and gout are often precursors; and headache, epistaxis, hæmorrhoids and neuralgia are frequently prodromal symptoms. The disease begins insidiously, slowly advances, and often is accidentally discovered or brought to light by some of its characteristic complications. When discovered it rapidly yields to dietetic treatment, and after a residence at some resort like Carlsbad, the sugar may wholly disappear from the urine. It will return, however, in time, and the treatment must constantly be kept up. In these persons, the urine seldom rises above three or four litres per day, and the amount of sugar varies between 90 g. and 300 g. for the greater part of the time. This form of diabetes may have a long duration, and not greatly interfere with a man's business. Cases have lasted thirty and forty years.[1] Death comes either from an intercurrent disease or from the complications.

Unfortunately the pathology of this disease is not understood, and later investigations may destroy this classification.

Experimental work has added little to our knowledge of this type of diabetes. Considerable work, however, has been done on the so-called alimentary, toxic and phloridzine glycosurias, which will now be described.

Normal urine contains a small quantity of dextrose.[7] Experiments have been made on men and dogs to whom large amounts of sugar have been given. When 250 g. of cane-sugar were given to a man [8] who had been previously kept on a nitrogenous diet, 0.7 per cent. of the amount appeared in the urine. In dogs [4] the ingestion of such an enormous quantity as 500 g. caused 3 per cent. of the amount to appear. Eleven individuals [5] underwent a rather agreeable experiment in which they partook of a supper of sweets, ices and champagne. Two to four hours later the urine of five of the party contained from 0.1 per cent. to 0.25 per cent. of sugar. Two hours later the sugar had disappeared. Another writer [6] has found that animals which had been starved for a few days, when given small amounts of sugar experienced a transitory glycosuria. A similar lack of assimilation of sugar may explain light forms of diabetes. This is known as alimentary glycosuria.

Toxic glycosuria is due to the ingestion of various poisons, notably curare. A host of investigators have

---

[*] Read before the Boylston Medical Society of the Harvard Medical School, November 17, 1893.

found sugar in the urine after injections of curare; but an equally large number have affirmed that glycosuria was absent, providing artificial respiration was maintained. Halliburton[7] says that the glycosuria is not present in these cases, but that the sugar reaction is due to glycuronic acid. He furthermore adds that this explains the supposed glycosuria which sometimes follows the use of morphia and chloroform. Strychnia, nitrate of uranium and many other drugs are claimed to have the power of bringing about a temporary glycosuria.

Phloridzine glycosuria has excited much interest. When phloridzine is given to an animal in the food, or subcutaneously, a glycosuria is produced. It commences about three hours after the ingestion of the glucoside, attains a maximum in twenty hours, and ceases within a day and a half. The glycosuria varies with the amount of food ingested. Various explanations of this phenomenon have been offered, but a recent series of experiments by Minkowski and von Mering throw much light on the subject. In birds glycosuria does not follow extirpation of the pancreas, but von Mering[8] found on giving phloridzine that sugar appeared in their urine. Dogs, rendered diabetic, passed an additional amount of sugar when they were given the drug. This led Minkowski to make the following experiment.[8] He removed the kidneys, both from a healthy dog and from a dog suffering with diabetes produced by pancreatic extirpation. To the healthy dog he gave phloridzine. After a time the blood of both animals was examined. The diabetic animal's blood contained 0.3 per cent. to 0.5 per cent. of sugar, which is from two to three times the normal quantity, while the phloridzine animal showed an abnormally small amount of sugar in the blood. He argues that if sugar is being formed in the organism, removal of the kidneys, thus preventing its excretion, will cause a storing up of it in the blood. The experiment shows that in the diabetic animal this was done, while in the phloridzine animal the sugar, far from being increased, was diminished. He, therefore, concludes that the glycosuria produced by phloridzine is due to its direct action on the kidneys.

In considering this constitutional type of diabetes, with regard to which we know so little, it is well to remember that an excessive amount of carbohydrates and some poisons may cause a temporary glycosuria, and that the kidneys under certain circumstances may allow the passage of sugar.

(2) The nervous or traumatic[1] variety of diabetes is the mildest of the three forms. It comes on after shock to the nervous system caused either by trauma or some severe mental strain, for example, worry, anxiety and the like, and runs a variable course. Polyphagia is absent, and the patient is seldom troubled with polydipsia. The urine is perhaps twice the normal amount, and though sugar is present, it is not in large quantities. There is little loss of weight. Subjected to treatment, hygienic and dietetic, the individual rapidly recovers, and the transitory glycosuria is over. Complications are rare. There is a sure tendency to recovery, and death almost never occurs unless there are extensive lesions of the central nervous system.

Pathology. — The pathology of the nervous form of diabetes has been earnestly studied and with good reason, for clinically mental disturbance appears to play a great rôle in its etiology. Packard[9] says many railroad engineers are victims to this disease. Paige[10] lays great stress on mental emotions. Madigan[11] has observed glycosuria alternating with insanity in a patient. Savage[12] has found diabetes and insanity alternating in families. Nagel[13] has observed two cases of persistent glycosuria following an apoplectic attack. Dr. R. H. Fitz[14] referred to the presence of glycosuria in epilepsy. Windle[15] has tabulated the records of 184 brain examinations in the post-mortems of diabetic persons. In 91 instances, the brain was normal; and of the remaining 93, 23 were connected with the fourth ventricle. These lesions were of the most varying type; cerebral hæmorrhage, meningitis, tumors and congestion of the blood-vessels were all noted.

The whole subject was looked into by a committee of the London[16] Pathological Society in 1882, who reported that they failed to find in the brain "any change which could be regarded as exclusively or constantly associated with diabetes."

In 58 cases of diabetes in which an examination of the spinal cord was made, 37 were found normal; and in the remainder there was no characteristic lesion.[16]

Experimental Work. — The experimental work of Claude Bernard, on the production of glycosuria by the puncture of the fourth ventricle, was one of his most brilliant achievements. This has been repeated many times with success. If the medulla be punctured in the region of the vaso-motor centre of a well-fed animal, sugar will appear in the urine in considerable quantity. After a few hours the sugar will have reached a maximum, and in a day or two, or even less, the sugar will be absent from the urine. If the animal has been starved previous to the experiment, little or no sugar appears. It would thus seem likely that the lesion to the fourth ventricle in some way acted on the liver so that the change of glycogen into sugar was accelerated, and the blood thus loaded with sugar emptied its excess into the urine.

The pneumogastric nerves[17] run to the liver, via the solar and hepatic plexuses. Section of these nerves does not give rise to glycosuria, nor does stimulation of the peripheral end of the section. This shows that the impulse from the diabetic centre in the medulla does not travel along these nerves. On the other hand, electrical stimulation of the central end of the section produced a glycosuria analogous to that brought about by puncture of the medulla. Furthermore, it is claimed that in some cases an irritation of the branches of the tenth pair of cranial nerves in the abdomen, liver, lungs, heart, stomach and intestines may in some cases bring about a temporary appearance of sugar in the urine. This would imply that the pneumogastric exercises an inhibitory influence upon the diabetic centre of the medulla.

The liver receives another nerve-supply through the splanchnics. When these nerves are cut, no sugar appears in the urine; and if then the diabetic puncture is made, it fails. Evidently, the action of the diabetic centre on the liver is by means of the splanchnic nerves. These have been traced to the spinal cord, with more or less probability, through the gangliated cord of the sympathetic, the first dorsal ganglion, the annulus of Vieussens and the lower cervical ganglion. Probably they do not leave the cord always at the same level.

Lustig obtained a transitory glycosuria by making lesions of the solar plexus, and Lepine has produced diabetes by electrization of the nerves of the pancreas.

"Section and subsequent stimulation of the central end of the sciatic nerve causes diabetes."[18]

With regard to these experiments on the nervous system, I should like to call your attention to the following considerations: (1) the glycosuria has been transitory in every case; (2) the experiments are severe, and might of themselves produce such a constitutional derangement that glycosuria would result, even if there was no injury to the nerves; (3) as for an injury of the solar plexus producing glycosuria, Minkowski has shown this view to be erroneous. The work of Chauveau on nerve lesions is so recent that it will be deferred to the end of the paper.

(3) The pancreatic or thin type of diabetes is the most severe form of diabetes mellitus. In one class of cases, an individual who has been in perfect health is plunged into the midst of a severe diabetes. In other cases the symptoms come on gradually; and belching of wind, nausea, a sense of fulness and weight in the epigastrium are often the first indications of trouble. Diarrhœa is often present. In still other cases, what is supposed to be a fatty diabetes develops into the thin variety.[19] When the disease is established the polyphagia, polydipsia and polyuria are extreme. The skin is harsh, dry and leathery to the touch. Emaciation quickly comes on, and there is great fatigue on exertion. The knee-reflex is usually abolished. Often the hair is lost, and the patient's teeth decay or fall out. The mental character is changed, and the unhappy individual is often in a state of mental depression. Hectic fever has been observed. The evolution of the case is characterized by its rapidity, and in the course of a period from a few months to three or four years, the patient usually succumbs to phthisis or diabetic coma. The urinary symptoms are much more severe than in either the fatty or the nervous forms. The quantity ranges between three and ten litres, and is generally between five and seven. The urea is decidedly increased and the sugar excreted per day is from 300 g. to 500 g.

Pathology. — Thomas Cowley,[20] in 1788, was the first to record a lesion of the pancreas in connection with diabetes mellitus. He observed an atrophy of the gland, with the presence of calculi, and suggested that it might be the cause of the disease. During intervals of forty years, more or less, Chopart[20] and Recklinghausen[20] made similar observations. But it was not until 1877 and the few following years, that the matter received much attention. Lancereaux[1] then published his two cases. In one of these the pancreas was atrophied, and much of the glandular structure was lost; in the other it was only with difficulty that the gland was found at all; but when found, calculi were discovered in the canal. Lancereaux's memoir led pathologists to study the pancreas more carefully; and, as a result, in quite a number of instances of diabetes, pancreatic lesions have been found. There would undoubtedly to-day be more recorded cases of changes in the pancreas in diabetes, were it not for the fact that the gland may look perfectly normal to the naked eye and yet on microscopical examination show marked alterations.[20] [81] Until this becomes more generally known, a diseased pancreas will be often overlooked.

What is the character of these changes? They are most varied, but the predominating characteristic is an increase in the amount of interstitial tissue. Williamson[19] has collected 100 cases from the literature upon the subject; 47 showed an atrophy more or less marked, and of this number the gland was almost absent in three; in two others it was not recognized by the naked eye, and in two there was a cystic dilatation of the duct. Seventeen out of 100 were in a condition of marked fatty degeneration; and in some instances an increase of the connective-tissue, the presence of calculi or atrophy were coexistent with the main lesion. In another group of 13, the gland was transformed into a firm mass of fibrous tissue; in three of this number the lesion is stated as a marked cirrhosis. Of the remaining cases eight were cancer, six were cysts and three abscesses. There were two cases of "pancreatitis and pancreatitis hæmorrhagica," and one each of calcified, cirrhotic and cystic pancreas, while in the remaining case the occurrence of calculi was alone stated. Rokitansky[19] found the pancreas affected in 13 out of 30 cases. Saundby[21] gives seven cases in which the pancreas was atrophied and four where it was abnormally firm and fibroid. Windle[15] collected post-mortem records on the pancreas in 139 cases. In 65 of the number, the gland was normal. Lest some of his cases and those of Williamson may be identical, I will pass them by, simply stating that atrophy and fatty degeneration were the most common affections.

Are these changes in the pancreas which are found in diabetes accidental? Are they the result of the disease? Do they furnish the cause of one form of this malady?

The first question can be answered in the negative with a good deal of assurance. Pancreatic changes have been found too often in connection with diabetes to be accidental. It does not seem likely either, that they are the result of the disease. They are too diversified to have a common origin. That they are concerned intimately with the production of diabetes, their frequency and the experimental work done on the pancreas makes highly probable.

(*To be continued.*)

REFERENCES.

1. Lancereaux: Bull. Acad. de Méd., Paris, 1877, 2d série, vi, 1215–1240; Bull. Acad. de Méd., 1888, No. 19, p. 588.
2. Schmidtz: Lancet, i, 1883, quoted, Roberts's Urinary and Renal Diseases, p. 245.
3. Worm-Müeller: Pflüger's Archiv., tome xxxiv, quoted in Archiv. de Med., Exper. No. 1, January, 1892, by Lepine in an article entitled Revue Analytique et Critique des Travaux Récents Relatif à la Pathogénie de la Glycosurie et du Diabète.
4. Seegan: Pflüger's Archiv., tome xxxvi, quoted in Lepine's article.
5. Moritz: Munch. Med. Woch., 1891, p. 5, quoted in Lepine's article.
6. Hofmeister: Quoted in Lepine's article.
7. Halliburton: Chemical Physiology and Pathology, p. 789.
8. Minkowski: Diabetes Mellitus nach Exstirpation des Pankreas, 1893.
9. Packard: in Hare, vol. i, pp. 1009–1036.
10. Paige: New York Polyclinic, vol. i, pp. 40–44.
11. Madigan: Medical Standard, 1893, vol. xiii, p. 33.
12. Savage: Medical Standard, 1893, vol. xiii, p. 33, quoted.
13. Nagel: See Lepine's article under note 3.
14. Fitz: Lecture xi, 1893.
15. Windle: Dublin Journal of Medical Sciences, 1883, vol. lxxvi, p. 112.
16. Quoted by Purdy: London Pathological Society, Diabetes, 1890.
17. Lauder-Brunton: British Medical Journal, 1874, pp. 1, 39, 221.
18. Landois and Sterling: Human Physiology, p. 310.
19. Vaughn-Harley: British Medical Journal, January 2, 1892, p. 9.
Rendu: Semaine Méd., 1891, xi, 109.
Also see the following on Pancreatic Diabetes.
Williamson: Medical Chronicle, March, 1892; Rokitansky is also quoted.

Depierre: Medical News, xxxix, p. 334; Original Article in Jour. de Méd. et de Chir. Pratiques, December, 1880.
Vaughn-Harley: British Medical Journal, viii, 27, 1893.
Nichols: New York Medical Journal, 1888.
Boutard: Thèse de Paris, 1890.
20. Lemoine and Lannois: Archiv. de Méd., Exper., January, 1891.
21. Saundby: Quoted in Osler, under Diabetes Mellitus.
31. Lepine: Lyon Méd. Jour., January 25, 1891; Semaine Méd., 1891, pp. 24, 111, 179, 388, 467, 509; Also see note 3.

◆

Clinical Department.

THROMBOSIS OF THE CENTRAL ARTERY OF THE RETINA, WITH UNUSUAL FEATURES.[1]

BY EDWIN E. JACK, M.D.,

Ophthalmic Surgeon to Out-Patients, Boston City Hospital; Assistant Ophthalmic Surgeon, Massachusetts Charitable Eye and Ear Infirmary.

The patient was a small and rather thin woman, forty-three years of age, who had always had fair health, and had never had any previous trouble with the eyes. On July 25, 1893, she was seized with sudden and severe pain through the left eye. The pain was confined to the eye, and was sharp and cutting in character. On the night of the 28th, the pain, still of the same kind and situation, became excessively severe, and the sight of the eye was suddenly lost. Coincident with this the conjunctiva became injected and the eye "looked swollen" — this increasing in the next few days. For about six weeks previous to this time the patient had had attacks of sudden blindness in the left eye, possibly three a week, coming on at irregular intervals and lasting from ten minutes to two hours.

I first saw her July 30th, and at that time she was much exhausted by the terrible pain and the entire loss of sleep for three nights. The condition of the eye was as follows. Conjunctiva injected and quite œdematous, raised in a mound partly around the cornea. V=0. Media clear. Whole fundus, except at periphery, an almost milky white, more intense around the macula. Macular region, for a space about one-third the size of disc, a pale red approaching a slaty color and sharply defined. Nerve head white except at porus, where it was pinkish; outlines obliterated. On lower temporal side a fair-sized hæmorrhage, near this other very small hæmorrhages. All vessels small. Some began at porus without blood-contents, but as they approached the periphery were partially filled with a granular-looking blood-column, giving the vessel an uneven appearance of local contractions and dilatations. Other vessels began at the porus with blood-contents of the same granular appearance, and as they approached the periphery lost their contents and appeared as white cords. These cords, however, were interrupted in places with small cylinders of blood — this happening mostly at the junction of branches. At every heart-beat there was a to-and-fro movement of the broken blood-column in both arteries and veins — toward the periphery in the arteries and toward the disc in the veins; but no progress was made, the blood returning to its original position. Some of the vessels with blood-contents had white borders; and two small vessels branching from the disc toward the macula were visible only as white, thread-like lines.

The appearance of the fundus August 2d was about the same, except that the macular region was a slaty-brown color and no movement of the blood-column was visible. There was less injection and œdema of the conjunctiva. On August 4th there had been but little pain since the last visit. The region around the eye, especially the brow and nose, was tender. No œdema of the conjunctiva and very little injection. Fundus-nerve very pale, but outlines very little obscured. Some œdema of retina remaining, but general color of eye-ground pink. Macular region, for a space rather larger than the disc, mottled much as in chorioretinitis.

The last observation was on January 25th of this year, just six months after the attack. Externally nothing abnormal. Fundus in general of normal color. Disc atrophic. Vessels about the same as previously described, but with more signs of perivasculitis. Macular region mottled, and around it spots, mostly small, of a pale-yellow color. Toward the periphery, especially between the vessel branches, there were appearances very like those seen in retinitis proliferans, but with no elevation, these patches merging into others having the characteristic appearance of disturbed retinal pigment. The eye was still absolutely blind.

Fourteen months ago the patient gave birth to a child after an easy labor. Seventeen years before this her only other child was born. About ten days after her last confinement she complained of a prickling and sleepy sensation in the right arm, which under bathing and massage disappeared. Three months later she began to have trouble in using the arm and hand, and soon they were practically useless. At present she can raise the elbow but little; the arm is fixed in a partially flexed position; the fingers also are partially flexed and have but little movement.

The present health of the woman is good. Within a year she has felt hardly as well as usual, but there have been no definite symptoms except dyspepsia. There have never been any signs pointing to cardiac or renal disturbance, and she has never had rheumatism. There is no history, and there are no signs of syphilis or of vascular degeneration. An examination of the urine at her last visit showed — color pale, specific gravity 1,012, no albumen, no sugar. The heart has been examined recently by her physician, Dr. E. S. Jack of Melrose, and is wholly normal.

There are in this case, it seems to me, several unusual and interesting features. The excessive pain and the conjunctival œdema are certainly unique and hard to explain. As far as the attacks of blindness and the fundus appearances are concerned there are several possibilities. These are embolism and thrombosis of the central artery and thrombosis of the central vein.

The case certainly has the typical appearance of embolism, with more than usual œdema. This supposition, however, does not well explain the many attacks of transitory blindness. The aura which occasionally precedes embolism, taking place in about one-fourth of the recorded cases, is, I think, rarely so frequent or complete. Schnabel and Sachs have explained these attacks by the theory that partial emboli shift their position at times, eventually becoming permanently fixed and entirely blocking the blood-current. Another explanation is that a partial embolus may cause a spasm of the vessels, thus shutting off the blood-current, this passing off and allowing the blood to circulate again.

Thrombosis of the central vein was first noted by

---

[1] Read before the New England Ophthalmological Society, February 6, 1894.

Loring, and corroborated later, anatomically, by Angelucci. Its distinguishing feature in all grades is a great distention of the veins, and there is usually no diminution in the size of the arteries. In the severe cases there is a strong resemblance to hæmorrhagic retinitis, with large and tortuous veins. In our present case there were a few small hæmorrhages, but they certainly occur to a limited extent in embolism. There was no venous distention — an important negative point. With this exception the case resembles one of Loring's examples of venous thrombosis, especially as regards the extensive œdema of the retina. In his patient, who had aortic obstruction, he considered that the attacks of transient blindness which had come on at intervals for many years, were the effect of temporarily weakened heart-action on an eye with abnormal vessels. The absence of physical or other signs of heart trouble in the present instance does not eliminate the possibility of an embolus starting from that source; but it does, it seems to me, destroy the application of such a theory in accounting for the repeated attacks.

Finally, there is arterial thrombosis, a condition which, according to Loring, Priestly Smith and others, is probably more frequent than supposed. Indeed, they consider that many of the specimens called emboli are really thrombi. The fundus changes are the same as in embolus. Previous attacks of transient blindness in the affected eye and even in the fellow eye, from probable spasm of the vessels, are given as a distinguishing feature of this condition. This corresponds more easily to the facts in the present instance than either of the other alternatives. The presence of the moving blood-columns, showing in all probability an incomplete shutting off of the current, does not aid in establishing this diagnosis, as the same phenomenon undoubtedly occurs in embolism. Unfortunately, too, the existence of perivasculitis of the retinal vessels so early cannot be taken as a sign of any analogous process further back, for the same thing can come on in the very earliest stages of embolism, where there is not any question of vascular trouble in the central artery.

It is interesting to look at the matter from another point of view — the possible connection in etiology between the monoplegia and the process in the eye. The monoplegia, judging from the nature of the paralysis, was cerebral, and it would seem most probable that it was of thrombotic origin. The existence of signs of vessel degeneration would throw much light on the question of a common pathology; their absence leaves room for doubt. Whether the blood state soon after the confinement may have had any influence in causing the monoplegia and in creating a condition of the heart or large vessels from which later an embolus could have come, is a question of importance. I will go no further than to say that, if we admit any connection at all, such a sequence seems probable.

From this standpoint, then, we come to no conclusion more definite than before. Clinically the case resembles one of thrombosis of the artery more than anything else. This diagnosis, too, explains best a pathological connection between the menoplegia and the blindness. For these reasons, and because there seems to be a growing opinion that thrombosis rather than embolism is the more usual process, I have retained that title. The conjunctival œdema may have come from an involvement of other vessels. I know of no explanation for the pain.

Medical Progress.

RECENT PROGRESS IN LEGAL MEDICINE.

BY F. W. DRAPER, M.D.

MEDICAL EXPERT TESTIMONY.

Medical expert testimony has inexhaustible interest as a reform topic. The uses and abuses of this kind of proof continue to engage the earnest attention of medico-legal writers. As in the case of some of those chronic ailments of the human race so familiar to medical practitioners as clinical opprobria, the number of remedies suggested attests the difficulty of the treatment; so in the present instance, every year calls out a new panacea for a disorder about the diagnosis of which there is substantial unanimity among physicians. One of the latest suggestions relative to the employment of experts comes from Dr. L. C. Gray, of New York, and evidently had its source in a very extensive personal experience in court proceedings.[1] Dr. Gray's remedy takes a double form: (1) the selection of medical men by the presiding judge to sit on the bench with him in an advisory capacity in trials which do not need juries; and (2) a conference of all the medical men in cases tried by a jury. The former plan has its analogy in the use of assessors in the English admiralty courts. The latter method, in the author's opinion, would bring about substantial agreement among the medical witnesses with reference to facts and objective conditions, although conclusions therefrom, diagnostic and prognostic, might differ. To the objection that the system of medical assessors and medical conferences here urged is opposed to the principles of our law, Dr. Gray courageously answers that if that be so, "the principles of our law are radically faulty"; and again, "a law that ceases to be the embodiment of common-sense has outlived its usefulness and ought to be superseded."

WOUNDS WITHOUT INJURY TO OVERLYING CLOTHING.

Examples of the improbable serve to check the medico-legal sin of dogmatism. The following are illustrations of what must be considered an unusual combination of conditions.

Dr. Spokes, of London,[2] reports the case of a man who, while leading a horse, stumbled and fell; the animal trod on him in such a way as to make a wound of the scrotum out of which the right testicle was extruded so that it lay outside its normal covering. The man's explanation of the wound was that the horse's hoof forced against the scrotum the metal edge of a purse which was carried in the pocket in such a position that it lay close to the genitals. The clothing, including the fabric of the pocket, was entirely intact. The edges of the wound were clean-cut.

Dr. Wagner, of St. Louis,[3] found in the foregoing a reminder of an experience of his own having similar features. While on a hunting trip through thick woods, Dr. Wagner carried a small hatchet in his belt for the purpose of cutting away a passage through the underbrush. In following game down a rather steep hill, he tripped and fell quite heavily, driving the blade of the hatchet against his thigh. He felt some pain, but as his clothing showed no external sign of a cut or tear, he attributed his sensation to a simple bruise, until he felt the blood within his underclothing and on undressing found a cut three-quarters of an inch long in the front of his thigh. The cut was somewhat irregular and left a scar as broad as it was long. The clothing showed no sign of injury whatever.

---

[1] New York Medical Journal, May 20, 1893.

[2] Lancet, February 6, 1893.

[3] New York Medical Journal, March 11, 1893.

THE DIAPHANOUS TEST AS A PROOF OF DEATH.

The term "diaphanous test" has been applied to an observation which consists in raising the hand of a supposed dead person, placing it before a strong artificial light, with the fingers extended and just touching each other and looking through the narrow spaces between the apposed fingers to see if a scarlet line or edge persists; the theory being that the presence of such a tint indicates that circulation of the blood continues and that there is evidence of life. This test received the approval of the French Academy of Medicine.

Edwin Haward presents a case which shows that the test should not be relied on alone as a conclusive one; the case also demonstrates the difficulty occasionally encountered in distinguishing real from apparent death, and the need, in such cases, of applying all the reliable methods for the prevention of deplorable haste, awaiting if need be the advent of decomposition if other appearances and conditions are in the least equivocal.[4] A woman of seventy-three, a subject of chronic bronchitis, was found early one morning in bed, insensible and apparently dead; but she looked so like-life, although not breathing, that her family had great doubt if death had actually occurred and Dr. Haward was summoned to solve the doubt. He found on his arrival, half an hour later, entire absence of respiration, of pulse and of heart-beat; the hands, slightly flexed, were rather rigid. These signs afforded a strong presumption that the woman was dead; but her countenance looked like that of a living person. This fact and the fact that once previously she had passed into a death-like state, with similar symptoms, even to the rigidity of the arms and hands, from which state she had recovered, caused the medical attendant to apply all known reliable tests and to call in expert help for the purpose. Sir Benjamin Ward Richardson was the consultant and his observations on the body of the woman were made with unusual care. Ten tests were applied, of which eight gave affirmative results in conformity with death; but there were two which were equivocal. Blood drawn from a vein in the arm was very dark, but flowed out in a fluid state and did not coagulate when exposed to the air. But the diaphanous test was the more striking; when the hand, with the fingers brought near together, was held before a strong light, there was a distinct red line of coloration between the fingers, as is seen in the healthy living hand. The body was allowed to remain in a warm room until the final proof, that of decomposition, removed every possible doubt. Dr. Richardson observes[5] that the lesson to be learned from this case is that the diaphanous test is of itself "positively worthless." He has seen an ordinary case of simple syncope in which there was entire absence of the rosy tint between the fingers, although the patient quickly recovered consciousness.

MEDICO-LEGAL RELATIONS OF CRANIAL INJURIES.

The head is, of all regions of the body, a part whose lesions present the greatest gravity, and are the most often fatal; it is particularly exposed to contusion injuries which represent weapons of the most primitive kind, and which offer the most frequent examples of homicidal violence. Maissiat,[6] of Lyons, has made a comprehensive study of these injuries of the skull. He calls attention first to the difficulties met in determining the kind of weapon with which a given scalp-wound has been made; a blow with a blunt instrument may make a wound upon the head resembling an incised or punctured wound. In these cases the use of a lens is a valuable aid; it discovers irregularities of the edges and deeper parts not apparent otherwise. Scalp-wounds tend to take on a rectilinear appearance in consequence of the retraction of both the pericranium and the outer tissues of the scalp where the parts are divided; this tendency is more marked in the scalp than in any other part. Another important medico-legal point is brought out by the author: there may be fracture of the skull without any lesion of the external soft parts or any external suggestion of traumatism.

For medico-legal purposes, cranial fractures are studied by Maissiat according to the method of their production: (1) by puncture; (2) by a cutting weapon; (3) by contusion; (4) by a fall from a height. In fractures of the first group, the lesions are limited to the point struck; if the weapon is of medium size, there are no radiating fissures in the bone, and even if the weapon is of considerable size, the stellate radiations are not extensive. Fractures by a cutting weapon (sabre, hatchet) show most often a clean section of the bone, with fissures extended in the axis of the principal lesion, with few fragments, and with only an exceptional extension of the break into the base of the cranium. Blows with a club cause a more or less comminuted fracture, with radiations extending from the chief lesion, and offering no uniform rule of extension; if the weapon used has a broad striking surface, the bony lesion which results is more apt to penetrate to the base of the skull, thus resembling the effects of a fall. In these latter cases, unless the fall is very considerable, the comminution is not extensive; in any case, it is very common to find the fissure or fissures projected from the vertex to the base, especially into the anterior fossæ. Experiments by Perrin have shown that these indirect lesions of the base of the skull are rarely the result of any injury other than a fall; that they do not readily follow a blow with a club, however heavy the blow may be.

PHENOMENA AFTER DECAPITATION.

Laborde has reported some instructive observations upon the head and body of a man executed by decapitation.[7] In two-and-a-half minutes after the axe of the guillotine fell the oculo-palpebral reflex failed to respond. The patellar reflex continued to the end of the third minute. The persistence of the reflexes through even this short interval proves, at least, that decapitation does not cause immediate and absolute inhibition. The cardiac impulse continued eleven and a half minutes. The cadaver presented the penis in a state of erection, without a discharge of any kind. The right frontal lobe of the brain was uncovered by trephining, the operation being begun twelve minutes after the decapitation; after exposing the motor convolutions, an electric current was passed for stimulation of the gray matter. Very clearly defined movements of the right facial muscles resulted. Laborde's explanation of the appearance of the muscular contractions on the right side, rather than on the left, is that the electric current was diffused.

---

[4] Lancet, June 10, 1893.

[5] Asclepiad, vol. x, No. 38.

[6] Marseille-médical, July, 1893.

[7] Le Bulletin Méd., June 21, 1893.

DEATH BY HANGING.

In the course of some investigations into the pathology of subserous hæmorrhages in asphyxia, Corin instituted a series of experiments on the blood-pressure and the nervous phenomena in death by hanging.[8] Repeating with some modifications the observations of Fredericq, Konow and Steenbech, he established the important part which compression of the carotids and pneumogastric nerves has in the course of death by hanging, and demonstrated the secondary or negative importance of occlusion of the jugular veins. With regard to the pneumogastrics, Corin found that pressure on those nerves, whether they were isolated or not, resulted in a slowing of the respiration and a coincident quickening of the heart-beats. There is no questioning of the truth of Coutagne's theory that compression of the vagi abridges the duration of the asphyxia in hanging.

With regard to compression of the carotids, experiments by injection prove the complete occlusion of those arteries when the body is suspended by the neck, and such being the case, there must necessarily be a marked degree of cerebral anæmia to aid in the fatal issue, for the vertebrals are too small and tortuous to maintain the supply of arterial blood.

DEATH BY STRANGULATION.

Strangulation as a method of suicide is so rare that the following instance is of interest.[9] This case was the subject of an inquest at Hastings, England, the deceased being a middle-aged female servant. Her dead body was found in a room whose windows and doors were locked on the inside; it was lying on the floor, face down, with the hands beneath the chest. There was no appearance of struggling. Blood oozed from the mouth, and the tip of the tongue protruded. Around the neck were two yards of list, and, over this, three yards of tape; neither of the ligatures was knotted, but was simply wound about the throat, below the cricoid, evenly, layer on layer. The only clothing was a night-dress, and alongside the body, on the floor, was a blanket. A little blood was found on the pillow of the bed in the woman's bedroom, and the surgeon who made the autopsy testified that, in his belief, the strangling was begun in this room, and was completed in the room where the body was found. The woman was a strong, muscular person; her motive for self-murder was not determined, although there was some evidence that she had been a subject of religious mania. The post-mortem appearances were those of asphyxia.

The Downing Professor of Medicine. — The Downing Professorship of Medicine in the University of Cambridge, England, which was left vacant by the retirement of Dr. Latham after a service of twenty years, has been filled by the election of Dr. J. Buckley Bradbury of Cambridge.

Reports of Societies.

OBSTETRICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

G. H. WASHBURN, M.D., SECRETARY.

Meeting of November 24, 1893.

Dr. E. W. Cushing read a paper on

THE OPERATIVE TREATMENT OF UTERINE FIBROIDS.[1]

Dr. John Homans: I am glad to hear this full and honest report from Dr. Cushing, giving the results in all his cases, whether good or bad. This is the only way we can arrive at any conclusions as to the advisability of operations or methods of operating.

In these cases of fibroid tumors wisdom is shown in choosing the cases that ought to be operated on, and in letting alone those that will do well unmeddled with. I have seen about 600 cases, and have operated upon about eighty. I presume that some of the 520 I ought to have operated on, and that in some of them my diagnosis was wrong; but I have tried to choose wisely. I always ask women on whom I do not operate to come and see me again in six months, or sooner, so that I may keep track of the tumor. I have watched a number of women, and have seen tumors diminish and disappear, and others increase in size; and I have operated on a tumor whose growth I had watched for thirteen years. I must say that I operate more frequently now than I did five years ago. I have operated nineteen times during these past ten months. Sometimes the shock of the operation in removing a large tumor full of blood is severe. I have had one lately where the tumor was not simply red in color, it was scarlet; and the removal of the tumor with other hæmorrhage caused a fatal result from shock twelve hours after operation. Very much blood was taken away with the tumor.

Fibroid uteri occasionally become cancerous. I have seen this happen in an old calcified fibroid which I saw at an ovariotomy in a woman of seventy. She died of cancer of the uterus four years after ovariotomy. This would be an argument in favor of operating on fibroids. Sometimes the blood-supply of fibroids will be cut off without apparent cause, and they will slough. I removed one about a month ago which filled the uterine wall symmetrically and was about nine inches by six inches in size. It was brown, and would have caused the patient's death in a few weeks or months. I did not suspect the condition before operating. Although the pedicle was treated intra-peritoneally, the patient left the hospital at the end of three weeks, having had no rise of temperature.

Fibroids may become filled with dilated lymph-spaces, and these spaces may become the seats of hæmorrhages of quite an extensive character. Both of these last two conditions would warrant removal. Adhesions in fibroids are very rare, but sometimes one meets with quite serious posterior ones, causing much hæmorrhage if they are attached to the mesentery, as I have once seen them. Some tumors grow very large slowly, and some diminish in size without apparent cause. If you only see these cases once you cannot tell which will grow and which will remain stationary or retrograde; but if you can watch them, you may be able to decide wisely.

I have had to operate once during pregnancy. I had advised against marriage on account of the fibroid; but my advice was not heeded, and pregnancy followed. A practitioner who was called thought the case was one of ovarian tumor; and as there seemed some doubt about the character of the tumor, I got Dr. Mixter to draw out a little disk of the growth. This little operation caused intense pain, so that at least a grain of morphia was injected in the course of about an hour, I think. The next day the patient was insane, and became more and more violent; the temperature rose; and I operated to save her life. I was able to remove the tumor without opening the uterine cavity, or removing the ovaries. The stump was treated extra-peritoneally. About ten days afterwards abortion took place, and sanity gradually returned. A little blood comes out of the scar at the menstrual periods.

---

[8] Bulletin de l'Acad. royale de Méd. de Belgique, March 25, 1893.

[9] British Medical Journal, July 15, 1893.

[1] See page 301 of the Journal.

I have removed some very large tumors and some very small ones. The largest was fifty-two pounds in weight, and the smallest a few ounces. Electricity *à la* Apostoli is useful in relieving pain and in checking hæmorrhage; but it does not diminish the size of the tumor, as a rule, unless the menopause occurs during or soon after the treatment.

In regard to the treatment by removing the ovaries, I operated by this method several years ago. One tumor as large as a large orange disappeared in four weeks, and none has ever grown since, during a period of ten years. In another case the uterine hæmorrhage continued; and two years after removal of the ovaries, I removed a large pediculated fibroid through the vagina, so that the loss of the ovaries was unnecessary. Two other cases were unaffected when I last heard from them.

The method of operating that I most affect at present is the intra-peritoneal one. I tie off the ovaries and broad ligament, and then amputate the uterus, as I would the thigh in a circular amputation, tying the uterine arteries just before I sever the neck of the uterus and burning out the uterine cavity thoroughly with the cautery. I do not think there has been much difference in the mortality following the two methods in my experience.

Dr. M. H. Richardson: The mortality in hysterectomies for fibroids is still so large that the question of interference should not be hastily decided; nor should the woman be advised to run so great a risk unless the indications are clear. In uncomplicated cases, in which the patient's strength is good, the mortality is small. Yet, in spite of all precautions, deaths do occur from causes beyond human control as well as from accident that may be avoided. Among the former are thromboses and embolisms; the latter include chiefly errors in technique and accidental contamination of the peritoneum from the uterine canal. The danger from avoidable errors is steadily diminishing, and we can predict with some confidence the result in a given case. Yet the risk is still considerable.

There are two indications for this procedure which may be pressing: the one a debilitating hæmorrhage, and the other an exhausting pain. Both indications not infrequently exist in the same patient. A third indication common to all large abdominal tumors is the existence of pressure symptoms. This last may be more important than all others. Among the less serious complications should be included the malignant degeneration that occasionally develops in the tumor. This, however, in my experience, is extremely rare — so rare that it may be practically disregarded as an influencing factor in prognosis.

The most important indication for interference, perhaps, is great rapidity of growth. This symptom combined with hæmorrhage, or with discomfort, or with both, renders an operation imperative. Hæmorrhage itself, if it is causing serious debility and does not yield to palliative treatment, demands surgical interference. Long-continued pain or a discomfort that makes life unbearable, while not demanding operation, justifies it. Whatever the symptoms may be, we are not warranted in letting them continue until the strength is so reduced that the dangers from operation are materially increased.

The method of operation to be chosen depends upon the case, the length of the pedicle, the accessibility of the tumor, the necessity for speed. If the patient's strength justifies the more prolonged method of total extirpation, this is much to be preferred to the extra-peritoneal treatment of the stump. If the patient is so reduced that there is danger in prolonged manipulations we cannot use the intra-peritoneal method.

The Trendelenberg posture has made abdominal hysterectomy one of the most beautiful operations of modern surgery. In this position the dissection of the cervix can be carried out with perfect accuracy; the ureters can be isolated and protected, the blood-vessels seen and tied. In closing the wound the pelvic floor can be covered in with peritoneum, perfectly adjusted and sutured. General peritoneal infection can be avoided in this operation by means of sterile gauze barriers. In case of suspected infection vaginal drainage can be used successfully through the posterior cul-de-sac, either by means of rubber tubing, gauze wick, or by both. By this method even the more septic diseases of the uterus, like cancer, can be removed with small mortality. In one case I removed successfully the whole uterus containing a sloughing fibroid of the foulest description. There was no infection of the peritoneum whatever.

In the extra-peritoneal method the disasters that have occurred in my experience have been caused by an infection from the uterine canal. The danger from this source is also present in the total intra-peritoneal extirpation, but it may be materially lessened by preliminary irrigation and packing. In the extra-peritoneal treatment the infection is apt to take place at the time of amputating the tumor.

On the whole, hysterectomy is one of the most gratifying in the list of abdominal operations. The signs of the times point towards earlier and more frequent interference, with a corresponding increase in favorable results.

Dr. A. T. Cabot said that he regarded the extra-peritoneal method as safest when a stump could be obtained and easily brought to the surface. He said that he had had a considerable number of operations for uterine fibromata, and perhaps he could show the dangers that he had met with best by reporting briefly the cases of death that he had had.

The first one was in a patient with a very large tumor, so large that many years before she had been advised never to have it operated upon, and had only been driven to this course by the excessive discomfort and almost helplessness that its size had entailed. The tumor grew down so into the vagina, that it could not be wholly lifted up and the pedicle had to be made through a portion about four inches in diameter before compression, and certainly as much as three inches after it had been compressed by the wire. The tension was so great upon this pedicle, that there was some sloughing both of the bladder and of the rectal wall. The fistulæ, discharging fæces and urine, healed up after a time, and everything seemed to be going well; until she suddenly, about four months after the operation, developed uræmic symptoms, which were evidently due to the compression of the ureters, owing to a contraction of the scar tissue in the pelvis. Of this she died.

The second case was one in which a woman with a sloughing fibroid on the top of the uterus became pregnant. Dr. Cabot saw her at the hospital, after the fibroid had set up considerable peritonitis. She was quite sick when she first entered, but became somewhat better, and it was deemed wise to remove the tumor. The fibroid was found adherent over a considerably inflamed area of the peritoneum. It was easily separated and the uterus was removed with the fibroid. She lived only about forty-eight hours; and at the autopsy it was found that the peritonitis had started from that portion of the peritoneum that had been in contact with the sloughing tumor.

The only other case of death after the removal of the uterus that he had had, was in a healthy woman with a fibroid of considerable size. The stump was treated intra-peritoneally.

The amputation was made through the cervix, and the stump, which was cut in a cup-shaped manner, was carefully drawn together by interrupted sutures. The closure seemed perfect. This patient did exceptionally well for two days. Then, without any special abdominal pain, she began to vomit, and died of a mild, septic peritonitis, starting about the stump of the uterus.

In addition to these cases of complete removal of the uterus for fibroid, Dr. Cabot said he had a number of times shelled out small fibroids by simply splitting the peritoneal covering and turning them out of their capsule. These cases have all done well and in some of them very great relief of symptoms has followed. A small fibroid, wedged down in the pelvis, close to the neck of the uterus, may cause more pain and discomfort than a much larger one which rises into the abdominal cavity.

On one or two occasions, when the removal of the fibroid uterus appeared to present more than usual difficulty on account of the depth within the pelvis at which the uterus lay, he said he had contented himself with removing the ovaries. This was done, both with the object of checking the growth of the tumor, and also of checking the hæmorrhage, which in one case, at least, was a very troublesome symptom.

Hitherto these cases have done well; and although the want of success reported by other operators would lead him to think that he had been fortunate in not having after trouble, yet he was still inclined to resort to oöphorectomy in difficult cases, where the risks of the removal of the uterus appeared greater than the difficulties which the patient suffered from, would warrant.

Dr. E. W. Cushing, in closing the discussion, described the method by which in all cases the stump could be diminished by enucleating any masses of fibroid tissue which have grown near the cervix, so that finally nothing is left but the uterine tissue proper. In this way the stump should never be thicker than the size of two thumbs. In thus enucleating and forming the stump, it is of the greatest advantage to use a rubber constrictor, for by its elasticity it allows nodules of fibro-tissue to be extracted from under it. After the stump is formed, a wire constrictor can be used if the operator prefer, although it is hard to see what advantage this offers over the rubber tubing.

In regard to selecting cases for operation, Dr. Cushing repeated that he would only operate where there was hæmorrhage, rapid growth or considerable pain, or where the tumor acted injuriously by compressing the rectum or ureter.

◆

THE NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, held at the New York Academy of Medicine, Tuesday evening, February 6, 1894, **Dr. M. Allen Starr**, President, in the chair.

ELECTRICAL REACTIONS AND THEIR VALUE IN DIAGNOSIS AND PROGNOSIS.

The **President** said that he has seen statements from various sources, some very dogmatic and others sceptical, in regard to the value of electrical tests as an aid to diagnosis and prognosis in various forms of nervous diseases. A careful review of the literature of nervous diseases will reveal to any one that most men who have written books on this subject have gone right back to the original article of Erb, published in 1872, in the first edition of Ziemssen's Cyclopedia, and have recopied Erb's diagrams and statements. Individuals who have had many opportunities of making electrical tests have noticed from time to time that their results did not correspond with the statements laid down by Erb. Their results, however, were not made public, or else they tried to explain them away, as if there was something wrong with them. A discussion on this subject, therefore, is very timely.

Dr. C. L. Dana opened the discussion, and spoke of the value of electrical reactions in spinal lesions. In connection with this subject he has lately studied a certain number of cases in which he was able to test the reactions many times in the course of the disease. The tests were made in cases of anterior polio-myelitis, progressive muscular atrophy and bulbar palsy; also in one or two cases of facial palsy and locomotor ataxia.

It was absolutely necessary, Dr. Dana said, in making any comparative statements about our results, that we should understand how the reactions were taken by each observer, and what he means by reaction of degeneration. The reactions were subject to such variability, and it was so easy to deceive one's self, that the operation required an extremely judicial state of mind and great care. In the tests made by himself he employed an indifferent electrode, about the size described by Erb; this was to be tied down, not held by the hand, so that there were no variations in the amount of pressure. For the active electrode he employed a small, pointed electrode, the surface of which measures one square centimetre each way. By means of this you can get the muscular irritability at different parts of the muscle, you can see whether the contractions are sluggish or otherwise, and you also learn the diffusibility of the contraction, which is a form of reaction which has not been sufficiently noted. If an electrode with a large surface is employed, the diffusible reaction is not brought out with any certainty. The small, pointed electrode can also be shifted to the motor point of the nerve, and thus the nerve reaction be obtained. In some cases the strength of the current required is so great that the point electrode gives rise to too much pain; in such a case he employs the ordinary-sized electrode. The electrode is first placed on the body of the muscle, and reaction obtained with a gradually increasing current; and then the same reaction with a gradually decreasing current. These reactions are compared with those on the opposite side and the operation repeated two or three times with a proper interval between, in order to allow the muscle to rest.

The three points that he has particularly investigated in connection with spinal lesions are: First, the relative irritability of the two poles; second, the character of the reactions, that is, whether they are sharp or sluggish, or sluggish and diffuse; and third, the course of the variations of the reactions in the different stages of the disease.

With regard to the relative irritability of the positive and negative poles, many of the recorded cases merely showed that the cathode exceeded the anode in irritability, without giving the exact number of milliampères required to produce contractions. Dr. Dana said he considered this an inaccurate method of making the measurements. In all reports it should be carefully put down how many milliampères are necessary to produce a positive pole contraction, and then a negative pole contraction, or *vice versa*. In this way, by following the course of the disease, we should find that each pole had a definite course of increased and decreased irritability, in accordance with the progress of the disease. The speaker exhibited a number of diagrams which he had prepared, showing the course of the polar irritability in several cases of progressive muscular atrophy, in two cases of anterior polio-myelitis and in one case of double facial palsy; in the latter case he was able to make daily examinations of both sides of the face for a number of weeks. His observations go to show that there is a difference between the course of the polar irritability in neuritis and that in progressive muscular atrophy and polio-myelitis. In neuritis there is a pronounced steady rise in the polar irritability, while in the spinal lesions it is very slight or absent. So far as his observations go, there is a true degenerative reaction in progressive muscular atrophy, as there is in polio-myelitis, but we only get it in certain stages of the disease. In all the descriptions of electrical degenerative reactions, the fact is spoken of that in normal muscles and in partly degenerated muscles the reactions are sharp and quick, but that when the muscles become degenerated the reactions are sluggish or vermicular. Further than this, with the point electrode there is a diffuse contraction of the muscle; that is, the whole belly of the muscle and even the adjacent muscles will contract. This diffusibility of the contraction, Dr. Dana said, he considered equally important with the sluggishness, although it does not always take place. It was better seen with the anodal contraction.

In conclusion, Dr. Dana thought we ought to revise many of our views of the reaction of degeneration; but it was too soon to formulate new views.

Dr. W. M. Leszynsky continued the discussion, confining his remarks more particularly to the value of electrical reactions in cases of traumatic neuritis. His method of making the examination, he stated, was very similar to that outlined by Dr. Dana. The conclusions drawn by him were as follows:

(1) That the value of electricity as an accessory method in diagnosis and prognosis of disease of the peripheral nerves is not as universally recognized as its importance demands.

(2) That the result of this procedure often furnishes corroborative and conclusive evidence, where only a provisional diagnosis has been made.

(3) That the necessary technical skill in successfully pursuing such investigations and correctly interpreting the result can only be acquired through special study and practice.

(4) That the use of the faradic current alone is quite sufficient for diagnostic purposes.

(5) That, as a rule, the galvanic current is supplemental to the faradic, and in the absence of faradic irritability in nerve and muscle it is of the greatest service in prognosis.

(6) That the discovery of the reaction of degeneration is not an essential feature in the differential diagnosis as to the location of the lesion.

(7) That the peripheral nerve fibres possess an inherent power of regeneration which seems almost unlimited, the length of time required for the completion of the regenerative process varying from a few weeks to seven years or more. Therefore, in severe forms of injury, the cause, degree and character of damage to the nerves are often of greater importance in prognosis than the demonstration of the reaction of degeneration.

(8) That the presence of reaction degeneration, or partial reaction degeneration, is not incompatible with the preservation of motility in the same area. This paradoxical condition has been found in cases of lead-poisoning and a few others; but thus far the cause has been inexplicable.

(9) That strong currents are only rarely necessary. The weakest current that will produce a distinctly perceptible reaction is all that is requisite.

(10) That a decrease or disappearance of faradic irritability in nerve and muscle simply denotes an interference with the nutrition in the course of the motor tract between the multipolar cells in the anterior horn and the peripheral nerve distribution. It does not enable us to judge of the nature of the pathological process.

(11) That the character of the reactions does not differ, whether the lesion be situated in the cells of the anterior horn, the anterior nerve roots, the nerve trunks, or in their ultimate distribution. The same rule holds good in reference to the various cranial motor nerves and their nuclei, such as the facial, hypoglossal and spinal accessory nerves.

(12) When the farado-muscular irritability is lost, no reaction can be obtained by a rapidly interrupted galvanic current.

(13) The secondary current from an induction coil is the one generally used in testing faradic irritability. Owing to its high electro-motive force, the resistance encountered in the moistened skin may be disregarded.

(14) The difference in the poles of the faradic current is only a relative one, and cannot be determined by the usual tests as applied to the galvanic current. The electro-motive force in the secondary coil is greater at the "break" than at the "make." The electrode that is felt to be the stronger in its action is usually considered as the negative or so-called "faradic cathode."

(15) In some apparently healthy individuals the musculo-spiral nerve fails to react to strong currents applied with the "faradic anode," while a comparatively weak current from the "faradic cathode" calls forth a quick response.

(16) In a case of undoubted peripheral paralysis the faradic irritability may be preserved, but it almost invariably requires a stronger current to produce muscular contractions than upon the healthy side (quantitative decrease); Dr. Leszynsky said he has never seen a case where this could not be demonstrated within a few days after the onset of the paralysis.

(17) The character of the muscular reaction demands attention. A slow and labored contraction associated with decrease in faradic irritability denotes degenerative changes.

(18) The faradic irritability may return in persistent cases of peripheral paralysis without any perceptible improvement in motility.

(19) Electro-diagnosis is inapplicable in paralysis of ocular muscles.

(20) When the farado-muscular irritability is lost upon skin excitation, its presence may be demonstrated in the muscle for a longer time by means of acupuncture.

(21) If electricity is to be of any service to us in ascertaining whether the nerve trunk has been divided or not, as a result of traumatism, the examination must be made as soon after the injury as possible. We can then determine at once if special surgical interference is necessary. Should two or three weeks elapse before such examination, it will be impossible to state whether the absence of reaction is due to traumatic neuritis or to complete division of the nerve. Exploratory incision would then be called for.

(22) The tests with the galvanic current require adequate apparatus and a working knowledge of the relationship between electro-motive force, resistance and current strength. It also requires much time, patience and perseverance; hence its unpopularity.

DR. M. A. STARR spoke of the value of electrical reactions in cases of multiple neuritis. He reviewed the conclusions of Nothnagel, Pal, Gowers and others on this subject, and gave the histories of a number of cases of multiple neuritis coming under his observation. The first case reported was one of general alcoholic multiple neuritis, with total paralysis in both arms and both legs. In this case, within two months after the onset, when the paralysis was extreme and when no voluntary movement was possible in the muscles of the arm, forearm or hand, the electrical reactions differed completely in these localities; in the arm there was a diminution of response to both currents without polar changes; in the forearm there was a loss of faradic response and diminution of galvanic response without polar changes; in the hand there was loss of faradic response, diminution of galvanic response with polar changes.

In two other cases of alcoholic multiple neuritis, very great variations were present in muscles which were equally paralyzed. In a case of diphtheritic paralysis there was a total loss of contractility to faradism, but no polar changes to the galvanic current. In another case of diphtheritic multiple neuritis, in which ataxia rather than paralysis was a marked symptom, an interesting fact was noted. There appeared to be a slight weakness in the right supinator longus muscle. The electrical reactions of this muscle, however, were found to be normal, the reaction to faradism being prompt, and the cathode closure contraction being greater than the anode closure contraction. For purposes of comparison the left supinator longus was simultaneously tested, there being no voluntary paralysis of this muscle whatever. It was found that the reaction to galvanism in this muscle showed polar changes, the anode closure contraction being greater than the cathode closure contraction, although there was no reduction in the faradic response. Here, then, was an observation which confirms the statement of Pal that electrical changes are sometimes present in muscles which are not paralyzed.

In closing his remarks, Dr. Starr said that every possible change to electrical reactions may be present in muscles affected in the course of multiple neuritis. The conclusion is inevitable, therefore, that to the electrical changes no very great diagnostic significance can be assigned. In the cases cited, there was no parallelism between voluntary power and electrical condition. Voluntary power in all the cases seemed to return before the electrical reactions became normal. Therefore we cannot project a reaction line upon a chart into the future and say that at a certain date, when the electrical reactions become normal, the voluntary power must necessarily return. Electrical reactions, while of some interest, are not to be taken as of great importance in the diagnosis of multiple neuritis.

DR. B. SACHS discussed the value of electrical reactions in dystrophies. In regard to the general subject of reaction degeneration, the speaker said he has been forced to the conclusion that there are only two points of value. The first and most significant feature of reaction degeneration was the loss of faradic response. The second was the sluggishness of the contraction. The variability between the anodal and cathodal contraction was extremely great, and he had long since abandoned the idea that the relationship between the two can be utilized in all cases either for the purpose of diagnosis or prognosis. Physiologists have demonstrated with considerable plausibility that the electrical excitation of nerves and muscles largely depends upon the rapidity and succession of single shocks. In muscles in which the faradic contractility seems to be absent, if you diminish the interruptions, you will often get a contraction, whereas you will not get it with the ordinary faradic machines we use. Dr. Sachs said he believed we could state that reaction degeneration was present in any given case if the faradic response was absent. He agreed with Dr. Dana's remarks regarding the variations in polar irritability in different stages of anterior polio-myelitis and other diseases. In Erb's diagrams, which have been so extensively copied, he does not differentiate between anodal and cathodal response. He does not make any distinction between the two poles. Dr. Sachs said he had found the greatest possible variability in the action of the two poles. In many cases, particularly in peripheral nerve palsies, he had found that the cathodal excitability was increased as long as the disease lasted. After full power had returned, the faradic excitability might still be diminished, or last for a period of time varying between several weeks and a year. In exceptional cases the faradic response remained normal from beginning to end, but the galvanic changes were pronounced.

The speaker said it was well to divide muscular dystrophies into two classes, namely, primary muscular dystrophies and the so-called spinal amyotrophies. In the pure dystrophies we rarely got a definite reaction degeneration; that is, there was rarely entire absence of faradic response and marked sluggish reaction, excepting in the very last stages of the disease, when so little muscular fibre was left that we could not expect to get either faradic or galvanic response. In primary muscular dystrophy, therefore, there was no typical reaction of degeneration. In other than primary muscular dystrophies, we got a very strong resemblance to the typical reaction degeneration. In progressive muscular atrophy of spinal origin reaction of degeneration might be present in its entirety; but we often found partial reaction of degeneration and other irregular types of electrical reaction.

As regards the value of electrical reactions in diagnosis and prognosis, Dr. Sachs said he was fully in accord with the statements made by the previous speakers. He still believed that Erb's observations were extremely well founded and held good in the majority of cases. It was certainly true that if the faradic response — in a case of facial paralysis, for instance — was never lost, in nine cases out of ten recovery will be more prompt than where it was lost. That the faradic irritability returns in some cases before the power, as claimed by Dr. Leszynsky, he thought exceptional, to say the least. It was much more certain that the power returned long before the faradic response did, in the vast majority of such cases.

As regards the value of electricity as a means of prognosis in cases of muscular dystrophy, the speaker thought it was very slight. The senses of sight and touch will teach us much more than the electrical examination in such cases. By the degree of response to the faradic and galvanic currents we can get some idea as to the condition of each individual muscle, but no definite conclusions can be drawn. In some cases of typical muscular dystrophy, certain muscles unquestionably do recover; others do not. In the cases which recover, the electrical reactions do not undergo any decided changes.

Dr. A. D. Rockwell said he agreed with Dr. Sachs that the main importance of electricity as an aid to diagnosis was in connection with the absence or presence of the faradic reaction. The importance of this subject to the general practitioner was impressed on his mind by a case that recently came under his observation. The case was one of facial paralysis, and the patient for seven weeks had been under the care of a general practitioner, who treated him with the faradic current without any benefit. Under the use of galvanism the patient at once began to improve. The following case indicates very positively the value of electricity as a diagnostic agent. The case was one of typical facial palsy on the right side from peripheral causes. During the course of the patient's recovery from this, a paralysis occurred on the left side of the face; this started as a peripheral paralysis, but on testing the muscles with faradism, it was found that they responded with perfect facility. Therefore, it was evident that the paralysis on this side was central. Shortly afterwards the patient had a second attack involving the right side of the face, again peripheral. Dr. Rockwell said that in ovarian or uterine diseases of an inflammatory character, the faradic current produces no improvement, but rather aggravates the pain; while in non-inflammatory conditions the faradic current will relieve the pain.

Dr. George W. Jacoby said that the statements made in the text-books on this subject are too dogmatic. The diagnostic value of electricity is limited to certain peripheral affections, and even there it is not as great as originally claimed. In prognosis, also, we must limit its value. In a number of cases of facial paralysis of long standing, he has found it impossible to obtain any reaction of degeneration. In a couple of other cases in which the paralysis had entirely disappeared with the exception of a slight obliteration of the labio-nasal fold, there was marked reaction of degeneration. These are exceptional cases, and he could give no explanation of them. Cases have been published in which there was a reaction of degeneration found in cerebral palsies; also in cases of primary dystrophy.

Dr. C. A. Herter referred to the electrical reactions in some cases of cerebral palsies. In one case under his observation, a woman aged seventy years, the patient had a series of slight apoplectic attacks, succeeded in time by complete paralysis of the right side of the body (face, arm and leg) and complete motor aphasia; at the end of one week distinct atrophy of the muscles of the forearm was noticeable, and at the end of one month it was very pronounced. The faradic irritability of certain muscles of the forearm was very much reduced. The contractions were exceedingly sluggish, and the reaction of degeneration was undoubtedly present. The galvanic irritability of these muscles was somewhat diminished. Dr. Herter also referred to the rapidity with which the reaction degeneration makes its appearance in some cases of injury to the spinal cord. In two instances coming under his observation it was pronounced at the end of four days.

Dr. L. Stieglitz agreed with Dr. Sachs that the most important feature of the reaction of degeneration is the sluggishness of the contraction. It must be borne in mind that muscles of coarse fibre react much more sluggishly than those made up of fine fibres.

Dr. G. M. Hammond said he agreed in the main with the statements made by the previous speakers. Like Dr. Sachs, he had noticed that muscles which do not respond to a rapidly interrupted faradic current will respond to a slowly interrupted one. The reverse is true with the galvanic current. With a battery that he employs he can get about 170,000 interruptions per minute, and he has found that the greater the number of interruptions, the stronger the current required. This rule applies in both healthy and diseased conditions.

Dr. Starr narrated the history of a case of facial paralysis that came under his care. An examination showed increased contractility to galvanism in the muscles, and perfect preservation to faradism, the cathode being greater than the anode. On the strength of this he gave a favorable prognosis. After six weeks' careful treatment the reactions remained about the same, but the paralysis was no better. The patient then went to another neurologist who made a similarly favorable prognosis, and applied electricity with equally unfavorable results. That is now a year and one-half ago; the reactions are still normal, but the face remains just as much paralyzed as it ever was.

Dr. Dana exhibited a Portable Perimeter which he has devised. It is made by Meyrowitz & Co., of New York.

Recent Literature.

A Treatise on Diseases of the Rectum, Anus and Sigmoid Flexure. By Joseph M. Mathews, M.D., Professor of Surgery, and Clinical Lecturer on Diseases of the Rectum, at the Kentucky School of Medicine, etc. Six chromo-lithographs and numerous illustrations; 537 pages. New York: D. Appleton & Co.

This book has been written to record individual experience acquired during fifteen years' practice as a rectal specialist. The intention has been to state only what is substantiated by fact. When this differs from statements of other authorities, both conclusions are given and the reader is left to decide between them.

Besides discussing the subjects usually treated in works of this class, namely, hemorrhoids, fistulæ, rectal ulcers, fissure stricture, cancer, tumors and malformations, the writer has introduced chapters describing disease of the sigmoid flexure, rectal neuralgia, hysteria, rectal reflexes, rectal antisepsis, and a new operation for fistulæ.

The book is an attractive volume, clearly printed and well indexed. The style is concise, and the author's statements direct. His ideas are practical, and are interestingly presented. Dr. Mathews states definitely what he thinks and what his experience has taught him. He makes no effort to harmonize it with oft-quoted ideas or theories if it does not so correspond. If a method of treatment is efficient, he so describes it. If in his practice he has found the reverse true, he condemns it in no doubtful terms. Such a book is easy to read and understand. It is one which contains information of value, both to the specialist and general practitioner. It is well illustrated.

Lectures on Mental Diseases. By Henry Putnam Stearns, A.M., M.D. Pp. 627. Philadelphia: P. Blakiston, Son & Co. 1893.

These twenty-nine lectures form, as a whole, a useful text-book. Although no new light is thrown on the subject, the established facts relating to the different features of insanity are graphically stated, and the numerous illustrative cases will appeal strongly to the interest of "the student and practitioner, for whom the volume is especially designed."

The classification offered is a very satisfactory one for its purpose. It is of a mixed ætiological and symptomatological variety. The term "paranoia," which has become so general in its application, the author looks upon as a palpable misnomer, on the ground that it is a Greek name for insanity in general applied to a special form, and one, moreover, which has no relations with any basis of nomenclature. He accordingly uses the more accurate and familiar term "primary delusional insanity."

In the chapter on "Insanity of the Puerperal Period" — one of the best in the book — we find the suggestive statement, based on the statistics of thirty-nine recoveries, that age was a factor of no importance in promoting the prognosis or duration of the disease, and that the recoveries were not particularly hastened by early admissions.

We regret that so high an authority has not thought it necessary to give us his views on the relations between ordinary insanity and syphilis, or to accord more than a brief allusion to the recognized influence of that important agent in general paresis. The diagnosis of the latter disorder is inadequately considered also, not only as regards cerebral syphilis, but also ordinary diffuse and focal lesions of the brain. Some suggestions as to the method of examining the insane for certification, would surely have been welcome to the general physician; and we are left in the dark as to many of the borderland states between mental health and disease, as well as the simulation of insanity.

These omissions, however, do not seriously detract from the value of the book, which is sure to find favor with those for whom it is designed, by reason of its thoroughly practical tone. Extracts from the laws of the different States and Territories of the United States, which relate to the general care of the insane, are appended.

Rest and Pain. A Course of Lectures on the Influence of Mechanical and Physiological Rest in the Treatment of Accidents and Surgical Diseases, and the Diagnostic Value of Pain. By the late John Hilton, F.R.S., F.R.C.S., Surgeon Extraordinary to Her Majesty the Queen, Consulting Surgeon to Guy's Hospital, Member of the College Council, President of the Royal College of Surgeons of England, Member of the Court of Examiners, and Professor of Anatomy and Surgery, etc. Edited by W. H. A. Jacobson, M.A., M.B., M.Ch.Oxon., F.R.C.S., Assistant Surgeon to Guy's Hospital, Surgeon to the Royal Hospital for Children and Women. Fifth edition. London and New York: George Bell & Sons. 1892.

There can be no doubt of the value of this book. It is more than a monograph, and can be safely placed in the catalogue of surgical classics. The present edition is satisfactorily edited. The printing and the plates are passable. The book is in the form of eighteen lectures, and no one who is interested in surgery should neglect reading the work. There are few books in the English language which can give the reader more food for thought than Hilton's Lectures on Rest and Pain.

The Use of Antiseptics in Midwifery: Their Value and Practical Application. By Robert Boxall, M.D. (Cantab.), M.R.C.P. (Lond.), Assistant Obstetric Physician to, and Lecturer on Practical Midwifery at, the Middlesex Hospital; formerly Physician to the General Lying-in and Samaritan Free Hospitals, etc. London: H. K. Lewis. 1894.

This little pamphlet is of considerable interest and value. The statistics given for the General Lying-in Hospital certainly show most admirable results. The entire absence of deaths from sepsis in the wards of so large a hospital for four years is an admirable record, and the confinement of more than a thousand consecutive out-patient cases without a single death is a result that can be rivalled by few institutions. The conclusion which the author draws from the Registrar General's Reports, as to the standard of asepsis among the general profession in England, are indeed sad, and are, we believe, even worse than that which undoubtedly exists among the less carefully trained portion of the profession in this country. A death roll of 2,356 unnecessary deaths in England, in a single year, is certainly sufficient justification for the publication of this work. The language of the pamphlet is clear, concise, and striking; the precautions recommended are excellent, and leave nothing to be desired, except the use of the nail-brush and nail-cleaner, which, strangely enough, are never mentioned.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, MARCH 29, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 WASHINGTON STREET, BOSTON, MASS.

THE REGISTRATION OF AND PREVENTIVE MEASURES AGAINST TUBERCULOSIS.

THE question of the wisdom of the registration of tuberculosis and the adoption of other preventive measures against this disease — by the dissemination of circulars, the affixing of placards upon houses occupied by the tuberculous, and the disinfection of rooms and apartments where there has been a death from tuberculosis — has occupied the attention of some local boards of health, notably in New York and Philadelphia, and been pretty thoroughly discussed by some of our medical societies this winter. The difficulty and delicacy of the problems involved are unfortunately in direct ratio to the importance of the question.

The American Public Health Association, at its last meeting, and the Pan-American Medical Congress adopted resolutions in favor of registration. In England, also, some of the local boards of health have petitioned the Local Government Board for sanction to include pulmonary tuberculosis as a disease notifiable under the provisions of the Infectious Diseases Act. The whole question of tuberculosis is now under the investigation in England of a Royal Commission.

The College of Physicians of Philadelphia held a special meeting in January to consider the proposed action of the board of that city in reference to the registration of tuberculosis. The following amended form of a resolution, offered by Dr. L. F. Flick, was under discussion.

> *Whereas,* Tuberculosis is now known to be a contagious disease; and
>
> *Whereas,* The methods by which the disease is conveyed from the sick to the well are now clearly understood; and
>
> *Whereas,* It has been shown that the room which is occupied by a consumptive during the infectious period of the disease, and the furniture and the bed-clothing which have been used by him, become infected, and are liable to convey the disease to others who may occupy or use them subsequently; and
>
> *Whereas,* Tuberculosis, owing to its long duration, cripples the bread-earning capacity of the family, when it occurs among the poor, to such an extent that the want and hardships which follow in its wake prepare the healthy members of the family for the disease; therefore be it
>
> *Resolved,* That we recommend to the Board of Health of the City of Philadelphia the registration and disinfection of houses which have been infected by tuberculosis;
>
> *Resolved,* That we recommend to the City Councils of the City of Philadelphia the establishment of a municipal hospital for the treatment of persons suffering from tuberculosis.

We regretted not having space at the time for the publication of the full discussion, which was participated in by a number of the prominent members of the College of Physicians, and dealt with the various sides of the questions at issue in a broad and enlightened spirit. At the end of the discussion, the college rejected the amended resolution offered by Dr. Flick, and voted the following resolutions offered by the Council of the College:

> *Resolved,* That the College of Physicians believes that the attempt to register consumptives and to treat them as the subjects of contagious disease would be adding hardship to the lives of these unfortunates, stamping them as the outcasts of society. In view of the chronic character of the malady, it could not lead to any measures of real value not otherwise attainable.
>
> That strict attention on the part of physicians in charge of the individual cases insisting on the disinfection of the sputum and of the rooms, on adequate ventilation, and on the separation of the sick from the well as far as possible, will meet the requirements of the situation so far as they practically can be met, and better than any rules that, for diseases so chronic, can be carried out by a board of health.
>
> That the College of Physicians respectfully requests that no official action be taken in the matter by the Board of Health, except the insisting on the disinfection of rooms in which consumptives have lived and died in instances in which such procedure is not likely to have been adopted under the direction of the attending physician.

On the other hand, our readers will remember that in November last Dr. H. M. Biggs, of the Bureau of Bacteriology and Disinfection, in an elaborate report to the Board of Health of the City of New York, made a number of recommendations having in view the more efficient limitation and prevention of pulmonary tuberculosis. The Board, acting on the advice of the Sanitary Committee, has since adopted a series of measures designed to carry these recommendations into practical effect.

In the first place, it is proposed to place a placard upon the door of every apartment that has been occupied by a consumptive patient, stating this fact and that it has thus become infected. The remainder of the inscription reads as follows:

> It must not be occupied by other persons than those now residing here until an order of the Board of Health directing that it be cleansed and renovated has been complied with.
>
> Name of occupant ——. Floor ——. Street No. ——.
>
> This notice must not be removed until the order of the Board of Health has been complied with.

Secondly, a circular has been prepared, which was to be issued to all physicians practising in the city, stating that the Board has resolved to adopt the following preliminary precautions:

(1) The Department will hereafter register the name, address, sex and age of every person suffering from tuberculosis, so far as such information can be obtained, and requests that hereafter all physicians forward such information on the postal cards ordinarily employed for reporting cases of contagious diseases. This information will be solely for the use of the Department, and in no case will visits be made to such persons by the inspectors of the Department, nor will the Department assume any sanitary surveillance of such patients unless the person resides in a tenement-house, boarding-house, or hotel, or unless the attending physician requests that an inspection of the premises be made. In no case where the person resides in a tenement-house, boarding-house, or hotel, will any action be taken if the physician requests that no visits be made by inspectors and he is willing himself to deliver circulars of information or furnish such equivalent information as is required to prevent the extension of the disease to others.

(2) When the Department obtains knowledge of the existence of cases of pulmonary consumption in tenement-houses, boarding-houses, or hotels, (unless the case has been reported and the attending physician requests that no visits be made,) inspectors will visit the premises, will leave circulars of information, and will instruct the person suffering from consumption and the family as to the measures which should be taken to guard against the spread of the disease. If it is considered necessary, the inspector will make such recommendations for the cleaning or renovation of the apartment as may be required to render it free from infectious matter.

(3) In all cases where it comes to the knowledge of the Department that premises which have been occupied by a consumptive have been vacated by death or removal, an inspector will visit the premises and direct the removal of infected articles, such as carpets, rugs, bedding, etc., for disinfection, and will make such written recommendations to the Board as to the cleaning and renovation of the apartment as may be required. An order embodying these recommendations will then be issued to the owner of the premises, and compliance with this order will be enforced. No other persons than those residing there at the time will be allowed to occupy such apartments until the order of the Board has been complied with. Infected articles will be removed by the Department, disinfected, and returned without charge to the owner.

(4) In the prevention and treatment of pulmonary tuberculosis it is of vital importance that a positive diagnosis should be made at the earliest possible moment, and that the value of bacterial examinations of the sputa for this purpose may be at the service of physicians in all cases not under treatment in hospitals, the Department is prepared to make such bacteriological examinations for diagnosis, if samples of the sputa, freshly discharged, are furnished in clean, wide-necked, stoppered bottles, accompanied by the name, age, sex and address of the patient, duration of the disease, and the name and address of the attending physician. Bottles for collecting such sputa, with blank forms to be filled in, can be obtained at any of the drug stores now used as stations for the distribution and collection of serum tubes for diphtheria cultures. After the sputum has been obtained, if the bottle with the accompanying slip filled out is left at any one of these stations, it will be collected by the Department, examined microscopically, and a report of the examination forwarded to the attending physician, free of charge.

(5) The authorities of all public institutions will be required to furnish to the Department the name and last address of any consumptive coming under observation within seven days of such time.

This circular concludes in the following words: "It is the earnest wish of the Board of Health that all practising physicians in this city co-operate with the Board in an earnest and determined effort to restrict the ravages of the most prevalent and formidable disease with which we have to deal."

In the third place, a circular has been prepared for general distribution, especially among consumptives and their families, which treats of the nature of the disease, the special danger of infection from the sputa, and the measures necessary for protection, and includes a number of general sanitary directions. While endeavoring to impress upon the public the contagiousness and perils of the disease, it is hopeful in tone and encourages those affected with it and all coming in contact with them, to unite in an active crusade against it. "Consumption," it states, "can often be cured if its nature is recognized early, and proper means are taken for its treatment. In a majority of cases it is not a fatal disease. . . . A person suffering from consumption may often not only do his usual work without giving the disease to others, but may also get well, if the sputum is properly destroyed." The circular also urges that whenever a person without medical attendance, is thought to be suffering from consumption, the name and address should be sent at once to the Health Department in order that an investigation of the case may be made.

A law may be good in the abstract, but it is practical only in so far as it secures the co-operation of the community which it affects to such an extent as to permit its enforcement without excessive annoyance and expense; moreover, no law is good which causes more harm to society than it cures. The same may be said of the registration or notification of such a disease as tuberculosis, and of the adoption of general preventive measures against it. Nobody would advocate dealing with tuberculosis as with leprosy. Its chronicity is sometimes very great, and we all have before us numerous examples of those constantly and intimately exposed to its infectious principles with impunity. At what stage shall a suspected case of tuberculosis be reported?

We are disposed to sympathize, in a measure, with the position taken by Dr. Da Costa, and with Dr. J. S. Billings's statement in a letter read at the meeting of the College of Physicians:

> I am doubtful as to what the decision of the College should be on this point. I presume that there are about six thousand people in Philadelphia affected with consumption, and that a considerable proportion of these have contracted the disease in infected houses. If it were possible by a systematic notification for the Board of Health to locate a considerable number of these infected houses, what steps would it take to purify them? How would it deal with those of the poorer classes who are affected with this disease, and with their furniture, bedding and rooms?

Until these questions are answered, I do not find it possible to form a definite opinion as to whether it is worth while to put in force a compulsory system of notification.

◆

THE RÔLE OF ALCOHOL IN THE CAUSATION OF CIRRHOSIS OF THE LIVER.

Cirrhosis, or more properly sclerosis, of the liver, also annular cirrhosis and common atrophic cirrhosis (gin-drinker's liver) has been long regarded as chiefly of alcoholic origin. The earlier writers, as Budd and Frerichs, speak of alcohol as the ordinary exciting cause; Murchison states that he had never seen a case due to any other cause; and Frerichs adds that while there may be other causes, yet we are totally unacquainted with them. This etiological conception, based on clinical observations, has been found to be too exclusive.

Chauffard, in his masterly article on "Diseases of the Liver," in the *Traité de Médecine*, sums up his etiological classification under three heads: (1) toxic, (2) infectious, (3) dystrophic agencies, and assigns to alcohol a chief place among the toxic causes. Even here the causation is more complex than might be supposed, for the alcohol of ordinary consumption is not a constant and always uniform chemical compound, but a product of very variable and often sophisticated composition.

Létienne has taken up the subject in a recent number of *La Médecine Moderne* (February 21, 1894). While recognizing the fact that the influence of alcohol on the liver may determine a hypertrophic form of cirrhosis as well as an atrophic form, he proposes the question: "Is alcohol necessary to the establishment of atrophic cirrhosis? Is it sufficient of itself to engender this disease?"

First of all, comes the evidence from physiological experimentation. The first experiments on alcohol-poisoning were made by Dahlstrom in 1852, and by Duchek in 1853. The subjects were dogs. The autopsy indicated no lesion of the liver. The experiments of Perrin, Lallemand and Duroy, in 1860, showed that in poisoning by alcohol the different viscera retained unequal proportions, and the liver more than any other; they did not, however, indicate any particular anatomical lesions in this organ. Later, Kremiansky (1868) and Magnan (1869) obtained marked hepatic lesions; they noted cellular steatosis (acute fatty degeneration) without traces of sclerosis. The results of Rugé (1870) are the same. Pupier, in 1872, observed fatty accumulation in the livers of fowls poisoned by alcohol. Sabourin, in 1879, poisoned guinea-pigs with alcohol, and obtained "central steatosis of the lobule, with peri-sub-hepatic phlebitis." In 1884, Dujardin-Beaumetz and Audigé made an important series of observations on hogs. The anatomical examinations made by Cornil did not reveal any processes of interstitial hepatitis. Some of these hogs were dosed for a series of years with various kinds of alcohol.

Straus and Blocq in 1887 noted lesions more advanced and well defined. They produced in hares, which they had been able to keep longest under the influence of alcohol, an embryonic infiltration of the portal spaces (third month), which became more pronounced and ended by encircling the lobules about the seventh month, without, however, presenting the aspect of a dense fibrous tissue.

Other experimenters, as Maret, Combemale and Strassmann, noted the state of the liver in animals poisoned by alcohol, and found only fatty degeneration of the parenchyma. Laffitte, in 1892, in his graduating thesis compares the lesions produced as a result of experimental alcohol-poisoning with those of Lænnec's cirrhosis. In the hare, he says, the prolonged ingestion of alcoholic liquids produces lesions which have no relation with common cirrhosis. The hepatic cell is almost always damaged, the connective-tissue is never irritated. *Per contra*, in studying chronic experimental lead-poisoning, he has been able to reproduce an atrophic sclerous hepatitis which has the greatest similarity to Lænnec's cirrhosis.

Some experiments by Richter (1892) differ somewhat from the foregoing, and confirm those of Straus and Blocq. He obtained pathological processes strikingly like those of annular cirrhosis. There are, however, differences in the systematization of the sclerous processes, according to the animal under experimentation. The cirrhosis is peri-portal in the hare, perihepatic in the dog.

The writer in *La Médecine Moderne* thinks it demonstrated as a result of all this experimentation that atrophic cirrhosis is not a simple affection, due solely to the effects of the poison ingested upon the walls of the blood-vessels which this traverses in the hepatic parenchyma. When we make section of a cirrhotic liver, the lesions which we see under the microscope are not simply an expression of the action of alcohol on elements of the tissue: they are the effect of complex causes. The alcohol has a certain part, but infection or toxic-infection also impresses its stamp on the organ. The liver undergoes, from the fact of its slow impregnation with alcohol, a profound depreciation; it tolerates badly even the common infections which assault it. There comes a time when it can no longer react against them, and it suffers degeneration. The nobler tissues as they perish, are replaced by a connective-tissue proliferation.

It has been remarked that the anatomical schemes which serve to classify the cirrhoses have not in nature the rigorous exactitude represented in the didactic treatises. Recent writings (as those of Létienne and Hanot) tend to relegate to a second rank the rôle of the peri-vascular connective-tissue, and to substitute for it that of the hepatic cell. There is no hepatic sclerosis without previous cellular alteration. At the ultimate and most characteristic periods of atrophic cirrhosis, there exists a veritable consumption of the liver. It has lost the faculty of making those efforts of struggle and of regeneration, which are observed in normal conditions. The liver becomes inactive, almost without a physiological rôle, secreting insufficient bile without colored quality, leaving in the blood the principles it should eliminate. The normal deglobulization no longer takes place in its cells. The corpuscular *débris* appears in the urine, in the liquid of ascites; and the blood, which is charged with these waste elements, gives to the tissues a urabilinic, icteroid tint.

These considerations have lately been presented by Hanot in an interesting study on alcoholic cirrhoses. Neither this writer nor the author of the article before referred to deny the sclerogenous power of alcohol; they only point out that this toxic agent is but one factor, and they emphasize the rôle of other toxic agents in the production of the same sclerotic phenomena. There is a cirrhosis caused by lead-poisoning, of a very typical kind, and of which we are beginning to learn much. There is a tuberculous cirrhosis, and there are certain acute infectious cirrhoses, distinct from every form of grave icterus, and which end in the same atrophic degeneration as alcohol. Atrophic cirrhosis of the liver may be the result of divers influences, certain of which are now known. It offers a uniform type of reaction of the hepatic tissue towards very varied irritant causes, and illustrates this principle of general pathology that the tissues have but limited means of reacting against agents of different species and indefinite number.

◆

MEDICAL NOTES.

Reduction in the Army Library Appropriation. — The House Military Committee has again cut down the appropriation for the Army Medical Library from $10,000 to $7,000.

Illness of Sir Francis Laking. — Sir Francis Laking, private physician to the Prince of Wales and surgeon-apothecary to the Queen, is reported to be dangerously ill in London.

The Hamburg Cholera Inspector. — Surgeon Woodward who acted so efficiently as cholera inspector at Hamburg last summer has been ordered to the same port for the coming season.

Cholera in Russia. — On the first of March all the governments of the Russian Empire, with the exception of Volhynia, Kovno, Plock and Tchernigoff, were officially declared free from cholera.

Adjunct Professor of Pædiatrics. — W. T. Northrup, M.D., of New York, has been recently elected Adjunct Professor of the Diseases of Children in the Bellevue Hospital Medical College, as the associate of Dr. J. Lewis Smith who has held the full professorship for over thirty years.

Examinations for the United States Army Medical Corps. — In view of the possibility of the reduction of the Medical Corps from one hundred and twenty-five to ninety assistant surgeons, by action of Congress at its present session, and to save possible loss of time and expense to candidates if such action be taken, the examinations appointed for March and April, 1894, will, by order of the Secretary of War, not be held until further notice. It is probable, that, if the Corps should not be reduced, the Examining Board will be convened in the fall of 1894. Of this, notice as early as possible will be given.

Small-Pox Epidemic in Brooklyn, N. Y. — The Brooklyn Board of Health has declared small-pox to be epidemic in that city. There are at present over one hundred cases under care, ninety-one being in the hospital which can accommodate but one hundred and twenty. A requisition has been made upon the State for tents, three having already been set up in the hospital grounds. An appropriation of $18,000 has been granted from the Emergency fund for special sanitary work, and a general vaccination has been ordered. The spread of the disease is now thought to have been caused by a ball given January 31st by some organization known to but not named by the authorities.

Prizes of the Spanish Academy of Medicine. — The Spanish Royal Academy of Medicine offers its annual prize for the best essay on the following subject, "Clinical and Therapeutical Study of Chronic Affections of the Intestine." The A. E. G. Cano Prize will be awarded for the best essay on "Infectious Endocarditis." Essays may be written in Spanish, Portuguese, French, Italian, German, or English, and must be sent to the Secretary of the Academy, 22 Montera, Madrid, before September 15, 1894.

An Indian Medical Congress. — A proposal laid before the Calcutta Medical Society to have a general Medical Congress in India has met with much favor; and the First Indian Medical Congress will be held in Calcutta in the beginning of January, 1895. Physicians practising in every part of the world are invited to take part, especially those in India and the East. The Congress will comprise the following sections: (1) Medicine, including Pathology; (2) Surgery; (3) Obstetrics and Diseases of Women and Children; (4) Public Health; (5) Medico-legal Medicine and allied subjects.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, March 28, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 46, scarlet fever 48, measles 10, typhoid fever 6, small-pox 5 and 1 death. During the week one case of small-pox was reported to the State Board of Health from Melrose.

A New Public Bath in Boston. — A new public bath-house has been opened at the South Cove district in Boston where bathing facilities can be had for a nominal sum, both summer and winter. It is a private concern backed by persons interested in hygienic charity, and will help to fill the need which is so marked in Boston of a large, well-appointed bathing-place during the cold months when the summer baths are unavailable.

The Committee on Public Health. — The Committee on Public Health of the Massachusetts Legislature has reported adversely on a proposed bill to require patent medicine bottles to have on them a label stating the percentage of alcohol in the medicine, and also adversely on a bill requiring cans and receptacles used by milk-dealers to be kept free from impurities.

The Massachusetts Hospital for Dipsomaniacs. — The Committee on Public Charitable Institutions has rejected a bill introduced to provide further luxuries for the Hospital for Dipsomaniacs and Inebriates in Foxboro. It was proposed to erect a gymnasium and a swimming-tank for the patients.

A Bequest paid to the Springfield Hospital. — The Springfield Hospital has received during the week the bequest of thirty thousand dollars, under the will of the late Mr. Horace Smith. Among other charitable institutions which received at the same time the payment of the bequests to them were the Home for Friendless Women and Children (thirty thousand dollars), and the Springfield Home for Aged Women (fifteen thousand dollars).

Small-Pox in Portsmouth, N. H. — A case of small-pox was discovered in Portsmouth on March 25th in a farmhouse just outside the city.

NEW YORK.

Hospital Saturday and Sunday Association. — The distributing committee of the Hospital Saturday and Sunday Association met in the Mayor's office on March 20th and divided $48,000 received from the annual collection among thirty-three institutions represented in the Association. Mount Sinai Hospital received the largest amount, $5,290, and St. Luke's the next largest, $5,153. The total sum collected this year was $58,300. Of this about $7,000 was specially designated for certain hospitals, and the expenses of the Association amounted to some $3,000.

A Raid on Abortionists. — On March 23d the police arrested sixteen advertising abortionists simultaneously in different parts of the city. The arrests were made at the request of the New York Society for the Enforcement of Criminal Law, which, through a skilful male and female detective, had secured evidence for the prosecution of the offenders. Some of the accused succeeded in securing bail, the bonds in each case being fixed at $2,500.

Public Health. — The unprecedentedly mild and pleasant weather that has prevailed during the month of March has had a marked effect upon the public health and reduced the death-rate of the city to a very gratifying extent. During the week ending March 17th the number of deaths reported was only 787, while in the corresponding week of last year, when the estimated population was at least 65,000 smaller than at present, the deaths amounted to 1,110. This mortality is also 175 lower than the average for the corresponding weeks of the past five years. Measles continues to be the most prevalent of the contagious diseases. During the week ending March 17th there were reported 309 cases, with 25 deaths, and during the week ending March 24th, 375 cases, with 29 deaths. Diphtheria increased from 187 cases and 40 deaths to 220 cases and 53 deaths. Small-pox and scarlet fever do not show any material change; but there was some decrease in the mortality from pneumonia, and the deaths from influenza decreased from 12 to 4. There are very few cases of typhoid fever reported, and during the week ending March 17th there were but 2 deaths from this disease.

Death of Dr. Stanard. — Dr. Alfred Cushman Stanard, one of the most promising young physicians in the city, died at the New York Hospital on March 20th of peritonitis resulting from appendicitis. On the 16th he was operated upon, and at first it was hoped that the procedure would be successful in saving his life, but an extension of the peritonitis soon followed. Dr. Stanard was born in New York and was twenty-nine years old at the time of his death. He was graduated from the Medical Department of Harvard University in 1889, and afterwards served as an interne at the New York Hospital. Later he was appointed one of the attending physicians to that institution.

◆

Miscellany.

AUTOPSY ON THE GREENWICH ANARCHIST.

The autopsy recently made on the body of the man killed in Greenwich, England, by the explosion of a bomb held in his hand, is of considerable interest as showing the variety of lesions possible in such an accident.

The report shows[1] that the man held the bomb in his left hand about on the level of the abdomen. It is remarkable how little damage was produced by the bomb. The left hand and wrist were blown away and the tendons left hanging. A circular opening over an inch in diameter, with a charred margin, was found a little to the right and above the umbilicus. Posteriorly there was an almost linear wound of exit below the last rib on the right side. On the left thigh and leg there were several charred wounds of varying extent and depth, while on the right thigh there were two deep wounds extending nearly to the femur, one in front and one on the outer side over the trochanters, which must have been very nearly on the opposite side of the body from the bomb. In this latter wound a piece of metal was found. As a rule, no pieces of metal were found in the wounds, but many bits of clothing.

On opening the abdomen some intra-peritoneal hæmorrhage was at once seen. This was due to great contusion and laceration of the right lobes of the liver, especially of the quadrate lobe and the adjacent part of the right lobe from the velocity of the air surrounding the bomb rather than to the metal itself. The gall-bladder had escaped injury. None of the intestines at this stage appeared to have been damaged, but on the removal of the peritoneum it was at once found that there was a large amount of retro-peritoneal hæmorrhage. Careful examination showed that the second part of the duodenum had been ruptured on the right side for rather more than an inch, and that the anterior surface of the right kidney was extensively lacerated. All the other abdominal viscera, including the stomach, which contained food, and the other portions of the intestine, were uninjured. The thoracic viscera and brain were quite normal.

---

[1] Lancet, February 24, 1894.

◆

THE FOREIGN QUARANTINE OF IMMIGRANTS.

In an editorial upon the request of the United States delegates to the International Sanitary Conference, that proper means be taken by European governments to prevent cholera and other infectious diseases from being brought to this country, the *Lancet* says:

"Precautions should be enforced, if not on the American side, then at the point of departure. The latter is the solution of the difficulty which the American Government desires to submit to the European Powers. In the name of humanity and of good neighborly feelings, care should be taken not to ship over to America infected clothing or persons likely to convey infectious or contagious diseases; but, if this principle does not suffice, then, even from selfish motives, the European Governments should act in the manner desired. A great deal has been said about the pilgrimages to Mecca, and it has been urged that, in English ships alone, as many as 20,000 pilgrims have been taken to Mecca in one single season; but this is nothing when compared to the 400,000, or so, immigrants who yearly go over to America. This great current of humanity travelling through Europe on its way to the New World exposes Europe itself to considerable danger, and it would be to the latter's interest if these immigrants were forced to observe laws imposing cleanliness, etc., from the moment that they commence their journey. Then, when finally the immigrant reaches his ship, he is stowed away in an over-crowded steerage, where the most unsanitary conditions prevail. The pilgrims to Mecca are not worse off than the steerage passengers to America; and the sanitary regulations of the pilgrim ships will be better in themselves and better applied than are those governing the steerage passengers to America. If considerable improvement in this respect is not enforced, the European Powers will be the losers, because quarantine will be imposed on ships arriving in America, and this will not only injure the passenger traffic but also the exportation of merchandise to the United States."

◆

IN MEMORIAM.—JOEL SEAVERNS, M.D.

At a meeting of the Roxbury Society for Medical Improvement March 22, 1894, the following resolutions in regard to the late Dr. Joel Seaverns were passed:

Whereas, Through the wisdom of our Heavenly Father, our friend and associate, Dr. Joel Seaverns, has been called to a higher sphere of duty,

Resolved, That in the death of Dr. Seaverns this Society has lost one of its most valuable and honored members, and one whom we shall sadly miss at our meetings for medical improvement and social converse.

Resolved, That the Roxbury Society for Medical Improvement tender to Mrs. Seaverns and family, their cordial sympathy in the sad bereavement and loss of the dear and loving husband and kind and affectionate father.

Resolved, That a copy of these resolutions be forwarded to Mrs. Seaverns, by our Secretary, and that the same be inscribed on the records of the Society, and that a copy be published in the *Boston Medical and Surgical Journal*.

A. B. Coffin, *Secretary*.

◆

Correspondence.

AMERICAN MEDICAL ASSOCIATION.

San Francisco Meeting.

San Francisco, March 14, 1894.

Mr. Editor:—San Francisco is a comparatively new city, but it is not lacking in places of interest to the visitor. About a half-mile to the northward of the city limits, nestling in a little valley and surrounded by evergreen trees, is the Presidio, the United States Army Station. A short distance beyond is old Fort Point, upon the water's very edge; the waves of the bay dashing upon its cement abutments are broken into spray and lost upon its walls. McDowell Avenue leads from near the fort, around the top of the cliffs, overlooking the Golden Gate and the broad expanse of the Pacific Ocean. Vessels of all nations and descriptions can be seen in the offing or quietly gliding through the waters of the gate.

The Cliff House—a famous resort—is situated upon a promontory directly overlooking the ocean. In the distance, on a clear day, the Farallone Islands—twenty-five miles away—are seen rising abruptly from the water; while less than one hundred yards from where one stands, the Seal Rocks jut up from the waves and the loud barking of the seals and sea-lions upon them tells why they are so named.

Sutro Heights are just above the Cliff House. Here nature and art have so blended their works that the visitor is truly astonished and delighted with what he sees. The committee of arrangements are planning an entertainment at this place for the wives and daughters of visiting members of the Association. All San Francisco is justly proud of Golden Gate Park. What was once dreary sand dunes, has been transformed into a very garden, flowers bloom throughout the year, and the grasses are always green. Broad avenues wind in and out past the conservatory, the deer paddock, around the base of Strawberry Hill and on to the ocean beach.

The California Mid-Winter Fair is being held in the Park, at the base of Strawberry Hill, and occupies a space many acres in extent. This fair has an individuality peculiarly its own, and offers much of interest to every visitor.

R. H. Plummer, M.D.
Chairman Committee of Arrangements.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 18, 1894, TO MARCH 23, 1894.

So much of Par. 8, S. O. No. 60, March 12, 1894, from A. G. O. as relates to First-Lieut. Harlan E McVay, assistant surgeon, is amended to direct him, on being relieved from duty at San Carlos, Arizona, by First-Lieut. Straub, assistant surgeon, to report in person to the commanding officer, Fort Huachuca, instead of Whipple Barracks, Arizona Territory.

Major Henry M. Cronkhite, surgeon, U. S. A., is relieved from duty at Fort Clark, Texas, and ordered to report in person to the commanding officer, Fort Reno, Oklahoma Territory, for duty at that post, relieving Captain Wm. C. Gorgas, assistant surgeon.

Captain Gorgas, on being thus relieved, will report to the commanding officer, Fort Barrancas, Florida, for duty at that post, relieving First-Lieut. Robert S. Woodson, assistant surgeon.

First-Lieut. Robert S. Woodson, assistant surgeon, on being relieved by Captain Gorgas, will report in person to the commanding officer Fort McIntosh, Texas, for duty at that post and for field duty in the Department of Texas, relieving First-Lieut. Benjamin L. Ten Eyck, assistant surgeon.

First-Lieut. Ten Eyck, on being thus relieved, will report to the commanding officer, Fort Clark, Texas, for temporary duty at that post.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MARCH 24, 1894.

B. S. Mackie, surgeon, ordered to the U. S. Receiving-ship "Franklin."

W. C. Braisted, passed assistant surgeon, from Naval Hospital, New York, and to the U. S. S. "Columbia."

S. G. Evans, passed assistant surgeon, from the Naval Hospital, Philadelphia, and to the Naval Hospital, New York.

W. G. Farwell, surgeon, ordered to the U. S. S. "Columbia."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOUR WEEKS ENDING MARCH 17, 1894.

Fessenden, C. S. D., surgeon. Detailed as chairman, Board for physical examination of Assistant Surgeon L. E. Cofer. March 6, 1894.

Purviance, George, surgeon. Detailed as chairman, Board to inspect Reedy Island Quarantine. February 20, 1894. To report at Bureau for temporary duty. March 2, 1894.

Hutton, W. H. H., surgeon. Detailed chairman, Board for physical examination of Inspector of Hulls. March 9, 1894.

Gassaway, J. M., surgeon. Detailed as recorder, Board for physical examination of Assistant Surgeon L. E. Cofer. March 6, 1894.

Godfrey, John, surgeon. Detailed as chairman, Board for physical examination of candidates, Revenue Marine Service. March 6, 1894.

Irwin, Fairfax, surgeon. To proceed to Paris, France, for special duty. February 24, 1894.

Mead, F. W., surgeon. Detailed as chairman, Board for physical examination of candidates, Revenue Marine Service. March 10, 1894.

Carter, H. R., surgeon. To report at Bureau for special duty. March 14, 1894.

Banks, C. E., passed assistant surgeon. To proceed to Portsmouth, N. H., as inspector. March 12, 1894.

Kalloch, P. C., passed assistant surgeon. Granted leave of absence for thirty days. March 12, 1894.

Glennan, A. H., passed assistant surgeon. Detailed as member, Board to inspect Reedy Island Quarantine. February 20, 1894.

Wasdin, Eugene, passed assistant surgeon. Granted leave of absence for sixteen days March 3, 1894.

Kinyoun, J. J., passed assistant surgeon. To report to chairman, Committee on Ventilation and Acoustics, House of Representatives, for special duty. February 21, 1894.

Woodward, R. M., passed assistant surgeon. To report at Bureau for special duty. March 14, 1894.

Guiteras, G. M., passed assistant surgeon. Granted leave of absence for twenty days. February 19, 1894.

Stimpson, W. G., assistant surgeon. Granted leave of absence for twenty-five days. March 5, 1894. Detailed as recorder, Board for physical examination of Inspector of Hulls. March 9, 1894.

Houghton, E. R., assistant surgeon. Ordered to examination for promotion. March 3, 1894.

Rosenau, M. J., assistant surgeon. Ordered to examination for promotion. March 6, 1894.

Cofer, L. E., assistant surgeon. To report to Board for physical examination. March 6, 1894. Placed on "waiting orders." March 15, 1894.

Gardner, C. H., assistant surgeon. Detailed as recorder, Board for physical examination of candidates, Revenue Marine Service. March 10, 1894.

Stewart, W. J. S., assistant surgeon. Detailed as recorder, Board for physical examination of candidates, Revenue Marine Service. March 10, 1894.

SOCIETY NOTICES.

Boston Society for Medical Observation.— The annual meeting will be held at 19 Boylston Place, on Monday, April 2, 1894, at 8 o'clock.

Readers: Dr. C. H. Hare: "An Ovarian Dermoid Discharging through Bladder for Three Years before Operation and Cure." Discussion by Dr. W. H. Baker and Dr. W. F. Whitney.

Dr. Charles Harrington: "Massachusetts Laws Relating to the Sale of Foods; their Enforcement."

Election of officers for ensuing year.

Election of honorary and associate members.

Report of auditing committee.

John C. Munro, M.D., *Secretary*.

The Suffolk District Medical Society, Surgical Section. — The Surgical Section of the Suffolk District Medical Society will hold its regular monthly meeting at 19 Boylston Place on Wednesday evening, April 4, 1894.

Dr. E. W. Cushing will present a paper upon "Abdominal Drainage." Dr. M. H. Richardson and others will take part in the discussion.

Dr. F. G. Balch will report "Cases of Compound Fracture of the Ankle."

Charles L. Scudder, M.D., *Secretary*, 1 Marlborough St.

The Association of American Medical Colleges.— The fifth annual meeting of the Association of American Medical Colleges will convene at Maple Hall, Grand Pacific Hotel, San Francisco, Cal., at 3 o'clock p. m., Wednesday, June 6, 1894. Action will be taken at this meeting upon several proposed amendments.

N. S. Davis, M.D., LL.D., *President*.
Perry H. Millard, M.D., *Secretary*.

Medical Association of Georgia.— The forty-fifth annual session of the Medical Association of Georgia will meet in Atlanta, Ga., on April 18th, 19th, 20th.

W. H. Elliott, M.D., *President*, Savannah, Ga.
Dan H. Howell, M.D., *Secretary*, Atlanta, Ga.

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The next lecture will be given on Wednesday evening, April 4th, at 8 o'clock, by Dr. P. C. Knapp. Subject, "Traumatic Nervous Affections." Physicians are cordially invited.

RECENT DEATHS.

John H. Rauch, M.D., of Chicago, died suddenly in Lebanon, Penn., March 24th. He was a well-known authority on sanitation and medical education. He organized the Board of Health of Chicago, and was President and Secretary of the Illinois State Board of Health from its organization to 1891. He was a delegate to the International Medical Association at Berlin in 1890, and to the Pan-American Medical Congress in the City of Mexico. During the war he was brigade surgeon under General Augur, assistant medical director of the Army of the Potomac, and medical director of the Gulf Department of the Nineteenth Army Corps.

Ernest Henry Jacob, M.D., Professor of Pathology in Yorkshire College, died of acute arachnitis in Leeds, England, on February 28th, aged forty-four years.

Auguste Ollivier, M.D., died recently in Paris, aged sixty-one years. He was a member of the Academy of Medicine and physician to the Vichey and St. Louis Hospitals, and to the Enfante Malades. His various writings have been of considerable value, especially his "Leçons Cliniques sur les Maladiés des Enfants."

BOOKS AND PAMPHLETS RECEIVED.

Verbrechen und Walmsinn beim Weibe, Statistische, Klinische und anthropologisch-biologische Untersuchungen. Von Dr. P. Näcke-Hubertusburg. Abdruck.

A Text-book of the Diseases of Women. By Henry J. Garriques, A.M., M.D., Professor of Obstetrics in the New York Post-Graduate Medical School and Hospital, etc. Containing three hundred and ten engravings and colored plates. Philadelphia: W. B. Saunders. 1894.

Clinical Lectures on Pediatrics, delivered in the Vanderbilt Clinic during the Session of 1892–93. By A. Jacobi, M.D., Clinical Professor of the Diseases of Children in the College of Physicians and Surgeons of New York, etc. Stenographic reports. Reprint. 1893. New York: Bailey & Fairchild. 1893.

An Illustrated Encyclopædic Medical Dictionary, being a Dictionary of the Technical Terms Used by Writers on Medicine and the Collateral Sciences in the Latin, English, French and German Languages. By Frank P. Foster, M.D. Vol. IV, with illustrations. New York: D. Appleton & Co. 1894.

A Text-Book on Diseases of the Eye. By Henry D. Noyes, A.M., M.D., Professor of Ophthalmology and Otology in Bellevue Medical College, etc. Second and revised edition, illustrated by five chromo-lithograph plates, ten plates in black and colors, and 269 wood-engravings. New York: William Wood & Co. 1894.

First Aid in Illness and Injury, Comprised in a Series of Chapters on the Human Machine; Its Structure; Its Implements of Repair and the Accidents and Emergencies to Which it is Liable. By James E. Pilcher, M.D., Ph.D., Captain in the Medical Department of the United States Army. Revised edition with 176 illustrations. New York: Charles Scribner's Sons. 1894.

Original Articles.

EXERCISE IN THE TREATMENT OF LATERAL CURVATURE.[1]

BY E. G. BRACKETT, M.D., BOSTON.

The use of exercise is one of the means to be employed in the thorough treatment of lateral curvature, and varies in its object with the case, and character and degree of curve. It must be remembered that all degrees of severity are found, from those light postural cases in which there is no actual distortion, but in which the condition is one of malposition only and self-correction can be easily assumed, to those severe forms of fixed and rigid curves in which there is marked structural change both in the bone and in the softer parts, and in which no degree of force which can be borne by the patient is able to immediately bring about the full correction of the deformity. The treatment in the different cases will differ in the methods and the means employed; but the object of the treatment in all cases is essentially to increase the flexibility of the spine and the trunk, to hold the patient in a corrected position, and to improve the general muscular condition. The employment of exercise, in its object and in the method of its application, will vary necessarily according to the object of the treatment and the stage in which it is used. In most of the severer forms of lateral curvature, the most important element in the treatment is to increase the flexibility of the spine, to make a better attitude on the part of the patient possible. To attain this, obviously something more than exercise on the part of the patient is required, such as the mechanical correction, and in this stage of the treatment the use of exercise is an accessory part to this one of mechanical force. In the later treatment of lateral curvature the object of exercise is to improve the muscular condition, and to enable the patient to hold himself in a correct attitude. In those lighter forms in which the forcible correction is not necessary, the employment of exercise has a more prominent part.

The question of mechanical correction is not here considered. The employment of gymnastics will receive separate consideration, as to whether it is used as an aid to mechanical correction to increase the flexibility of the spine, or as a means of muscular training and development.

With reference to the character of the exercises, they may be classed as active and passive; the former including those in which treatment is performed purely by the aid of muscular exertion, aided only by the gravity of the body, and the second those in which this is either supplemented or substituted by additional force, used either by mechanical means or by an assistant.

The passive are included under the head of mechanical correction, and are, therefore, not considered here.

The active may be further classified with reference to the object for which they are used, whether for the increase of flexibility of the spinal column, or for the improvement of general muscular condition, and they will be considered under those heads.

Increase of Flexibility. — Exercises of this character have the same object as the passive mechanical correction, that is, the stretching of contracted structures in such a way as to lessen the obstacles to correction of the deformity. These, in the main, consist of forcible bending and twisting of the spine in such ways that the force will be exerted against the distortion. Precaution is needed in this exercise that no such movements are employed which in any way tend to increase the flexibility of the spine in the direction of the concavity, and second, that all such motions are avoided which tend by themselves to the crowding together of the already distorted vertebral bodies, forcing them still further from the vertical line, and thus increasing the rotation which accompanies the lateral deviation. As the plane of the bodies of the vertebræ are carried farther away from the vertical line than is the axis of rotation, during flexion of the spinal column they are crowded together and are forced still farther away from the median line, thus increasing the rotation. This fact is made use of frequently in the examination, as when the patient is told to bend forward, which exaggerates the amount of rotation at first apparent. The opposite of this is equally true as seen in the diminution in the degree of rotary curve during suspension and during recumbency. In the same way that the pushing together of the vertebræ increases the rotation, the forcible stretching tends to pull them into the median line, and if this motion is carried still further by a backward bending, the force toward the correction of the rotation is still greater. For this reason all exercises which allow a forward bending of the spine are to be avoided, and those which tend to increase the backward flexibility should be encouraged.

Care is also necessary in those cases of double curve, that exercises directed toward the increase of the flexibility in one part of the spine shall not result in bending of the concavity in the other. Such particularly being the case with those asymmetrical movements in which the trunk is carried to one side, either in the standing position or by leaning over the side of a table or a roller. As the spine bends much more freely in the region of the concavity than of the convexity, unless great care is used when the effort is made, or when pressure is brought to bear upon the convexity of the curve, in all those motions where the whole trunk is involved the spine invariably moves more in the concavity than in the convexity. If this is allowed to happen, it obviously counteracts all the good that may come from the pressure or the force which may be used upon the convex portion.

This class of exercises is intended either to increase the backward flexibility of the spine and thus indirectly to improve the rotation, or is directed to the rotation itself. The first, or those for backward flexibility of the spine, are performed both when the patient is recumbent, and when the influence of the superincumbent weight is removed, and we have the force of muscular action only; and, second, those in which the patient is suspended, but in which we have not only a partial removal of superincumbent weight but also the force of direct traction; and, third, those in which the patient is standing, but in which either additional force or simply the weight of the body is used as a means to increase the amount of backward bending. The first of these are employed while the patient is lying prone, and the effort is made to forcibly raise the head and shoulders from the couch by muscular action alone. These are varied and made more forcible by bending backward over a padded surface, which is placed at the point where the greatest increase of amount of motion is required while the patient is lying on the back, and allows the head and shoulders to fall downwards over the end of the couch. These are either done alone, or at first with the aid of an assistant in case the patient's strength is not sufficient.

---

[1] Read before the Boston Society for Medical Improvement, January 22, 1891.

In the second series of these exercises, in which the patient is suspended or partially suspended, the weight should be equally divided between the head and the arms, that is, the rope from the head-sling should pass over a single pulley and return to the handle which the patient grasps. If a compound pulley is used, then the amount of force used upon the head is relatively increased in proportion to the number of pulleys, and too great force upon the head and neck may be used. The object of the suspension is to exert a stretching force on the spinal column, and the suspension should be so performed that the force shall be expended as directly as possible on the contracted structures.

The third series consists of body movements, comprising bending and torsion of the trunk, and which bring the strain from the body weight and muscular action on the convexity of the distortion. These are taken in part alone, and in part with such assistance as will enable them to exert increased muscular action, as from straps and bars properly arranged for the direction of the pull, or by the hands of an assistant.

Exercises for the Improvement of the General Muscular Condition. — The object of exercise used with this purpose is to train the patient to maintain a more normal attitude, and by this training to make this position habitual. This is practicable only for those curves which have, by the other means, been made flexible and thus a corrected position possible, and in the light postural cases in which correction has always been possible. In the large majority of non-paralytic cases, the amount of asymmetry in strength is not great, at least not appreciable to practical tests; and for this reason special exercises for weak muscles do not play a prominent part. The matter of unequal use of muscles is one of greater importance; and such exercise is rather to the training of such use of the muscles, that the patient at first with effort can, and later will, maintain this corrected attitude without effort and unconsciously. The matter of aids to this by apparatus to prevent the patient from assuming injurious attitudes, both in standing and sitting, is important, but will not here be considered.

These exercises may be placed under three groups: (1) for correction of round shoulders; (2) for self-correction; (3) exercises in the corrected position. No attempt is made to enumerate the individual exercises used for these purposes, as this would open a subject of itself too large for the scope of this paper, but rather to consider the object of the various forms, and the conditions under which they may be used.

In the large majority of these cases of spinal distortion, there is found the condition of round shoulders, frequently associated with a pushing forward of the neck and head; and the early correction of this is important in thorough treatment. Like exercises that tend to increase a forward bending of the spine, the position of round shoulders exerts a force which is detrimental to the improvement of the rotation. When the curve and the rotation of the spine are in the upper part of the trunk, the forward movement of the shoulders tends to push backward the spine in such a way that the rotation of the vertebræ are increased. As the chest becomes more fully developed, and the shoulders are carried and forced backward, the result is the same as in those exercises which tend to increase the backward flexibility of the spine. Many of these cases present a condition of decided rigidity, in which instance the treatment must be directed towards increasing the flexibility of the spine in this region, until correction becomes easy.

By exercise for self-correction is meant those movements in which the attempt is made by the patient's voluntary effort alone to assume a corrected position. In this, the patient may either stand erect, or be aided by such a position of the arms as will allow greater ease and more perfect correction, as, for instance, by the effort of the sense of raising and pushing with the shoulders or head, with the hands on the hips or clasped behind the neck; but no general rule can be laid down, as each case must be studied with reference to this by itself. In this effort, a marked improvement in the position is possible, while its value is manifest by the greater ease in assuming and maintaining this position, and, after practice, in the nearer approach to the complete correction. As an exercise this position is held for an increasing length of time during the regular hours of gymnastic work, and the effort made at all times during the day.

An additional force that can often be employed with very excellent results is gymnastic work in the corrected attitude. Bernard Roth has insisted on the value of maintaining this, which he has called the key-note position; and its value lies in its training one to perform body movements while the spine is held as far as possible in the corrected position. The key-note position may be one which has been found best through the effort of self-correction, or by the varied positions of the arms and the plane of the pelvis; or the exercises may be taken with the patient recumbent, and a more complete position of correction obtained by the addition of mechanical force pressure. The advantage of muscular work in the corrected position, maintained in any way, is obvious. After it has become easily possible to assume an attitude of self-correction, it is difficult to maintain the correction when any movement is attempted. By holding this position during gymnastic exercise, this same self-correction is maintained with greater ease during the day, and becomes more nearly habitual.

◆

PATHOLOGY OF DIABETES MELLITUS.*

BY ELLIOTT P. JOSLIN, A.B., PH.B.

(Concluded from No. 13, page 312.)

Experimental Work. — The experimental work of Herr von Mering and Herr Minkowski,[8] on the production of diabetes by pancreatic extirpation, forms one of the foremost chapters in all experimental pathology. It is about two hundred years since Wirsung gave his name to the pancreatic duct. The pancreas must have excited a good deal of interest at that time, as we find Regnier de Graaf [22] and Conrad Brunner [22] trying to extirpate it. They thought that their attempt was successful, and published two articles, in which the medical fraternity was informed in Latin that the removal of the pancreas was provocative of no results. Their word was accepted — or forgotten; and I find no further mention of the subject until Claude Bernard attempted to produce a diabetes by plugging the duct of Wirsung, and failed. In 1889 von Mering and Minkowski began their work on the subject, to which they have added from time to time ever since. Many investigators have confirmed their work, but none have essentially added to it.

---

* Read before the Boylston Medical Society of the Harvard Medical School, November 17, 1893.

The technique of the removal of the pancreas is no mean piece of surgery. The gland is difficult to get at, the blood-supply is free, and it has an intimate connection with the surrounding parts. The total removal is essential for the success of the experiment, and it is in this particular that so many have failed. So carefully has Minkowski conducted his operations that in not a single instance did he leave even a small part of the pancreas in the abdomen. Peritonitis is one of the greatest bugbears to the operation. After full extirpation, first intention is seldom obtained, though this was obtained in partial removal of the gland. The experiments have been conducted on dogs. Cats are difficult to experiment upon, and the pancreas of rabbits cannot be successfully removed. Good results come from the extirpation in swine, but in birds and frogs the returns are not so satisfactory.

When a healthy dog is deprived of the pancreas he is attacked invariably within twenty-four hours with glycosuria, which continues for some weeks without interruption up to the death of the animal. On the first day after the operation the urine contains one per cent., or less, of sugar; on the following day the percentage has risen to four or six; and on the third day it has reached eight, ten, or even more. If no food is taken, the sugar begins to diminish; but after seven days of starvation it does not fully disappear. The amount of sugar decreases when the animal becomes very weak, and at some time before death may wholly disappear from the urine. In two of Minkowski's cases this occurred. "The diminution in the amount of sugar excreted in no way corresponds to an improvement, but rather to a worse state of the conditions of nutrition." Peritonitis and septic processes may lead to a disappearance of the sugar. If carbohydrates are taken, the amount of sugar rises rapidly, and the sugar ingested is practically wholly excreted. The urea stands to the sugar in the ratio of two to three, when the dog is on a pure flesh diet; and this ratio is maintained with very slight variations through all the vicissitudes of the experiment. Thirst, polyphagia and polyuria are constant accompaniments of the glycosuria; and the emaciation, feebleness and the slow healing of the wound all show that the animal is suffering from a severe diabetes mellitus.

Von Mering and Minkowski have further reported that after a partial extirpation of the pancreas a diabetes was not produced. To this fact they attach much importance. They think this explains the non-appearance of glycosuria in man in some pancreatic lesions. A part of the gland can perform the function of the whole. Furthermore, this answers the objection which has been raised that the diabetes was due to nerve lesions caused in the operation. In the removal of a large portion of the gland, for example, four-fifths, the same nerve lesions would be committed as in the removal of the whole gland. Just how much of the gland must be left in the abdomen to prevent diabetes cannot definitely be stated. The nutrition of the part left behind here enters into the problem. In some of the instances where a portion of the gland is removed, a diabetes of light grade is produced. This is present only when the animal is on a carbohydrate diet; and it is supposed that slight glycosurias in man might be attributable to some moderate disturbance of the pancreatic function.

The abdominal grafts of the pancreas are by far the most striking part of Minkowski's and von Mering's work. This was suggested by Schiff's work on the thyroid. The art of the experimenter is here given full range. The pancreas is a fragile organ and quickly dies. Moreover, an animal which has submitted to an operation on the gland is in great danger of peritonitis. Both obstacles were overcome in the following manner. The pancreas was carefully dissected from its attachments in the abdominal cavity, turned on its axis and stitched to the abdominal wall. The blood-supply was disturbed as little as possible. The wound was allowed to heal, and gradually the pancreas became engrafted on its new surroundings. When this was firmly established the dog was submitted to another operation, in which the internal part of the gland was removed. On the recovery of the animal no diabetes resulted. After an interval of some time, the engrafted pancreas was removed; and when this was done, diabetes in all its forms appeared. What more striking proof could be asked for the action of the pancreas in producing diabetes?

The removal of the graft with its sequence of diabetes throws aside completely the theory that in these cases nerve lesions are the cause of the disease. The blood-supply of the graft, in some cases from the abdominal parietes, in others from the aorta alone, excludes any theory which ascribes the prevention of the diabetes to the different blood-supply the gland might receive.

No connection exists between the intestinal secretion of the gland and its functions in the prevention of glycosuria. Minkowski has observed the absence of the ordinary secretion and yet no diabetes, while Thiroloix [24] has seen a diabetes come on when the secretion was active.

Is this function whose disturbance leads to the production of diabetes a specific property of the pancreas?

Minkowski concludes that it is, else why should diabetes appear on its extirpation? Various authors have thought differently. Renzi and Reale [23] found sugar in the urine after the removal of the salivary glands. Minkowski has carefully gone over their work in his own laboratory and finds (1) that the glycosuria was usually slight in intensity, (2) that it was transitory, and (3) that it was not even a constant result of such extirpation. And as for the work of the same authors on duodenal extirpation, much the same conclusions were reached which Weintraud [25] has further confirmed.

Falkenberg, after removal of the thyroid, obtained a glycosuria in 13 out of 20 cases. Gley [26] and Minkowski agree in thinking this glycosuria due to traumatism.

It may be well to definitely state that the removal of the gland so that all intestinal secretion is cut off brings on no diabetes. A transitory glycosuria may result from the abdominal operation.

Minkowski's experiments of total extirpation, partial extirpation and grafts of the pancreas have been confirmed by Hedon,[27] Thiroloix [28] and Abelman.[23] Lepine [29] in 100 pancreatic extirpations, and Sandmeyer [80] in 29, have come to the same result.

How does removal of the pancreas cause diabetes mellitus?

Minkowski does not say, but simply states the two theories which are advanced, and points out that there are further channels for experimental work which when traversed will enable us to have a clearer insight into the question.

The first of the two theories at present most advocated is that there is a ferment in the blood which destroys the sugar. This ferment is furnished by the pancreas, disease or removal of which causes a heaping up of the sugar in the blood, due to the non-assimilation of the sugar by the tissues. The other theory implies a poison in the blood, which in the normal person is destroyed or rendered inactive by the pancreas; removal of this gland allows an accumulation of the poison and grave nutritional disturbances.

Lepine[31] was a fellow-worker with Dr. H. P. Bowditch, who has spoken highly of him to me as a scientist. He discovered that the normal pancreas when treated with a little water made alkaline was able to destroy a small quantity of sugar. The blood of an animal deprived of its pancreas lost less sugar than the blood of a sound animal; and hence Lepine concluded that the pancreas yielded to the blood a ferment which contributed powerfully to the destruction of the blood sugar. This ferment he called the glycolytic ferment. He found that the blood of the portal vein was richer in this ferment than that of any other part of the body, and after an elaborate series of experiments proved that this ferment was contained in the white blood-corpuscles. This ferment is diminished, he has shown, in the blood of diabetic persons to the number of seven; and, in fact, in all cases in which there is an increased amount of sugar in the blood the ferment is present in less than the normal quantity.

Writers on diabetes speak favorably of Lepine's theory, but most of the experimenters have not yet accepted it. This theory of Lepine's necessitates the view that glycosuria results from the lack of the power of assimilation of the sugar by the body. Hedon[27] and Seegan[32] also consider that the lack of assimilation of the sugar is the cause of diabetes.

RECENT WORK OF CHAUVEAU.[33]

Chauveau was a fellow experimenter with Claude-Bernard. He has done much eminent work in time past, and the field of experimental diabetes is well known to him. Two articles which he has recently published connect the work of Claude-Bernard and that of Minkowski. In his first memoir he proves that diabetes is due to an increased production of sugar by the liver. In a normal animal the blood in the hepatic veins contains the most sugar of any blood in the body. The sugar in the arterial blood always is greater in amount than that in the venous. Claude-Bernard has shown the formation of this sugar to be the property of the liver, and Chauveau has made clear that the destruction of the sugar takes place in the tissues. Somewhere in the capillaries between the red arterial and dark venous blood the sugar is lost. If this sugar continues to be lost in an animal rendered diabetic, we can feel sure that the cause of the diabetes rests on the overproduction of sugar and not on its lack or destruction.

So Chauveau produced diabetes in animals by traumatism, by puncture of the fourth ventricle, by section of the cord just below the medulla and by removal of the pancreas. In each instance the analysis of the arterial and venous blood showed the normal excess of sugar in the former. It is well known that a section of the spinal cord from the last few cervical to the sixth dorsal vertebræ produces a diminished amount of sugar in the blood; but when this section was made, the arterial remained richer in sugar than the venous blood. His experiments confirmed his theory that diabetes is due to an increased production of sugar. This work was preliminary to his next article.

We know that sugar is formed in the liver. Is it formed anywhere else? The muscles remove the sugar from the blood, which they use dehydrated in the form of glycogen. There is no reason why these, like the liver, should not convert this glycogen back into sugar, but no proof of this has ever been given. Furthermore, if the muscles did do this, we should expect to find more sugar in the venous blood than in the arterial, but Chauveau's previous work has shown that this is not so. The liver, then, is the source of the increased sugar in the blood — hypoglycémie — in diabetes; and if we can explain the mechanism by which the liver brings this about, we can explain the disease.

For a long time it has been known that puncture of the fourth ventricle would produce a passing glycosuria, and lately von Mering and Minkowski have shown that removal of the pancreas will cause the same result. Various clinical facts also go to show that the pancreas is connected with the production of diabetes. And this leads us to consider the pancreas in a new light as a moderator of the glycæmic function of the liver. Now in diabetes there is besides the glycæmia a destruction of the tissues going on throughout the entire body. The losses of the body surpass its gains. Katabolism is the ruling feature, and from the products resulting from the katabolism part of the sugar is formed in the liver. This we know because diabetic animals which are starved still continue to secrete sugar. But how does the pancreas act to prevent this destruction of tissue and subsequent formation of sugar in the normal state? As the veins of the pancreas empty into the vena porta, it is natural to explain this influence of the pancreas upon the formation of sugar in the liver by supposing an internal secretion of the gland which empties into the blood, by which it is carried to the liver and participates in its functions. However, as yet experiment has given no proof of the direct action of this pancreatic secretion on the liver. The facts already known, with what Chauveau adds later, tend to show that this action is through the agency of the nervous system.

The functions exercised by these two glands depend without doubt upon their inherent properties, but the nervous system cannot fail to regulate their action. Glands have been shown to have excito-secretory nerves — compare the submaxillary gland and the chorda tympani — and there is no reason to suppose that the pancreas and the liver are exceptions. In fact the teachings of physiology would impose upon us the consideration of the existence of excito-secretory and inhibito-secretory nerves of the liver. Indeed, study of nervous action on the liver has been made; but Chauveau combines the former experiments with pancreatic extirpation.

When a section of the spinal cord at its junction with the medulla was made on starving dogs, hypoglycémie resulted as after the extirpation of the pancreas and this hypoglycémie was attended with glycosuria. These common symptoms lead us to draw a connection between the result obtained on bulbar section and pancreatic extirpation, and to conclude that in both instances the animal is subjected to the same influence; in one, pancreatic secretion is rendered impossible by removal of the pancreas; in the other, it is made quite as impossible by paralysis of the gland. From the effects thus produced by bulbar section we can conclude that the pancreas is thereby isolated from its excito-secretory centre, whence suppression of the internal secretion and subsequent hypoglycémie. But this section did not injure the excito-secretory centre of the liver; on the contrary, it became more active, which would imply that it was not antagonized. The following deductions then can be drawn from bulbar section: (1) the action of the pancreas on the glucose-forming function of the liver appears to be under the control of a centre which excites the internal secretion of the pancreas; (2) this centre is situated at some point above the junction of the cord and medulla; (3) the sugar-forming function of the liver is controlled by an excito-secretory centre which is situated in some region of the spinal cord; (4) the action of the pancreas upon the liver is exercised upon the excito-secretory centre of the liver and not on the liver itself.

Puncture of the fourth ventricle causes much the same train of phenomena as does the section of the cord at its junction with the medulla. In bulbar section the animal of course dies because his life is dependent on artificial respiration. In medullary puncture respiration is not disturbed. The identity of the results leads us to consider that in sugar-puncture of the fourth ventricle the excito-secretory function of the pancreas is for the time deranged. This leads up to the conclusion that this centre is no higher up in the nervous system than the medulla, and the section between the spinal cord and medulla has shown that it is no lower.

This production of glycosuria by bulbar section can also be explained on the hypothesis that there is an inhibito-secretory centre of the liver in the medulla, which by the operation is shut off from its influence on the liver. The internal secretion of the pancreas then would stimulate the inhibito-secretory centre and moderate the excito-secretory, while its absence would produce just the opposite results and hypoglycémie would appear. The lighter glycosuria which appears on bulbar section could then be explained by the pancreas acting to a slight extent, though removed from its excito-secretory centre. Having thus set forth the theory, Chauveau proceeds to the more original part of his work.

When a section of the cord is made between the fourth cervical and sixth dorsal pairs of nerves, a hypoglycémie is produced. Evidently this is due either to increased action of the inhibitory centre or paralysis of the excitatory. The second alternative conforms more easily to the facts. Now as this paralytic effect ceases when we go above the fourth cervical pair, and we then get hypoglycémie, it is evident that the excito-secretory centre of the liver is in the neighborhood of the fourth cervical pair. The section between the fourth pair cervical and sixth pair dorsal is then explained by this section severing the communication of the excito-secretory centre with the liver. It can furthermore be deduced that the inhibitory fibres of the liver pass out of the cord above the fourth, or else the hypoglycémie would not result from section below that point.

When a section between the fourth cervical and sixth dorsal is followed by removal of the pancreas, instead of getting a hypoglycémie with the symptoms of diabetes which are ordinarily obtained on removal of the pancreas, Chauveau found a condition of hypoglycémie, and following the theory as detailed above, the explanation is easy. The connection between the liver and its excito-secretory centre having been severed, the removal of the pancreas could not produce its ordinary effects.

When suppression of the pancreas is followed by section of the cord between the fourth cervical and sixth dorsal, from the previous work we should expect that the symptoms of diabetes would cease when the latter part af the operation was performed; but no such result awaits the experimenter. The hypoglycémie continues. The reason can be found in the sympathetic ganglia which lie in the track of the nerves. These act as relays to the central nervous system; and from these nervous impulses are sent forth, only these are dependent in character upon the primary impulse which is received from the higher source. They continue to act in the same way even though separated from their centres in the central nervous system. So when the cord was cut between the fourth cervical and sixth dorsal, the ganglia were left under the control of the inhibitory centre, and subsequent removal of the pancreas had no effect.

These experiments are further varied by substituting the bulbar section for removal of the pancreas, and the same results are obtained. Thus, section of the cord between the fourth cervical and sixth dorsal, followed by section at juncture of medulla and cord, produces no hypoglycémie. The hypoglycémie is produced and not diminished, however, when the section below the medulla is followed by section of the cord between the fourth cervical and sixth dorsal. Thus, in these experiments the isolation of the excito-secretory centre of the pancreas (or what we can consider as connected with it, the inhibito-secretory centre of the liver) acts in the same way as does removal of the gland itself. A section just below the medulla, combined with removal of the pancreas, makes no greater hypoglycémie than does simple removal of the gland.

To recapitulate Chauveau's theory: Diabetes is due to an excessive production of sugar by the liver. This production is regulated by the internal secretion of the pancreas, which acts upon the liver through its excito-secretory and inhibito-secretory nerves. The excito-secretory centre is in the cord near the origin of the fourth cervical pair. The inhibito-secretory centre is in the medulla. The internal secretion of the pancreas acts on these so as to stimulate the inhibito-secretory centre and moderate the excito-secretory centre. Removal of the pancreas does the reverse, and brings on hypoglycémie. Section just below the medulla cuts off the action of the inhibitory centre, and hypoglycémie results. Section of the cord between the fourth cervical and sixth dorsal allows the inhibito-secretory but not the excito-secretory centre to act — whence hypoglycémie. These centres act through ganglia, which, once excited, keep on originating impulses of a similar nature unless they receive an excitation of an opposite character. The removal of the pancreas has the same action on these ganglia as does the section at the junction of the cord and medulla. "The close connection between the effects of depancreatization and those of bulbar section serve to establish the identity of the direct mechanism which presides over the manifestation of these effects. The pancreas plays the rôle of an inhibitor of the liver by means of its central nervous regulators."

This theory of Chauveau's, which I have not stated quite as fully as the author gives it, calls our attention to the unity of diabetes. It is complicated. It is based on analyses of the blood and experiments on the nervous system, both of which methods of experimentation give opportunity for error. Nevertheless, it furnishes a better explanation of all forms of diabetes than anything yet advanced and will be useful in suggesting further work.

REFERENCES.

8. Minkowski: Diabetes Mellitus nach Exstirpation des Pankreas, 1893.
22. Abelman: Ueber die Ausuntzung der Nahrungsstoffe nach Pankreas-exstirpation mit besonderer Beruchsichtigung der Lehre von der Fettresorption.
23. Renzi and Reale: Quoted from Minkowski, see note 8.
24. Thiroloix: Archiv. de Physiol., 1892, p. 716.
25. Weintraud: Quoted from Minkowski, see note 8.
26. E. Gley: De la Glycosurie chez les chiens thyröidectomises, Arch. de Physiol., p. 240, No. 2, 1893.
27. Hedon: Arch. de Méd., Exper. 1, p. 44, 1891; Arch. de Méd., Exper. 5, p. 695, 1893; Arch. de Physiol., Exper. 1, p. 156, 1893; Arch. de Physiol., Exper. October, p. 617, 1892.
28. Thiroloix: Arch. de Physiol., Exper. 5, s. iv, pp. 716–720, 1892.
29. Quoted from Sandmeyer, see note 30.
30. Sandmeyer: Zeitschrift für Biologie, xxix, p. 86.
31. Lepine: Lyon Méd. Jour., January 25, 1891; Semaine Méd., 1891, pp. 24, 111, 179, 388, 467, 509; Also see note 3.
32. Seegan: Quoted by Lepine, see note 3.
33. Chauveau and Kaufmann: Soc. de Biol., February and March, 1893.

◆

RELAXATION AS A CURATIVE AGENT.

BY ANNIE PAYSON CALL, BOSTON.

Many diseases are either caused by or accompanied with unnecessary tension, and in addition it might be said that many diseases cause tension. This tension, which is involuntary but can be voluntarily dropped, disturbs the natural equilibrium of the forces of the body, and will not allow Nature to do her perfect work. The antidote is relaxation; and this being the case, certainly relaxation is not given the place that should be accorded to it among the natural curatives. Neither is it yet recognized to be as effectual an aid to the better working of medicine, as exercise, fresh air, nourishment, and so-called rest, which is often very far from relaxation. These four are accepted natural curatives; but their good effects may be greatly enhanced by systematic relaxation, which renders the body more susceptible to their influence.

Take the simple instance of severe pain, which of itself directly excites contraction. A very slight effort of the will to relax the suffering part often brings almost immediate relief. It is because of their relaxing power that warm applications are made. If these in return were assisted by the natural voluntary relaxing of the patient, each might help the other greatly and save much unnecessary suffering. With severe pain contraction is so abnormally instinctive that it seems at times to relieve it, but after such relief there is always a reaction which means increased suffering.

Many forms of indigestion result from contraction, and nothing else, and it is marvellous that medicine should have any effect in such cases, when it is steadily thwarted by an extreme tension on the part of the patient, a tension which might be dropped voluntarily. Of course indigestion of this sort can become chronic, when the tension is continued long enough to get beyond medicine or natural cures.

The semi-invalids who come week after week for more medicine and expect it to do its work and cure while they are steadily resisting it, are familiar occupants of a physician's office. But it does not, apparently, occur either to the patient or the physician that the patient can be taught not to resist, by as normal a process as a child is taught the use of its fingers on the violin — or the voice is given its natural freedom, that it may express itself in song.

It is an almost equally familiar fact that there are invalids, so-called, in whom the original disease has entirely disappeared, but the brain impression is almost, if not quite as strong as during the disease, and the patient is ignorant of the fact that he has recovered. The disease habits here often take some form of tension, the dropping of which helps the patient to reach a normal state, although there must be at the same time some mental effort.

Nervous tension is often so immediately connected with some mental impression that in order to relieve it the greatest tact is required. For instance, you cannot say to a man, "My dear sir, you are quite well if you will only behave as if you were." That would throw him back more decidedly upon the sick-list; but you can lead him little by little until he sees the state of his own case, believing this to be entirely his own discovery, and so takes pleasure in removing all abnormal habits and curing himself.

So it is with many cases of nerve trouble which arise from an over-worked, over-excited, or over-anxious brain. One form after another of mental strain the patient *must remove himself* before he can really begin to get rid of the tension that is keeping him ill. The triviality of these nervous anxieties is most remarkable, but of course they should be looked upon as mere forms of tension and dropped, just as one might study a muscle that is unnecessarily contracted and train it to a natural freedom. On the other hand, their triviality can never be truly impressed upon the patient unless he is led to discover it himself. A blunt effort at persuasion merely increases the tension, and this same tension, of course, retards the recovery.

A nervous invalid of this sort should be trained always objectively, as far as possible. Without such training, a man, or more especially, a woman, may be kept ill unnecessarily long, through the action and reaction of an anxious mind and tired nerves. The anxiety seems real and so works upon the tired nerves. The tired nerves are a physical reality and not only increase the anxiety but, in nine cases out of ten, cause it. The tension is continued and the patient is kept ill, and neither fresh air, exercise, nourishment, sleep, nor medicine can help a man, to any extent, where his own will persists in permitting his abnormally anxious brain and tired nerves to play back and forth one upon the other. This condition is more common with women than with men. Some women seem to take pleasure in overloading and emphasizing their anxious brains, in lacerating their tired nerves and then taking a daily, almost hourly, unhealthy observation of both. This, of course, is due to the more sensitive nervous temperament of the woman. But it is like rubbing a wound and then expecting it to heal, or perhaps in this case there is even a grim enjoyment of the non-healing process. And all so unnecessary if one would learn to look the other way, while nourishment, fresh air, exercise, sleep, and a normal relaxation are doing their own work with the assistance of whatever medicine may be needed.

Beside this nervous fatigue, there are many forms of nervous contraction from apparently no immediate organic cause, which might be greatly helped by gaining the power to relax normally. As an instance may be given a case of a woman who had suffered for years from an inability to articulate clearly and a want of power to direct her muscles. She could not make herself understood by any one, and at times would fall full length upon the floor, so uncertain was her balance. Physicians had told her that there was no cure, and after thirty years of this unfortunate state, she has now learned not only to balance herself on both feet, but to stand and rest easily upon one, and has gained the power of communicating with others with a perfect articulation.

The fact of the possibility of dropping unnecessary tension seems to be little recognized by many physicians. A short time since a very prominent doctor in one of our large cities, informed a man who applied to him for help in a spasmodic contraction of the throat, that he could not help him in any way: but added, "Nothing worse will happen than that you will faint away, and you will be all right then, for your throat will relax." It never occurred to him that the man, who had an excitable, nervous temperament, somewhat over-strained, might learn to relax his own throat, and save the inconvenient relief of fainting at times for the purpose of regaining his breath.

Unnecessary contraction, while more immediately recognized in such cases as the above, may be found, although by no means to so great an extent, in many diseases that have not a directly nervous cause. Various forms of congestion are accompanied with contraction. Fever may be increased by an excitement which causes contraction, and decreased by quietly giving up to it and letting it have its way. And so one form of disease after another could be named, which is increased by the accompanying contraction and would be correspondingly abated by its removal.

With unnecessary contraction, nourishment has not its full effect, the digestion is labored, so that nervous force is used in the process of digestion which would otherwise be kept for new life. Fresh air has not its full reviving effect, for the circulation is impeded, and the blood cannot carry the oxygen so freely through the body. Vigorous exercise is not taken as easily when the muscles are not normally directed, neither is it as beneficial in its results. First, because of the waste of force in motion; second, because as a result of this waste, there is often more or less tension when resting, which does not allow the quickened circulation all the freedom required for its best result. With unnecessary tension, sleep is not so restful as it should be, for when one does not give way to a perfectly natural sleep, the waste cannot be supplied so rapidly. Where it should be all a building up, there is at the same time a using up of force, all the more trying because it is abnormal.

Fresh air, exercise, nourishment and sleep are Nature's curatives. To lead the patient to a greater freedom is only to open the way that these may have a more immediate effect. The freer the body, the quicker Nature can bring it to a state of health, whatever may have been wrong in the beginning, and this, of course, applies equally to the action of medicine.

A man takes ether not only to get relief from pain, but to be kept in a passive state which will enable the surgeon to do his work, unhampered by the contractions that would inevitably come from fear or pain.

There is no ether that will keep a sick man in a state of freedom and allow the disease to run its course and be over with, but there is a natural freedom which might come without ether if the patient had a little knowledge of how to gain it.

A disease has a natural course, even though it is a disease, so truly does order reign in spite of man's disorder, and to give it its freedom with the guide of the curatives, would lessen the possibility of after effects which are often worse than the disease, or of death itself.

It is, of course, impossible to train a very sick man to keep quiet and free and let the disease be taken care of by Nature and medicine, but it is quite possible to train one who is not very ill, so that he may be saved much unnecessary suffering. Even a very sick man, if he is in his right mind, may be helped by gentle and constant suggestion.

Of course, as a preventive, a training to natural freedom could be used illimitably, but the object of this article is only to call attention to its curative power. A sense of weight may be given to the whole body, through getting the impression of weight from the slow lifting of an arm — either by another's moving it gently so that it must gradually be passive, or by the patient's being taught to lift it himself from the shoulder — even an inch from the bed, and then dropping it. As this is repeated over and over, the impression grows and a greater sense of weight is spread over the whole body, which relieves the tension and gives a certain degree of freedom. In addition to this, is the quiet effect upon the brain, which comes from fixing the mind upon something so simple. The result of the idea of weight tends to spread the freedom over the entire body, unconsciously to the patient.

Great care must be taken that the sense of weight is weight alone and not pressure.

This same result sometimes comes more quickly by a very slow lifting of the head by the two hands of another. The extremely slow motion of head, legs, or arms always has a directly quieting influence and so leads to greater freedom.

The immediate effect upon the brain of breathing is very well known, and various forms of quiet, long, and short breaths, can be made most useful, especially if the patient is well enough for the simple concentration of counting, — for instance, inhale counting seven, exhale counting seven — rest (breathing naturally) counting seven — and repeat this seven times keeping his own count. This may be increased to nine, twelve, fifteen, twenty-four, and the resting periods may be doubly as long as the breathing.

This simple concentration is often difficult even for those who call themselves well, and is most useful in focussing the mind with many who have, or have had, nervous prostration. A return, after a long nervous illness, to a natural use of the mind in talking, in reading, or in the various daily affairs of life, is often difficult, when otherwise one might be perfectly well, and is made easier by this simple form of concentration in breathing, because through it the brain gets a better balance. Added to these, are other exercises in concentration, by which, through keeping the mind steadily for a very short time on various forms and motions of nature, a strong brain impression is made and a healthier state of nerve brought about. These must be chosen with care and with special reference to individual needs, and are meant, of course, for help in nervous cases. They are successful often where the interest needs to be roused, and help comes as much from the way the exercise is given as from the exercise itself.

Having given an idea of weight and the deep breathing exercise according to the state of the patient, more or less can always be done in helping the power of direction, so that only the muscles needed will be used, even in turning over in bed or moving an arm or leg. Very great help is given through conveying an idea of what it is to free one's self from unnecessary mental tension.

Take a case, for instance, in which the patient is resisting constantly in his mind the fact of being ill. This resistance produces a tension of the brain, the effect of which is felt upon the entire body. Now if he can be shown, quite simply, that he must be perfectly willing to be ill, for that *will help him most to get well*, there is a counteracting effect at once and Nature and the doctor are given a better chance.

To be sure there are often instances where the patient instead of resisting the illness gives up to it too willingly. In that case he is resisting recovery and must no more be permitted to do so than to resist the illness. *Relaxation is necessary only in so far as it trains the body to a normal freedom and so enables it to find and hold its own equilibrium.*

It may be thought to be impossible to change a man's mental state to such a degree, but that depends upon how it is approached. As has been said before, all the tact of a diplomatist must be used in such training, as indeed in all training for a natural freedom.

The same is true of the resistance to various annoyances, great and small. Indeed irritability is one of the most fruitful causes of prolonging disease. The unwillingness in each case has the same effect upon the brain, and its counteraction brings immediate relief and so opens the way for a more rapid cure.

The process of relaxation as a curative may be briefly summed up thus: a greater freedom of the body to be gained through obtaining a sense of weight, quiet and deep breathing, and a power of natural direction and simple concentration.

It results in a freeing of the body, which will more certainly and rapidly permit a wholesome effect from fresh air, exercise, nourishment, sleep, medicine, and other curative processes.

◆

Clinical Department.

TWO CASES OF PULMONARY CONGESTION AND ŒDEMA OCCURRING DURING PREGNANCY.[1]

BY FRANCIS W. GOSS, M.D., ROXBURY, MASS.

Case I. Acute pulmonary congestion and œdema in patient six and one-half months pregnant. Death.

At 2 a. m., March 27, 1889, I was called to see Mrs. D., six and one-half months advanced in her first pregnancy. She had recently moved to Roxbury from a distant part of the city. Her pregnancy had been uneventful till the present illness.

During the afternoon preceding my summons she had been to see her physician, three or four miles away, because of a slight cough, and some difficulty of breathing, which had troubled her for a day or two. She retired as usual, slept for several hours, and then woke suffering from great dyspnœa and distressing cough. When I reached her she was sitting in a chair, in extreme distress, with alarming dyspnœa, rapid breathing, coughing and expectorating quantities of bloody serum. Her face was dusky, skin cold, and bathed with clammy perspiration. Her pulse was very rapid and feeble; the lungs filled with moist râles, and her condition betokened impending death. She lived but a short time, — not more than half an hour after my arrival.

Her physician informed me that there was nothing apparently serious in her condition when she called upon him the previous afternoon, and he was much surprised at her sudden decease.

Case II. Sudden pulmonary congestion and œdema in patient six and one-half months pregnant. Induced labor. Recovery.

Mrs. M., six and one-half months advanced in her seventh pregnancy summoned me at 11 p. m., October 26, 1893, on account of severe dyspnœa.

She had been seen nine days before by Dr. G. W. Clement in a similar attack, when her husband came for him saying that he believed his wife was "choking to death." Dr. Clement informs me that he found her sitting in a chair, bent forward, coughing hard and raising bloody, frothy sputa. The chest was filled with moist râles, the pulse was quick and feeble, and her condition critical. He was with her some three hours before she was sufficiently relieved for him to feel that it was safe to leave her. She rallied under the use of stimulants and of pilocarpin *sub cute.* On subsequent examination he found a mitral systolic murmur of the heart, and albuminuria.

Being obliged to leave the city for several days Dr. Clement directed that I should be sent for during his absence, if there was need.

When first seen by me the patient was suffering from alarming dyspnœa and orthopnœa, frequent cough and expectoration of bloody sputa. Pulse 120, respiration 48. In about two hours, under the use of aromatic spirits of ammonia, nitro-glycerine, etc., she became easier, and I left her for the night.

October 27th. She was much more comfortable, and had slept somewhat. She reported an attack of acute rheumatism several years ago, and another last winter.

Examination of the heart showed marked mitral systolic souffle; not much enlargement of the organ. Some œdema of extremities. Urine abundant under the use of diuretics prescribed by Dr. Clement. Albumen, one-third bulk. Epithelial and granular casts.

The patient said that she had not felt any fœtal movements since the attack of dyspnœa ten days ago. No fœtal heart heard on auscultation. She has had two premature births of dead children at about seven months, since birth of last living child four and one-half years ago.

October 29th. Has had some return of the paroxysms of dyspnœa. In view of the recurrence of the attacks and the continued tendency thereto, and the cardiac and renal disease, it seemed to me that the patient's condition was critical so long as the fœtus remained in utero. Accordingly, under antiseptic precautions, I introduced a catheter through the cervix uteri, with the view of bringing on premature labor. Pains came on during the evening and at 12.20 A. M. October 30th she was delivered of a fœtus apparently of about six and one-half months' development which had evidently been dead for several days.

---

[1] Read before the Boston Society for Medical Improvement, January 22, 1894.

With the exception of some rise of temperature on the second day, for which an antiseptic intra-uterine douche was given with immediate improvement, the patient made a satisfactory recovery.

November 30th. The patient is about and doing house-work. Feels fairly strong; no return of dyspnœa since labor. Urine abundant; specific gravity 1,025; albumen small in amount; and but one granular cast found in examination of two slides.

Judging by what I can learn from the text-books, and from conversations with physicians, such cases as those here reported are fortunately rare. When they occur, and medicinal treatment does not relieve, it seems to me the only hope for the patient may be speedy delivery, if it can be effected. In the first case there was no opportunity for the procedure. In the second, the patient's life was in jeopardy as shown by the recurrence of the alarming attack, notwithstanding she was under the influence of digitalis, diuretics, cathartics, etc., prescribed by Dr. Clement.

Whether such conditions appearing in pregnant women are always accompanied by cardiac or renal disease, or by both, I do not know. These troubles were present in the second case. In the first the point was not determined.

◆

TOXIC EFFECTS AFTER USE OF OIL MALE FERN (ETHEREAL) FOR TAPEWORM.

BY JOHN H. GRANT, M.D., FORT PORTER, BUFFALO, N. Y.,
Hospital Steward, U. S. Army.

C. H., aged thirty-five, was a soldier in the Garza campaign on the lower Rio Grande in Texas during the winter of 1890–91, at which time he was often obliged to subsist in part on insufficiently cooked goat meat. As a result, he became the possessor of a tænia saginata. Outside of the few large towns in this part of Texas, defecation by the inhabitants (principally so-called *greasers*) is universally carried on in the open-air and readily accounts for the manner in which our patient became infected.

In 1892, an army surgeon treated him by the administration of oil of turpentine, which produced violent strangury and the passage of about sixteen feet of the worm.

In November last he was again treated with drachm doses of oil male fern (ethereal) (of an old stock some time on hand); but two doses were retained, aborting about eighteen feet of the entosoa.

March 1st the man requested further treatment; and a fresh supply of the male fern having been received (W. H. Schiefflin & Co., New York), an emulsion with acacia was prepared, each fluid ounce containing one and one-third drachms of the oil. The day previous the patient abstained from solid food, a saline cathartic being administered at sunset. The morning following, at 6.30 one ounce of the mixture was given, and at 8.30 a like quantity; at noon a dose of sal rochelle was taken, resulting in the expulsion of about eighteen feet of the parasite. About 4 o'clock the patient, on leaving the water-closet, fell to the floor and had to be carried to his bed. The writer being then called, found the patient in a most pitiable condition — almost pulseless, skin cold, eyeballs protruding and staring, suffused with tears, the lids puffed and of a dark-brown color. Deafness was nearly complete in both ears, but the sight was not at this time affected. Patient was husky, suffered from a vise-like constriction of the chest, gasping for breath, and with a ghastly expression of despair. He appeared to be *in extremis.* As soon as possible whiskey (one ounce) was administered, and a sinapism applied over the sternum. In about five minutes the pulse could be felt. The other symptoms gradually disappeared, so much so, that in a half hour the case was considered safe. The feeling of chest constriction and of burning within the stomach lasted for a few hours; but a few ounces of milk and whiskey and particles of ice freely dissolved in the mouth, soon gave relief. The patient had dimness of vision and was very weak and nervous the day following, keeping his bed for two days.

There were two interesting points about this case. The first was the extreme depressant action of the male fern in what might be considered not a large dose.[1] It will be noticed that it was nearly eight hours after the second and last dose in this case before any alarming symptoms presented, and not until after the bowels had been moved several times. The second point was the thrice-repeated failure to bring away the head. Diligent search in the present instance failed to discover any traces, although a portion of the voided parasite was very narrow. Possibly the head is very securely imbedded beneath a fold of the *valvulæ conniventes* and protected from the direct action of the drug. The peristaltic action of castor oil might have secured the head, but owing to the disgust excited by it in the patient on previous attempts, an alkaline cathartic was prescribed instead.

◆

Medical Progress.

RECENT PROGRESS IN PUBLIC HYGIENE AND PREVENTIVE MEDICINE.

BY SAMUEL W. ABBOTT, M.D.

INFECTIOUS DISEASES, AND THEIR PREVENTION.

Diphtheria. — Dr. Thorne Thorne, chief medical officer of the Local Government Board of England, in a recent lecture upon Diphtheria, said:

"Bad sanitary conditions might have an influence, but they are overwhelmed by other conditions which cause the disease. . . . Diphtheria chiefly attacks children of school age, from five to fifteen and it is clearly proved that the disease is influenced by school attendance. Dr. Power has shown conclusively that, by an aggregation of children at school, you can deliberately manufacture a potency of diphtheria. The reasons for this are chiefly the special infection from the breath of those who are congregated together for any length of time, and the limited space set apart for the scholars. There is also the danger, at young ages, of children passing confectionery from mouth to mouth, of drinking from the same unwashed cups, the absence of ventilation, and other conditions."

He laid special stress upon infection through the medium of milk, and advised every one to leave off drinking raw milk. He also named the lower animals and especially the domestic cat, as carriers of infection.

---

[1] Pepper, vol. ii, p. 941; Hand-book of Medical Sciences, vol. iii, p. 65, and vol. vii, p. 790.

Isolation was recommended as absolutely essential. In hospitals there should be much more attention to the amount of *lineal* space per bed, which he deemed of more importance than cubic air-space or high rooms. No child should go to school from a house where there is a sore-throat. The system of keeping up "average attendance" by insisting that all scholars should go to school had done much harm. Everything that touched the mouth or lips of a patient should be burned. Houses should be selected which are not damp, and dense foliage should not grow near them.

THE DISSEMINATION OF SMALL-POX BY TRAMPS.

Special prominence has been given to this subject by the medical officers of health of England, during the past year; and valuable papers have been published by Dr. Armstrong, of Newcastle-on-Tyne, and others. Dr. Armstrong says: "Of 63 towns invaded in 1892–93, the medical officers of health of which have given me the particulars, 37 or 59 per cent., had the infection primarily from vagrants. The disease was brought secondarily by vagrants into 36 towns, including some into which first cases had also been brought by the same class of persons. Such secondary infections occurred as often as nine times in Carlisle, Southampton and Sunderland, twelve times in Warrington, fifteen times in Keighley, eighteen times in Blackburn, and no less than twenty-five times in Nottingham. In nineteen times only out of the 63 towns reporting, was small-pox infection stated to have been brought otherwise than by vagrants; and in seven of these it was subsequently reintroduced by vagrants no less than twenty-five times. As a result of his inquiries Dr. Armstrong presented the following resolutions:

> That the Incorporated Society of Medical Officers of Health consider it desirable:
>
> (1) That vagrants should be restrained in their powers of carrying infection about the country, especially in epidemic times.
>
> (2) That they should be made to report their movements.
>
> (3) That they should, when considered requisite, be subject to disinfection and detention for such time as the sanitary authority of the district in which they are may think necessary for the protection of the public health.
>
> (4) That in epidemic times all persons frequenting casual wards or common lodging-houses should be medically examined on admission.
>
> (5) That sanitary authorities and the police should have power to detain for medical examination any vagrant found in any public place.

MILK-INFECTION.

Prof. W. T. Sedgwick has contributed valuable papers upon different phases of this subject to the *Boston Medical and Surgical Journal* and to the Twenty-fourth Report of the State Board of Health of Massachusetts. Other investigations confirm the conclusions presented in these papers, first, as to the presence of bacteria in large numbers in milk as drawn from the cow, and, second, as to the question of milk as a medium for the transmission of the infection of typhoid fever.

König,[1] in his recent volume, says: "Cow's milk, although it may leave the udder free from bacteria, will be found to contain them immediately after milking. These bacteria enter the milk by means of hair, and particles of dirt floating in the air of the stable, and increase with extraordinary rapidity.

Cropf and Escherich[2] found in milk, two or three hours after milking, by means of Koch's method of cultivation, from 60 to 10,000 colonies, and in five to six hours after milking 200,000 to 6,000,000 colonies per cubic centimetre.

E. von Freudenreich[3] demonstrated the rapid development of bacteria in milk as follows; at different temperatures:

Number of Colonies of Bacteria per Cubic Centimetre.

	15° C. (60° F.)	25° C. (77° F.)	35° C. (95° F.)
3 hours after milking . .	10,000	18,000	39,000
6 hours after milking . .	25,000	172,000	12,000,000
9 hours after milking . .	46,500	1,000,000	35,280,000
24 hours after milking . .	5,700,000	577,000,000	50,000,000

Miquel[4] also testifies to the rapid development of bacteria in milk, and to the fact that the rapidity of development depends upon the temperature of the milk. Although the bacteria may be harmless, their presence must be borne in mind, especially in the use of cows' milk as food for infants. In addition to the harmless bacteria, those which are pathogenic may also gain access to the milk, and thus cause disease.

In Luzerne, Switzerland,[5] several epidemics of typhoid fever have been traced to buttermilk, which was returned from the creameries to milk-dealers after the cream had been removed for making butter.

A similar typhoid epidemic[6] is detailed in the Danish "Wochenschrift für Aerzte," which occurred in the fall of 1886 in the three districts of Ore, Haarsley and Skowby, in the island of Fünen. The cause was traced to a common establishment belonging to these three parishes, from which buttermilk was re-sold to customers. Typhoid fever was found to exist at this establishment, and the sick patients had partaken of the returned buttermilk.

Another epidemic traced to buttermilk is reported from two districts in Hanover.[7]

In Groningen, Holland,[8] another typhoid epidemic was reported in 1886, the cause of which happened to be the infection, in the dairies, of vessels washed with water which had been polluted by the excreta of typhoid fever patients.

Almquist[9] reports an epidemic of the same disease which occurred near Göteborg, Sweden, in 1889, in which the cause was determined to be the infection of skim-milk which had been returned from a dairy to the consumers.

Kitasato[10] reports cases of cholera which were caused by the use of infected milk in Calcutta. The investigations of Koch and Kitasato show that cholera bacteria will multiply in milk. Their length of life depends on the reaction of the milk. The sooner it sours the sooner they die.

THE HYGIENE OF OCCUPATIONS.

The well-known observations of Dr. Farr upon the mortality of persons engaged in certain occupations, as deduced from the Registration Reports of England, have been supplemented by valuable papers on the same subject by his successor, Dr. Ogle.

---

[1] Chemie der Menschlichen Nahrungs und Genussmittel, Third Edition, 1893.

[2] Chem. Centralblatt, Bd. ii, pp. 583, 584.

[3] Kleine Milchzeitung, 1890, No. 2.

[4] Chem. Centralblatt, 1890, i, p. 1064.

[5] Milchzeitung, 1890, p. 296.

[6] Ibid., 1886, p. 834.

[7] Ibid., 1890, p. 245.

[8] Ibid., 1886, p. 875.

[9] Zeitschrift für Hygiene, 1890, 8, 137.

[10] Ibid., 1889, 8, 491.

The following is selected from several tables presented by Dr. Ogle at the last session of the International Congress of Hygiene at London.

Comparative Mortality from Phthisis and Respiratory Diseases, of Men from Twenty-Five to Sixty-Five Years of Age, Engaged in Various Dust-Inhaling Occupations.

	Phthisis.	Lung Diseases.	Total.
Fishermen (as standard)	55	45	100
Carpenters, joiners	103	65	170
Bakers	107	94	201
Wool-workers	130	104	234
Cotton-workers	137	137	274
Cutlers, scissor-makers	187	196	383
File-makers	219	177	396
Masons, brick-layers	127	102	229
Stone- and slate-quarry men	156	138	294
Pottery-makers	239	326	565
Cornish miners	348	231	579
Coal miners	64	102	166

The point most worthy of note in the foregoing table is the remarkable immunity of coal-miners from phthisis, as compared with the high mortality of the metal miners of Cornwall.

ON THE QUALITY OF THE BERLIN SERVICE-WATER.[11]

Dr. Proskauer furnishes additional facts upon the effect of filtration of water through sand, as investigated by Piefke and Fränkel.

The volume of water furnished to Berlin is daily on the increase, and this increase is not due alone to the growth of population, but also to a larger consumption per head. Respecting the composition of the unfiltered water of the Spree, and of Lake Tegel, which furnish the city water-supply, the author points out that the experiments carried out during the last few years, with reference to the power of the sand-filters to arrest micro-organisms, have shown that it is imperative that the source of water should be, as far as possible, protected from pollution by human excreta, so as to furnish a raw material of the utmost degree of purity.

In this respect, the water of Lake Tegel is greatly preferable to that of the river as drawn at the Stralau works. The river water is, as a rule, strongly yellow in color, almost always turbid, and has a muddy taste and smell. When allowed to stand, it has at times a considerable deposit, consisting mainly of organic detritus and bacteria. The water of the lake is, as a rule, clear, but occasionally slightly turbid; in color it is pale yellow, and the taste and smell rarely dead and earthy. This, in fact, occurs only when the snow melts in the spring, and there is at certain periods a slight deposit. The bacteriological examinations showed that the river water was usually very rich in germs, and that the number is on the increase. Out of sixty analyses in the period of two-and-a-half years, the number of colonies of bacteria in one cubic centimetre of water was,

In 16 cases or 26.6% of the tests over . . . 100,000
In 23 cases or 38.3% of the tests between 10,000 and 100,000
In 20 cases or 33.3% of the tests between 1,000 and 10,000
Only one sample contained less than 1,000 germs.

Contrasting the totals per cubic centimetre in the present period with those in former years, it appears that in

1884–85 there were from	59 to 8,316 germs
1885–86 there were from	191 to 110,740 germs
1886–87 there were from	750 to 17,000 germs
1887–88 there were from	1,400 to 186,000 germs
1888–89 there were from	220 to 190,000 germs
1889–91 there were from	940 to 360,000 germs

The author believes that the water of the Spree is becoming so polluted that its use must either be shortly discontinued on sanitary grounds, or the filtration must only be permitted to be carried out under the most stringent precautions.

There were only three occasions, however, when the number of germs per cubic centimetre in the water of the Tegel exceeded one thousand.

With reference to the filtered water, the author says the number of bacteria capable of development after filtration were as follows:

During 1889–90 from	12 to 110 per cubic centimetre
During 1890–91 from	9 to 310 per cubic centimetre
During 1891 (last half)	3 to 60 per cubic centimetre

Only three times during the whole period did the number of germs in the filtered Tegel water rise above one hundred per cubic centimetre.

On twenty-three occasions the filtered water of the Spree contained more than 150 germs, the numbers ranging from 310 to 13,000 per cubic centimetre. In certain cases these high ratios of germs were attributed to the freezing over of the filter-beds. The beds at the Tegal works are covered in and cannot become frozen in winter.

After reviewing the chemical and bacteriological analyses of the water, the author points out that only the latter tests furnish an accurate and liable indication of the working of the filter-beds. The quality of the service-water was tested in the mains at various parts of Berlin, and copious tables are given of the analyses of the water, made at stated intervals during the whole period.

LEAD-POISONING FROM A PUBLIC WATER-SUPPLY.

Several cases of poisoning in the town of Calau[12] induced the government to make an inquiry as to the cause. The water was of extreme purity, as indicated by chemical analysis, and contained only five germs per cubic centimetre. It was brought to the town in cast-iron pipes coated with asphalt composition, but the houses were supplied by means of lead-pipes of considerable length. Two months after the water was introduced there, some cases of lead-poisoning were reported among inhabitants where the water remained undisturbed in the pipes during the night. An inquiry conducted under the direction of Dr. Koch revealed the presence of lead, varying in amount from a mere trace to thirteen milligrammes per litre.

The reason for this rapid absorption of the lead was shown to be the richness of the water in free and partially combined carbonic acid, the low percentage of carbonates, and its extreme softness. The tendency to dissolve lead was further increased by the large volume of air contained in the water, which was taken up during its flow through the mains, for at the source it contained no air whatever.

THE WATER-SUPPLY OF PARIS.

The new water-supply of Paris,[13] now being introduced, will yield a supplementary supply of 25,000,000 gallons per day, at a cost of about $7,000,000. The sources are two streams, the Breuil and the Vigne, whence it is to be brought to the reservoirs at Montrebon, a distance of about 68 miles, of which 38½ miles are open cutting, 18½ miles are underground conduits,

---

[11] Zeitschrift für Hygiene, vol. xiv, 1893, p. 250.
[12] Ibid., vol. xiv, 1893, p. 295.
[13] Le Genie Civil, vol. xxii, 1891, p. 181.

3 miles elevated conduit, and 4½ miles are siphons. The diameter of the open cutting varies from 5 feet 10 inches to 6 feet 2 inches. The reservoirs are designed for a capacity of 10,600,000 cubic feet, and are divided into three compartments.

A NEW DISINFECTING APPARATUS.

This apparatus was designed by Mr. O. Krell and Dr. Raptschefsky, at the direction of the inspector of the medical department of the Russian army. In the first instance all existing forms of apparatus were procured, and were submitted to a searching trial. The conditions laid down for the new apparatus were:

(1) That it should destroy entirely, not only the germs of all known pathogenic organisms, but even those bacilli found to be the most difficult of extermination (the garden-mould bacillus).

(2) That the disinfection should be accomplished in the shortest space of time.

(3) That the apparatus should be as simple as possible, both in construction and in manipulation.

The various systems tested were: (1) hot air; (2) superheated steam; (3) saturated-steam jets; (4) saturated steam at rest, with means for creating high pressure during disinfection; (5) saturated steam at rest at about atmospheric pressure, with means for producing a vacuum by condensation; (6) saturated-steam jets at high pressure, with superheating.

The operations of these various classes of disinfecting apparatus were discussed in detail; and the experiments led to the conclusion that the new apparatus must work by means of saturated steam at a high pressure, with provision for the ventilation of the disinfecting chamber, and with special air-inlets also at the floor level, without special heating apparatus within the chamber, but furnished with heat-accumulators. The apparatus is made of steel, is cylindrical in form (3 feet in diameter and 5 feet long). The cylinder is placed horizontally, and has doors at each end, fastened to bronze rings with six screw-bolts to each. The chamber is tested to a pressure of ten atmospheres at the works, but the safety-valve is weighted to lift at three-quarters atmosphere above normal.

The total weight of the apparatus is about one ton. It is distinguished from all others by its rapidity of working. The previous heating up of the chamber from the cold state takes two minutes; and in fifteen minutes more a temperature of 100° C. (212° F.) is reached, even through a thickness of thirty-two blankets, while, in five minutes more, the temperature rises to 112° C. (234° F.). The disinfection, therefore, even of the most difficult objects, can be completed in twenty-two minutes. The working speed is contrasted by the author with that of other forms of apparatus now in use, and the advantage of saturated steam at 100° C. over heated air, even at 150° C., as determined by Koch,[14] is insisted upon.

RECENT APPARATUS FOR CREMATION.

Dr. T. Weyl,[15] of Berlin, gives a brief historical account of the practice in all past ages (introduced by the Aryan race), and traces the revival of the practice to the close of the eighteenth century, although from that time till the first cremation in Europe at Milan, January 27, 1876, a period of nearly eighty years elapsed. Since that date the practice has extended in Italy, till there are now 27 crematories in operation in that country alone.

In Germany, the first crematory was built at Gotha in 1878. No others were introduced till that at Hamburg in 1891, but very soon after others were erected in Heidelberg, Berlin and Offenbach. The number of cremations at Paris reaches a total of 400 annually, and the system is in use to some extent in Switzerland, Denmark, Sweden and the United States. The author classifies the existing establishments under two heads, those without regenerative furnaces and those which adopt this plan. To the former class belong the crematories of Milan, on the system of Gorini, and that of Venini, which is a modification of the former. In the latter class are included the crematory at Gotha, in which, during the period ending November, 1891, no less than 976 bodies had been disposed of. The process here lasts two hours-and-a-half, and the cost is about eighty marks ($18.50). The system of Bourry at Zurich, the furnace of Toiseul and Fradet at Père-la-Chaise, in Paris, and others at Stockholm and Gothenburg are founded on the regenerative furnace of Siemens. The furnace of Guichard differs from those mentioned by the use of coal-gas and compressed air; it has, therefore, no gas-producer furnace. In an experimental trial of this furnace at Paris, the process lasted forty-six minutes, and involved the use of 190 cubic metres (about 6,700 cubic feet) of gas and 500 cubic metres of compressed air. A table is appended, giving the cost of cremation with each system, together with the time employed in the antecedent heating, and also in the cremation itself.

INFECTIOUS DISEASES. — PERIODS OF INCUBATION, QUARANTINE AND INFECTION, AND SOURCES OF INFECTION.

The following summary is condensed from Dr. L. F. Parkes's recent "Handbook of Infectious Diseases," and will be found very useful to boards of health and sanitary officials for reference, as well as to general practitioners of medicine.

DIPHTHERIA.

Incubation Period: least, unknown; average, 2 days; greatest, 7 days.

Quarantine Period: 7 days from last exposure to infection.

Infective Period: from the beginning of symptoms, for the whole period of illness.

Sources of Infection: 1. From a previous case, acute or convalescent. 2. From a case of apparently simple tonsillitis. 3. From a case of apparently simple nasal ulceration or ozæna. 4. From domestic animals (cats, pigeons or fowls) suffering from a throat affection of a diphtherial nature. 5. From cows' milk, by human infection of the milk in the cow-sheds and dairies, etc. 6. From fomites, that is, infected bedding, clothes, carpets, curtains, books, toys, cups, spoons, forks, etc. 7. From a person who has been in contact with a diphtheria patient, but who has not himself contracted the disease. 8. From defective sanitary conditions; these are probably merely predisposing causes engendering morbid conditions of the tonsils favorable to the growth of diphtheria contagion when implanted thereon.

SCARLET FEVER.

Incubation Period: less than 24 hours; average, 1 to 3 days; greatest, 7 days.

Quarantine Period: 7 days from last exposure.

Infective Period: from earliest appearance of symptoms, till all desquamation has ceased.

Sources of Infection: 1. From a previous case of scarlet fever, acute or convalescent. 2. From a case of sore throat without discernable rash, but merely a mild form of the disease. 3. From cows' milk, either by human infection of the milk in cow-sheds and dairies, or during the milking, or from a diseased condition of the cows. 4. From fomites. Infection may be carried by persons who are not themselves sufferers, if they have been in contact with patients.

---

[14] Gesundheits Ingenieur, August 31, 1892, p. 521.

[15] Ibid., 1892, p. 377.

MEASLES.

Incubation period: from exposure to infection to onset of illness: least, 4 days; average, 9 to 10 days; greatest, 14 days. From exposure to infection to appearance of rash: least, 7 days; average, 14 days; greatest, 18 days.

Quarantine Period: 15 days from last exposure to infection.

Infective Period: from earliest appearance of symptoms till convalescence is well established. The catarrhal stage preceding the eruption is very infectious.

Sources of Infection: 1. From a previous case of measles. 2. From fomites.

MUMPS.

Incubation Period: least, 14 days; average, 21 days; greatest, 25 days.

Quarantine Period: 25 days from last exposure to infection.

Infective Period: from onset of prodromal stage for 2 or 3 weeks subsequent to appearance of parotitis. The chance of infection diminishes progressively from the onset of the disease.

Sources of Infection: 1. From a previous case. 2. From fomites.

GERMAN MEASLES.

Incubation Period: least, 5 days; average, 18 days; greatest, 21 days.

Quarantine Period: 21 days from last exposure to infection.

Infective Period: from onset of prodromal stage to cessation of desquamation.

Sources of Infection: 1. From a previous case. 2. From fomites.

INFLUENZA.

Incubation Period: less than 24 hours; average, 3 to 4 days; greatest, 5 days.

Quarantine Period: 5 days from last exposure to infection.

Infective Period: from earliest onset of symptoms till convalescence is well established.

Sources of Infection: 1. From a previous case of influenza. 2. From fomites.

WHOOPING-COUGH.

Incubation Period: least, 7 days; average, not determined; greatest, 21 days.

Quarantine Period: 21 days from last exposure to infection.

Infective Period: the whole period of illness from onset of earliest catarrhal symptoms.

Sources of Infection: 1. From a previous case of whooping-cough. 2. From fomites.

SMALL-POX.

Incubation Period: least, 9 days; average, 12 days; greatest, 15 days.

Quarantine Period: 15 days from last exposure to infection.

Infective Period: from the onset of initial symptoms till all scabs have been removed. The period of greatest infectivity is during the acute stage (vesicular and pustular). During the initial illness and until the appearance of the rash the liability to impart infection is not great.

Sources of Infection: 1. From a previous case of small-pox. 2. From fomites. Infection can be carried by a person who has been in contact with a small-pox patient, but who is not himself a sufferer from the disease. 3. Proximity to a small-pox hospital containing numerous cases in the acute stage.

CHICKEN-POX.

Incubation Period: least, 13 days; average, 14 days; greatest, 19 days.

Quarantine Period: 19 days from last exposure to infection.

Infective Period: from appearance of eruption till this has completely disappeared.

Sources of Infection: 1. From a previous case. 2. Fomites. The infection may be carried by those who have been in contact with the disease.

TYPHOID FEVER.

Incubation Period: least, 8 days; average, 12 to 14 days; greatest, 23 days.

Quarantine Period: 23 days from last exposure to infection.

Infective Period: the excreta are infectious through the whole course of the disease and until convalescence has been established at least a fortnight.

Sources of Infection: 1. Water, food or air contaminated by the specific virus contained in the excretions of a typhoid-fever patient. 2. Fomites. Infection may persist for several weeks in infected clothing and bedding shielded from exposure to light and air.

TYPHUS FEVER.

Incubation Period: average, 7 days.

Quarantine Period: 14 days from last exposure to infection.

Infective Period: from beginning of illness till convalescence.

Source of Infection: From a previous case of the disease. Fresh air and free ventilation rapidly destroy the virulence of the contagion. Fomites probably do not propagate the contagion.

ASIATIC CHOLERA.

Incubation Period: least, a few hours; average, 1 to 2 days; greatest, 10 days.

Quarantine Period: 10 days from date of last exposure to infection.

Infective Period: from earliest onset of symptoms till complete recovery.

Sources of Infection: 1. From water, food and air contaminated with the discharge of a person suffering from cholera. 2. From fomites. 3. There is reason to believe that the virus contained in the excreta at the time of leaving the body of a patient and for a short period afterward, is in a less active condition and more easily destroyed by chemical agents than after such excreta have been exposed for a short time to contact with the air.

◆

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

J. T. BOWEN, M.D., SECRETARY.

Regular Meeting, Monday, January 22, 1894, the President, Dr. C. F. Folsom, in the chair.

Dr. F. W. Goss reported

TWO CASES OF PULMONARY CONGESTION AND ŒDEMA OCCURRING DURING PREGNANCY.[1]

Dr. E. Reynolds: This subject seems to me one which rests upon a basis of clinical medicine and physiology more than obstetrics. I came to-night prepared to learn rather than to contribute anything valuable to the discussion, and my impression that that would be the case is strengthened by the paper. All that I can say on the question is derived from a theoretical standpoint. We know that in normal pregnancy the systemic circulation labors under an increased obstacle, that that obstacle is thrown back through the left heart on to the pulmonary circulation and the right heart; there is normally then an increase of tension throughout the whole circulatory system. We know that as pregnancy advances the heart normally enlarges. Authorities are divided as to whether it is by dilatation or hypertrophy; the fact, however, being probably, that it is usually a mixed process, though either factor may predominate. Under these conditions it is easy to see that any slight addition to the obstacle may induce an œdema, especially in the pulmonary circulation to which the whole obstacle is thrown back.

Such a complication occurring, the question of treatment, it seems to me, should be primarily solved by a resort to medical measures, everything to strengthen the heart, everything which can relieve the system of its added load; depletion of the circulatory system so far as that is consistent with the patient's general strength. But the question of the induction of labor seems to me a very difficult one. We know that in normal cases cardiac symptoms develop during labor in a large proportion of all instances, from the fact that during the contractions of the uterus, and during the increased tonic pressure upon the uterine vessels in labor, the extra load which the heart is already carrying is actually increased again, and that many hearts fail to compensate this extreme load even under normal circumstances.

Where the heart has already given out during pregnancy, I should question much the wisdom of adding to it the extra load of labor. I should feel I should not be willing to recommend the induction of labor until all medical means had been exhausted, and should personally feel that I should be unwilling to do it until after consultation with the best authority in clinical medicine whom I could obtain. If, as in Dr. Goss's second case, the woman recovered sufficiently to be in fair condition, and yet not so thoroughly but that there was a strong prospect of a recurrence of this very dangerous complication, I should be inclined to induce labor, but I should feel that in that case everything was in favor of the most rapid methods, of those which would least prolong the added strain upon the heart, due to the pressure of the contracting uterus. Such cases are, of course, unfit for anæsthesia. In some cases rapid delivery without anæsthesia is impossible because the muscular fibres of the cervix resist dilatation too firmly. In other cases, and especially in those in which the patient is already in a state of exhaustion, a moderately rapid dilatation of the os by the hand can be carried on without anæsthesia, to a degree which at least will permit the introduction of one finger. When one finger can be introduced into the uterus it is usually possible to hook down the foot of the fœtus at six or six and a half months; and by traction on the foot, any os can be gradually dilated, the fœtus acting as a wedge, and exerting pressure from above. I should be inclined to believe that such a method as that would be much preferable to any gradual induction of labor, but as I said, I can speak of this question only upon theoretical grounds and not from experience. My own experience with pulmonary œdema as a complication of pregnancy has been wholly limited to cases of renal origin with which, as I understand it, this discussion is not concerned.

---

[1] See page 336 of the Journal.

Dr. C. M. Green: I can add very little to the subject; I came to learn. It has always been taught that in such cases induction of labor should be the last resort; that medical measures should be the first recourse; and only on their failure and in critical condition of things, as a last hope, labor should be induced. I am reminded of a case which I saw in consultation, where the cause of death was uncertain; but the clinical history of the case was very similar to that of Dr. Goss's cases. The patient was taken with serious dyspnœa. There was œdema of the lungs and some lesion of the heart, I believe. She was, however, more nearly advanced to term, and I am not sure she was not very near to term. It was thought best to deliver her, and it was done; but the patient died after a few days of the combined difficulty, which, I believe, was somewhat of the kidney and somewhat of the heart. I should, I think, in such cases place my chief reliance on medical measures, should relieve the lungs by action upon the kidneys and bowels. The literature of the subject is very scanty.

Dr. A. L. Mason: I should like to ask, whether in cases of extensive œdema of the lungs from pregnancy, Bright's disease or other causes, there is any objection to the use of pilocarpine subcutaneously.

Dr. Goss: In the first attack of the second case Dr. Clement used pilocarpine subcutaneously, hoping to relieve the condition of the lung, and the patient was relieved by its use. There was a profuse increase of saliva, the woman bending forward and the secretion running from her mouth. I suppose there is always the risk of the patient being drowned, so to speak, by the profuse secretion in the use of pilocarpine under such circumstances. Regarding the induction of premature labor in the second case, as far as the child was concerned it seemed to me there was not much hesitancy because there was every evidence that the child was dead. I sought counsel before proceeding to induce labor; and in this case, at any rate, relief was obtained, and there has not been recurrence of the serious attacks. Medical treatment had been thoroughly tried, and the patient still remained in a precarious condition, and it seemed to me that the induction of labor was the only thing remaining to be tried. I think the method pursued was safer than rapid dilatation and forced delivery would have been.

Dr. Green: I have used pilocarpine in pulmonary œdema of renal origin especially, and very rarely has it seemed to do harm. I recall one case of extensive œdema of the lung, in which I thought the patient would drown, so extensive was the salivary secretion. She, however, recovered. It seems to me that with careful watching, to guard against the depressing effects of pilocarpine, and by keeping the heart well supported, it is a safe drug and acts very successfully.

Dr. Reynolds: I should like to add the same experience with a single exception of one distressing case that I saw in consultation, that did die; but I think the drug relieved the condition in a number of other cases.

Dr. Mason: Recently a case of a different nature came under my observation, a man with Bright's disease and very extensive œdema of the lungs. The question of pilocarpine came up. It seemed to me there was so much œdema that it was not a good drug to use, and it was not used. I am glad to know that it is generally safe.

A CASE OF APPENDICITIS.

Dr. C. F. Folsom: Last night (Sunday) I went to my office at 9.30, and found a lady waiting to see me in reference to a member of her family who had slight pain in the lower part of the abdomen, thought to be due to having eaten a raw apple the previous evening. She had vomited slightly Saturday evening, and had had two loose discharges. She had been moderately comfortable during the day. I said I should rather see her before suggesting anything, but the lady said it was quite superfluous, as there was nothing serious the matter. I called and found a slight localized tenderness inside the crest of the ileum on the right side. The patient looked perfectly well, pulse below 100, had had a slight chill. I said I would see her again in the morning. I found she had had a rather uncomfortable night, and the tenderness had become a little more diffused, extended nearly to the umbilicus, but also in the left side and above the umbilicus and the epigastrium. Temperature 101.5°, pulse 104, no vomiting during the day or night or to-day, and there had been no very great pain. No resistance could be felt, nothing in the way of tumor. It seemed to me it could not be anything else than appendicitis. Dr. Porter saw her and concurred in the diagnosis. The diagnosis having been made we both urged an early operation. The operation was done this afternoon at five o'clock. The striking features in the case in my mind were the very slight symptoms as compared with the gravity of the condition which Dr. Porter found. It was difficult to persuade the patient that she had serious trouble; there were no marked constitutional symptoms and yet the appendix was found to be gangrenous. I should have said that there was no special tenderness, pain or sense of resistance at the so-called McBurney point at any time.

Dr. C. B. Porter: The case was extremely interesting because it had been induced, as the family thought, by indiscretion in eating an apple. I found, on examination, that there was more resistance to pressure over the region of the appendix, but there was also extreme sensitiveness to the touch on the left side above the umbilicus and just below the ensiform cartilage. Considering the temperature, the localization (especially at Dr. Folsom's first visit) in the right iliac fossa, and not being able to think of anything else it could be, it seemed to me wise to operate. The very extensive sensitiveness seemed to me indicative of a threatened general peritonitis (if it had not already started), with its origin probably in the right iliac fossa. I made an incision for the ordinary operation for removal of the appendix; and when I got down to the junction of the small with the large intestine, it was impossible to find any appendix. Upon turning the ascending colon upwards, I could feel the induration underneath, and upon dragging it all out, it was found that the appendix, which was very long, was drawn back and was all adherent on the posterior surface, but that there was no pus. As soon as I had discovered a band running off to one side, I commenced to dig it out with my finger a little, and then there came a puff of that foul gas, significant of anything gangrenous, and I said, "My finger has touched it if I have not yet seen it." Dissecting further I found I had the base of the appendix laid bare near the junction of the cæcum and ileum, and down further, behind the cæcum, was the rest of it so imbedded that I could not tell what was appendix and what were the surrounding parts. I passed an aneurismal needle underneath the base of the appendix, tied two ligatures and cut between. I then dissected it away, and at about the middle it broke entirely, it was so gangrenous, and left a piece deeply placed that had to be dissected afterwards. As soon as the bowel was cut the lumen at both ends was touched with a 95-per-cent. solution of carbolic acid to prevent infection. Finally, I succeeded in digging out the rest of the appendix. It is interesting to see the extent to which the destruction had gone. I have operated on a few cases as gangrenous as this, and one fully as much so within twenty-four hours, and it goes to show how important it is for cases which are suspected to be appendicitis to be thoroughly studied with reference to immediate operation.

Dr. E. B. Brackett read a paper on

THE USE OF GYMNASTICS IN THE TREATMENT OF LATERAL CURVATURE.[8]

Dr. E. H. Bradford: My views are so thoroughly in accord with Dr. Brackett's that it is hardly possible for me to discuss, as I agree with everything he has said. I think he has hardly laid stress enough on the fact, which I think he was one of the first to call attention to, that is, the necessity in cases of this sort with slight osseous change, of avoiding forward curving of the spine. To express it in more common language, what a patient with a rotary lateral curvature needs to do, if it is desired to correct the deformity, is to attempt to become what is known as a backward athlete, namely, that class of athletes who can bend the spine backward to a greater extent than is normally possible. Any one who has examined the back of one of this class of athletes will have noticed its peculiar character, namely, not only how symmetrical it is, but also how the physiological curves are diminished; and the exercises and practices which are necessary to produce this are what is needed in treating rotary lateral curvature with any osseous change. This is entirely independent of exercises for the development of muscles. Exercises for the development of muscle, as Dr. Brackett says, are useful and important to enable the patient to maintain a correct attitude; but for corrective exercises attention should not be paid so much to the muscles as to increasing the flexibility of the spine and the contraction of the limb muscles.

Dr. E. M. Hartwell: My belief is that ordinary gymnastics are worth nothing, or next to nothing, in the treatment of scoliosis, except in so far as they may be made serviceable in giving tone and power to the muscles of the back after the spine has been straightened, or its deformed curves reduced by other more appropriate and effective forms of procedure. By ordinary gymnastics, I mean school gymnastics and the various forms of light and heavy gymnastics that are taught or practised in most gymnasia. The ordinary gymnastic teacher or director is apt to be so wedded to mere "muscle-building" as to be a blind adherent to the doctrine that scoliosis is due chiefly to disordered or impaired muscular action. Any one who professes to treat a fully-developed scoliosis by means of customary gymnastic exercises, having only the resources of an ordinary gymnasium at his command — be that gymnasium never so completely equipped with pulley-weights and gymnastic machines — transcends his functions and promises what he cannot perform. Even the so-called medical gymnastics should be looked upon as an adjuvant therapeutic measure chiefly, and not, as so many uncritical enthusiasts would have us believe, as the sole or even the most effectual means of reducing or abolishing a scoliosis. I entirely agree with Dr. Brackett and Dr. Bradford in holding that muscular exercise alone is totally inadequate to the task of straightening a scoliotic spine in which any considerable degree of rigidity has declared itself. That school and recreative gymnastics, if they are well taught and diligently practised during childhood and the first stage of adolescence, are of great value in counteracting the deforming attitudes imposed so often on school children, and so far, both are efficacious in preventing scoliosis, I have not any doubt.

It cannot be gainsaid, I think, that the *Sjuk-gymnastik* of the Swedes includes many mechanical procedures, among those they call passive movements, that are capable of rendering efficient aid in increasing the flexibility of a not wholly rigid spine, so that its deforming curves may be corrected. If once the spine is *redressed* massage and active exercise of the atonic and atrophic muscles come into play as corroborative measures. When torsion is present, or anatomical changes have been wrought in the vertebræ and the vertebral ligaments, the work of supplying and *redressing* the spine is tedious and expensive, often extremely so.

The medical profession owes a debt of gratitude to Dr. Gustaf Zander, an acute and accomplished physician of Stockholm, for the patience and mechanical genius displayed by him during the last thirty years in developing the so-called Mechanical Medical Gymnastics. Dr. Zander has invented and brought into use a series of some seventy machines, by means of which the appropriate effects of the more important active and passive movements embraced in the Swedish movement treatment can be secured more effectually, certainly and cheaply, where numbers of patients are concerned, than is possible under the conditions which usually obtain in the practice of medical gymnasts, be they never so skilful.

---

[8] See page 329 of the Journal.

The Zander machines are divided into two main classes, namely: (1) those that afford active exercise to the patient, being set in motion by him; and (2) those that are actuated by a steam- or gas-motor, against the "passive resistance" of the patient. The first class includes thirteen machines for arm-movements; thirteen for leg-movements, and thirteen for trunk-movements. The second class includes five machines for distinctively passive movements; and thirteen for various, purely mechanical, manipulations. In cases requiring massage, Dr. Zander has recourse to manual massage, being of the opinion that machinery cannot be successfully substituted for the hand, in this branch of mechano-therapy. The construction of both classes of machines is such that the work required of the patient in overcoming resistance can be accurately measured and hence adapted to his strength and needs. In this respect the Zander machines are unequalled.

Dr. Zander has attained marked success in the treatment of scoliosis, through the use of his so-called orthopedic machines. These machines are ten in number and constitute a series quite distinct from those already mentioned. In the construction and use of his orthopædic machines for the purposes of correction and redressing, Dr. Zander employs devices to secure suspension, corrective posture, counter-pressure and counter-rotation in varying degree, according to the nature and state of the scoliosis present. He also has recourse to certain machines belonging to the two classes mentioned above, for the sake of restoring and increasing the action of the muscles concerned in maintaining the normal curves and position of the spine; but mechanical support by means of fixed bandage or corsets do not form a part of his treatment, though it well might, it seems to me.

As an aid to testing and controlling the effects of his treatment he makes frequent minute and searching measurements to determine the relations of the bony prominences of the spine, shoulders, thorax and pelvis to each other. The results of such measurement are platted in the form of a mathematically constructed chart, and are of great practical value. In making the measurements alluded to Dr. Zander uses two very ingenious, and I must add expensive, measuring machines invented by himself; they are shown in the collection of pictures of the Zander apparatus, which I present for your inspection. One of them enables him to determine the amount of deviation of the spine both in the frontal and the sagittal plane measured in millimetres, and the other shows the contour of the thorax at any level that may be chosen — below the axillæ.[3]

In general, Dr. Zander's treatment of scoliosis accords in principle with that of Professor Lorenz of Vienna, except that the latter makes use of fixed bandages and of very cleverly constructed wooden-corsets, of which the specimen presented is a sample; while Zander lays more stress on minute measurements for purposes of control than does Lorenz. Both Lorenz and Zander employ mechanical measures for corrective purposes, and muscular exercises for tonic and retention purposes after reduction has been in some measure secured. Lorenz employs forcible pressure or *redressement force* in the manner shown on page 178 of Bradford and Lovett's "Orthopædic Surgery." Zander's method of applying forcible pressure and counter-rotation is less violent and more deliberate.

Zander's principal paper on the treatment of scoliosis is entitled, "Om Den Habituela Skolioseris Behandling Medels Mekanisk Gymnastik," and was published in the *Nordiskt Medicinskt Arkiv.*, 1889, Band XXI, No. 22. The article, which is well illustrated, is in Swedish, but it is accompanied by an abstract in French. Nebel's "Bewegungskuren mittelst Schwedischer Heilgymnastik und Massage mit besonderer Berücksichtigung der mechanischen Behandlung der Dr. G. Zander, Wiesbaden, 1889, contains the best and fullest account that has yet appeared of Zander's contributions to mechano-therapy.

It is interesting to note that both Lorenz and Zander hold that the principal provoking cause of scoliosis, in those who are most afflicted by it, namely, growing school girls, is found in the faulty positions they are so often obliged to assume and maintain in writing. Indeed, Lorenz declares that "the majority of habitual scolioses are writing-positions become fixed." So far as I am aware there are no comprehensive statistics to show whether or not scoliosis is more frequent in the United States than it has been shown to be in Germany, Sweden and Denmark. It seems to me reasonable to suppose, however, that the proportion of scoliotic girls in our schools is needlessly great; since our vicious systems of teaching writing are frequently rendered doubly dangerous owing to the careless and unscientific way in which so many of our school-children are furnished with chairs and desks.

I have recently had occasion to study the seating of the children in the public schools of Boston. My observations confirm those of Dr. C. L. Scudder, who showed that the assortment of desks and chairs in respect to size, was quite inadequate to the hygienic needs of pupils. I have examined the chairs and desks in one hundred schoolrooms, taken at random and ranging in grade from the high school to the primary school. In only eighteen out of one hundred class-rooms did I fail to find gross misfits. Of the pupils seated in the remaining seventy-two class-rooms, no less than twenty per cent. were misfitted. By misfitted, I mean that either they could not place their feet flat upon the floor, or they had their knees in contact with the under surface of their desks. It seems to me hardly reasonable to expect that sixteen to eighteen minutes of gymnastic exercise daily, which is all that is permitted in our schools, should prove adequate to counteract the deforming tendency of vicious postures in writing and study, especially when so large a proportion of the pupils are forced for more than two hundred minutes a day to maintain exhausting and abnormal positions because of the neglect of the authorities to provide them with suitable desks and chairs.

DR. BRADFORD: One word in regard to the recording of lateral curvature. There is no question but that the Zander recording appliance is the best that exists for the purpose for which it is designed. There is one difficulty which has not been mentioned, and that is true of all the recording appliances which have been hitherto exhibited, namely, that the record is made with the patient standing. It is absolutely impossible to fix a patient perfectly still while he stands during the marking of the record. Schultez has written upon this question, and he states that while the record is made the patient may alter his position a number of times. Of course, with great care, as no doubt Zander uses, fairly good results may be attained, but there is a very simple way of obviating all this and making records with simpler apparatus, namely, by having the records made while the patient is lying down. This gives a more accurate record of the rotation, and that is the most important record. In regard to the subject of Lorenz treatment with apparatus, I think what Dr. Hartwell has said in regard to the matter shows conclusively that Lorenz is right in claiming that mechanical gymnastics should be supplemented by the use of some appliances during the intervals of gymnastic exercises in all urgent cases.

---

[3] The construction and working of Dr. Zander's principal orthopædic machines was explained by the aid of pictures and diagrams.

In regard to the wood corset, it may be said that is one of the best that has been devised. It, however, has one disadvantage in our climate, and that is that it does not bear hot weather so well as some of the other forms; and personally I am inclined to think the paper corset which has been perfected by Dr. Weigel is superior to the wood corset.

Dr. Goldthwait: I have been very much interested in the subject of gymnastics as applied to the treatment of scoliosis, and have watched with a good deal of interest the methods and the results obtained in the hands of pure gymnasts; and while I am a firm believer in gymnastics in these cases, both for muscular development and to increase the flexibility of the spine, at the same time I feel firmly convinced that they represent only a portion of the treatment, and that they must be supplemented by some apparatus. I was very much interested in seeing Dr. Zander's apparatus, and one cannot see it without being very much impressed by the mechanical ingenuity of the man; but at the same time it seemed to me that results equally good could be obtained with apparatus much less complicated and much more at the command of the average practitioner of orthopædics than is Zander's apparatus, there being only one such institute in this country and that one in New York.

Dr. Brackett, in answer to a question, said: The discussion has broadened somewhat from what I intended. I agree fully in relation to the lack of weakness in the majority of cases. At the Children's Hospital I have had collected every case that has been treated there for eighteen months, and we fail to find a marked or any appreciable weakness in the majority of these cases. It is true, however, that we find a good many of them coming on in young and growing girls, or after some exhausting disease, or during a period of a great deal of depression, in which very likely we can attribute it to more of a general lack of tone than to actual muscular weakness. On the other hand, we have not found a decided unilateral weakness, that is, we have tried to prove or disprove or to have observations upon the question of unilateral weakness, and so far the figures do not show enough of change to consider it of any value. With reference to the improvement in gymnastics alone, there is one condition I think we often meet with, that is a child who will come for treatment and be given purely a gymnastic treatment as we have tried as a matter of observation. There is no doubt that for a while there is a decided improvement. I have been led to think that that is due simply to the improved muscular tone, or else to the improved energy and pride of the patients by which they are able to hold themselves more correctly, that is, the effort is continued for so much longer a time that the general condition of the case seems improved. But as to the actual weakness for which the muscular development is claimed by certain people, I have never yet been able to find any basis for it.

◆

Recent Literature.

Dissections Illustrated: A Graphic Hand-book for Students of Human Anatomy. By C. Gordon Brodie, F.R.C.S. With plates drawn and lithographed by Percy Highley. In four parts. London and New York: Whittaker & Co.

The author's plan has been to offer the student a series of pictures of dissections, with a few diagrams and some short descriptions. The plates are reduced one-third from the natural size. We have received the first and second parts, which treat of the upper and lower limb. The illustrations are beautiful. The dissections are of the standard type. There are no sections nor "window-cuts." The areolar tissue and fat have been removed and the parts shown according to time-honored practice. Deep dissections follow more superficial ones, so as to give the student the successive layers. Such being the lines on which the work is undertaken, we have nothing but praise for its execution by both the anatomist and the artist. T. D.

The National Dispensatory. Containing the Natural History, Chemistry, Pharmacy, Actions and Uses of Medicines, including those recognized in the Pharmacopœias of the United States, Great Britain and Germany, with numerous References to the French Codex. By Alfred Stillé, M.D., LL.D., Professor Emeritus of the Theory and Practice of Medicine and of Clinical Medicine in the University of Pennsylvania; John M. Maisch, Ph.M., Phar.D., Late Professor of Materia Medica and Botany in Philadelphia College of Pharmacy, Secretary to the American Pharmaceutical Association; Charles Caspari, Jr., Ph.G., Professor of Pharmacy in the Maryland College of Pharmacy, Baltimore, and Henry C. C. Maisch, Ph.G., Ph.D. Fifth edition, thoroughly revised, according to the Seventh Decennial Revision of the United States Pharmacopœia. Imperial octavo, 1910 pages, with 320 engravings. Philadelphia: Lea Brothers & Co. 1894.

This encyclopedia of materia medica, therapeutics, pharmacy and the collateral sciences has, through the extraordinary energy of its editors and publishers, appeared only five months after the publication of the last revision of the United States Pharmacopœia, and but a single month after that official work went into legal effect.

As one of the best-known commentaries upon the United States Pharmacopœia, the late thorough revision of that work has necessitated a like revision in this commentary, yet the revision has been by no means restricted to such necessary changes, but the latest editions of the British, French and German pharmacopœias have been exhaustively searched for materials of value, and ample space has been given to such, and to the new synthetic remedies and to the drugs, which although as yet unofficial in any pharmacopœia are being largely used. The present edition is thus more than one hundred pages larger than the previous one.

The descriptions of materia medica are clear, thorough and systematic, as are also the explanations of chemical and pharmaceutical processes and tests. The therapeutical portion has been revised with equal care and the statements of the action and uses have been arranged not only alphabetically under the various drugs, but for practical medical usefulness have also been placed at the instant command of those seeking information in the treatment of special diseases by being arranged under the various diseases in a therapeutical index. The readiness with which any of the vast amount of information contained in this work is made available is indicated by the twenty-five thousand references in the two indexes at the end of the volume.

For the physician and the pharmacist, for whose use it was specially prepared, this edition will no doubt prove to be more than ever valuable. B. F. D.

How to Use the Forceps. With an Introductory Account of the Female Pelvis and on the Mechanism of Delivery. By Henry G. Landis, A.M., M.D., Professor of Obstetrics and Diseases of Women and Children in Starling Medical College, Columbus, O. Revised and enlarged by Charles H. Bushong, M.D., Assistant Gynæcologist and Pathologist to Demilt Dispensary, New York. Illustrated. New York: E. B. Treat. 1894.

This book is divided into three parts: Part I, Mechanism of Labor; Part II, the Forceps; Part III, Application and Cases.

Part I is interesting not only as a sample of the way in which a single mind frequently strikes out new truths which meet too tardy acceptance, but also for its intrinsic worth. Although Dr. Landis's views of fifteen years ago are at variance with the accepted teaching of to-day in some minor points, as, for instance, in the importance which he ascribes to the parietal protuberances in the production of rotation, they are, in the main, in thorough accordance with the views now held by most progressive teachers. The exposition of the mechanism of labor contained in this little book is especially clear, and will be of value to every one interested in the subject.

Part II contains a set of excellent directions for the use of the forceps. It is clear, detailed and accurate, though some of the views expressed are perhaps not quite brought up to date. Most obstetricians of to-day would consider that the chapter on "When to Use the Forceps" is a little over-conservative.

The book so far is excellent, and will furnish valuable reading to any one interested in the subject. It is a pity that as much cannot be said for Part III, "Application and Cases," which adds but little to the book, is sketchy, and rather crude.

The printer and publisher have done good work.

Operation Blanks. Prepared by W. W. Keen, M.D., Professor of the Principles of Surgery in the Jefferson Medical College, Philadelphia, Pa.

By filling up these convenient forms, instructions may be given to the nurse, the family physician and the attendant. The plan of operation blanks is a capital one, but we fancy that the majority of surgeons would prefer to select their own list of dressings.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, APRIL 5, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 Washington Street, Boston.

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

ANTI-VACCINISM.

Scarcely a year has elapsed during the past ten years in which the opponents of compulsory vaccination have not petitioned the Massachusetts Legislature for a repeal of the existing laws. The unusual prevalence of small-pox, and the consequent increased interest in vaccination during the present season, have led to a renewal of the opposition, and at least four hearings have been devoted to the subject by the Legislative Committee on Public Health. At the first hearing two of the petitioners spoke at considerable length. Their statements presented almost the same identical arguments which have been used for nearly a century in opposition to vaccination, and followed very closely after their predecessors, Birch and Rogers, who, as long ago as 1805, attempted to disprove the value of vaccination. The statements were made up chiefly of theory and denunciation, with such reasoning as the following:

"The vaccinist's statistics are worthless, and may be made to prove anything. You will find, if you look into this point of the controversy, that the vaccinist is hopelessly given over to a belief in the efficacy of vaccination, and that he constructs his statements unfairly, and solely with the view to support a preconceived opinion. After the mind has given itself up to this absurdity, all that follows is easy, and passes without scrutiny, without analysis."

As much as to say that the careful statistical investigations of the German Government upon this question (the most thoroughly vaccinated people in the world), together with those of the Local Government Board of England and those of the Hungarian statistician, Körösi, are all false and worthless.

One of these gentlemen made the remarkable statement that "vaccination increases small-pox." Dr. Alfred Russell Wallace attempted to prove the same proposition before the present Parliamentary Commission of England, but when asked by the Commission to examine his figures more closely was compelled to retract his statements, and honestly admitted the worthlessness of his figures.

At the second hearing ten or a dozen persons presented testimony, prominent among whom was a member of the Boston School Committee (not, however, appearing as a representative of any action or sentiment of the Committee), who stated a considerable number of alleged injuries and deaths from vaccination, in not one of which was any evidence given that the alleged harmful results were anything more than a coincidence such as might occur in a very large number of vaccinations, and not necessarily a consequence of the operation.

Considerable stress was laid upon the death of Dr. W. Stokes, which occurred at the City Hospital in 1889, but which has been repeatedly shown to have had no connection with a previous vaccination in the relation of cause and effect.

At the third hearing, Ex-Attorney-General Pillsbury made a very brief argument for the petitioners, his principal point being that vaccination as a preventive against small-pox should not be compulsory, so long as similar preventive measures are not compulsory in the case of tuberculosis, rabies and other diseases.

A half-hour was then given to the remonstrants who supported the existing laws. Senator Buckley, of Holyoke, in a very convincing five-minute address, told the Committee of the practical necessity of vaccination in the paper-making, rag-consuming city of Holyoke, and of the defenceless position in which that city would be left without the protection afforded by the present statutes.

The fourth hearing was entirely devoted to listening to Mr. Pickering, an anti-vaccination missionary from London, who has spent considerable time during the past winter in Rhode Island, Indiana and Massachusetts as a vigorous opponent of vaccination. Much of his argument had little reference to the subject, consisting, as it did, of certain arrogant claims of ability to cure cases of small-pox in marvellously short periods of time by methods of his own. He appeared to be quite incensed at the city authorities, who would not allow him free admission to the Small-Pox Hospital of Boston.

It is quite remarkable that nearly all opponents of vaccination, not excepting those who have appeared at our State-House this year, in quoting foreign statistics, and especially those which relate to Germany, are wont to pass over in silence the period which has supervened since the Franco-Prussian War. As a matter of fact, the German compulsory law did not take effect till 1874, since which time small-pox has almost entirely disappeared from Germany, while the partially vaccinated neighboring countries have suffered severely from this cause.

On the day following the last hearing the Legislative Committee reported, "leave to withdraw."

As a comment upon this hearing before the Committee on Public Health of the Massachusetts Legislature, it is legitimate to quote the following from a very recent editorial in the *New York Times:*

> "H. Hitchcock, M.D., writes to us from the executive office of the Anti-Vaccination League to ask a candid question, to which we will give a candid answer. 'Are you willing,' he asks, 'to open your columns to a discussion of the question of vaccination?' We reply: 'No,' for it would not be worth the doctor's while, nor ours. There is at the present day no question of vaccination except in the minds of the members of anti-vaccination leagues — gentlemen and ladies who are engaged with perfect sincerity, we have no doubt, in a futile attempt to head off human progress and to reopen a question about which pretty much all the world has made up its mind. The appeal of the American Anti-Vaccination League is, in our judgment, an appeal to ignorance and prejudice."

◆

THE UNFAVORABLE SEQUELÆ OF CERTAIN RADICAL OPERATIONS ON THE GALL-BLADDER.

The accidents and evils of biliary lithiasis are among the most general of all hepatic affections, being common to all nations and all climates. To rid the afflicted of these evils, three radical surgical operations have of late years been devised: cholecystotomy, cholecystectomy and cholecystenterostomy.

Cholecystotomy, first performed by J. L. Petit in 1743, in cases where the gall-bladder, distended by calculi, was attached by firm adhesions to the abdominal wall, afterwards (1859) proposed by Thudicum as worthy of wide extension, did not definitely obtain a place in modern surgery for the otherwise irremediable accidents of biliary lithiasis till the operation was successfully performed and advocated by Marion Sims in 1878. It is the simplest and safest of all the radical operations, is indicated in all cases of chronic lithiasis, attended with frequent attacks of hepatic colic and other troubles, where, on careful examination, there is found to be complete patency of the choledochus duct.

In this operation, an external fistula is established, by which there is an escape of bile, and the principal danger is that this fistula shall become permanent. This danger is emphasized by the author of a recent voluminous work on the liver, Labadie-Lagrave; such permanent fistulæ have occurred in the practice of Walker, Robson, Terrillon, Tait and others, though infrequently, and Seymour, as the result of his personal experience, regards the danger as very slight, believing "that it is only when an obstruction in the common duct has been unrelieved that this can occur."[1] It cannot be said that "ideal cholecystotomy," in which the gall-bladder is opened and the calculi removed, then the organ is carefully sutured with catgut and restored to the abdominal cavity — it cannot be said that this procedure is to be recommended if, according to Langenbuch, it be attended with a very serious danger. The ductus choledochus, he says, reacts to any excitation in a remarkable manner; this is the reason why this canal becomes swollen after the excitation caused by an operation, the tumefaction preventing the free flow of bile; there is a regurgitation of it, and the bladder fills up; finally the sutures give way and the bile is thrown into the peritoneal cavity, and the patient dies. Lawson Tait also, in a recent discussion on the surgery of the liver, regards "ideal cholecystotomy" and cholecystectomy "as based on fallacious reasoning and dangerous methods."[2] With regard to cholecystectomy, the principal reason why this operation should not be chosen in preference to cholecystotomy, *when the latter is feasible*, has been given above; and it seems agreed that the usefulness of cholecystectomy is limited to cases where the tissues of the gall-bladder are diseased and where this organ cannot be sutured to the abdominal walls.

---

[1] Medical Record, December 6, 1890.

Cholecystenterostomy is an operation of still more recent device, being first performed by Winiwarter in 1881, though Nussbaum, a year earlier, had conceived of the operation and advised it in the following words: "When the escape of bile through the natural duct is no longer possible, it will be practicable to make an artificial connection between the gall-bladder and intestine through which the gall can again escape into the intestinal tract." This operation, according to Murphy's statistics,[3] had been performed by the old method of sutures twenty-three times up to December, 1893, with a mortality of thirty-five per cent., or eight deaths in twenty-three cases. Of the seventeen cases where the operation had been performed with Murphy's anastomosis button (from June 11, 1892 to December 1, 1893), there was in every instance a good recovery.

This record, of course, speaks favorably for the anastomosis button; but what the public would like to know more particularly is the after-history of the successful cases. Were these persons restored to a good degree of working vigor, or did serious infirmities follow? In one of Mayo Robson's cases, the gall-bladder was stitched to the colon; what was the effect on this patient of the constant diversion of the biliary secretion from the small intestine into which it is normally poured during a certain stage of the digestive process?

We have, fortunately, a full statement of results from a well-known member of the profession, who has lately gone through the operation for relief of jaundice by retention due to irremediable stenosis of the choledochus — we refer to the recent report of Dr. Dujardin-Beaumetz to the French Academy, March 13, 1894.

The patient, whose gall-bladder has been made to open into the intestine, is constantly menaced with biliary infection. In the physiological state, although the choledochus opens into the duodenum where microbes exist in abundance, yet owing to the peculiarities of its anatomical conformation, microbes rarely penetrate the duct; when there is a biliary fistula with a free communication between the gall-bladder and intestine, the liability to microbic penetration and infection of the liver is much greater. This infection manifests itself by febrile accessions of a remittent or intermittent type.

There is also more or less intestinal dyspepsia, resulting from the fact that the biliary fistula opens into the intestine at a variable distance from the ampulla of Vater, and there is now want of concordance between the pancreatic and biliary secretions. Gastric dyspepsia, more or less intense, is certain to follow; this is likely to take the form of acid dyspepsia (hyperchlorhydria).

For the hepatic infections and the febrile symptoms resulting, Beaumetz advises intestinal antisepsis by salol and the administration of quinine in lavements. When there is acid dyspepsia, fifteen grains of bicarbonate of soda may be given one hour before meals. The diet should be mainly vegetable. It must, however, be borne in mind that the subject of this kind of biliary fistula will never be in a really normal condition again, either in respect to digestion or nutrition, but "they will be enabled to live, and in conditions relatively favorable, thus deriving incontestable advantages from surgical intervention."

◆

MEDICAL NOTES.

Small-Pox in Chicago. — The number of cases of small-pox reported to the Board of Health of Chicago for the month of March was as large as that for both January and February combined.

Attempt to Burn a Hospital. — The third attempt within a short time to burn the Topeka City Hospital occurred recently, but the fire was discovered in early season and no serious damage was done.

A Victim of Professional Enthusiasm. — Dr. Adolf Meyer, assistant in the Schonborn's clinic at Wurzburg, died recently from diphtheria contracted in doing tracheotomy. The tube became obstructed by membrane; and to save the patient from asphyxiation Dr. Meyer put his mouth to the canula and cleared it by aspiration. He died a few days later.

Soap and Water in Glasgow. — In a lecture at the London Institute, on "The Chemistry of Cleanliness," Prof Vivian Lewes said, when speaking of the wasteful action of hard water on soap: "The introduction of the new Loch Katrine water-supply to Glasgow has saved the city several thousand dollars a year in soap; and, mind you, Glasgow is not a place where they waste soap."

Increase in Suicides in New York City. — The mortality reports of the New York Board of Health show that while the total mortality of the city has risen since 1883 from 34,011 to 44,370 per year, the number of suicides has increased from 161 to 313. In the last ten years, while the general mortality has increased about one-fourth, the mortality from suicide has increased nearly one-half.

---

[2] Edinburgh Medical Journal, October, 1893.

[3] Medical Record, January 13, 1894.

Typhoid Fever Epidemic at Montclair, N. J. — An outbreak of typhoid has occurred at Montclair, N. J., some thirty families having one or more patients each. Nearly all the cases are said to have occurred among the customers of a single milkman, in whose family two cases of typhoid fever are known to exist. The Board of Health has forbidden the sale of milk from this source.

Liquor Riots in South Carolina. — The working of the new State Dispensary Law in South Carolina is not satisfactory to the people of that State, or at least to a certain proportion of them ; and last week several riots occurred in various parts of the State between the people and the State police. At Florence a mob broke into the State Dispensary and destroyed the entire stock of liquors.

Five Male Generations. — The five female generations recently reported in this column have their counterpart in a family in an English village where, according to the *Medical Press*, there are now living the following members of one family: T. D., aged ninety-seven; G. D., his son, seventy-three; G. D., Jr., grandson, forty-eight; J. D., great-grandson, twenty-six; and G. D., great-great-grandson, six years old.

Suicide in the German Army. — The number of suicides in the German army is 6.33 in every 10,000 men; while in the French army it is but 3.33, and in the English 2.09. Saxony and Silesia furnish the largest number of suicides. According to the published statistics, the causes lie, aside from the natural suicidal tendency of the German race, in the fear of punishment and the wretched treatment the private soldier has to endure.

Death of Commander Cameron. — Commander Verney Lovett Cameron, who was sent out to Africa by the Royal Geographic Society in search of Dr. Livingstone, was killed last week by a fall from his horse while hunting in Bedfordshire, England. He was the first European to cross the entire breadth of the African continent, in its central latitudes, beyond the western shore of Lake Tanganjika, to the Atlantic sea-coast of lower Guinea, making the greater part of the journey on foot.

An Incident of the Cholera at Jedda. — An astounding instance of the unconcern which was shown towards the loss of life by cholera during the pilgrimage in the East last summer has come to light in the sentence by an English court of the captain of a vessel conveying pilgrims home from Mecca and Jedda. In a storm many were washed overboard and others died of disease, nearly two hundred in all perishing. The captain made no mention of this in his log, for which omission he was fined twenty-five dollars.

Damages for Invalidism from Shock. — The Supreme Court of Minnesota has ruled, that where the evidence tends to show that prior to sustaining a personal injury a woman was healthy and active, but by such injury is rendered a helpless invalid, an award of $10,000 damages is not so large as to warrant a reviewing court in saying that they are excessive. In the case on trial the injury for which damages were awarded was in itself slight, but medical testimony supported the plaintiff's claim that the nervous shock resulted in cardiac and neurotic disease.

The International Medical Congress. — Harold Frederic, in his London letter in the *New York Times* of April 1st, says of the International Medical Congress in Rome: "Italy may be wallowing in the mire of poverty, but she manages none the less to give the International Medical Congress the finest reception it has yet had in Europe. Not much money has been spent; but the King and Queen, Crispi, and the Court have been prodigal of personal attention and interest, which had a much greater effect than mere financial lavishness. Visiting doctors, both English and American, write me in terms of almost excited enthusiasm over their experiences in Rome, where they are treated as the guests of the whole city." As the Congress met on March 29th, Mr. Frederic's correspondents must have written very promptly on going home from their pleasant reception.

The Michigan State Board of Health and Tuberculosis. — The Michigan State Board of Health, in adopting its rule that hereafter all cases of consumption or other diseases due to the bacillus tuberculosis shall be reported by householders and physicians, has acted in a most rational manner in calling attention at the same time to the fact that isolation of the patient is not looked for or expected. The sole purpose of the new law is to secure to the various boards of health information of the locality occupied by each person affected with tubercular disease, with the view of giving him trustworthy information as to how he may avoid re-infecting himself and infecting others, and telling persons most endangered how to avoid contracting the disease. In a similar manner, the New York State Board compels the registration of all tuberculous persons, but does not attempt sanitary visitation and disinfection except under certain conditions. The Philadelphia Board does not require registration, but simply attempts an active educational campaign in the matter of preventing the disease.

The Practice of Medicine in Maine. — A correspondent sends us the following clipping from the Rockland (Me.) *Courier Gazette*, concerning the social and financial status of the physician in one of the small island towns: "There is talk of getting up a time to raise money to help keep our doctor here another year. He cannot stay on what practice he gets, and we cannot afford to have him go. The most of us know what it is to go to the main and Carver's Harbor for doctors. Let's wake up and get up a good time and raise what money we can for the good cause!"

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, April 4, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 38, scarlet fever 53, measles 4, typhoid fever 2, small-pox 6 and 3 deaths (all in unvaccinated persons). There are now twelve cases at the small-pox hospital on Canterbury Street, and three cases at Gallop's Island. No cases were reported to the State Board of Health from places elsewhere in the State.

Bequest to the Lynn Hospital. — The Lynn Hospital and the Home for Aged Women have each received a bequest of one thousand dollars, by the will of the late Edward H. Johnson, of Lynn.

The Population of Boston and its Value. — According to the *Census Bulletin* on Finances of Municipalities, just issued at Washington, the population of Boston is 448,477, and the assessed valuation of real and personal property in the city is $822,041,800, which is an assessed valuation of $1,832 *per capita*, not including the Public Library twins, who possess no personal property.

NEW YORK.

The Academy Committee and the Bill for a National Bureau of Health. — On March 28th a delegation of the New York Academy of Medicine, among whom were Drs. William H. Thomson, George F. Shrady and Richard H. Derby, went to Washington and argued before the House Interstate Commerce Committee in favor of the Academy's bill to establish a National Bureau of Public Health. Dr. T. Gaillard Thomas, the chairman of the committee of the Academy having the matter in charge, was not able to leave New York, and a paper prepared by him was read by Dr. Derby.

Tubercular Meningitis from Milk. — An apparently well authenticated case of tubercular meningitis, the direct result of drinking milk from a tuberculous cow, is reported from Yonkers. The patient, the four-year-old son of Mr. William A. Harper, of the publishing house of Harper & Brothers, who married a granddaughter of the late Rev. Henry Ward Beecher, gave no sign of ill health until the 1st of March, when the family physician was called in. The symptoms presented were those of tubercular meningitis, and later the diagnosis of this disease was confirmed by Dr. M. A. Starr, Professor of Diseases of the Nervous System in the College of Physicians and Surgeons of New York, who was called in consultation. The child died March 27th. The milk used by the family was supplied by two fine Alderney cows which were purchased about a year ago, and which had always seemed to be perfectly healthy. After the child's death, however, the Koch lymph test was applied by Veterinary Surgeon J. B. Lamkin, and the presence of tuberculosis was indicated in both animals by the rise of temperature following the injection. A careful examination also revealed evidences of tuberculosis in the udder of one of them; and it is claimed by Dr. Brush and other authorities that the milk of a tuberculous animal cannot convey the disease unless the mammary gland is affected. It is stated that several weeks ago Dr. Lamkin reported to the Board of Health that he had found tuberculosis among the cattle of Yonkers.

Miscellany.

PERFORATION OF THE HEART, WITH CONTINUANCE OF LIFE FOR THIRTEEN HOURS.

An unusual case of prolonged existence with a perforated heart is reported by Dr. Thompson, of San Bernardino, Cal.[1] The man was a Mexican, twenty-nine years old, five feet seven inches in height, weighing one hundred and sixty pounds. After the shooting he complained of internal pain over the abdomen and of great thirst. He was given morphia subcutaneously for the pain and shock, and was carried by wagon and train to San Bernardino, a distance of some length. He died a few moments after reaching the hospital, *thirteen hours* after being wounded.

The autopsy, four hours later, showed "a bullet-hole two-and-a-half inches inside and one-third of an inch below the centre of the nipple line; size of wound at point of entrance, five-sixteenths of an inch, almost round. The bullet penetrated the cartilage of the sixth rib, near its juncture with the rib, breaking it, and chipping a small piece out of the upper part of the seventh rib. Entering the pleural cavity, the course of the ball was downwards and slightly inwards; this cavity was filled with blood. Passing through right side of the pericardium, penetrating the right ventricle of heart, one-and-a-half inches from apex, it passed through the anterior wall, severing the right coronary artery. Leaving the heart, the ball passed directly downward, penetrating the diaphragm, entering and passing through the left lobe of the liver from above downward, entering the small intestines. The ball having perforated the wall of the intestines, followed them through their action, and was found about two inches up the rectum."

HYPNOTIC SUGGESTION IN THE CURE OF ASTHMA.

The astonishing effect of hypnotism in the relief of symptoms is well illustrated by a case of asthma reported by Creed.[1]

The patient had received very little benefit from treatment of any kind, even "Himrods' Asthma Cure, which was resorted to by the late Earl of Beaconsfield during his last illness," failing to more than mitigate the paroxysms. He was hypnotized daily for ten days, and appropriate suggestions made. On the third he was much relieved, and slept on only one pillow; while on the tenth he was free from respiratory distress, and could walk with considerable speed.

Nevertheless, the cure was not perfected, as he has occasional modified attacks of dyspnœa so that he is now provided with a written order "to sleep when he reads it and to awake after five minutes, breathing freely." This he always carries, and says that it never fails him. There are numerous polypi in both nostrils, which have not been removed for fear of making the cure by hypnotism questionable.

---

[1] Southern California Practitioner, February, 1894.

[1] Australasian Medical Gazette, June, 1893.

Correspondence.

PROPOSED REDUCTION OF THE ARMY MEDICAL CORPS.

AN ATTEMPTED LEGISLATIVE OUTRAGE.

MR. EDITOR: — It is with indignation that all lovers of justice will look upon the latest endeavor of certain members of Congress to injure the efficiency of the Medical Corps of the United States Army by reducing its numbers 35 men.

This measure, now pending, is a buncombe attempt to gain credit for economy with political constituents; and the medical men are selected for attack because they, and more is the pity, do not combine politically for self-defence, and are therefore a safe mark. In this case the bill is a most insulting one to these honorable physicians, implying as it plainly does that 35 of their number draw pay without earning it.

It is well that the facts of the case should be clearly formulated. The Army Medical Corps consists of 193 members, attending to various hospital routine work, drilling the hospital corps detachment in field and other duties, and ministering to the medical and surgical needs of the 28,000 soldiers, constituting the present United States Army; and also attending their wives and families; a total of soldiers and adult male civilians at United States Army posts being to-day 43,431.

These 193 doctors are scattered over an area greater than all Europe, and divided among the 120 military posts.

In event of field duty at any time, it is plain that one surgeon, at least, must accompany the troops, from each post, and another should stay behind to take medical supervision of the hospital and of the women and children. It will thus be seen how small — even too small — is the present corps. Moreover, it occasionally happens that a doctor (being human) falls ill; and thereby reduces the effective list. Several are thus incapacitated at this time. And again, the law permits officers to take a month's vacation in each year without loss of pay. Therefore this reduces by one-twelfth the list actively on duty, and about 16 medical officers are thereby relieved for a time. As a matter of fact, such is the pressure of duty that the Surgeon-General must often refuse this well-earned vacation, compelling continual duty.

A simple calculation will suffice to show that these various factors, and the present five vacancies, reduce the number of the active medical corps much below its nominal strength of 193 members; and should the present bill removing 35 more become a law, a grievous injury will be inflicted, not only on the efficiency of the corps, but also on the soldiers and their families, who must look to the United States Medical Corps for attendance in sickness.

If it be alleged that contract surgeons — civilians — might be appointed to fill these vacancies at a lower cost, the reply is obvious; that there is now no appropriation made for contract doctors, though formerly this was the case; and even if there were, there is no provision of law whereby they can be placed in charge of the medical department at a military post. Therefore they cannot take charge of the discipline and field drill of the hospital corps detachment, nor be responsible for the post hospital with its supplies. To effect economy as far as practicable, the Surgeon-General has long employed only private physicians at all the arsenal posts in the country; these being small ones. A further grinding down of medical estimates is worthy of the hearts and intellects from which the thought emanates.

Should this bill pass, it will, of course, stop the operation of the new Army Medical School which is doing such good work and which employs itself with the special education in sanitation of hospitals and troops, commissary knowledge, bacteriology, military surgery and other subjects urgently needed by the new men among the assistant surgeons.

No further comment is needed save the statement that upon March 15th, the Commanding General of the United States Army, Gen. J. M. Schofield, addressed a letter to the Secretary of War stating that this bill would be "seriously injurious to the Military Service," also "the Medical Corps of the Army is none too large for the necessities of the Service." And yet it is considered likely that this measure will pass the House! MEDICUS.

METEOROLOGICAL RECORD.

For the week ending March 24, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S..18	30.16	50	62	38	61	87	74	S.W.	S.W.	5	16	F.	O.	
M..19	29.82	62	70	53	88	60	74	S.W.	N.W.	15	13	O.	C.	
T..20	30.28	42	47	37	43	58	50	N.	S	14	11	O.	F.	
W..21	30.14	41	45	37	74	100	87	S.E.	N.E.	10	4	O.	R.	0.04
T..22	30.00	44	52	35	76	91	88	N.	N.E.	18	19	O.		0.03
F..23	29.76	40	46	34	89	62	76	S.E.	W.	19	19	R.	C.	0.48
S..24	30.16	36	43	30	35	69	52	N.W.	S.E.	13	8	O.	C.	
☞	30.05		52	38			71							0.55

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MARCH 24, 1894

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Diphtheria and croup.	Scarlet fever.	Measles.
New York	1,891,306	873	377	18.26	16.28	7.48	1.98	3.19
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,115,562	394	153	16.25	14.25	4.00	1.25	2.00
Brooklyn	978,394	326	121	19.60	20.40	7.80	4.80	.60
St. Louis	560,000	—	—	—	—	—	—	—
Boston	487,397	235	78	13.33	19.35	5.59	1.72	—
Baltimore	500,000	—	—	—	—	—	—	—
Washington	308,431	120	37	9.11	26.56	3.32	—	—
Cincinnati	305,000	133	44	10.50	13.50	3.00	—	—
Cleveland	290,000	95	33	15.75	11.55	4.20	1.05	3.15
Pittsburg	263,709	—	—	—	—	—	—	—
Milwaukee	250,000	89	43	13.44	19.04	2.24	—	3.36
Nashville	87,754	30	8	10.00	3.33	—	—	—
Charleston	65,165	32	9	9.39	12.52	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	96,217	25	8	12.00	16.00	8.00	—	—
Fall River	87,411	53	21	24.57	26.46	1.89	—	3.78
Lowell	87,191	33	14	3.03	27.27	—	—	—
Cambridge	77,100	24	12	12.48	20.80	4.16	4.16	—
Lynn	62,656	14	5	14.28	35.70	—	—	—
Springfield	48,684	3	3	—	3.33	—	—	—
Lawrence	48,355	21	11	—	9.52	—	—	—
New Bedford	45,886	10	4	10.00	20.00	—	10.00	—
Holyoke	41,278	—	—	—	—	—	—	—
Salem	32,233	11	1	9.09	9.09	9.09	—	—
Brockton	32,140	12	3	—	—	—	—	—
Haverhill	31,396	13	5	—	6.19	—	—	—
Chelsea	30,264	—	—	—	—	—	—	—
Malden	29,394	8	1	—	25.00	—	—	—
Newton	27,556	8	2	—	—	—	—	—
Fitchburg	27,146	5	1	—	—	—	—	—
Taunton	26,972	9	1	—	—	—	—	—
Gloucester	26,688	13	6	7.69	—	—	—	—
Waltham	22,058	3	0	—	—	—	—	—
Quincy	19,642	—	—	—	—	—	—	—
Pittsfield	18,802	2	2	—	—	—	—	—
Everett	16,585	9	3	22.22	11.11	—	—	—
Northampton	16,331	3	0	—	—	—	—	—
Newburyport	14,073	—	—	—	—	—	—	—
Amesbury	10,920	5	1	—	10.00	—	—	—

Deaths reported 2,643: under five years of age 1,015; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 395, diphtheria and croup 145, measles 47, scarlet fever 47, diarrhœal diseases 46, whooping-cough 32, typhoid fever 32, small-pox 15, cerebro-spinal meningitis 15, erysipelas 10, malarial fever 4.

From diarrhœal diseases New York 20, Fall River 7, Philadelphia 6, Brooklyn and Nashville 4 each, Washington and Cincinnati 2 each, Boston 1. From whooping-cough New York 8, Brooklyn 7, Philadelphia 5, Washington 4, Fall River 2, Boston, Cincinnati, Nashville, Charleston, Cambridge and Gloucester 1 each. From typhoid fever Cincinnati 7, New York 6, Philadelphia 5, Cleveland 4, Milwaukee and Charleston 2 each, Boston, Washington, Fall River and Lowell 1 each. From small-pox New York 7, Brooklyn 4, Boston 3, Lynn 1. From cerebro-spinal meningitis New York 5, Cleveland 3, Milwaukee 2, Boston, Worcester and Lynn 1 each. From erysipelas Boston 4, Brooklyn 3, New York 2, Somerville 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending March 10th, the death-rate was 19.9. Deaths reported 3,983: acute diseases of the respiratory organs (London) 434, whooping-cough 145, measles 111, diphtheria 82, scarlet fever 52, fever 39, diarrhœa 30, small-pox (Bradford 4, West Ham 3, Birmingham 2, Bristol, Oldham and Leeds 1 each) 12.

The death-rates ranged from 11.1 in Huddersfield to 25.1 in Liverpool; Birmingham 17.4, Bradford 18.9, Bristol 20.9, Croydon 17.2, Hull 16.9, Leeds 17.2, Leicester 19.3, London 20.4, Manchester 21.7, Newcastle-on-Tyne 19.6, Nottingham 14.9, Oldham 18.8, Portsmouth 14.6, Salford 22.0, Sheffield 19.1, West Ham 20.1, Wolverhampton 23.9.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending March 17th, the death-rate was 19.2. Deaths reported 3,855: acute diseases of the respiratory organs (London) 373, measles 124, whooping-cough 118, diphtheria 71, scarlet fever 47, fever 39, diarrhœa 34, small-pox (Birmingham 8, London 3, West Ham 2, Cardiff and Oldham 1 each) 15.

The death-rates ranged from 12.1 in Croydon to 25.6 in Liverpool; Birmingham 19.3, Bradford 18.6, Bristol 20.5, Leeds 18.2, Leicester 16.8, London 19.3, Manchester 21.1, Newcastle-on-Tyne 12.1, Nottingham 16.3, Sheffield 18.2.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 24, 1894, TO MARCH 30, 1894.

By direction of the President, **Lieut.-Col. Samuel M. Horton**, deputy surgeon-general, will report in person to the President of the Army Retiring Board at San Francisco, Cal., for examination by the board.

Captain William R. Hall, assistant surgeon, is relieved from duty as attending surgeon and examiner of recruits at San Francisco, Cal., to take effect upon the completion of his examination for promotion and will then report in person to the commanding officer, Whipple Barracks, Arizona Territory, for duty at that post.

SOCIETY NOTICES.

Boston Society for Medical Improvement. – A regular meeting of the Society will be held at the Medical Library, No. 19 Boylston Place, on Monday, April 9, 1894, at 8 o'clock, P. M.

Drs. M. H. Richardson and G. L. Walton: "The Operative Treatment of Spasmodic Wry-Neck." Discussion opened by Drs. C. B. Porter and J. J. Putnam.

Under oral communications Dr. W. L. Burrage will report "A Case of Tuberculosis of the Female Bladder, Diagnosticated and Treated by Howard Kelly's New Method of Direct Inspection and Catheterization of Ureters through Large Endoscopes."

John T. Bowen, M.D., *Secretary*.

Suffolk District Medical Society. — The annual meeting will be held at 19 Boylston Place, on Saturday, April 28, 1894, at 8 P. M.

Papers. - Dr. F. S. Watson, "Some of the Clinical Features and the Surgical Treatment of Primary Tuberculosis of the Urinary Organs." Discussion by Dr. P. Thorndike and others. Dr. F. H. Williams, "Diphtheria." Dr. W. A. Morrison, "The Value of the Stomach-Tube in Feeding after Intubation" — based upon twenty-eight cases. Discussion by Dr. F. B. Harrington, Dr. Gannett, Dr. C. M. Whitney and Dr. Prescott.

Business. – Report of the treasurer and the librarian. Election of officers. Appointment of delegates to the American Medical Association.

Supper after the meeting.

A. L. Mason, M.D., *President*.
James J. Minot, M.D., *Secretary*.

Philadelphia Pathological Society. — The semi-annual conversational meeting of the Philadelphia Pathological Society will be held in the upper hall of the College of Physicians Building, Thirteenth and Locust Streets, on Thursday, April 26th, at 8 P. M.

Dr. Simon Flexner, Associate in Pathology in the Johns Hopkins Medical School, will deliver an address entitled "An Experimental Study of the Nature and Action of Certain So-called Toxalbumins." Members of the medical profession are cordially invited to be present.

Augustus A. Eshner, *Secretary*.

THE CARTWRIGHT LECTURES.

The Cartwright Lectures of the Alumni Association of the College of Physicians and Surgeons for 1894, will be delivered at the New York Academy of Medicine, No. 17 West 43d Street, on Wednesday evenings, April 4th, 11th and 18th, at 8 o'clock, by Prof. Russell H. Chittenden, Ph.D., of Yale University.

Subject: "Digestive Proteolysis." I. General Nature of Proteolytic Enzymes; General Nature of Proteids. II. Proteolysis by Pepsin – Hydrochloric Acid — with a Consideration of the General Nature of Proteoses and Peptones. III. Proteolysis by Trypsin; Absorption of the Main Products of Proteolysis."

Physicians are cordially invited to be present.

Francis P. Kinnicutt, M.D.,
Walter B. James, M.D.,
D. Bryson Delavan, M.D.,
Committee.

MUTTER LECTURESHIP OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

The next course of ten lectures under the bequest of the late Prof. Thomas Dent Mütter, M.D., LL.D., "on some point or points connected with Surgical Pathology" will be delivered in the winter of 1896–97, before the College of Physicians of Philadelphia. Compensation $600. The appointment is open to the profession at large. Applications, stating subjects of proposed lectures, must be made before July 1, 1894, to

William Hunt, M.D.,
Chairman, Committee on the Mütter Museum,
S. E. cor. 13th and Locust Sts., Philadelphia, Pa.

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The next lecture will be given on Wednesday evening, April 11th, at 8 o'clock, by Dr. P. C. Knapp. Subject, "Traumatic Nervous Affections." Physicians are cordially invited.

RECENT DEATH.

Edward Brown-Sequard, M.D., died in Paris, April 2d, aged seventy-six years. He was born in the island of Mauritius, but received his medical education in Paris, graduating in 1840, at which time he had already acquired considerable reputation as an experimental physiologist. He received five prizes from the French Academy, and twice received the queen's grant for the encouragement of science from the British Royal Society. He engaged in the practice of medicine in Mauritius until 1854, when he travelled extensively in England and in this country, lecturing and giving private medical instruction. In London he did much work as the head of the Hospital for the Paralyzed and Epileptic. In 1864 he was made Professor of the Physiology and Pathology of the Nervous System in the Harvard Medical School, a position which he held for four years. In 1869 he returned to France, where he was appointed professor in the School of Medicine at Paris, and in 1873 came back to the United States and began practice in New York, and with Dr. Seguin commenced the publication of the "Archives of Scientific and Practical Medicine." After a short residence in London he returned to Paris where he has since resided. In 1878 he succeeded Claude Bernard as professor of experimental medicine at the College of France. In 1881 he was awarded the Baly Medal by the Royal College of Physicians of London. He was for several years president of the French Academy of Sciences. He wrote much and was a most enthusiastic investigator in questions of physiological medicine. Among his published volumes are "Lectures on the Physiology and Pathology of the Nervous System," "Paralysis of the Lower Extremities," "Lecture on the Nervous Affections." He established in Paris the *Journal de la Physiologie de l'Homme et des Animaux*. A few years before his death he discovered the true elixir of life which should rejuvenate and prolong human existence.

BOOKS AND PAMPHLETS RECEIVED.

Retinitis Albuminuria. By L. Webster Fox, M.D. Reprint. 1894.

A New Dynamometer for Use in Anthropometry. By J. H. Kellogg, M.D. Reprint. 1894.

Tuberculosis in Relation to Animal Industry and Public Health. By James Law. Reprint. 1894.

Original Articles.

THE CHARLES RIVER IN ITS RELATION TO THE ETIOLOGY OF INTERMITTENT FEVER.[1]

BY R. W. GREENLEAF, M.D., BOSTON.

The etiology of intermittent fever is so little understood to-day, that, excepting that a micro-organism has been discovered in the blood of patients suffering with the disease, we know but little more about it than did our predecessors of fifty years ago. Indeed, as evidenced by certain articles in our journals and discussions in our medical societies, it would appear that we do not know as much.

With our present knowledge of micro-organisms it is a little singular that this corner of medical literature should still be clothed with the phraseology of the past, oftentimes containing a partial truth, but so imperfectly expressed as to be misleading and inadequate for practical purposes.

Not a few writers are still urging, in otherwise excellent papers, hypotheses as diverse from each other as inconsistent with observed facts.

Among supposed causative agents we still hear of "atmospheric conditions," "marsh miasms," "river mists," "sewage contaminations," etc.; also that intermittent fever is an "exotic of tender growth," a "stranger in this part of the country," and the like. It would be of the greatest interest if some one could present a perfectly demonstrated theory of the whole course of events, from the taking of the causative agent from its habitat outside the body to its mode of entrance into the body, and through the various stages of its history in the body. The difficulties in the way of so complete a demonstration are so great that I am encouraged to present the following views as to this question, which, though not wholly proven, will serve to co-ordinate distinct data and to give us a "working hypothesis," sufficiently complete for practical purposes. They were derived from a study of the conditions found during a house-to-house inquiry along the banks of the Charles River in the vicinity of Boston, and from a comparison of the data thus ascertained with the reports of observers elsewhere.

In common with other regions in and about Boston, intermittent fever has not been present in the area under consideration for a long time, until within the past six or eight years. A common impression prevails that the Charles River is in some way responsible for its introduction. For instance, even in the utterances of the profession, we hear of the disease "creeping up the valley of the Charles." The offensive conditions due to the refuse of various factories, starch, grease, etc., also the sewage contaminations and the exposure of mud flats have all been held responsible as at least having furnished a nidus for a causative agent "introduced from elsewhere." There is no question that each of these unsanitary conditions has existed, though some of them have since been removed. My studies have led me to conclude that there is equally no question that none of these conditions are causative agents, *per se;* moreover, that we need not look elsewhere to find the offending cause. In other words, that it is right here at home, has been here all along, and is likely to show itself (as it has of late with us), just as it does elsewhere, whenever we establish the conditions of its existence and introduction to our bodies.

Before presenting these views in detail, permit me to call to your attention what appears to be a fully demonstrated law applicable to, and most useful in the study of the causes of epidemics; namely, that when a cause is general in nature, such as the contamination of a water-supply, as in the case of the cholera epidemic in Hamburg, that the distribution of the cases, when plotted on a map, is widespread, and shows what may be called a markedly characteristic "curve." This is most graphically shown in the data furnished by Professor Sedgwick in the last Report of the State Board of Health, which marks an era in the American study of epidemiology. I will pass about the maps showing the distribution of typhoid fever in Lowell and Lawrence. In these cases the cause was fully demonstrated. Furthermore, since the measures suggested by the Board were adopted in the city where their advice was fully taken, typhoid fever has practically become non-existent. On the other hand, locally acting causes give rise to cases which when plotted are seen to present an equally characteristic "curve." Professor Sedgwick has also demonstrated this in connection with epidemics in which the milk-supply was shown to be the probable agent in the spread of the disease. (See same Report.)

To apply this law to the conditions under consideration, Townsend's exhaustive analysis of the 106 cases in Boston in 1892 shows that two areas were particularly affected, namely, the South Cove and the West End near Poplar and Brighton Streets. He did not explain their distribution. He simply considered that many of them were imported, as from the Newtons; but the points applicable to our inquiry are that he does not report any cases immediately along the river's bank, moreover, that his cases were for the most part grouped around local centres. In the discussion following Dr. Townsend's paper, Dr. John Homans, 2d, referred to a few cases occurring on Marlborough Street, subsequent to the digging up of the street. These, with a single exception on Beacon Street, are the only cases I heard of as having originated near the water front. Further negative evidence as to the river being a causative agent for Boston's cases is that the park police, who pass a considerable part of their time along the Charles-bank have had no cases of the disease among their number. That this is not a question of their lack of susceptibility is evidenced by the fact that several of them were ill with it during the war.

Careful inquiry for some distance along the banks failed to find a single case; though in places unsanitary conditions were found, yet intermittent fever was unknown. Several families had lived in the same places for many years, even twenty and thirty, and had been free from malarial disease. The first locality I found affected was at Barry's Corner. Here in a damp neglected settlement, six cases had occurred within the past three years. An interesting fact was, that still nearer the river, on the same marsh, was a more cleanly and drier settlement. In this place those of whom I inquired knew of no cases.

No other cases of importance were found on this side of the river until reaching Watertown. Here in an extremely unsanitary area, including two sub-areas near at hand, about a dozen cases were found. It is noteworthy that in this area seven of Watertown's nine cases of diphtheria and one case of her seven cases of scarlet fever had occurred since the first of the year. Further along the river were cases close by a pond whose level had recently been much lowered. Still further along, in a particularly dry and apparently healthy place, the only case near at hand was in the person of a gentleman whose occupation called him daily to a particularly damp part of Newton. As you are aware (and the details will doubtless be presented this evening), there have been a great many more cases in the Newtons away from the river's banks than in its immediate neighborhood. Some occur near ponds and some occur on hillsides, but their relative infrequency near the banks of the river certainly tends to show that the river, *per se*, is not a causative agent.

---

[1] Read before a meeting of the Cambridge Society for Medical Improvement, February 26, 1894.

The last cases to which I would especially call your attention on the south side of the river, occurred among workmen engaged in digging up around a brook (the Cheese-Cake Brook) in connection with sewer improvements. Five or six men were affected during the summer of 1892, when the soil was first dug up.

Following down the north bank, a very similar outbreak occurred among workmen engaged in "improving" a large estate in Waltham near the Watertown line. It is to be noted in passing that they were digging up what was practically a primeval soil, that is, undisturbed, damp, forest soil.

Along this north bank long stretches were found with no, or only a few cases. In the mills and at the arsenal about one in fifty persons had had the disease, but they were found to live in some especially malarious centre elsewhere.

Passing down to Cambridge, a very interesting relation was found, similar to that referred to on the south bank, namely, a far less number of cases near the river than at a distance from it. You will recall the valuable paper of Dr. Stevens on "Malaria in Cambridge and Vicinity," published in the *Boston Medical and Surgical Journal*, December 29, 1892. He showed the prevalence of the disease in North Cambridge near the clay-pits and near Fresh Pond. In some places so many men were ill as to seriously cripple the working forces. You will observe, however, that he has nothing to say of cases near the river. Moreover, inquiry of other physicians assured me that very few of Cambridge's cases had occurred there. My personal inquiry for the most part verified their statements. Foul odors and other unsanitary conditions, even *in extremis*, had existed in places along the banks but intermittent fever was relatively rare. About the only cases I found were in a settlement just to the west of the Cambridge Hospital. Here, in a little valley formed by the sloping banks of a small water-course, were several. At this place, besides the attendant dampness, the most unsanitary conditions existed, for example, one of the houses, a double one, had an unwalled privy in an old shed, just behind the rear and on the shady side of the house; on this side also were the kitchens; and on the easterly side was an old cesspool. In this house both families were sufferers, and intermittent fever had also attacked the persons who had lived there the year before. The other cases had occurred further along the settlement. The only other case I heard of in this neighborhood was in the household of the landlord of these houses. This case may have arisen from the Fresh Pond centre, and skipped over the intermediate households; but certainly its origin is far better explained as in some way due to the infection among the tenants.

It would thus appear, first, that all the cases of intermittent fever on the immediate banks of the Charles River are localized about special foci. This shows most clearly when they are plotted as on this map, and, according to the law expressed above, excludes any cause that is general in its action, as would be the river *per se*, or any of its especially unsanitary conditions; and, secondly, that in each centre there was present some local condition of especial dampness, as by recent disturbance of the soil, as a possible associate of a causative factor.

Let us next consider what light is shed upon the subject of the origin of these cases by studying the data furnished by others.

Intermittent fever is a very widespread disease. It occurs in one form or another in various tropical countries. It ascends through the temperate regions of both hemispheres, reaching into Canada in our hemisphere, and into the countries bordering on the North Sea in the eastern. One of the best accounts on this part of the subject is that of Boudin in "Géographie et Statistique Médicale," published in Paris in two volumes in 1857. Though notably a disease of swampy lands, as around the Isthmus of Panama, and the Pontine Marshes about Rome, yet mountainous regions are not exempt. But wherever found, the cases are localized about special foci. Another fact stands out prominently in all accounts, namely, that some condition of dampness is invariably mentioned. Either an old mill-pond has been dried up, or a river has overflowed its banks and subsequently exposed an expanse of damp soil, or a mass of forest vegetation has recently been dug up, or a sewer or other excavation has been made. No matter what the views of the author may have been, whether he upholds the "ground-water" theory, the "clay subsoil," "atmospheric agencies," or whether he has taken pains to tabulate the temperature, rains, winds, etc., one is almost sure of finding mention of some condition of dampness.

Other facts in the distribution of intermittent fever are closely correllated with the above. One of these is that certain localities, even if surrounded by water, if their soil is well drained, that is, is not marshy, are notably free from the disease; for example, in many oceanic islands it is practically unknown. A similar fact is that sailors and marines have a much smaller percentage of cases than is found among troops stationed on shore. Data of this sort show that dampness, *per se*, is not the cause of intermittent fever, but is only an associate of the cause; in other words, it appears to be only such dampness as occurs on land in association with organic matter, whether the dampness itself is due to rainfall, or to pond or river overflow. Moreover, portions of countries if particularly dry, as the Cape of Good Hope, or if with abundant river drainage but without much marshy land, are notably exempt from malarial diseases. Still another fact showing the close relation of the disease with dampness is, that where it has prevailed and the soil later has been well drained the disease has disappeared. This has been abundantly shown in the experience of Brooklyn, N. Y., in Washington, and in places in other countries, as in the various parts of England.

In this connection I would call your attention to the fact that in a new country, as in our West, intermittent fever is very common; indeed, in Wisconsin, as I am informed by a physician whom I intend to quote at length presently, this has so forced itself upon the notice of settlers that they are unwilling to occupy dwellings constructed over cellars recently excavated through the *débris* of vegetable growth, whether such growth is in swampy land or on a mountain side. Their experience has taught them that to do so would most likely result in malarial illness in their household. They wait till all is dry before occupying their houses.

In the long respite from malarial diseases which is now being broken in upon hereabouts, I fear we are losing sight of certain facts which have a most important bearing on the subject. We forget that when our ancestors settled here they found conditions practically the same as we are now finding in the West, and that they found intermittent fever here. This is clearly shown in the Boylston Prize Essay of our venerable and honored poet-teacher, Dr. Oliver Wendell Holmes, written in 1838, nearly sixty years ago, but standing to-day as one of the best expositions of the etiology of intermittent fever for practical purposes extant.

We forget that all through our State, as shown in the admirable reports of the Drs. Adams of Pittsfield and Framingham, Dr. Cook of Natick, Dr. Chase of Brookline, and others, that malarial diseases have been found in several places much longer ago than for the past six or eight years. Indeed, a comparison of the various papers shows that at no portion of the century has there been a time when some towns in New England have not furnished cases, which if the disease had an etiology anything like that of small-pox or scarlet fever, or to that of the supposed mysterious stranger, a "materies morbi" which is said to be "creeping up our river courses" in some extraordinary way to-day, all of us would probably have been stricken with the disease by this time.

We forget that the present renaissance of New England activity, with its construction of metropolitan sewers, its building of many suburban homes for merchants of our large cities, and the many problems incident to gas-pipe, drain-pipe and electric-railway construction has practically arisen hereabouts within the past six or eight years, and that previous to that time Boston and Salem and Plymouth and Cambridge, as regards building operations and the like, were practically in the condition that certain of our suburbs, as Chelsea and Charlestown, are in to-day. Indeed today intermittent fever is heard of chiefly in their newer parts or those recently disturbed in connection with local improvements, as digging up streets and the like.

The next point in our search for a causative agent must be studied with the patients themselves. Not to prolong this paper unduly, let me at once call your attention to the researches of Drs. Osler and Thayer of Johns Hopkins, and of Professor Councilman formerly there also, but now with us; let me refer to Professor Binz of Bonn, and to Dr. Dock of Texas, and to the repeated confirmatory observations of the microscopists of our home hospitals in the last year or two. They have demonstrated beyond a shadow of doubt that in the blood of an intermittent fever patient is a micro-organism which attacks the red corpuscles and is a causative factor of the disease. This is known as a hæmatozoon. At one stage of its life-history it closely resembles an amœba, and passes through a variety of stages (crescentic, granular, etc.), and then appears outside the corpuscle as a flaggellated form. This is not a bacterium. Its affinities are with the monads, the lowest of organisms in the ascending scale of animal life. The action of cinchona alkaloids in destroying its life is known, but how it gets into the body and where it lives when outside, are still matters of conjecture. Certain formidable, if not insurmountable, difficulties are in the way of settling these points. One of them is that as far as known no animal can be successfully inoculated with the disease from human blood. The other difficulty is equally formidable. When one learns that there are many micro-organisms in the ground, one is apt to conclude that it would prove an easy matter to solve the problem. I at first so concluded on finding in earth taken from the surroundings of the instructive series of cases I am about to call your attention to, amœboid forms, granular bodies, flaggellate organisms, etc., looking very similar to those found in blood. For a moment I was greatly rejoiced, thinking I could soon solve the difficulty, but on consulting the authorities I learned that all previous inoculation experiments had failed because the soil in all places is apt to be teeming with the bacillus of tetanus, which soon kills the animals experimented upon. At this point of the argument one is forced to say that demonstration wholly fails. I do not see how these points can be fully demonstrated.

When evidence such as has been advanced up to this point in the inquiry fails, it is proper, for the purposes of a "working hypothesis," to rely on what the lawyers call "circumstantial evidence." It would appear that such evidence justifies us in assuming that the hæmatozoon has for its habitat outside the body some form of animal or vegetable life such as is found in swampy land or in decaying vegetation, as on a forest-clad hillside. It is known that such micro-organisms live in organic tissues, both living and dead, and it is not necessary for practical purposes to say just what particular organism the hæmatozoon lives in.

Our complete argument would then stand in this way:

(1) Intermittent fever is a disease always originating locally, thus excluding as etiological factors all causes of a general character.

(2) Intermittent fever is always found to have associated with its origin some conditions of local dampness.

(3) A micro-organism, namely, the hæmatozoon, has been demonstrated as occurring as a causative factor in the blood of patients ill with intermittent fever.

(4) These organisms belong to a group of animals, many of whom are known to live in damp soil, or in animals and plants living in damp soil, thus rendering it extremely probable, especially if we consider our first and second propositions, that the "hæmatozoon" has a similar habitat.

(5) Such micro-organisms may readily be taken into the system in either of the following ways: (*a*) By drinking water contaminated with moisture from such damp, decaying soil. (*b*) By entering on food which is contaminated from unclean hands. It seems to me quite probable that, in view of the uncleanly habits of laborers who sit down to their dinner-pails without a thought of washing their soil-stained hands, we may quite sufficiently account for what appeared to be the case in my inquiry, namely, that, relatively speaking, far more cases occurred among hearty laborers than among other classes of people. Professor Sedgwick refers to this method of self-inoculation under the name of "secondary infection," as accounting for a considerable number of cases of typhoid. (*c*) By cur-

rents of air blowing within limited areas from soil rich in the supposed germs. In view of the widespread opinion that air from malarious marshes is liable to cause the disease, also in view of the cases to which I shall soon call your attention, and of other cases which have come to my notice, this latter seems a probable way also.

You will observe that the first, second, third and a portion of the fourth propositions in the argument may fairly be considered as fully demonstrable and practically already demonstrated; you will also note that the supposition in the fourth, also the fifth proposition, while not to be considered in that category, are in a class of circumstantial evidence of the strongest kind, namely, being wholly in agreement with similar classes of data which have been demonstrated in other lines of argument.

It is an axiom of science that if an hypothesis is sufficiently strong to permit prediction which subsequent data confirms, and that if observations are sufficiently numerous to guard against the probability of individual mistakes, that such an hypothesis explaining a sequence of phenomena, even if incapable of demonstration at every point, ceases to be an hypothesis, but takes the rank of a theory. Indeed, it may become a law; such is the law of gravitation which at first was the Newtonian hypothesis. Such is the theory of evolution, which is an outgrowth with modifications of the Darwinian hypothesis. The view presented in this paper can scarcely yet be called a law, perhaps not even a theory. I would summarize the present state of our knowledge regarding the etiology of intermittent fever as in the stage of strong hypothesis, almost a theory; at all events, quite sufficient for practical purposes, and what naturalists would call a "working hypothesis."

In support of the view that the hæmatozoon lives in a damp soil outside the body, and whether in a swamp or on a mountain side, let me offer the following cases. They nearly complete the chain of evidence.

I did not see any of them personally, but state them as reported to me by the physician in charge of the institution where they occurred. This institution consists of several buildings standing on hilly land, much of which, just prior to their construction, was covered with forest growth. The cellar of one of the buildings was excavated through boggy soil containing much decaying vegetable material, though situated near the top of the hill. Intermittent fever broke out among its inmates soon after it was occupied. Two of the dormitories are situated on the highest hill, and form sides of a quadrangle. The one occupied by the boys was built on land which had been cleared for many years, and was well dried. In this scarcely any cases occurred. The other, the girls' dormitory, was built under exactly similar conditions as to date, plan, etc., except that it was on damp forest-land, a considerable amount of the *débris* of which was disturbed in excavating for the cellar. In this five or six cases occurred daily, until nearly all the girls were ill. The epidemic ceased on digging a trench around the side of the building towards the woods, so that no moisture from them could enter the cellar. These cases may be considered as examples of air-transmission. Another interesting series, illustrating the probable origin from a cause associated with damp soil and decaying vegetable material, occurred in this same institution, in an old stone house situated near the foot of the above-mentioned hills. At the very foot, some hundred yards or more from the house, was a swamp. No cases had occurred in this house for many years, nor have occurred within the past year, thus disproving any connection with the swamp. But, just as with the other series, numerous cases occurred in this house when local conditions of a similar character were at hand. In this series, the local conditions were the digging up of soil rich in decaying vegetable matter necessitated in the construction of a roadway and a sewer next to the house.

In judging of the etiology of these cases, it is to be noted that the institution is situated remotely, more than a mile, from the Charles River, and that, although cases were to be found in neighboring towns, yet none were particularly near at hand.

Had such a combination of presumably causative factors, as were found here, existed in the West, such cases would probably not have been allowed to occur. Measures, such as delay in occupancy, and others to ensure dryness of immediate surroundings, would have been taken. In this case the physician in charge feared intermittent fever, but he was overpersuaded, having been informed that, though the disease had been "creeping up our river valleys in the past few years," that it was almost unknown in that immediate neighborhood, and never occurred on hill-tops. He permitted the immediate occupancy of the buildings, and the results proved it to have been a sad mistake. Such cases ought not to occur again in this locality. A due attention to the steps of the hypothesis advanced this evening, though it be not proven at every point, certainly promises us a safeguard. With the present activity in park and metropolitan improvements, and with the growing tendency to building suburban residences, it is well to bear so promising a safeguard in mind. It may prove that the present epidemic may subside at once, as it is already beginning to in several of the places already attacked. Such local subsidence is to be expected in accordance with this hypothesis. It is certainly the wise and prudent course to assume that we have no more immunity from attacks of intermittent fever than is the case with the rest of the world, and that to guard against it we, too, must take the best measures that experience teaches are protective.

TWENTY-SIX CASES OF INTUBATION OF THE LARYNX.

BY FRANK L. DAY, M.D., PROVIDENCE, R. I.

Up to the first of January, 1894, since October 10, 1890, I have seen (each time in consultation with one or more physicians) 31 cases of laryngeal obstruction. These do not include four cases where the child had died previous to my arrival, once each with Drs. Godding, Carpenter, Moore and McKenna, nor one case with Dr. Acres, where operation was refused.

Of the 31 cases seen, in five operation was not advised; of these, three recovered and two died, as follows:

One child, age six, with Dr. Hanaford, of Apponaug, recovered.

Two with Dr. G. E. Carpenter, in East Providence, recovered.

One case seen with Dr. H. P. Abbott was instructive. Male, age five-and-a-half years. A septic case where there had been laryngeal symptoms for twelve

Case	Date	Attending Physician	Sex	Age	Duration before Intubation		Complications before Operation.	Nasal Symptoms	Albumen in Urine	Size of Tube	Relief to Dyspnœa	Dysphagia	Cause of Death	Results
					General Symptoms	Laryngeal Symptoms								
1	Oct. 10, 1890	Dr. W. L. Munro	M.	5½	3 days	1 day	Hyperemesis	No	....	5-7 yr.	Complete	None	Heart failure	Death 29 1-3 hours after operation, sudden and unexpected
2	Nov. 7, 1890	Dr. Acres Dr. J. W. Mitchell	M.	3¼	3 days	3 days	General bronchitis	No	....	3-4 yr. 5-7 yr.	No	....	Extension	Tracheotomy done as intubation gave no relief. Death in 27 hours
3	Nov. 19, 1890	Dr. H. O. Brown	M.	3	Several days	30 hours	....	Profuse epistaxis	Yes	3-4 yr.	Complete	Slight	Extension	Death 57 2-3 hours after operation
4	Mar. 14, 1891	R. I. Hospital Dr. G. L. Collins	M.	4	2 weeks	2 weeks	Total suppression of urine for 24 hours Bronchitis	....	Suppression	3-4 yr.	Complete	None	Uræmia	Death after 18¼ hours
5	July 6, 1891	Dr. J. W. C. Ely	F.	5	24 hours	24 hours	....	No	No	5-7 yr.	Complete	Slight	....	Recovery. Wore tube 4¾ days
6	July 10, 1891	R. I. Hospital Dr. C. M. Godding	M.	3	6 days	24 hours	Sepsis	Yes	Yes	5-7 yr.	Complete	Much at first None later	....	Recovery. Wore tube 10 days
7	July 16, 1891	R. I. Hospital Dr. C. M. Godding	F.	3	4 days	....	....	No	Yes	3-4 yr.	Complete	Slight	....	Recovery. Tube removed on 5th day
8	July 25, 1891	R. I. Hospital Dr. C. M. Godding	F.	17 ms.	1 day	1 day	Sepsis. Pertussis 3 wks.	Yes	Yes	2 yr.	Complete	Slight	....	Recovery. Wore tube 10 days
9	Oct. 8, 1891	Dr. J. W. Keefe	F.	2¼	5 days	12 hours	Sepsis	Yes	....	3-4 yr.	Much	Slight	Sepsis	Death after 5 hours
10	Dec. 15, 1891	Dr. G. E. Carpenter	M.	8	2 days	12 hours	....	Yes	Yes	8-9 yr.	Complete	Slight	Extension	Death after 58 hours
11	Jan. 2, 1892	Dr. G. E. Carpenter	M.	4½	4 days	48 hours	....	No	Yes	5-7 yr.	Complete	None	....	Recovery. Tube worn 6½ days
12	Jan. 12, 1892	Dr. G. E. Carpenter	F.	2½	24 hours	24 hours	....	Yes	....	2 yr.	Complete	None	Extension	Death after 23 hours
13	Jan. 18, 1892	Dr. G. E. Carpenter	F.	5½	9 days	18 hours	Acute nephritis	Yes	1%	5-7 yr.	Complete	None	Uræmia	Death 9 days after intubation
14	Jan. 27, 1892	Dr. G. S. Eddy, Fall River	M.	4½	9 days	36 hours	....	Yes	....	5-7 yr.	Complete	Slight	Extension	Death after 45 hours
15	May 16, 1892	Unknown	F.	2	4 days	36 hours	....	No	....	2 yr.	Complete	None	....	Recovery. Wore tube 5 days
16	Oct. 30, 1892	Dr. W. H. Bowen	M.	9	Several days	36 hours	....	No	Much	8-9 yr.	Complete	Much	....	Recovery. Wore tube 8½ hours. Re-inserted temporarily 2 days later
17	Nov. 3, 1892	Dr. J. F. Duffy	F.	2	5 days	2 days	....	Yes	....	2 yr.	Nearly complete	None	Extension and exhaustion	Death after 43 hours
18	Nov. 8, 1892	Dr. W. W. Hunt	M.	3	5 days	5 days	Sepsis	Yes	Yes	3-4 yr.	Complete	Slight	Sepsis	Death on 6th day
19	Nov. 12, 1892	Dr. W. L. Munro	F.	6	3 weeks	3 days	Influenza 3 weeks	Yes	No	5-7 yr.	Complete	Slight	Pulmonary œdema	Death 11½ hours after operation
20	Nov. 12, 1892	Dr. W. W. Hunt	M.	7	Several days	2 days	....	No	Yes	5-7 yr.	Complete	None	....	Recovery. Coughed up tube after 66 hours
21	Nov. 27, 1892	R. I. Hospital Dr. J. W. Mitchell	M.	7	1 week	30 hours	Sepsis	Yes	Yes	5-7 yr.	Nearly complete	Slight	Sepsis	Death after 35 hours
22	Dec. 6, 1892	Dr. W. L. Munro	M.	11 ms.	60 hours	24 hours	Sepsis	Yes	....	1 yr.	Complete	None	Sepsis	Death after 43 hours
23	May 3, 1893	Dr. R. P. Eddy, Jr.	M.	2	3 weeks	36 hours	Sepsis	....	....	2 yr.	Complete	Slight	Sepsis	Death after 27¾ hours
24	May 15, 1893	Dr. R. P. Eddy, Jr.	F.	4½	5 days	48 hours	Sepsis	....	....	5-7 yr.	Complete	Slight	Sepsis and extension	Death after 9½ hours
25	Nov. 18, 1893	Dr. R P. Eddy, Jr.	M.	6	7 days	2 days	Sepsis	Yes	....	5-7 yr.	Complete	None	Sepsis	Death after 13¾ hours
26	Nov. 22, 1893	Dr. R. P. Eddy, Jr.	M.	26 ms.	42 hours	42 hours	Sepsis	Yes	....	2 yr.	Complete	Slight	Sepsis	Death after 41¼ hours

SUMMARY OF TWENTY-SIX CASES.

	Died.	Recovered.		Died.	Recovered.
Under 1 year	1	0	5 to 6 years	2	1
1 to 2 years	0	1	6 to 7 years	2	0
2 to 3 years	6	1	7 to 8 years	1	1
3 to 4 years	2	2	8 to 9 years	1	0
4 to 5 years	3	1	9 to 10 years	0	1

18 died and 8 recovered.

hours. Seen by Dr. Abbott but a few hours before my visit. As the dyspnœa was but moderate, we decided to try steam-inhalation and other medical means for a while. Everything went on well, until twelve hours later the parents took him away from the steam and saw him choke to death without notifying Dr. Abbott, as had been agreed if anything went wrong. The lesson is this: Environment is an important factor in estimating the advisability of operation; and in another case where competent nursing and care was not available, I should operate, even where the dyspnœa was very moderate.

One case seen with Dr. S. A. Welch. A child of two years had been sick but a few hours, a septic case with only moderate obstruction. We decided first to initiate medical means, and saw marked improvement for some hours. The child died of sepsis within twenty-four hours.

In twenty-six cases operation was advised, and these are reported in the table which accompanies this paper.

This series is far too small to be, by itself, of any statistical value, but can only go to help make up, with the reports of others, the great mass of statistics.

Nearly every case served to open up suggestions or to enforce well-recognized points, and some of them I have appended to this report.

Case 1. Here the child's strength had been nearly exhausted by vomiting from repeated doses of ipecac, persisted in the entire night previous to Dr. Munro's first visit, by advice of the former attendant, an uneducated man. It is not the inexperienced only, who even to-day, when called to a case of diphtheritic croup, administer an emetic, as often as otherwise to satisfy the family. There may be cases where a single emetic dose may be useful in helping the expulsion of membrane; but to persist in the use of emetics, or to give them in a routine way, seems to me unjustifiable and inexcusable. I believe the heart-failure in this case is attributable to the weakness induced by emesis.

Case 2. This is the only case where the dyspnœa was not relieved, at least temporarily, by the tube. At first a three-to-four-year tube was inserted, quickly removed, and a five-to-seven-year tube at once introduced. Neither gave relief, and tracheotomy was at once done, partially relieving the breathing for a time. This case serves to emphasize what has been repeatedly said, that the tracheotomy instruments should always be at hand.

Case 4. No urine was voided here for twenty-four hours preceding entrance, nor was any treatment efficient to re-establish renal activity after entering the hospital.

Case 13 also had suppression of urine, coming on two days after the tube had been removed, and when the child was doing well in every way. The family attendant exhausted every means to establish the function of the kidneys without avail.

Case 6 was a very interesting one. The child was desperately ill, and only recovered after a long stay in the hospital. While wearing the tube, it seemed daily, for several days, that he would die, and on one of these days several consultants advised that the tube be removed, lest it be found obstructed. The character of the respiration, which was very rapid, though shallow, and the sound, inclined me to the belief that the tube was clear, and that any extra manipulation would weigh against recovery. The look of a child struggling for air, usually a slower and labored respiration, is far different.

Case 8. Here the tube became plugged on the tenth day. There was cyanosis and labored breathing. Prompt removal of the tube showed its lumen to be nearly occluded by membrane, and was followed by relief. It was not required afterwards.

In Case 16, could I have foreseen the great dysphagia which was to follow intubation, I should have done tracheotomy at the start. It was the only one where there was so great difficulty in swallowing as to cause me to remove the tube for the purpose of feeding — this after it had been in but eight-and-a-half hours. For two days he did well without it, having only moderate dyspnœa; then I was summoned in the middle of the night, and found him struggling desperately for breath. I had no assistance at the time, and the surroundings for immediate tracheotomy were unfavorable, so the intubation tube was reinserted without any assistance, medical or lay. I decided to leave the thread attached for a few minutes, to facilitate removal if necessary. In a fit of coughing the patient pulled it out, and with it came much membrane. This case well illustrates the danger of leaving the thread attached. Fortunately, the tube had so reamed out the trachea that the obstruction was removed. Had anything been required later, I was prepared to do tracheotomy, owing to the O'Dwyer tube interfering with the taking of nourishment.

Cases 17 and 21 were moribund at the time of operation. They were cases where tracheotomy would never have been considered. It seemed doubtful if the latter would survive intubation even. The whole operation did not require fifteen seconds. The child rallied well, and lived a day and a half. These two cases seem to me to justify the claim of intubation to a definite place in surgery not occupied by tracheotomy.

In Case 18 the tube was coughed up, and did not require to be replaced for twenty-four hours. This child finally died from sepsis. In Case 20 the tube was likewise coughed up after sixty-six hours, but was not needed afterwards. The child recovered.

Case 19 was an unusual one. The whole family had been having influenza, and three weeks previous to operation she had an attack. Her symptoms were anorexia, weakness, insomnia, much gastric irritability and fever, with a general eruption of petechiæ, maculæ, papulæ and blotches. The eruption disappeared, but she did not regain strength. I saw her first November 11, 1892. She had been croupy the day before, but in the evening there was less dyspnœa. Same thing repeated next day. My visit was in the evening, and, as she was breathing pretty well, Dr. Munro and I agreed that it was best not to operate. The following day there was more dyspnœa, increasing towards night, when there was marked cyanosis and retraction. No membrane nor glands. Vomiting constantly. Pulse 145, intermittent. Intubation gave entire relief to dyspnœa, and she soon fell asleep, having had little or no sleep for two or three days. Nourishment taken pretty well. She did well for six hours. We gave a hopeful prognosis. The following morning Dr. Munro was called, and found she had just died, having for the five hours previous grown progressively weaker, and having breathed more and more rapidly, the parents stated. No necropsy was obtained; but it seems probable that death was from pulmonary œdema, following a catarrhal laryngitis attending influenza.

This series of cases has been especially interesting to me, in carefully watching the way in which the children took nourishment. It cannot be too frequently repeated, that once the tube is in place (whether by tracheotomy or intubation) and obstruction overcome, a case of laryngeal diphtheria resolves itself into the systemic disease diphtheria in the vast majority of cases, and now nourishment is the key to the situation, and the nurse holds that key. Everything else, even stimulation, is subsidiary only. I have been surprised to find in how large a proportion of cases the patient, if in a favorable posture (usually lying on the back or side, with feet elevated a little) can swallow with very little difficulty if fed rather slowly. Here everything depends on the tact and patience of the nurse.

In 25 cases of intubation noted, there was

No dysphagia in	10
But little dysphagia in	13
Much at first, none later in	1
Impossible to swallow in	1

So, in 23 out of 25 cases, these children could take nourishment without great difficulty from the first. This leads me to believe that the difficulty in feeding has been overestimated by most writers. However, much care and patience is often requisite on the part of the attendant.

The tube, then, merely overcomes one of the incidental symptoms, if you please. The disease itself must be fought with food and stimulants, the latter in very large quantity often. The only drugs necessary, from our present knowledge, seem to be mercury and iron. Peroxide of hydrogen is useful locally in the throat.

While in most of the cases the introduction of the tube has been easy, there have been enough trying ones to enforce what is well known, that in young children and in densely infiltrated throats it may be attended with much difficulty.

Case 9 was especially difficult; the fauces were greatly swollen, particularly on the left side, making the glottis seem to be far out of the median line. Here the tube was coughed up after two or three hours, and was found plugged with a single piece of membrane, which showed the bifurcation of the trachea.

Almost without exception, after operation the child coughed a few minutes, then fell into a quiet sleep. The relief of dyspnœa was complete in 22 cases, nearly complete in 2 cases, incomplete in 1 case, and none in 1 case.

By consulting the table, the size of the tube used will be seen in many cases to have been larger than that indicated by the O'Dwyer gauge for a child of that age. The development of the child is more important than the age. I always use as large a tube as can be placed with ease, and leave it in as short a time as is consistent with unobstructed breathing.

As far as I know, there has been no permanent impairment of speech. The average time of wearing the tube in the eight cases which recovered was about five and a half days. The percentage of recoveries was 30.8, but this is of little import. To illustrate the fallacy of statistics in a limited number of cases, the first 20 cases show 40 per cent. of recoveries. Again, the last 6 all died. These were all in the country (in East Providence and Rehoboth), and in a locality where the type of cases I have seen has been especially septic and malignant, these being a small part of all the cases of diphtheria I have been asked to see (the others not laryngeal) there during the past few months.

The cause of death has been

Sepsis in	7 cases
Extension to bronchi in	5 cases
Uræmia in	2 cases
Sepsis and extension in	1 case
Sudden heart failure in	1 case
Œdema of lungs in	1 case
Extension and exhaustion in	1 case

Especially true is it that the type of the disease prevailing at the time determines the death-rate after either intubation or tracheotomy. This is apparent especially from the greatly varying percentages reported by operators in Europe, where intubation has been steadily growing in favor during the past three years.

By no means do I believe that tracheotomy is to be driven into disuse by intubation, in relieving the obstructive symptoms of diphtheria. It is a severer way of accomplishing what, in a large proportion of cases, intubation does; but I would never intubate without having the tracheotomy instruments ready for an emergency, as their use may be imperative in any case.

Intubation involves less shock, requires no anæsthetic, requires no cutting, and is therefore often consented to by parents who would not allow tracheotomy. In very young children it holds out some hope, where tracheotomy is almost always fatal. Being a less severe measure, it may be resorted to earlier, as well as later, than tracheotomy would be justifiable. There is no wound to heal after the tube is removed.

◆

FOUR UNUSUAL CASES:[1]

I. IMPERFORATE HYMEN WITH HÆMATOCOLPOS.
II. MUCOUS CYSTS OF THE VAGINA.
III. RECTO-VULVAR FISTULA.
IV. SALIVATION OF PREGNANCY.

BY CHARLES M. GREEN, M.D., BOSTON.

I.

THROUGH the kindness of Dr. C. W. Swan I saw this case April 20, 1893. The patient was fourteen years and five months of age, was well developed, well nourished, and in excellent general health: she attended school regularly, took long walks, was fond of dancing and of the out-door sports of healthy young girls. Neither she nor her watchful mother had seen any symptom of the menstrual molimina; but for three months there had been a noticeable enlargement of the abdomen. For a week there had been a frequent desire to pass the urine; but there had been no disturbance of defæcation, no bearing down, no pelvic distress, in fact no discomfort whatever. Advice was sought, however, on account of the gradually increasing tumor in the lower abdomen and the non-appearance of the menstrual flow. Dr. Swan found an abdominal tumor, reaching nearly to the umbilicus, but narrow, and not extending into the iliac regions: the hymen he found to be imperforate.

When I saw the case, I was unable to determine positively whether we had to deal with a distended vagina simply, or whether the uterus and possibly the Fallopian tubes were involved; but the absence of distressing symptoms and the probability that the girl had passed but a few months beyond the age of puberty led me to believe that probably the retained menstrual blood was limited to the vagina. The hymen was found to be bulging convexly outward: this I punctured with a small trocar, and a dark-brown fluid escaped. The discharge was not of tarry consistency, as usually described in the books, owing, I presume, to the fact that it had not been retained sufficiently long for the blood serum to be absorbed to any great extent. After the abdominal tumor had somewhat subsided, I enlarged the opening in the hymen by multiple incisions and thus thoroughly evacuated the vagina. After washing out the vagina with a weak carbolic solution I explored with an aseptic finger: the uterus was found of normal size and the os non-patulous; the tubes could not be felt: it was clear, therefore, that the case was one of hæmatocolpos simply. The vagina was enormously distended and seemed to fill the whole pelvis.

---

[1] Read before the Boston Society for Medical Observation, February 5, 1894.

The evacuated fluid was carefully collected and was found to measure three and one-half pints. Assuming that there had been no marked absorption of the serous constituent, and accepting the common statement that the normal average amount of each menstrual flow is about six ounces, we may infer that the fluid evacuated represented approximately nine monthly periods, and that the girl began her menstrual life at the age of thirteen years and eight months.

After operation the patient was kept in bed for five days and the vagina was carefully syringed with carbolized water. There was no febrile reaction and no evidence of sepsis. Twenty days after operation a normal, painless, and free menstruation took place, lasting six days. Three days thereafter I found that the vagina had contracted a good deal, but was still quite capacious: the vaginal walls were now more or less thrown into folds, and gave off a thin, glairy secretion: the uterus was normal in size and position.

These cases of congenital hymeneal atresia are rare. Carl Braun observed only four cases in his extensive experience, and Lombe Atthill, Master of the Dublin Rotunda, only one. Among careful, intelligent people the anomaly should be recognized early; and when thus recognized, and aseptically treated, the results should be good. In neglected cases, however, the uterus and Fallopian tubes may become distended, blood may thus escape into the peritoneum, and fatal results ensue. In these cases, too, of hæmatometra and hæmatosalpinx, there is danger of rupture of the tube either by over-distention or by the force of a rapidly contracting uterus after the hymen is incised. To avoid this latter danger it is prudent to make at first only a small opening in the hymen, thus allowing the fluid to escape very slowly, and also to avoid all pressure over the uterus, either by the hand or by the abdominal bandage which has sometimes been advised. The greatest danger in all cases of menstrual retention from hymeneal atresia, and the one most fatal in former days, can now most happily be averted by rigid surgical asepsis.

It is probable that in earlier times these cases of menstrual retention were sometimes overlooked and the patient treated with iron and the various emmenagogues until distressing symptoms demanded a physical examination. Sometimes the hymen has ruptured spontaneously, and a natural cure thus resulted. Mitchell[2] has recently reported the case of a girl of sixteen who had never menstruated, and who had had monthly attacks of spasmodic pains in the lower part of the abdomen, irritation of the bladder, and a constant feeling of bearing down, associated with abdominal enlargement. During an attempt at vaginal examination the hymen was ruptured, a large amount of retained menstrual flow gushed out, and recovery followed.

II.

Mrs. H., aged thirty-five, who had borne one child several years before, was referred to me in the autumn of 1893, by Dr. J. H. Woods, of Brookline. She had been for some time in poor general health, and there was well-marked nervous debility: the pelvic symptoms were backache and a constant feeling of bearing down. Vaginal examination revealed a second degree of retroversion with old adhesions, a slight laceration of the cervix requiring no treatment, and two cysts of the vaginal wall. The cysts were seated, the one on the anterior wall just in front of the cervix, the other on the right posterior wall at its upper third: the size of the two cysts was about equal, that of a large horse chestnut or small hen's egg. These cysts had probably been growing for several years; but it was only in the past year or so that the patient had been conscious of some obstruction in the vagina.

It was obvious that what was most needed in this case was general treatment directed to the neurasthenic condition; and incidentally it was thought best to free the uterus, if possible, and restore it to its normal position. The cysts probably added little to the patient's discomfort, except in so far as possibly to increase the sense of weight in the pelvis and to interfere somewhat with physiological functions. It was evident, however, that their presence would interfere with measures to raise the uterus and the subsequent wearing of a pessary; and it was reasonably probable that before long they would reach such a size as to occlude the lumen of the vagina. It was therefore thought best to remove them. Under ether anæsthesia the cyst walls were freely laid open, there appearing to be no sac which could be dissected out. The contents of the cyst on the right posterior wall were of a thinish, mucoid character, of a light chocolate color, and without odor: those of the cyst on the anterior wall, thick, viscid, and almost semi-solid, of albuminous color, and likewise without odor. This latter material was submitted to the examination of Dr. W. T. Councilman, who reported as follows: "Contents of cyst consist of a glairy mucus, enclosing great quantities of so-called Drysdale's corpuscles and large leucocytes filled with fat granules. It is very probable that the cyst had an epithelial lining, and that these Drysdale's corpuscles are the nuclei of cells which have been destroyed."

The cyst cavities were gently curetted, cleansed with Dobell's solution and weak corrosive, and lightly packed with iodoform gauze. After ten days the cavities had markedly shrunk, there was very little mucous discharge and the openings were still patent: the patient was then sent home for general treatment preparatory to dealing with the adherent retroversion.

Mucous cysts of the vaginal wall are fully treated in the text-books, and I am able to contribute nothing new to the knowledge of the subject. They must be regarded as somewhat rare, although some observers, notably Lee, of New York, consider them fairly common: in an experience of sixteen years I have met with but this one case. They occur, as a rule, singly, more rarely two or three at one time. The anterior wall of the vagina is the most frequent seat, the lateral wall the least common. In sixty-six per cent. of the cases the cyst is situated between the middle of the vagina and the vaginal introitus, and when thus seated may simulate rectocele or cystocele: in my case both cysts were at the upper third of the vagina. The cysts may vary in size from that of a pea to that of the fist: isolated cases are also reported of still larger cysts; but they are usually discovered by the time they reach the size of a hen's egg. They may be superficially or deeply seated: in my case both cysts were superficial. The contents of the cysts may be thin, resembling that of hydrocele fluid, and of reddish, brownish, greenish or chocolate color; or they may be thick, viscid and albuminous.

---

[2] British Medical Journal, December 16, 1893.

Opinion is still divided as to the existence of glands in the vaginal wall; but the weight of authority seems to be that in all probability there are no true glands, but what are called vaginal crypts. Vaginal cysts are probably not, therefore, retention cysts properly so called, like wens or cysts of Bartholin's glands, but are developed in the vaginal crypts, which are lined with flattened epithelium, and which have in some way become occluded, either by inflammatory processes or by epithelial plugs. This subject is fully discussed in an able paper by Rutherfoord,[3] which is the latest contribution I have seen.

Vaginal cysts, as a rule, grow very slowly, and when small cause no symptoms: small cysts are therefore discovered only by accident. Large cysts may cause uterine displacements, may interfere with the bladder or rectum and cause various pressure symptoms, may make coitus difficult or impossible, and, when seated low, may protrude from the vagina and cause discomfort: they may also constitute an obstruction in labor.

The best treatment of vaginal cysts of any size is undoubtedly enucleation; but this is often difficult or impossible when the cyst wall is thin or the cyst is deeply seated. In such cases free incision and evacuation is the most reliable measure, followed by curetting and packing with iodoform gauze: it is well also to excise a small portion of the cyst wall to prevent closure of the incision, after the patient has passed from observation.

These tumors should be recognized without difficulty; but Winckel points out that they may be mistaken for cystocele, rectocele or small ovarian cysts. Careful examination, however, will usually remove all doubt, and doubtful cases should be aspirated before incision. In large cysts there is well-marked fluctuation.

III.

A. C., aged thirty-two, single, a bookkeeper by occupation, consulted me in November, 1891, and gave the following history: The general health had always been fairly good, and the menstrual function normal; she had suffered more or less with hæmorrhoids, and twelve months previously had been operated on for the cure of a fistula in ano. Since the operation she had suffered with soreness about the vulva, and also with incontinence of intestinal gases and semi-liquid discharges. It was from this last annoyance that she especially sought relief.

Physical examination disclosed a short fistulous tract extending from the lower border of the sphincter ani to an opening about two inches to the left of the anus: further, the sphincter was entirely laid open at its upper left border, and a gaping sulcus extended from this point upward toward the left, along the inner border of the left labium majus to a point opposite the lower third of the left labium minus. There was a small button-hole opening through the left nympha: the hymen was intact. The symptoms and lesions presented were essentially those of a complete rupture of the perineum, although the vagina was in no way involved. It was obvious that there had existed a fistula in ano extending from within the sphincter upward and to the left between the labia, that this fistula had been laid open, and that the sulcus had subsequently failed to unite, although the surfaces had cicatrized.

Through the kindness of Dr. E. J. Forster, who was then on duty, the patient was admitted to the Boston City Hospital, and I operated to close the sphincter and restore the integrity of the parts. The necessary denudation was made, the rectum was closed in with catgut sutures, and the sulcus above with silver wire. The superficial fistula in ano was successfully treated with the elastic ligature. The wire sutures were removed on the tenth day, good union had taken place, the deformity of the parts was removed; and on discharge, two weeks later, the patient had entire control of the sphincter ani as regards both liquid fæces and intestinal flatus.

This case is unique in my experience, and I have never seen a similar one reported. Should a case of recto-vulvar fistula ever present itself to me before the sinus had been laid open I should adopt the method of treatment proposed by Dr. E. W. Jenks, of Detroit, in 1883,[4] for the cure of fistula in ano. In view of the fact that in so many cases treated by incision alone the sphincter ani fails to unite, and the deplorable condition of incontinence of fæces and flatus thereby ensues, Jenks recommended the following method of procedure: The sinus is laid open, care being taken to incise at right angles to the sphincteric muscular fibres; the so-called pyogenic membrane and all adjacent abnormal tissues are dissected away; and the sulcus is then closed with buried sutures passed entirely around the fistulous tract, the sphincter to be closed as in cases of complete rupture of the perineum. Dr. Jenks does not claim that this method is applicable to all cases of fistula in ano; but it would seem to be especially applicable to cases like the one above reported.

IV.

Mrs. A. D., aged twenty-seven, first came under my observation just prior to her first labor in 1891. She was a fine specimen of womanhood, well developed, accustomed to long walks, and, with the single exception to be presently mentioned, in robust general health. Early in her pregnancy, in place of the morning nausea and vomiting so commonly observed at this time, she began to be troubled with salivation. This symptom gradually increased in severity, interfering with her comfort by day, but especially disturbing her at night. In fact, the flow of saliva finally became so profuse at night that the patient dared not lie down for fear of choking, but sat bolstered up in bed with a towel placed to receive the saliva. She was thus able to sleep but little, although towards morning the flow diminished somewhat, and she was enabled to sleep for two or three hours. In spite of the loss of sleep, however, the general health continued good, and the appetite was unaffected. The submaxillary glands were markedly enlarged and the contour of the face thereby distorted; the eyes, too, were somewhat heavy from loss of sleep, but otherwise the patient looked as well as usual.

---

[3] Transactions of the Obstetrical Society of London, 1892, page 354.

[4] Transactions of the American Gynæcological Society, Vol. 8.

During all this time the lady had been under the care of a well-known and able physician, who had tried all the drugs recommended for excessive salivation without appreciable effect. The patient said she had received more than a dozen prescriptions. It did not therefore seem worth while for me to attempt any further treatment. I found that the urine was markedly diminished in amount, without other abnormality, however. This diminution was undoubtedly due to the great derivation of water through the salivary glands, and I advised the free use of Apollinaris or lithia water, which increased the amount of urine somewhat. The labor was in no way remarkable: the os uteri was fully dilatable after twenty hours of first stage labor; but the head did not descend, and after two hours of fruitless maternal effort I delivered a ten-pound girl with high forceps and axis-traction rods. During the next three days salivation occurred two or three times, the flow lasting only a few minutes; it did not appear after the third day, when lactation was fully established; from this time the convalescence progressed normally, and mother and child were discharged well.

Early in 1893 this patient became pregnant again, and at the end of the second month salivation began again as in the first pregnancy: there was no morning sickness. By the fifth month the flow of saliva had become so excessive as to cause great discomfort and loss of sleep; but, as before, the general health continued good. In view of her former experience, the patient was indisposed to submit to drug treatment, especially as I could offer no assurance that any treatment would prove effectual. As before, lithia water was found to be the most refreshing drink for the swollen gums and oral mucous membrane. Labor began just 280 days from the first coitus after the last menstrual period, and with the invasion of labor pains salivation ceased. The labor was uneventful, except that as before it was necessary to deliver with high forceps, the child, a boy, weighing ten pounds. On the second day there was some return of salivation, and with the establishment of lactation the salivary flow did not cease, as in the former pregnancy; on the contrary, it continued for two weeks more or less profuse, never absent for an entire day, and sometimes sufficient in amount to cause vomiting when the patient was recumbent. After two weeks the flow gradually diminished in amount; but it did not cease altogether until the end of three months. Aside from this discomfort the convalescence was normal, and mother and child were discharged well.

I have met with but one other case[5] of excessive salivation in pregnancy, and that was seventeen years ago when I was a medical student. My experience is therefore that of others, that excessive ptyalism of pregnancy is a very rare affection. Winckel, in his text-book of midwifery, says that salivation is mostly associated with extreme nausea and vomiting; but these latter symptoms were absent both in Dr. Richardson's case and in my own. The disorder is probably a reflex neurosis, like many of the cases of uncontrollable nausea and vomiting. The amount of the salivary flow in twenty-four hours may reach several quarts and seriously impair the general health. In some cases of ptyalism, as in some of nausea and vomiting, the disorder may cease spontaneously in the fourth or fifth month; in others, as we have seen, it may continue throughout pregnancy, and cease soon after the birth of the child or on the establishment of lactation. Charpentier[6] mentions seven cases in which ptyalism began with the pregnancy (as in Richardson's case), and persisted after delivery, once fifteen days, once eighteen days, twice for two to three weeks, and three times in the same woman for from three to four months.

In regard to the treatment of this affection, while many drugs are recommended by various writers, reliance can be placed upon none. Galatin truly says that pregnancy salivation "is apt to resist remedies." Astringent mouth washes of tannin or quassia may palliate, but cannot be expected to cure. Charpentier recommends the frequent use of brandy as a gargle, and the keeping in the mouth of small pieces of dry, bitter, orange peel. Other recommended remedies are pilocarpin (perhaps on the *similia similibus* theory), iodide of potash, fluid extract of viburnum prunifolium, belladonna, and atropia, the latter being best used by hypodermic injection near the affected glands. But if the affection is a reflex neurosis, it would seem that nerve sedatives would hold out most promise of successful results. Schramm is said to have cured a case in 1886 with bromide of potash, after the iodide and pilocarpin had both failed; but if I remember rightly Richardson used the bromides in his case, to which I have alluded, without apparent effect. If I were to meet with another case, however, I think I should place most reliance on bromides and on large doses of chloral hydrate, the latter exhibited preferably by rectum.

◆

REMARKS ON SURGICAL SPLINTING.[1]

BY EDWARD A. TRACY, M.D., BOSTON, MASS.

That illustrious surgeon, Frank Hastings Hamilton, whom I delight in quoting — for his work on "Fractures and Dislocations," the first of its kind in the English language, does honor to American surgery — he, speaking of the ordinary manufactured wooden splints, said: "I wish at once, and for all, to disclaim any intention of giving even a qualified approval of any of those carved, polished, and generally patented wooden splints, which are manufactured and sold by clever mechanics, and which one may see suspended in almost every doctor's office, whether in the city or in the country. Constructed with grooves and ridges, and variously inclined planes, for the avowed purpose of meeting a multitude of indications, such as to protect a condyle, to press between parallel bones, to follow the subsidence of a muscular swelling, etc., they never meet exactly a single one of these, whilst they seldom fail to defeat some other indication of equal importance. . . . If carved wooden splints are employed, they ought to be made especially for the case under treatment."

---

[5] This case was assigned to my charge in 1877 by the Obstetrical Department of the Harvard Medical School. Prof. William L. Richardson, at that time instructor in clinical obstetrics, was summoned to my assistance and delivered with forceps a face presentation, M. D. P. He recognized the patient as one whom he had been treating for salivation in the out-patient department of the Massachusetts General Hospital, and who was also affected with excessive ptyalism in her former pregnancy. In this case salivation ceased within half an hour after delivery. Dr. Richardson's report of this interesting case may be found in the Boston Medical and Surgical Journal for July 12, 1877.

[6] Cyclopædia of Obstetrics and Gynæcology, vol. ii, page 6.

[1] Read before the Malden Medical Society, January 29, 1894.

These strictures apply, it seems to me, with somewhat lessened force to the metal splints we frequently see nowadays. Hamilton further states his preference for strips of wood cut to the proper length and width by the surgeon, and so padded as to fit the inequalities of the limb treated. This surgeon was an adept in the use of gutta-percha for splinting; and the point to note is that whatever he used, he made his own splints. Most surgeons, I believe, think as Hamilton did in this matter; and Dr. Henry O. Marcy's dictum, "The surgeon must make a splint to fit the limb — and not the limb to the splint," aptly defines the proper practice in surgical splinting.

The subject of surgical splinting is a vast one, whether looked at from an historical or a practical point of view. Had I the time and qualifications needful, and you the patience, it might be clearly shown you that surgical splinting, like navigation and printing, had attained perfection undreamed of, in the happy era preceding that of the Chinese philosopher Confucius. But doubtless you will be better pleased if, fancy being restrained, the practical aspect of the subject be dwelt upon. Indeed, I shall use further restraint, and confine myself to remarks on surgical splinting as exemplified in the use of my wood-pulp material, and that, I hope in a manner interesting and profitable to you all.

First, the material and method used shall be described, and later a variety of splints made in accordance with this method shall be shown you; finally, if time permit, I shall demonstrate the method by making a splint before you.

In describing the material, time is saved by quoting from a paper (to be published later) contributed by me to the recent Pan-American Medical Congress.

The Material. — The basis of the material is wood-pulp made preferably from the crushed fibre of the poplar tree, and rolled in sheets in such fashion that the broken fibres intertwine in every direction and loosely, so that an increase of plasticity is thus given to the product. These sheets are further strengthened by having a fabric introduced between the layers of the pulp, or by interweaving with the short, crushed wood-fibre, a long jute or other tough fibre.

The sheets are rolled of different thicknesses, for adaptability to all splint conditions. For convenience I shall designate the thickness by number, each unit representing a thickness of one millimetre: thus sheet No. 1 represents the material with a thickness of one millimetre, — sheet No. 2, with a thickness of two millimetres, and so on.

Characteristics of the Material. — The chief characteristics of this material are stiffness or rigidity when dry, and plasticity when moist. Its rigidity can be increased *ad libitum* by the use of a silicate solution as a moistener. Its plasticity has a limit. The limit is rarely experienced, and only when moulding the material over certain complex curved surfaces. To exemplify: a splint cannot be directly moulded over the ankle-joint anteriorly, for there are two large curves in opposite directions to be followed simultaneously — the convex curve from maleolus to maleolus, and the concave from above downwards over the leg and instep. This difficulty, when met, can be obviated in various ways. I shall mention three of them. Take the case of the ankle-joint: an anterior splint is required for it. The proper-shaped blank shall be cut from sheet No. 1, and moistened with one of the solutions described later. It then should be applied to the limb, care being taken to keep its outer border in contact with the skin, while the superfluous material over the anterior of the joint should be pinched between the thumb and forefinger, and all of it laid or pressed over to one side; a bandage should be singly applied to perfect the moulding of the splint. This method of "pinching and folding over" has an important application in the making of spinal jackets. A second method consists in cutting away the superfluous material, in this case an elliptical figure, and bringing the edges of the cut portion together, to retain them so by means of a strip of the material fastened over the cut edges. A third way is to cut a blank for each important curve and after moulding to properly unite them.

The material possesses, besides the above characteristics that *desideratum* of a splint material — extreme lightness. Its cheapness also deserves a passing mention.

Moisteners. — Water or a stiffening solution can be used to moisten the material.

Water. — The advantage of water is its omnipresence. A serviceable splint can be made with its aid. Such a splint should be protected from perspiration or other moisture, lest it be softened and its usefulness destroyed. It can be so protected by a covering of oiled paper or silk, mackintosh, or best by a coat of varnish.

Silicate Solution. — A stiffening solution having several qualities to recommend its use is that of silicate of potash (silicate of soda is almost as serviceable). Any desired degree of rigidity can be imparted to a splint by using this solution, the amount of rigidity depending on the strength of the solution. A splint rendered rigid in this manner, is not affected by perspiration, nor indeed by momentary contact with fluids, as in washing. Another advantage, especially in cases of compound fracture, is that this solution renders the splint antiseptic. In practice, the solution of silicate of potash generally sold for surgeon's use, and further diluted with water, can be employed. (The commercial solution spoken of in this paper is regarded as a 100-per-cent. solution, and the percentage solutions spoken of in this paper are to be made by diluting the commercial solution with the proportion of water called for by the percentage: thus a 70-per-cent. solution is made by mixing 70 parts of the commercial solution of silicate of potash with 30 parts of water. The commercial solution should have a specific gravity of 1.3 to 1.4.)

Dextrin Solution. — Another useful stiffening solution is that of dextrin, in the proportion of about eight ounces to a pint of water. This solution adds some tenacity besides stiffness to the material treated with it. A splint made with its aid can be remoistened with water and remoulded, quite an advantage in cases where from subsidence of swelling or other cause, a closer approximation of splint to the limb is desired. In practice, dextrin (to be had of paint wholesalers) can be carried about in powdered form, and a solution in water extemporized when needed. An addition of eight grains of corrosive sublimate to a pint of the dextrin solution will render it antiseptic.

Moistening Process. — A few words descriptive of the proper manner of moistening the material. The aim should be to get barely sufficient moisture into the material to render it semi-plastic. If more moisture be absorbed, it becomes more difficult to maintain the moulded splint in the desired shape while drying, and also unnecessarily lengthens the time required to dry the splint. I find the best way of moistening the splint blank, is to apply the fluid used, on each side of it, alternately, by means of a flat paste-brush. A little practice will enable us to judge the precise amount of moistening best suited for our purpose.

Drying. — The time required for drying the moulded blank varies, for the different sheets employed, from ten to forty minutes; the thicker sheets, holding the more moisture, require the longer exposure to heat to drive it out. Any source of sufficient heat can be employed; a good kitchen fire is very efficient and, generally, convenient. While the splint is drying it is serviceable to have yarn or string wound around the moistened form after its removal from the body, to aid it to maintain the desired form, until drying permanently fixes it.

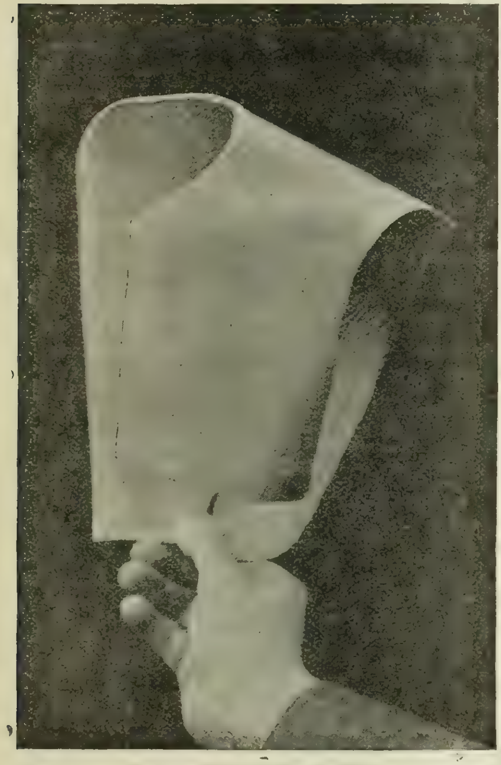


Fig. i. A Claviculo-Scapular Splint.

Having thus described the material and method used, instead of quoting further the dry technique for the various head, trunk, upper and lower limb splints, I shall show you some made in accordance with that technique, "the observation of one of which is better than a large demonstration of words," to quote old Isaak Walton.

The most of the splints here shown were exhibited at the Columbian Exposition; your Society, and I am grateful for the honor, has been the first to give me an opportunity to display and explain them to brother practitioners. [Splints for various parts of the body, all of them moulded on the living subject, were shown and discussed; the following three are selected for illustration here.]

A CLAVICULO-SCAPULAR SPLINT.

This splint is part of an apparatus devised for the the treatment of dislocation (upwards) of the acromial end of the clavicle. The apparatus is fully described in the *Boston Medical and Surgical Journal*, Vol. cxxviii, p. 186. An apparatus for fracture of the clavicle has been devised on the same principle, that is, to regard the shoulder as a pyramidal body, and to so treat it. In a fracture, however, there is such short bone leverage for effective pressure, that a modification is introduced by which the apex of the pyramid is raised upward and backward, and by suitable splinting fixed effectively in the desired position.

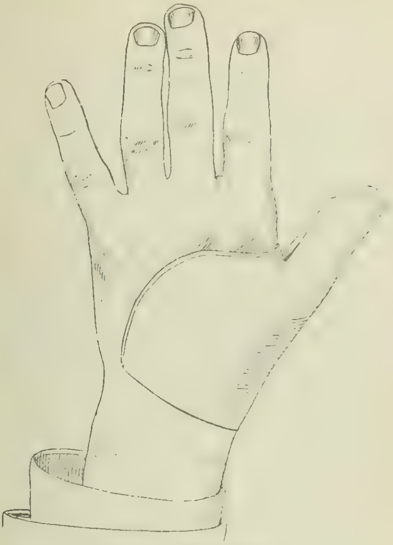


Fig. ii. A Thumb Splint.

A THUMB SPLINT.

This splint is intended for fixation of the thumb, including its metacarpal bone. It embraces the thumb, that portion of the dorsum of the hand shown in the engraving, and somewhat more than the thenar eminence of the palm, care being taken to keep below the cross-palm lines that mark the region of the meta-carpo-phalangeal joints, so as not to hinder finger motions.

A SPINAL JACKET.

The blank for this splint is of the simplest pattern, having width sufficient to envelop the patient's body once and a quarter around, and its length governed by the amount of spine we wish to control. This particular jacket was made for and worn by a boy of six years. It was moulded on the boy's body and completed at his home in less than forty minutes. The jacket's edges are covered with chamois skin glued on. The straps are of chamois skin also, and this material was used because of the ready manner it can be attached

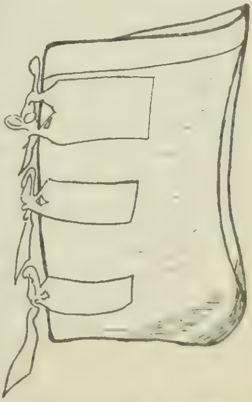


Fig. iii. A Spinal Jacket.

to the jacket, and its toughness and friction preventing the giving or slipping of a bow-knot.

Before attempting a demonstration of splinting by this method, I must state that it is handicapped by the amount and quality of the material at hand. That manufactured so far has been finished by hand-labor at the pulp mill. It has been distributed among Boston surgeons, several of whom have kindly signified to me their pleasure in testing it. The supply is now exhausted, I hope not for long. Mr. Charles H. Fisk, of Manchester, N. H., the gentleman who has undertaken to put the material on the market, has written me that machinery will be constructed to manufacture it cheaply and expeditiously.

[The making of a palmar forearm splint was here demonstrated. The splint meets the indications which Cheever emphasizes in the treatment of a Colles' fracture. He says: "The important point would seem to be . . . not to press the back of the wrist down in such a way, by splints, that we shall lose sight of this arch, which is so marked, under the radius. . . . This arch must be well supported. . . . The splint should terminate at the head of the metacarpal bones, and the thumb and fingers should be left free."[2]]

In concluding, fellow-practitioners, I thank you for your kindness and energy in braving to-night's snowstorm, to meet here; and I ask you, if pleased with this splint material, to take hold of it and develop its various applications, which have been so briefly hinted at; then, perhaps, in later years we can all look back on work done, and done well, and feel that we have done some little to advance surgery — American surgery.

◆

Clinical Department.

A CASE OF MYXŒDEMA.

BY ROBERT E. BELL, M.D., LOWELL, MASS.

THERE has been so much written on this subject, and it is so prominently before the profession, that I wish to report my one case, as it has presented some features that I have not seen mentioned.

Mrs. B., fifty-four years of age, consulted me first January 7, 1894. Family history good. Father and mother both lived to be almost seventy; two brothers and four sisters living. She dates her symptoms from about eighteen months ago. She comes to me because she cannot see to read, and thinks her glasses need changing. $V = \frac{2}{10}$; glasses do not improve her vision. Ophthalmoscopic examination simply shows the fundus somewhat paler than normal.

Patient says that about eighteen months ago her face and hands began to bloat, and she had difficulty in keeping hold of objects in her hands, was constantly dropping dishes, etc. Then her limbs began to swell; and finally she noticed she could not get her clothes on alone, her arms were so useless. She had become very sensitive to cold. Her hands and arms pained her so she could sleep but a few hours. Was dizzy, and felt like falling if she attempted to walk. No appetite. Urine at times was very heavy and almost black. She could not go up stairs without getting out of breath. When she came to me, there was pallor of the face and a puffiness about the eyes. There was œdema about the ankles and legs. The skin of the hands was dry and rough. The hair had no lustre. She talked very slowly and deliberately, and walked as though completely tired. Examination of urine was negative.

Supposing I had a case of myxœdema to deal with, I ordered the thyroid extract of Parke, Davis & Co., in doses of five grains twice a day. At the end of one week patient was better, but complained of some nausea, and pain in her back and legs. I decreased the extract to three grains twice a day, and kept it up until the middle of February, then reduced it to about two grains a day.

At the present time she considers herself well. I certainly never saw a more marked improvement in any patient. She eats well, sleeps well and breathes well. Her vision is now all right with the lenses suited to her age.

◆

Medical Progress.

REPORT OF PROGRESS IN GYNÆCOLOGY.

BY F. H. DAVENPORT, M.D.,
Instructor in Gynæcology, Harvard University.

THE CAUSE OF PERITONEAL ADHESIONS AFTER ABDOMINAL SECTION.

WALTHARD[1] has conducted a series of experiments in the Pathological Laboratory of University College, London, to ascertain the cause of peritoneal adhesions after abdominal section, with a view to discover the way to avoid that complication. He found that prolonged contact of normal peritoneum with atmospheric air caused necrosis of the superficial layer of cells. This injury, even when strict asepsis is carried out, favors the formation of adhesions. It speaks in favor of rapid operating, but many gynæcological operations and procedures for disease and damage to the intestine cannot be performed quickly; hence there must always be danger of peritoneal adhesions when the course of the case is aseptic, and of suppurative peritonitis when accidental infection occurs. The great aim of the operator is to make sure that the peritoneal cavity is thoroughly cleared of all fluid or semi-fluid material by the usual "toilet." In short, the serous membrane must be kept from the contact of fluid, but not allowed to become dry by exposure to air. This Walthard calls "dry asepsis."

When the cavity cannot be kept dry, as in many long operations, "moist antisepsis" is required. In other words, the peritoneum is flushed out with water at 100° neutral, and preferably containing chloride of sodium. The loss of its shiny appearance is the evidence that the serous membrane is becoming dry.

URETERO-VAGINAL FISTULÆ.

Hochstetter[2] has been able to find records of thirty-nine cases of uretero-vaginal fistulæ, of which twenty-three were caused by difficult labors, ten followed total extirpation of the uterus, two the opening of a pelvic abscess, one the spontaneous breaking of an abscess, one from ulceration caused by a pessary, and in one case the cause was not given.

The frequent performance of vaginal hysterectomy makes the study of fistulæ from this cause of interest. Ligature of the ureter of one side is difficult of recognition in the first days after the operation, since there is often from other causes a diminution in the amount of the urine. The cystoscope, or catheterizing the ureters, would assist materially in making a diagnosis. Ligature of both ureters is recognized by absolute anuria. If such a diagnosis is made early, the immediate removal of the ligatures may result in a restoration of the function of the ureters and the avoidance of a fistula. Two such cases are referred to.

---

[2] Lectures on Surgery. By David W. Cheever, M.D. See Lecture X, Boston Medical and Surgical Journal, vol. cxxix, p. 2.

[1] Correspondenz. Blatt f. Schweiz. Aertze xxxiii, 1893, reported in British Medical Journal, December 2, 1893.

[2] Arch. für Gyn., xlv Band, 1 Heft, 1893.

The diagnosis of a ureteral fistula is an easier matter. The patient loses only a part of the urine, about a half, the bladder is intact, as shown by injecting it full, and the sound does not pass from the fistula into the bladder, but from the bladder through the fistula into the vagina.

The treatment of such a fistula is, in the first place, by cauterization, care being taken not to cause so much swelling as to close the ureter. If the ureter is not wholly cut through cure may follow, and several such cases have been reported. If this fails, operative treatment should be tried. Simon advised changing the ureteral fistula into a uretero-vesico vaginal fistula, and then closing, but his attempts failed. Landau suggested passing a thin catheter from the vagina into the ureter, carrying the free end through the lower segment of the ureter into the bladder and out through the urethra, refreshing the tissues on both sides of the catheter and uniting them. There have been several successes by this method.

A modification of this procedure by Schede consists in making a vesico-vaginal fistula, and then turning the open end of the ureter into the bladder. The details of this method should be read in the original in the *Centralblatt für Gynäkologie* for 1881, No. 23. A case operated on by Schede, and one the account of which is given in the article under review and three by other operators were successful.

If such attempts at cure fail, there are two courses open, the closure of the vagina below an artificial vaginal fistula, and the extirpation of the kidney of the affected side.

VENTRO-FIXATION OF THE UTERUS.

Napier and Schacht[3] divide ventro-fixation into two great varieties, indirect and direct. The first fixes the uterus by means of its ligaments or the pedicle of an ovarian cyst, etc., in the course of another operation; the second requires suturing of the uterus itself. Direct corporeal uterine fixation may be either lateral or median. The authors favor the median method, and the essential feature consists in passing three sutures through the edge of the rectus muscle, the fascia, peritoneum of the left side, the uterine wall, and the same structures of the right side, one at the fundus, one as near the intra-peritoneal cervix as possible, and one midway between these.

The conditions which justify such an operation are when uterine retroflexion or procidentia occasions such symptoms as unfit a woman for her life-work, provided other forms of treatment and minor operative measures have proved non-curative. Age is an important factor. Of twenty cases operated on by the authors, seventeen were under forty years of age. There were eleven cases of retro-displacement, nine of prolapse. Ten had been done long enough before the report to judge of permanent results, and of these only one was a failure, and that was due to the dragging of cervical fibro-myoma. There were extensive adhesions in five cases, in fifteen there were none or they were easily separated. Two deaths occurred in the series, one from sepsis and one from hæmorrhage and shock.

CONSERVATIVE TREATMENT OF DISEASES OF THE UTERINE APPENDAGES.

Pozzi[4] refers in this paper, in addition to operations on the tubes and ovaries themselves, to methods of treatment of the uterus diseased at the same time as the tubes, which have for their object the cure of the latter, such as curetting, cauterization and electricity. Such measures Pozzi believes may be useful in the first phases of acute catarrhal salpingitis, but illusive in pus cases or in chronic cases where the walls are thickened. Massage and electricity should be applied to diseased appendages only in chronic cases where the tubes contain no liquid. The conservative operation which has been proposed in cystic salpingitis in order to induce the evacuation of the liquid by dilatation of the uterus and of the ostium internum of the tubes, is dangerous on account of the likelihood of provoking inflammation of the neighboring peritoneum and is usually impracticable by reason of the extensive obliteration of the tubes in the vicinity of the uterine cavity.

In discussing the main topic of the paper, namely, operations bearing directly upon the ovaries or tubes for removing the diseased and respecting the healthy part, he considers two procedures, resection and ignipuncture of the ovary.

With regard to partial resection of the Fallopian tubes, Pozzi eliminates it from the number of conservative operations. He believes that once having been attacked by acute inflammation, it has become definitely incapable of fulfilling its physiological rôle. The rôle of the Fallopian tube is not that of an inert duct; it is essentially active; the integrity of its texture, the persistence of its vibratile epithelium and its contractile fibres are conditions indispensable to its function. Therefore an inflammation of some duration must surely destroy or definitely paralyze these active elements.

It is entirely otherwise with the ovary. It is well known that a small quantity of ovarian tissue suffices to assure the regularity of menstruation and to permit fecundity, hence there are more than theoretical considerations in favor of partial resection of the ovary. The persistence of menstruation is constantly remarked if a fragment, however small, is left, and several observations prove that its fecundity is preserved.

It remains to be determined in what cases of lesions of the ovary a partial operation can be made, and to decide the nature and technique of this operation. The first general consideration is that whenever the Fallopian tube is healthy and the ovary alone diseased, it is wise to preserve a part, and only at the last extremity make a total sacrifice.

The most favorable cases are those in which the diseased process has affected one region of the ovary leaving an entire segment of the organ intact. A typical lesion is an isolated cyst, in which case, after it has been ascertained that the tube is completely permeable by the passage of a stylet, the surgeon performs the resection of the diseased parts by two incisions

---

[3] British Medical Journal, October 14, 1893.

[4] British Medical Journal, September 16, 1893.

which circumscribe a cuneiform segment. The two lips of the wound are reunited by a continuous suture in catgut. Resection may also be employed in cases of microcystic degeneration, in which the disease has left a zone of ovarian tissue intact. It is frequently found that a large part of the organ is thus affected, whilst in the region of the hilum, a band of tissue exists untouched by disease. An incision can be made along this line, removing the greater part of the ovary, but preserving the base of the organ. Pozzi, in addition, in cases where it has been necessary to liberate the Fallopian tube by tearing off adhesions, fixes the ostium of the tube upon the ovarian stump by means of a few points of suture, in order to prevent the tube from falling away from the rest of the ovary and contracting adhesions.

Lately, Pozzi has practised ignipuncture instead of resection. He considers it more expeditious and doubtless more efficacious than resection. When the ovary presents dispersed lesions such as cysts of small volume, they are opened successively by the small knife or thermo-cautery, and burned on their internal surface. Where there is diffuse ovaritis it is advisable to make the point of the cautery penetrate rather deeply into the œdematous stroma. He has no doubt that the actual cautery has a distinct influence in producing an energetic melting of the chronic inflammations.

In answer to the objection that the cautery would be liable to produce sclerosis, Pozzi says: "Assuredly this might be the case were the cauterization followed by the falling away of the eschar from suppuration and granulation. But in the interior of the peritoneal cavity the process is quite different; it is essentially aseptic. The eschar is reabsorbed, molecule by molecule, without inflammatory process or embryonic proliferation susceptible of becoming a nodule of fibrous tissue."

The practical results in Pozzi's cases have been satisfactory. He has performed resection of the ovary six times and ignipuncture eight times. All the patients recovered, and in all, either immediately or later, the pains ceased or were greatly diminished, and in those who before had suffered from menstrual irregularities there was improvement. One patient became pregnant, in whose case he made twelve deep points of ignipuncture in the left and eleven in the right ovary. The ovaries were white, smooth and enlarged and affected with diffuse ovaritis.

His experience is recent and extends over a period of a little more than two years. The results are, however, very encouraging, and taken together with those of Martin, may serve to encourage operators in a new path.

THE SO-CALLED "CONSERVATIVE OPERATIONS" ON OVARY, TUBE AND UTERUS.

The partial operations on ovary, tube and uterus in case of tumors and other diseases, have, according to Martin,[5] found so little favor that he has been led to call attention to them again. The resection of one ovary after extirpation of the other, in particular puncture of hydropsical or hemorrhagic follicles, has been performed by Martin twenty-seven times; of twenty-four operated on in the last method, eight became pregnant later. As soon as the disease of the ovary has left no functionally-active ovarian tissue and especially where a purulent process has been recognized the extirpation of the whole ovary is indicated; for the small number of cases in which there is chronic oöphoritis or circumscribed new growths, Martin recommends partial resection. The resection of occluded tubes after extirpation of the other diseased tube Martin has performed forty times; one woman conceived later. Of the one hundred and forty-one enucleations of intra-parietal myomata, twenty-six women died; of the one hundred and fifteen that lived, five developed new tumors and two conceived again.

Martin claims that these conservative operations offer no greater dangers than the radical, that the women are almost universally freed from their sufferings and remain so, that relapses or affections of the resected organs rarely occur, that the feminine functions remain intact, that pregnancy is possible even with such partially preserved organs and that finally the birth occurs without especial danger.

ENDOMETRITIS IN THE MENOPAUSE.

Jacobs[6] is opposed to the view that the menopause has a curative effect on endometritis and leucorrhœa, that being the exception and not the rule. He describes the degenerative changes of the genitalia in the menopause, the symptoms of endometritis and their differential diagnosis from carcinoma, and calls especial attention to the fact that even in non-malignant disease the discharge may be foul-smelling. As general symptoms he mentions pallor, wasting away, indigestion and obstinate constipation; occasionally neuralgia and mental disturbances occur. Chronic eczema, urticaria, acne, pruritus vulvæ and mucous polypi in the uterus are frequent accompaniments. Usually the disease has existed before the menopause. As therapeutic measures the author advises at first building up the general health, then curetting followed by local treatment.

ENDOMETRITIS PURULENTA SENILIS, SEU ATROPHICANS.

Patru,[7] under this name, describes a disease which has been noticed by only a few authors, notably Fritsch. It has clinically, as well as pathologically, a resemblance to ozæna and occurs in women over sixty, especially in those who suffer from cardiac affections. It can be caused by bacteria of a type very little studied, which develop in the atrophied mucous membrane and cause a more or less foul purulent discharge which occasionally is bloody. In the discharge are found various forms of bacteria, red and white blood corpuscles and a polygonal, atypical, uterus epithelium. The discharge is either constant and scanty, or intermittent and profuse. The patients complain of moderate pain in the back lower abdomen, the uterus is usually normal in size and moderately tender. The complexion is sallow and can, in connection with the fetid discharge, simulate malignant disease, although the cervix is small and soft and shows no swellings or ulcerations.

The vagina may be inflamed and adhesions of the walls may occur; perhaps the little studied vaginitis adhæsiva is only a secondary affection and result of senile endometritis. The prognosis is favorable and the disease gradually disappears with age; whether malignant degeneration occurs is not known. The thing to be feared is sepsis from retained secretions and cachexia from chronic secretion of pus. To avoid his the treatment should consist in dilatation of the cervical canal, curetting, cauterization of the inner surface of the uterus and daily vaginal injections.

---

[5] Deutsch. Med. Woch., xix, 30, 1893, reported in Schmidt's Jahr.

[6] Cent. für Gyn., 1894, No. 4.

[7] Rev. méd. de Suisse rom., 1893, No. 5.

◆

Reports of Societies.

CAMBRIDGE SOCIETY FOR MEDICAL IMPROVEMENT.

ALBERT H. TUTTLE, M.D., SECRETARY.

A meeting of the Society, February 26th, with Dr. Henry O. Marcy in the chair, was specially devoted to a discussion of

THE MALARIAL DISEASES OF THE CHARLES RIVER VALLEY: THE BEST METHODS FOR THE IMPROVEMENT OF THE SANITATION OF THE RIVER.

Dr. R. W. Greenleaf read a paper on

THE CHARLES RIVER IN ITS RELATION TO THE ETIOLOGY OF INTERMITTENT FEVER.[1]

Dr. H. C. Ernst: By common consent, we must consider the cause of most malarial diseases is a micro-organism. My experience with the subject under discussion is derived mostly from cases seen at the Massachusetts General Hospital, most of which came from Newton and regions about there already shown this evening on the map, and described in Dr. Townsend's report.

A plasmodium is not a form of bacterium; its existence in the blood has only been discovered a few years, and it has no relation to the bacterial forms of micro-organisms. They require special study, by new methods yet to be worked out. In many instances it is impossible to make a diagnosis between typhoid fever and malaria except by means of the microscope, which may reveal with proper preparation the hæmatozoon of malaria.

In order to make this examination, a bottle containing equal parts of alcohol and ether, and cover-glasses should be taken to the bedside of the patient; the cover-glass is to be carefully cleansed, a slight puncture of the patient's finger is made with a fine needle until a small drop of blood can be squeezed out, a thin layer of blood is spread over the cover-glass and carefully dried; then the glass is placed in the bottle containing the alcohol and ether, and kept until time for examination. To examine the specimen, it must be doubly stained by first immersing in a saturated solution of eosin in alcohol, or placing a few drops of the same on the cover-glass and allowing it to remain for ten to fifteen seconds; it is then washed off with water and treated with a saturated alcoholic solution of methyl-blue, when it is finally washed, dried and mounted. By this means the red corpuscle is stained red and the plasmodium blue. Under the microscope, it is found to be an amœboid form with dark pigment spots in the centre, which divides, and just before complete division assumes a seven-petalled, daisy-like form.

Dr. Ernst exhibited under the microscope the plasmodium of malaria.

Dr. Stevens said he could endorse the observations of Dr. Greenleaf. Most of the cases he had seen were a long way from the river, near fresh-water brooks, old water-courses which were now drained or filled up, and standing water (as the old reservoirs in Cambridge and on College Hill, Somerville, and especially in Arlington). Before 1886 he had seen very few cases of intermittent fever in Cambridge; then it rapidly increased; but during the last five years it had greatly fallen off, so that at present there was not over one-quarter of the cases that formerly existed.

Dr. Durgin, in discussing the question of improvement of the sanitation of the river, said that official attempts had been made to remove the drains which emptied into the river from the Boston side along Beacon Street, and that these attempts had succeeded in part. The sewerage from the abattoirs of Brighton was no longer poured into the river. Some drains along Beacon Street were under discussion, and action was delayed in their removal to prevent unnecessary expense on the part of the land-owners in case the property behind their houses on the river bank should be taken by the Park Commission for improvements on the river.

Dr. H. J. Barnes said he was glad to hear that Boston had done so well toward improving the sanitary condition of the river. Last year 80 drains emptied into Stony Brook, and thence into the Charles River. It was not long ago that he looked into the brook and saw a great amount of fæcal matter floating about, which made him think of the conditions at Moon Island as he found them last summer.

During every great rainfall the flood-gates are opened into the Charles; the idea is maintained that by this means a large quantity of water is forced through the sewers, which are thereby flushed clear of their contents and maintained in a good condition. This is an erroneous conception, since except, perhaps, in times of drought, the ordinary circulation in the sewers is sufficient to keep them clear; and as their discharge into the river causes the accumulation of a great quantity of slimy, dirty material about the mouth of the drains which at times is very offensive, they should be done away with. He would not like to live in his house on Beacon Street in the summer-time from this cause alone. What he had said about the mouths of the flood-gates was equally true of the condition of Stony Brook outlet in the Charles. Some people had informed him the smell about the place was simply that of dock odor, and not injurious to the health; but obviously it was a product of decomposing organic matter, and undoubtedly it was the reason that the organisms so useful in purifying the river no longer existed. At one time there was an extensive bed of oysters in the river, but they could not live where the sewerage rendered water so impure; and he had made the same observations at Moon Island, the shell-fish about the gateway having all died out.

◆

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

JOHN C. MUNRO, M.D., SECRETARY.

Regular Meeting, Monday, February 5, 1894, Dr. Ingalls in the chair.

CANCER OF THE CERVIX. — PATHOLOGICAL SPECIMENS.

Dr. Swift: I thought this specimen would be of interest as it shows a number of pathological conditions occurring in one patient. It is a case of cancer of the cervix, in which there is also a fibroid on the anterior wall of the womb. On the right side there was a tubo-ovarian cyst, and on the left a hydro-salpinx. The case was also interesting as showing how easily in these pelvic troubles a wrong diagnosis may be made. This patient was first seen a year ago by a gynæcologist in this city, the complaint being backache. It was found that she had an epithelioma of the cervix. He evidently felt this fibrous nodule and these tumors in the sides of the pelvis, for he told her that she had cancer of the uterus, and that the disease had extended so far that she could not be cured, but benefit would be derived from operation, and he was willing to undertake the operation of hysterectomy. She consented, but her friends objected. As time went on she became worse, and was taken into the City Hospital. There the same diagnosis was made and a radical operation was refused. The cervix was curetted, but the symptoms (pain) continued. She was practically bedridden. She came to me at the dispensary a while ago, and demanded that something be done. She said that with the history no hospital in the city would take her in. They refused her on the ground of her having cancer, an incurable disease. I examined her and made the same diagnosis that had been made previously. She was anxious to have the operation performed. Under ether it was found that these masses on the side were movable, evidently not attached to the pelvic walls, and there was some hope of getting out the whole mass. The disease by this time had extended down onto the anterior wall of the vagina, and I began the operation by dissecting up the vagina and removing all the diseased tissue that I could. I opened the peritoneal cavity from below, and putting my finger in there, found this large cyst on the right side perfectly free, and a smaller cyst on the left side, also free. On opening the abdomen these things came out without any difficulty at all, and if the operation had been done a year ago, probably her chance of ultimate recovery would be much greater than it is now. The operation was done last Friday, and the woman to-day is in very good condition.

---

[1] See page 353 of the Journal.

Dr. C. M. Green read a paper entitled

FOUR UNUSUAL CASES: I. IMPERFORATE HYMEN WITH HÆMATOCOLPOS; II. MUCOUS CYSTS OF THE VAGINA; III. RECTO-VULVAR FISTULA; IV. SALIVATION OF PREGNANCY.[1]

Dr. Forster: I was present with Dr. Green and saw the third case. It was a very interesting one and I took a sketch of it at the time which I think gives a pretty fair idea of the condition of the parts. It looked like a rupture of the perineum following labor, except that the vagina was entirely intact.

Dr. Whittier: I was very glad to hear Dr. Green's paper on this form of reflex neurosis. I have never been able to understand why in the same individual it should be so constant in succeeding pregnancies when the chief of reflex neuroses, vomiting, is so inconstant and so variable. I have had three cases corresponding to the disorder described, and I think Dr. Green will remember I ventured last season to ask him with reference to the remedies that might be employed. The first case was seventeen years ago and in the succeeding pregnancy it was quite as unmanageable. Four years ago a lady with her first pregnancy had among the earliest symptoms salivation, which continued during the whole period of pregnancy to an extreme degree, without the slightest sign of reflex disturbance in any other direction, and continued several weeks after the completion of pregnancy. I was of the opinion at that time that the continuance after the birth of the child was coincident with and dependent upon sub-involution of the uterus, which was present to a notable degree in that case. In the succeeding pregnancy, the earliest symptom of pregnancy preceding even the absence of the menstrual period, was salivation. This continued during the whole of pregnancy and lasted seven weeks after the completion of it. A lady consulted me last week who for five successive pregnancies, none of them completed, had as the first intimation, salivation. I need not say that we shall all accept Dr. Green's statement that this condition is, so far as remedies are concerned, quite unmanageable. I doubt if we may, with any degree of hope, expect to apply to this any remedy, such as those employed in the other so-called reflex neuroses of pregnancy, with fair success, for from all that I can learn of this disorder, it more nearly than any other deserves the title, incoercible.

Dr. Washburn: I have been very much interested in this series of cases. In regard to the last one, I have now under my care a patient who has been troubled very much with salivation, and in that case there was an excessive amount of nausea and vomiting accompanying the salivation. The salivation was not as excessive as in some of the cases Dr. Green has spoken of, but it was constant and extremely annoying, and would amount to from a pint to a quart in the course of twenty-four hours. I tried a series of different things to see if anything would have any effect. Nothing had much effect, but I thought what gave the most relief was a combination of bromide of sodium with the effervescent bromo-caffeine, given in doses of ten grains of the bromide of sodium dissolved in water, to which afterwards a teaspoonful of the effervescent bromo-caffein was added. In that way it seemed to agree with the stomach perfectly, and it gave a little relief to the salivation.

In regard to the cases of cyst of the vagina, I saw a case about two years ago, that showed the possibility of error in another direction. A woman came to me with a small enlargement on the anterior wall of the vagina, about the junction of the outer and middle thirds, which apparently was a vaginal cyst. Examination, however, showed that the contents of it could apparently be squeezed out, and I found that a fine probe passed into the urethra could be gotten to enter this little sac. It would often be quite distended with the urine and a little *débris* that collected there. It gave her a great deal of discomfort in various ways and I finally opened it and denuded the surface, and sewed up the little fistula into the urethra, and the thing healed very well, and she has been perfectly comfortable ever since. But the first examination of that gave every appearance of being a vaginal cyst. A vaginal cyst which I saw recently was situated almost at the vaginal outlet, and the size of an English walnut. In three or four cases I have seen, the cyst has been along about the middle third of the vagina. I think that the way to reach these always is by the operative method, and my experience has been that of Dr. Green, that very often you cannot find any cyst wall to dissect out. You simply have to lay it open and take off a piece of the outside, scrape it out and let it granulate up in that way.

---

[1] See page 358 of the Journal.

Dr. Buckingham: I have met with one case of salivation in pregnancy, and like those of Dr. Green and Dr. Whittier, it had appeared in a former pregnancy as well. It was so severe that the patient spent her whole time on the bed, with her head over the edge, and her mouth draining into a basin. She was much emaciated and the condition would have been alarming but for her assurance that she had suffered even more in her former pregnancy. Each time salivation ceased about the fifth month. She was treated with a number of drugs commonly used for the neuroses of pregnancy, the only one doing any good being atropia. I do not believe that that hastened recovery, but it gave considerable temporary relief, and it could be repeated.

◆

Recent Literature.

A Text-Book of the Theory and Practice of Medicine. By American Teachers. Edited by William Pepper, M.D., LL.D., etc. In Two Volumes. Illustrated. Vol. II. Philadelphia: W. B. Saunders. 1894.

The second volume of this important work makes its appearance somewhat later than had been anticipated. It is a year since the publication of the first volume. In a certain measure this is compensated for by the incorporation of the latest investigations and studies in some subjects. The first 69 pages are devoted to general considerations concerning the biology of bacteria, infection and immunity, by Dr. W. H. Welch. It is interesting to compare this contribution with those from the same pen on kindred subjects in the last edition of Flint's "Practice of Medicine," published in 1886. One may thus get a striking illustration of the activity and advance of research in this department of medical science during the short space of eight years. Dr. William Pepper contributes 325 pages out of the 1,000 pages of text contained in the volume, and writes on diseases of the heart and its membranes, of the blood-vessels, of the mediastinum, of the mouth and tongue, the salivary glands, the pharynx and tonsils, of the œsophagus, the stomach and the intestines. Dr. R. H. Fitz treats of diseases of the peritoneum, the liver and the pancreas. Dr. Francis Delafield has considered diseases of the lungs and of the kidneys; Dr. James C. Wilson, diseases of the nose, larynx, pleura and bronchi; Dr. William Osler, diseases of the blood, of the supra-renal capsules and ductless glands; Dr. James W. Holland contributes a chapter on practical urinary examination; and Dr. Henry M. Lyman chapters on dietetic diseases, the acid dyscrasia, rickets, osteomalacia, obesity, biliary lithiasis, gravel, saccharine diabetes, polyuria, rheumatoid arthritis, gout and rheumatism.

The title-page states succinctly the plan upon which the work is made up; the names of authors embrace a number of the prominent teachers of clinical and theoretical medicine in the chief medical schools of this country, and may be held in a measure as a guarantee of the character of the work.

The paper, the letter-press, and most of the illustrations, which are numerous — are first-rate. Each volume has a separate and full index.

Holden's Manual of the Dissection of the Human Body. Edited by John Langton, Surgeon to, and Lecturer on Anatomy at, St. Bartholomew's Hospital, etc. Sixth edition, revised by A. Hewson, M. D., Demonstrator of Anatomy at Jefferson Medical College, etc. 311 illustrations. Philadelphia: P. Blakiston, Son & Co. 1894.

This new edition of a well-known work calls for no very extended comment. The bulk has been reduced by putting the more minute points in smaller type. The binding is more simple and well adapted to the dissecting-room. There is a great deal in this work that explains its continued success. For our part we think it would have been wise to omit all minute anatomy. The dissector can have nothing to do, for instance, with the plan of the renal tubules, nor the blood-vessels of an intestinal villus. All this is out of place, if the book is intended to be merely a manual of dissection. We are least pleased with the treatment of the abdominal viscera, and would particularly protest against the implication that the back of the cæcum is often or usually destitute of peritoneum. T. D.

Healthy Hospitals: Observations on Some Points connected with Hospital Construction. By Sir Douglas Galton. With illustrations. Oxford: Clarendon Press. 1893.

The author's object in writing this book was to place on record those principles which ought invariably to be followed in every good hospital, and to point out those conditions of construction which according to recent practice represent the minimum standard required to be followed in building a new hospital. The author does not enter upon the detailed requirements of hospitals for special diseases, entailing in some cases separation of patients, in others special curative adjuncts. He recognizes the probability that a large number of new hospitals for infectious and other diseases will have to be built in the next few years, and endeavors to impress the importance of simplicity of design and moderation in cost. The book is one which those interested in hospital construction should consult.

The Physician's Wife; and the Things that Pertain to Her Life. By Ellen M. Firebaugh. With portrait of author and 44 photo-engravings of original sketches. In one crown octavo volume of 200 pages. Philadelphia: F. A. Davis Co. 1893.

Mrs. Firebaugh has expanded what was probably a very interesting paper, as read to a club, into the proportion and dignity of a book.

It is difficult to believe that the author is really the wife of a physician, so much has been omitted that could have been said in regard to the peculiar duties, hardships and rewards of the life of a doctor's wife, and so many anecdotes contained in the 186 pages could have been related as well of the wife of a banker or a grocer. For instance, it is not clear why the fact of being a physician's wife should cause the lady in question to insist that cabbages should not grow in her front-yard, or why her husband, because he is a physician, should be equally determined that they should.

For a busy doctor's young wife, who is beginning to learn that her husband's time, and, it often seems, his interests also, must belong to his patients rather than his home, there is little to aid or comfort; while to the wife of many years much in the book will appear trivial and commonplace.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, APRIL 12, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

BROWN-SÉQUARD'S TEACHING.

In the recent death of Brown-Séquard — so well known personally to many of the readers of the Journal as having been a citizen, practitioner and medical teacher for several years in this city, and a frequent visitor to this country — the world has lost the last of a distinguished band of experimental physiologists, with all of whom he had been contemporary, and who have helped to make this century fruitful in scientific discovery. The mere mention of the names of the most conspicuous in this band — Flourens, Magendie, Claude Bernard, Vulpian, Longet, Charcot — recalls some of the most valuable acquisitions in neuro-physiology of the past sixty years.

We shall not repeat the facts in Brown-Séquard's medical career mentioned in the Journal of last week. His memoirs on the physiology of the nervous system in both French and English (he wrote with equal facility in both languages) are very numerous. He is best known in this country by his work "On Paralysis of the Lower Extremities," his "Experimental Researches applied to Physiology and Pathology" (New York, 1853), and his "Lectures on the Physiology and Pathology of the Central Nervous System," first delivered in London in 1858, and published in this country in 1860. This is an "epoch-making" book, and sums up his most important investigations on the spinal cord. In 1856, he delivered a course of lectures in Boston, on "The Pathology of Epilepsy," which attracted much attention; these were published in the Journal in 1856 and 1857.

Probably of all his works, that on the "Physiology and Pathology of the Nervous System" has been the most read, and we well remember the eagerness with which it was sought for and read by students of medicine at the time of its publication, thirty-odd years ago.

It is impossible to overestimate the advantage which has accrued to science from these researches, so replete with originality, on perhaps the most difficult part of nervous physiology. We may point particularly to the anatomical and experimental facts set forth in those lectures, showing the relative share of the gray matter and of the various columns of white matter in the transmission of both sensory and motor impressions, and to the demonstrations there given: (1) That the conductors of sensory impressions from the trunk and limbs decussate in the cord and not in the encephalon [Brown-Séquard, by the way, subsequently took this all back, and affirmed that the decussation does not exist[1]]; (2) that in the dorsal region, the various parts of the cord except the posterior columns are instruments of volition; (3) that a small part of the cord may contain conducting elements from all parts of the body on the same side; (4) that the anterior columns have a share in the transmission of sensory and, particularly, tactile impressions; (5) that in cases where the gray matter is destroyed, sensibility is lost; (6) that the fibres of the sympathetic going to the blood-vessels of the head originate in the spinal cord from the roots of the last cervical and first and second dorsal nerves, etc. Brown-Séquard's investigations of the vaso-motor and cervical sympathetic nerves, and his doctrine on the "Transfer of Sensibility" are of the highest interest. With regard to the vaso-motor nerves, following Claude Bernard, he established that the effects of excitation of these nerves consist essentially in a contraction of blood-vessels with diminution in the blood flow, in the temperature, and in the activity of nutrition. He was the first to galvanize the sympathetic nerve. He showed, also, that irritation of the nervous system is a powerful direct or reflex cause of a great many morbid changes in nutrition, secretion, etc.

Brown-Séquard was the first artificially to produce peilepsy in animals by injuries to the spinal cord in certain regions, and to demonstrate the existence of an "epileptogenous zone" in guinea-pigs. His views as to the pathogeny of epilepsy are of the highest interest, though they have been in many points contested. Thus the "contraction of the blood-vessels of the brain proper," precursor of the loss of consciousness, was disputed, if not disproved by Vulpian, and the weight of authority to-day is against the view that the primary seat of epilepsy is in the medulla oblongata instead of in the cortex cerebri.

Dr. Brown-Séquard followed the teachings of Flourens respecting the functions of the cerebrum. According to Flourens, all the properties of the cerebrum are inherent in every part, and from this standpoint he made vehement war on the localizationists of the time, the phrenologists. Brown-Séquard was never willing to accept the modern views of localization, as they were expounded by Ferrier, Nothnagel, Charcot, Seguin and others; in fact, he always bitterly opposed these notions of cerebral physiology; and he has been cited as a striking example of the baneful influence of a strong prepossession or bias. As Agassiz could never see any force in the arguments of the evolutionists, so, to Brown-Séquard, Ferrier's experiments on monkeys were only illustrations of reflex inhibitory action, not of direct irritation or of destruction of well-defined centres. He had accumulated facts which led him to believe that paralysis, anæsthesia, amaurosis, aphasia, and other effects of brain-disease are not dependent on loss of function of either the centres or conductors specially employed in voluntary movements, perception of sensations, power of expression of ideas by speech, etc. He taught that a lesion of any part of the brain may produce any symptom, and that, on the other hand the same symptom may appear, no matter where the seat of lesion may be. A lesion in any part of the brain can produce paralysis, either on the same side or on the opposite side of the body. A paralysis may appear on one side, then on the other side, although the lesion remains in one-half of the brain. As regards vision, facts, according to Brown-Séquard, show that a disease in one-half of the brain can produce hemiopia either in both eyes or one, and in the corresponding or the opposite halves of the retinæ, or a complete amaurosis of either of the two eyes or of both together, so also, anæsthesia, aphasia, loss of consciousness, etc., may arise from lesions in almost any part of the brain. One of the doctrines that he stoutly maintained was this, that the seat of each special function of the brain, instead of being a cluster of cells localized in a small part of the brain, is disseminated, so that the cells belonging to each are spread over a considerable extent, if not the whole extent of the brain.[2]

---

[1] London Lancet, August, 1880 (Am. Ed.), p. 188.

We have not space here to comment on these views; the work has been done by Charcot, Seguin, Foster, Soury, Luciani, Ferrier and others. It is enough to say that Brown-Séquard had a comparatively small following; that his peculiar teachings in which he combated with acerbity the views of his opponents were always listened to with respect and patience, but with incredulity by medical audiences; and that the physiology of to-day is moving farther and farther away from his positions. Brown-Séquard will always deserve a large place in the annals of medicine for the many facts with which he has enriched science, but, like Magendie, he was not a philosophic thinker, and though a good observer, he did not always correctly interpret the facts which he observed.

◆

THE INTERNATIONAL MEDICAL CONGRESS.

The Twelfth International Medical Congress came to a brilliant close on April 5th, and there seems to be little doubt that as regards the friendly relations of all the members and the generous hospitality of the entertainers, it has been the most successful meeting yet held.

The Congress was formally opened on Thursday, March 29th, in the presence of the King and Queen of Italy and the officers of the Court. Professor Baccelli delivered his inaugural address in Latin to an audience of six thousand persons. Prince Ruspoli, the Syndic of Rome, extended to the members the welcome and hospitality of the city.

The immediate glory of the meeting; the dinners given by the foreign ambassadors to the officers of the various sections; the splendid lawn party given by the Queen to the whole Congress; the many private entertainments and public hospitalities of open gallery and museum; and the final banquet in the great court of the Baths of Caracalla when seven thousand persons were gathered together in the vast dismantled ruins of that unequalled athletic club of Imperial Rome, — all these, brilliant as they might be, were but rich appointments of the true feast.

Of the actual work of the Congress; its nineteen sections, each sitting for five days from 8 A. M. to 3 P. M.; its sixty-nine pages of titles of papers to be read; its five general meetings to listen to addresses by Babes, Bizzozero, Bouchard, Danilewski, Michael Foster, Abram Jacobi, Laache, Nothnagel, Stokvis, and Virchow, — it is too soon to speak. The value of such addresses and such extensive sectional work can only be appreciated after they have become widely known, thoroughly read and studied in full. Brief epitomes of such papers are apt to give, not merely unsatisfactory, but often false impressions of the statements, the arguments, the conclusions therein contained. On the arrival of our carrier pigeons, a thousand of which were set free at the close of the final banquet in the Thermæ, we may give our readers even more details than could have been sent by special cable. The list of speakers and papers was a most promising one for the real worth of the Congress.

◆

MEDICAL NOTES.

A Long Medical Life. — Dr. Schupmann, who died recently in Geseke in Westphalia, was probably the oldest physician in Germany. During the first fifty years he was in practice it is stated that he never left his district for a single night, and he did not finally retire from active practice and the charge of the local hospital until he was past ninety years of age.

Danger from Heated Cabs. — The introduction of heating apparatus in some of the public carriages of this city, while of great comfort to the rider, makes worthy of note the following cases reported to the Académie de Médecine of Paris, by M. Dr. Brouardel: "On the 31st of last December a cab-driver who went to sleep in his cab for half an hour after closing the windows was found dead, and the autopsy showed that the death was due to poisoning by carbonic oxide gas from the heating apparatus. On the same day a physician, after an hour's consultation, entered his heated carriage without noticing that the windows were closed. In a few minutes he became dizzy, nauseated, and was seized with such muscular weakness that he could scarcely lower the window. The serious effects of this brief exposure to the gas lasted some ten days." In the discussion following this report it was stated that from five to eight deaths are reported every winter in Paris from gas-poisoning in heated cabs. Another physician since then has nearly lost his life in a similar manner, being found by the driver, unconscious on the seat.

---

[2] See Brown-Séquard's lecture in the Lancet, April 5, 1876, and the Lancet's comment on the lecture.

Medical Charities of London.— The present discussion in English medical journals on hospital and dispensary abuse can be better appreciated after realizing the large number of institutions of direct medical charity. The *Directory of Metropolitan Charities* gives the following list of hospitals and dispensaries in London, not including foundling asylums or diet-kitchens: "Twenty-five charities for the blind, seven charities for deaf and dumb, five charities for incurables, two charities for idiots, sixteen general hospitals, eight consumption hospitals, five ophthalmic hospitals, three orthopedic hospitals, five skin hospitals, sixteen hospitals for women and children, four lying-in hospitals, twenty-nine miscellaneous special hospitals, twenty-nine general dispensaries, thirteen provident dispensaries, six institutions for surgical appliances, twenty-six convalescent institutions, seven nursing institutions." They number 206 in all.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon April 11, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 42, scarlet fever 45, measles 9, typhoid fever 10, small-pox 3 (with 3 deaths). There are at present ten cases in the Small-Pox Hospital. During the week one case of small-pox was reported to the State Board of Health from Chicopee.

The Massachusetts Homœopathic Medical Society. — The programme of the annual meeting of the Massachusetts Homœopathic Medical Society included a luncheon at the State Insane Hospital at Westborough.

The American Association for the Advancement of Physical Education. — The ninth annual convention of the American Association for the Advancement of Physical Education was held last week in New Haven, Conn., with an attendance of nearly four hundred delegates.

A Suit for Damages in a Case of Small-Pox. — A suit for $15,000 damages has been brought against the Selectmen of Ansonia, Conn., by the father of a boy who was taken to the small-pox hospital of that town by order of the selectmen in 1892. The boy died of the small-pox, and the father claims that the removal was the cause of death.

New England Almshouses. — The Boston Almshouse is not the only one at present under investigation as to the methods employed to give the inmates the full benefit of money appropriated for their care. The Portland, Me., city government has been asked to investigate the almshouse, and to restrain the board of overseers of the poor from holding their regular monthly dinners at the almshouse at the cost of the city.

A Case of Catalepsy in Lowell. — A woman was found apparently dead in Lowell last week; and on the arrival of the ambulance gave none of the ordinary symptoms of life when examined by the surgeon. Just as the ambulance drove up to the undertaker's establishment, the surgeon noted a flicker of the eyelids, and the patient was carried, still insensible, to St. John's Hospital, where after several hours' treatment she rallied from her cataleptic state.

Town Clerks and Medical Orthography. — Massachusetts town clerks have a fearful struggle with the nomenclature of disease as presented to them in the certificates of death returned to them by physicians. The following are some of the diseases of which citizens of this commonwealth were said to have died in the year of our Lord 1893, taken *verbatim et literatim* from town reports: In Wellesley — taber dorsalis, extensive bronis, acute aystitis, asphyxia neonatonim, gastirentiritis, chronic parenchymatoes; in Milford — sewiclity (aged seventy-two), nutral disease of the heart, gastertis, caranomia, suppressaricella [Query, Was this Ayer's Sarsaparilla?].

Report of the Perkins Institute. — The sixty-second annual report of the trustees of the Perkins Institution for the Blind shows a continued increase in the number of pupils and in amount of work done at the school and kindergarten. There are now one hundred and forty pupils in the school proper at South Boston and sixty-four in the Kindergarten at Jamaica Plain and seventeen in the workshop for adults. The director's report says that the progress of the three blind and deaf children, Edith Thomas, Willie Robin and Tommy Stringer, has been more than satisfactory. They have been placed in the regular classes and subjected to the same rules as others, the only difference being the presence of their special teacher as interpreter. Their progress compares favorably with that of their classmates, and doubt can no longer be entertained of the feasibility of educating children thus deprived. The number of these is sufficient to make it a duty to seriously consider the means of their education. The schools for the deaf generally have no provision for the blind child, or the schools for the blind for a deaf pupil.

NEW YORK.

Tuberculous Cattle Discharged by the State Board of Health for Lack of Funds to Inspect Them. — It is greatly to be regretted that the present Legislature has neglected to make a suitable appropriation for the further carrying out of the act passed last year, which conferred extraordinary powers on the State Board of Health for the purpose of stamping out tuberculosis and other contagious diseases among cattle. For some time past the Board has been seriously crippled for lack of funds, and last month, when it was notified of the existence of tuberculosis in the cows of Colonel

Beecher, at Yonkers, whose grandchild died of tubercular meningitis, the Secretary of the Board, Dr. Balch, wrote in reply that it would be impossible for the State officials to make an examination of the animals mentioned for some months at least. "This department," he said, "is working under a very small appropriation for tuberculosis, and unless the present Legislature makes an additional appropriation, it will take us several months to attend to the requests already on file." And now, under date of April 6th, the Board has issued an order directing the release of cattle suffering from tuberculosis and the discharge of cattle inspectors, because of the insufficiency of the funds at its disposal. This order has naturally caused great indignation among cattle-owners, many of whom have sacrificed some of their most valuable stock for the purpose of exterminating the disease, and it is feared that the most serious consequences will ensue. A large number of tuberculous animals have been quarantined awaiting slaughter, and the order to release them permits their sale and distribution throughout the State and the country at large.

A Commission to Investigate Tenement-Houses. — The Legislature has passed a bill which provides for a committee of seven citizens, including Dr. Cyrus Edson, Commissioner of the Board of Health, for the purpose of investigating the condition of tenement-houses in New York. The commission is authorized to employ counsel and a stenographer, and to compel the attendance of witnesses, and $10,000 is appropriated for its expenses.

◆

Miscellany.

THE USE OF ANTIPYRETIC METHODS IN THE TREATMENT OF SCARLATINA.

Dr. John Carslaw, of Glasgow, in a paper on "The severer forms of scarlet fever, with special reference to antipyretic methods of treatment,"[1] based on the study of six hundred and thirty cases, draws the following conclusions in regard to the external use of applications of cold and tepid water:

(1) That, in the large majority of cases, they are not required.

(2) That, even in simple cases, and in anginous cases, tepid spongings are useful in allaying restlessness and giving comfort — if the rash has not developed, the addition of mustard being an advantage.

(3) That mustard spongings are particularly useful during the earlier stages of an attack in which nervous phenomena are prominent.

(4) That for the hyperpyrexia of such (nervous) attacks, especially if the rash has developed, repeated cold wet packing is a convenient and efficacious method of treatment, general improvement often following its use.

(5) That local applications to the head may sometimes be of assistance.

(6) That, in all cold applications, there is need for the exercise of the greatest care.

---

[1] Glasgow Medical Journal, Nos. I and II, 1894.

THE INTERNATIONAL SANITARY CONFERENCE.

The closing session of the International Sanitary Conference at Paris was held on April 4th, and an international convention was signed by all the delegates, those from the United States and Great Britain making reservations in regard to a few details.

The measures deal with three aspects of the cholera question, and are reported to be minute in their requirements. The first series provides for a thorough inspection and control over the embarkment of all pilgrims from Indian ports for Mecca, and for proper medical service on all vessels carrying pilgrims. The second series provides for the reorganization of the Turkish lazarettos on the Red Sea. The quarantine of pilgrim ships from India, formerly varied from two to seven weeks, whether the vessel had a clean bill of health or not. By the terms of the new convention a ship with a clean bill of health will be delayed only long enough for medical inspection, and contaminated or suspected vessels will not be detained in quarantine more than five days. The third series relates to precautionary measures in the matter of the return of pilgrims from Mecca by the lazaretto of Tor in Arabia Petrea, on the east shore of the Gulf of Suez. The conference has earnestly urged the Turkish Government to reorganize its sanitary administration thoroughly, with the view of preventing the introduction of cholera into Europe by land. With what result?

◆

THE TREATMENT OF CHRONIC RINGWORM OF THE SCALP.

In the Dermatological Section of the British Medical Association, held at Newcastle-on-Tyne, August 2, 1893, the above subject was introduced by Dr. Calcott Fox, and discussed by various members. Dr. Fox, in considering the parasiticidal treatment, asked whether it was possible to make strong parasiticides penetrate the hair follicle and to bring them into contact with the diseased root and thus to destroy the parasite, as has been denied by Besnier. He was not wholly prepared to accept the latter's view, but yet regarded purely parasiticidal treatment as a slow means of cure. Irritative treatment was commended as effective, but would be more advisable if the desired amount of irritation could be produced at will. He also recommends shaving. Treatment by croton oil in obstinate cases had yielded the speaker brilliant results, but it should always be kept in the hands of the physician.

Some of the speakers who followed favored the use of strong irritants and croton oil, others did not. Dr. Alder-Smith declared that in 90 out of every 100 cases that he had really cured, he had had to employ some croton oil sooner or later, or had had to needle out some isolated stumps left after other remedies had failed. Dr. Radcliffe Crocker considered croton oil a valuable remedy, most useful in very disseminated cases, but one which must be very carefully employed. He recommended oleate of copper, and for older children, salicylic collodion. Dr. Brooke uses as a base a modified Lassar's paste, with kaolin substituted for oxide of zinc, so as to make the preparation more sticky; he adds to this sulphur or creolin as a parasiticide. He was doubtful as to the value of epilation. and considered the croton oil treatment admissible only when the patient could be seen daily by the physician. Dr.

Thin considered it necessary for the cure of ringworm to set up an inflammation about the hair follicle sufficient to kill the parasite; but this inflammation must be carefully controlled, as he had seen cases where large areas of permanent baldness had been produced by croton oil. He did not favor therefore the use of croton oil, except in very exceptional cases, and in very exceptional hands. He had found that ringworm hairs that had been soaked in croton oil for a week, still caused a growth of the fungus in cultivating media, and therefore its effect must be due to its irritating and not to its parasiticidal properties.

◆

A FAMOUS COUNTRY OBSTETRICIAN TWO CENTURIES AGO.

In the second volume of the "Philadelphia Hospital Reports," recently published, Dr. Theophilus Parvin contributes a sketch of the work of Mauquest de La Motte, a famous French obstetrician of the last half of the seventeenth century. Although he was educated in medicine at the Hôtel-Dieu in Paris, he returned to the small country town of Valognes in Picardy to practise. Leading the busy and arduous life of a country doctor, he gradually acquired fame as an obstetrician "by adding reading to practice, observations to reading, and reflections to observations."

In 1726, when he was seventy-one years old, he published his "Traité des Accouchements," making this modest claim for its merits: "I have waited a longer time to publish this work, hoping to make greater progress; but my advanced age has decided me to issue it as it is, fearing that unforeseen death may deprive me of the pleasure of giving some light to my successors, trusting that the Lord will reward, not living in a place in which fortune can fulfil the desires of those who sacrifice to this idol."

What was the variety of work done by this physician, who frequently rode twenty or thirty miles on horseback to attend a case of labor, is exemplified by the reports of over 400 cases, written in a most interesting and vivid manner. The following passages will meet the ready appreciation of the tired doctor of to-day:

"Mother and child saved, but I almost died; and I was so fatigued and exhausted I could not use my legs and arms for eight days. . . . I believe I would have died when this accouchement, in which I had exhausted my knowledge and my strength, ended. I could scarcely breathe, and it was necessary to put me upon a mattress in front of the fire and to rub me with warm cloths. . . ." Of the closing moments of a labor he says, "The child escaped from the vulva as readily as an eel slips through your hand." So great was his regard for the feelings of his patient in conducting a labor, that it was said that "he would not so much as see the patient's feet when her slippers were off."

He was a master in podalic version, which was his favorite and chief obstetrical operation; and he asserted that, in obstructed labors, "in any other presentation than that of the head, the Lord had given him the means of extracting living children if he were called in time." The forceps devised by Palfyn he had heard of, but condemned, as he said he did not see "how an instrument of steel or other material could be passed to the place where the head is arrested and wedged, usually in the strait formed by the ischia, the sacrum and the pubis, so closely that a sound to evacuate the urine which has been retained for several days cannot be introduced, nor a canula for rectal injection, not even a myrtle leaf; how can such an instrument be applied and used to remove the infant from the peril to which the narrowing of the parts exposes it? . . . Its use would be as impossible as to pass a cable through a needle's eye."

He was one of the first to recognize the narrowed pelvis as a cause of dystochia. Throughout his book are related unusual and interesting cases; one woman dying of fright consequent on his attendance; one woman who had thirty-two children before she was forty-five, when she lost her husband. Patience and refraining from meddlesome midwifery were the chief characteristics of his work. His self-independence and practical opinions he recorded in these words:

"As I have lived at the extremity of a province surrounded on almost all sides by the sea, and have worked most frequently in the depth of a country without physicians or surgeons who could aid me by their counsels, I have been compelled to conduct my practice most frequently in seeking to aid nature and to calm the accidents of pregnancy and labor, so far as common-sense and my reflection have furnished the means, without too great subjection to authorities and making myself a slave to common usuages, at least when I did not know the necessity for conforming to them in reference to the disease, the constitution of patients and other circumstances from which practical considerations can be drawn."

◆

THE NECESSITY FOR A WELL-PAID MEDICAL PROFESSION.

In an address before the Southwest London Medical Society Mr. Thomas Bryant urged the importance of physicians being well paid for their services.[1] He said:

"Let us never forget that our patients' interests are those we should always primarily consider, and that in all our practical and scientific professional work the public good is its ultimate object; but at the same time let us bear in mind that in order to realize this leading purpose it is all important for the interests of the public, as well as for the due exercise and dignity of our profession, that every practitioner of medicine should hold a perfectly independent but responsible position, and that in his professional work he should be left perfectly free from lay control, although amenable to lay censure. It is also equally necessary that he should be adequately paid for his professional services by all classes according to their means. Under these circumstances all measures, whether under the guise of charity or called 'provident,' and all hospitals, general, special, or private, which encourage the public to seek professional advice for little or nothing, are to be discouraged as helping to pauperize and degrade the public at large; and all members of our profession who induce or tempt the public so to do by means of private hospitals, competing private dispensaries, touting clubs and associations, or who are ready to accept at a reduced figure, over the heads of their neighbors, appointments which have been put up by laymen, as it were, to auction or competition, adopt the surest means within their power to lower the position of their profession in the estimation of the public, and at the same time do injustice to the profession and public by not giving to the latter the best services the former can supply, whilst they must, in addition, lose their own self-respect, even if they happen to gain cash by their unworthy actions. For let me ask, How is it possible for a man who is ill-paid or overworked, or both, either to give, in the interests of the public, the professional attention it is essential for him to bestow on every case he has undertaken to attend; or to maintain, in the interests of the profession, the position to which he is entitled and his own self-respect? We all know that any measure which encourages, either in a profession or trade, underpay and overwork, leads to bad work. In our profession such deficiencies are no less harmful — nay, they are more so, as its issues to the public are either life or death, health or ill-health, and to the profession either a position of pleasure, honor and respect, or one of degradation and unrequited labor."

---

[1] Lancet, February 10, 1894.

◆

CROTALUS HORRIDUS.

The following description of the initial steps in the securing and preparing of the "mother tincture of *Crotalus Horridus*" receives the sanction of two homœopathic medical journals. A box of twenty-four large rattlesnakes was received by a museum proprietor in Rochester. Having provided a long hempencord, a bottle of ammonia and some whiskey, "to be prepared for an emergency," the owner, known as "Rattlesnake Pete," unfastened the lid of the box and, as a large snake darted out, seized it by the neck and carried it to a table, while the long lithe body coiled round his arm and the rattles were "singing away like grasshoppers."

Now comes the interesting part of the performance. A piece of common window-glass was placed near the snake's open mouth, and the rattler struck his wicked-looking fangs, which were nearly an inch in length, against the glass, a thin stream of yellowish looking liquid spurting upon it at each stroke. "Oh, he's full of it," said Pete. "There's poison enough right there to kill twenty men." While he spoke he walked toward the den, and giving the snake a quick twist, released him. The poison on the glass was absorbed with sugar of milk, scraped into a bottle and carefully sealed. The poison thus obtained is sent to certain London homœopathic physicians, who use it in their practice as a medicine for diphtheria and other diseases of a similar nature. The poison is supposed to be very valuable. The process just described was repeated with snake after snake, until all in the box were transferred to the den. After the first three or four were taken out, Pete plunged his hand among the mass of wrigglers with seeming impunity, dragging out his next victim with a quick but certain motion. "These fellows will give up their poison more readily to-morrow; they are a little sluggish on account of having been kept in such close quarters for the past forty-eight hours," said Pete, in response to the writer's query.

"Besides selling the poison, which I have told you about," added Pete, "when a snake dies, I try-out the fat of the reptile, and obtain from one and a half to two ounces of a very penetrating oil, from a fair-sized snake. This oil is worth eight dollars per ounce, and is used as a specific for deafness."

METEOROLOGICAL RECORD,

For the week ending March 31, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..25	29.89	42	52	33	84	88	86	S	N.W.	10	15	O.	O.	0.01
M..26	29.90	32	37	28	56	55	56	N.W.	W.	12	15	O.	C.	0.02
T..27	30.25	26	32	20	39	45	42	W.	W.	16	19	C.	C.	
W.28	30.47	30	40	21	44	40	42	W.	S.W.	15	11	C.	F.	
T..29	30.03	36	40	33	78	100	89	S.	W.	12	4	N.	N.	0.20
F..30	30.00	39	47	31	65	41	53	W.	W.	12	14	O.	C.	0.02
S..31	30.01	46	57	36	46	63	54	W.	S.W.	7	15	F.	O.	
☞	30.08		43	29			60							0.25

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MARCH 31, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal Diseases.	Diphtheria and croup.	Scarlet fever.
New York	1,891,306	821	354	16.92	16.76	1.68	8.40	1.56
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,115,562	455	140	13.64	12.10	1.10	7.26	1.98
Brooklyn	978,394	340	123	18.85	14.79	.87	8.70	2.61
St. Louis	560,000	—	—	—	—	—	—	—
Boston	487,397	212	71	9.40	25.38	.47	5.17	1.41
Baltimore	500,000	—	—	—	—	—	—	—
Washington	308,431	—	—	—	—	—	—	—
Cincinnati	305,000	106	32	4.70	15.04	—	2.82	—
Cleveland	290,000	101	41	15.84	10.89	.99	1.98	4.95
Pittsburg	263,709	89	35	15.68	16.80	3.36	—	4.48
Milwaukee	250,000	75	40	11.97	20.00	2.66	7.32	1.33
Nashville	87,754	31	10	22.61	12.92	3.23	6.46	3.23
Charleston	65,165	24	6	—	12.48	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	96,217	25	9	4.00	20.00	—	20.00	—
Fall River	87,411	—	—	—	—	—	—	—
Lowell	87,191	32	8	9.39	18.78	—	—	—
Cambridge	77,100	31	13	22.61	12.92	3.23	6.46	3.23
Lynn	62,656	9	7	—	33.33	—	—	—
Springfield	48,684	12	3	8.33	8.33	—	—	—
Lawrence	48,355	8	2	25.00	50.00	25.00	—	—
New Bedford	45,886	13	5	15.38	15.38	15.38	—	—
Holyoke	41,278	—	—	—	—	—	—	—
Salem	32,233	11	2	9.09	—	9.09	—	—
Brockton	32,140	17	4	—	11.66	—	—	—
Haverhill	31,396	10	6	10.00	40.00	—	—	—
Chelsea	30,264	—	—	—	—	—	—	—
Malden	29,394	10	2	10.00	20.00	—	—	—
Newton	27,556	11	5	—	27.27	—	—	—
Fitchburg	27,146	—	—	—	—	—	—	—
Taunton	26,972	8	2	12.50	12.50	12.50	—	—
Gloucester	26,688	—	—	—	—	—	—	—
Waltham	22,058	7	5	—	—	—	—	—
Quincy	19,642	—	—	—	—	—	—	—
Pittsfield	18,802	2	0	50.00	—	—	—	—
Everett	16,585	—	—	—	—	—	—	—
Northampton	16,331	2	1	—	50.00	—	—	—
Newburyport	14,073	—	—	—	—	—	—	—
Amesbury	10,920	5	0	—	60.00	—	—	—

Deaths reported 2,502: under five years of age 936; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 359, acute lung diseases 416, consumption 299, diphtheria and croup 157, scarlet fever 52, measles 37, diarrhœal diseases 36, whooping-cough 25, typhoid fever 21, erysipelas 15, small-pox 8.

From measles New York 24, Brooklyn 7, Philadelphia and Milwaukee 2 each, Cleveland and Pittsburg 1 each. From whooping-cough New York 7, Brooklyn 6, Philadelphia 4, Cambridge 3, Cleveland and Pittsburg 2 each, Somerville 1. From typhoid fever Philadelphia 5, Boston and Pittsburg 3 each, New York, Cincinnati, Cleveland and Lowell 2 each, Springfield and Malden 1 each. From erysipelas New York 6, Brooklyn 5, Boston, Cleveland, Pittsburg and Pittsfield 1 each. From small-pox New York 4, Brooklyn 3, Boston 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending March 24th, the death-rate was 19.8. Deaths reported 3,979: acute diseases of the respiratory organs (London) 397, measles 162, whooping-cough 123, diphtheria 84, scarlet fever 39, fever 38, diarrhœa 25, small-pox (Birmingham and Oldham 5 each, London 1) 11.

The death-rates ranged from 10.6 in Derby to 25.1 in Salford; Birmingham 21.0, Bradford 17.5, Cardiff 18.2, Hull 16.2, Leeds 18.9, Leicester 19.8, Liverpool 23.0, London 20.3, Manchester 23.8, Newcastle-on-Tyne 20.1, Nottingham 18.0, Portsmouth 13.1, Sheffield 17.4.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 31, 1894, TO APRIL 6, 1894.

CAPTAIN EDWARD C. CARTER, assistant surgeon, will proceed at once to Fort Spokane, Washington, and report to the commanding officer for temporary duty.

Leave of absence for twenty-one days, to take effect on or about April 14, 1894, is granted **MAJOR CHARLES L. HEIZMANN**, surgeon, U. S. A.

The following named officers are detailed to represent the Medical Department of the Army as delegates to the Association of Military Surgeons of the United States, to meet in Washington, May 1, 1894: **LIEUT.-COL. WILLIAM H FORWOOD**, deputy surgeon-general; **MAJOR ROBERT M. O'REILLY**, **MAJOR JOSEPH K. CORSON** and **MAJOR WALTER REED**, surgeons; **CAPTAIN JOHN L. PHILLIPS**, **CAPTAIN G. L. EDIE**, assistant surgeons.

FIRST-LIEUT. HENRY D. SNYDER, assistant surgeon, is relieved from duty at Fort Reno, Oklahoma Territory, and ordered to Fort DuChesne, Utah, for duty at post, relieving **CAPTAIN SAMUEL Q. ROBINSON**, assistant surgeon.

CAPTAIN ROBINSON, on being relieved by **FIRST-LIEUT. SNYDER**, will report in person to the commanding officer, Davids Island, New York, for duty at that post.

MAJOR PETER J. A. CLEARY, surgeon, will be relieved from duty at Fort McPherson, Georgia, by the commanding officer of that post, on the receipt by him of this order, and will report in person to the commanding officer, Fort Custer, Montana, for duty at that post.

FIRST-LIEUT. EDWARD L. MUNSON, assistant surgeon, will proceed without delay to Camp Merritt, Montana, and report to the commanding officer, for temporary duty at that post.

FIRST-LIEUT. CHARLES F. KIEFFER, assistant surgeon, having reported at Hdqrs. Dept. Dakota, is assigned to temporary duty at St. Paul, Minn., and will report to the medical director of the department for instructions.

SOCIETY NOTICES.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, April 18th, at 8 o'clock.

Dr. E. G. Cutler will report "Two Unusual Cases of Malaria, one of Remittent Fever followed by Death, the other Successfully Treated." Dr. W. T. Councilman will show pathological specimens and Dr. A. P. Chadbourne will report on "The Clinical Use of Malacin."

F. C. SHATTUCK, M.D., *Chairman.*
HENRY JACKSON, M.D., *Secretary.*

AMERICAN MEDICAL ASSOCIATION.

SAN FRANCISCO MEETING.

The Committee of Arrangements for Transportation report that after strenuous endeavors to secure for members of the Association a round-trip ticket to San Francisco for the cost of a single full fare, they have so far succeeded that about one-half of the railroads have favored the committee's petition. These are chiefly the lines west of the Missouri, from which points thirty-day tickets can be had over various lines for but little more than a single fare. If arrangements can be made with Eastern railroads, over which there is more local travel, the entire journey can be made for a very low price.

The Committee desire a concerted effort of the members in the East to secure such reduction over lines east of the Missouri River.

AN EXCURSION TRAIN FROM CHICAGO.

Dr. Liston H. Montgomery, of Chicago, announces that arrangements have been made for a special train to leave Chicago on Tuesday, May 29th, at 10.30 P. M., arriving at Omaha, Wednesday noon, and Denver on Thursday morning at 7.30 of the 31st. Stop overs will be granted to visit any of the sanitary or pleasure resorts throughout Colorado. At Denver there will be opportunity for a side excursion to any of the sanitaria or to Silver Plume over the Georgetown loop. From Denver the route is via Cheyenne, Ogden and Salt Lake City, where a stop over will be made to visit the Lake and Garfield Beach. From Utah the route is over the Southern Pacific and the train is due at San Francisco. The return will be made by the Shasta route.

BOOKS AND PAMPHLETS RECEIVED.

Report of Board of Health, City of Seattle, Fiscal Year Ending December 31, 1893.

Twenty-sixth Annual Report of the New York Orthopædic Dispensary and Hospital, 1893–94.

Sixteenth Annual Report of the Presbyterian Eye, Ear and Throat Charity Hospital, Baltimore, Md. 1893.

Annual Reports of the Managers and Officers of the New Jersey State Hospital for the Year Ending October 31, 1893.

The Application of Graphics to the Fetal Heart Sounds. By Hugh Hamilton, M.Sc., M.D., Harrisburg, Pa. Reprint. 1893.

The Tannate of Mercury in the Treatment of Syphilis. Gangrene of the Scrotum. By Charles W. Allen, M.D. Reprints. 1892–94.

Tariff Bill 1894 – H. R. 4,864, as It Passed the House of Representatives, February 1, 1894. Washington: Government Printing Office. 1894.

The Proceedings of the Third Annual Meeting of the Association of Military Surgeons of the United States, held at Chicago, Ill., August 8, 9, 10, 1893.

Burdett's Hospital and Charities Annual, 1894. Edited by Henry C. Burdett. London: The Scientific Press. New York: C. Scribner & Sons. 1894.

Longevity, with a List of Persons Known to have Lived One Hundred Years or More. By Archer Atkinson, M.D., of Baltimore, Md. Reprint. 1894.

Germania, a Monthly Magazine for the Study of the German Language and Literature. Vol. V. 1893. A. W. and E. Spanhoof, Editors, Manchester, N. H.

Reports of the Trustees and Superintendent of the Butler Hospital for the Insane. Presented to the Corporation at its Fiftieth Annual Meeting, January 24, 1894.

Transactions of the American Orthopedic Association, Seventh Session, held at St. Louis, Mo., September 19, 20 and 21, 1893. Philadelphia: Published by the Association. 1894.

Three Years' Experience with the Electrical Treatment of Fibroid Tumors of the Uterus, with a Report of Forty-four Cases. By W. L. Burrage, A.M., M.D., Boston, Mass. Reprint. 1894.

Addresses by the President, Samuel C. Busey, M.D., at the Celebration of the Seventy-fifth Anniversary of the Medical Society, D. C., and at the Banquet, February 16, 1894. Washington. 1894.

The Human Element in Sex: Being a Medical Inquiry into the Relation of Sexual Physiology to Christian Morality. By Dr. Elizabeth Blackwell. New edition. London: J. & A. Churchill. 1894.

Tait's Perineal Flap Operation. Critique of Macroscopic Examination of Specimens Removed in Thirty-two Consecutive Laparotomies. By F. Byron Robinson, B.S., M.D., Chicago, Ill. Reprints. 1893–94.

A Primer of Psychology and Mental Disease. By C. B. Burr, M.D., Medical Superintendent of the Eastern Michigan Asylum; Member of the American Medico-Psychological Association. Detroit: George S. Davis. 1894.

A Case of Contusion and Rupture of the Ileum with Peritonitis without External Wound, Successfully treated by Cœliotomy and Primary Enterectomy, Followed by Circular Enterorrhaphy (Maunsell's Method). By Frederick Holme Wiggin, M.D. Reprint. 1894.

Lectures on Genito-Urinary Diseases. By J. C. Ogilvie Wile, M.D., C.M., F.R.S E., Consulting Surgeon to the Aberdeen Royal Infirmary, and Examiner in Surgery in the University of Aberdeen. With numerous illustrations. London: The Scientific Press. 1894.

A Case of Suprapubic Cystotomy in which the Bladder was Distended with Air instead of Water and Four Hundred and Ninety-five Calculi Removed. Four Cases of Brain Tumor, In Three of which Operation was Done; Two Operative Recoveries; Ultimate Death in All. By W. W. Keen, M.D Reprints. 1894.

Aero-Therapeutics, or the Treatment of Lung Diseases by Climate; being the Lumleian Lectures for 1893 Delivered before the Royal College of Physicians, with an Address on the High Altitudes of Colorado. By Charles Theodore Williams, M.A., M.D., Oxon., F.R.C P., Senior Physician to the Hospital for Consumption and Diseases of the Chest, Brompton; Late President of the Royal Meteorological Society. London and New York: Macmillan & Co. 1894.

Original Articles.

FLAT-FOOT.[1]

BY E. H. BRADFORD, M.D.

If both feet of a standing person are placed side by side, they, with the two hollows which constitute the arch, form a circle, the outer sides of the feet forming weight-bearing rims. If one of the feet is removed and the whole weight is thrown upon the other, it will be seen that the semicircular rim, or the portion which touches the floor, becomes wider as the whole weight of the body is thrown upon the limb. This is due to the fact that the centre of the axis of the leg falls to the inner side of the weight-bearing portion of the sole; when one leg carries the weight, the ankle sags to the inside slightly, and the portion of the foot which touches the floor is correspondingly widened. This increase in the width of the contact portion of the sole is accomplished chiefly by the eversion of the foot in front of the medio-tarsal articulation and is checked by the tibiales muscles and the ligaments. If these muscles are weakened, the eversion of the foot will increase if weight is thrown upon it, the check becoming the ligaments which bind the scaphoid and metatarsals to the os calcis and astragalus.

If for any reason the muscles which hold the normal position of the foot are weakened, whenever the superincumbent weight becomes too great for the muscles to bear, the strain falls upon the ligaments, and this in time causes pain and tenderness. This pain and tenderness varies in severity, also in location. In some instances it is felt on the inner side of the foot in the region of the scaphoid, often at the head of the astragalus; sometimes the pain is referred to the outer side of the foot beneath the external malleolus. In some instances it is felt at the insertion of the plantar fascia to the os calcis, and sometimes a contracted band in the sole of the foot, similar in all probability to the fibrous cords to be felt in Dupuytren's contraction.

An examination of a dissected foot will show that the so-called arch of the foot is in reality two arches, an outer and an inner, united to each other firmly by ligaments, the outer arch being much lower than the inner. The outer arch consists of a truss composed of the five metatarsals, the cuboid and the os calcis; weight falling upon this passes through the astragalus, which sits upon the end of the os calcis. What may be termed the key-stone of this arch is the os cuboid, which articulates with the head of the astragalus slightly in front of the centre of pressure transmitted through the middle of the astragalus.

In the inner arch of the foot, the bow consists also of the curve of bone from the head of the first metatarsal and the os calcis, but the key-stone is slightly anterior to that of its outer arch, and is the scaphoid, which articulates with the astragalus on one side and the cuneiform on the other. There is also a transverse arch of the foot which, as has been pointed out by Dr. Goldthwait, is of some importance clinically. When weight is thrown upon the foot, the foot and leg can be compared to a leg with two claws, the weight not falling directly over either, but passing through the astragalus, which sits side-saddle, as it were, over the end of the os calcis. When the weight of the body is thrown upon both feet, but little sagging is noticed. When the weight is borne upon one foot, either the body is inclined to the outer side so as to bring the centre of gravity directly over the outer arch, or the foot falls to the inside and the base is broadened, the inner arch descending and a movement of the inside taking place at the medio-tarsal articulation. This sagging inward consists of the dropping of the front of the astragalus with the scaphoid, that is, the so-called plantar flexion of the astragalus occurs. There is also a slight amount of inward movement of the heads of the astragalus and os calcis. This motion of sagging would continue until the heads of the astragalus and the os calcis rested upon the ground, with complete eversion of the foot if it were not that this is checked by ligaments and by the tibiales muscles.

Flat-foot is developed not only by the weakening of these muscles, as by a gradual stretching of the ligament. Individuals stand in what Annandale has called the attitude of rest. In this attitude, if the muscles are weak and not in action, the foot may be turned outward, and a greater amount of strain comes upon the ligaments which are not relieved by the tension of strong muscles. After a while the ligaments stretch, and the exciting cause remaining the same, a deformity is produced by alteration in the shape of the bones. It is probable, also, that faulty attitudes, positions with the foot turned out, are brought about, not only by occupation, but also by imperfect shoeing.

If a number of people be watched where they can be seen walking towards the observer from a distance, it will be noticed that peculiarities of gait are quite marked, that at least four per cent. will be seen to toe-out badly; that an equal number will toe-in with one foot; a smaller percentage will toe-in slightly with both feet; a large number will be seen to walk straight, that is, without eversion of the feet; a number will be seen to turn one foot out and the other foot in; the majority of children will be noticed to walk with the feet straight. The percentage of persons walking with the feet out is larger among women than among men, probably on account of the imperfection of shoes worn by women.

Anything which may weaken the muscular strength of the legs, or the muscles which are attached to the feet, will indirectly influence the causation of flat-foot. An increase of the superincumbent weight beyond the muscular strength may directly cause flat-foot. Rapidly growing children frequently show everted and flattened feet. Athletes who lift unusual loads in feats of strength develop flat-foot. In neither of these instances, however, is pain usually observed, provided the strain upon the ligaments is not too great. If, however, the weight of a rapidly growing child increases out of proportion to the muscular strength, or if the muscular strength of the athlete is weakened in his legs, strain comes upon the ligaments and pain develops. Certain occupations develop flat-foot, especially those which necessitate continued standing upon the feet. Flat-foot is characteristic of waiters, and is frequently seen in hospital nurses. An important indirect cause of the development of flat-foot is imperfect shoeing, particularly the lacing of boots tightly around the ankle and some distance up the leg.

DIAGNOSIS.

Although there is no difficulty whatever in the recognition of flat-foot in its pronounced stage, yet in the earlier stages, especially in children, it is not infrequently overlooked. A careful examination is therefore important, as not infrequently cases of flat-foot are not recognized, but also other affections of the foot are considered and treated as flat-foot. The following means will enable the physician to avoid mistake:

---

[1] Read before the Surgical Section of the Suffolk District Medical Society, February 7, 1894.

If a sheet of white paper is blackened over the flame of a piece of burning camphor, a sooty surface is furnished on the sheet of paper. If the patient be directed to stand with the bared foot upon this smoked sheet of paper, and the foot quickly removed without disturbing the paper, an exact imprint of the foot will be seen. In the normal foot not only is there a hollow extending two-thirds of the width of the foot and fully one-third of the length, but the line on the outer side of the foot should be straight or slightly convex with the convexity outward. When there is eversion of the foot this outer edge of the foot becomes slightly concave with the concavity outwards. Where in addition to this the scaphoid and the metatarsals come more in contact with the ground, the hollow of the foot will be diminished in size; in extreme cases it may be entirely lost.

It is important to recognize the amount of eversion of the foot and to what extent that is to be seen. This can be determined by examining the patient from behind, placing the child erect upon a table and drawing a line down the middle of the leg as far as the level of the malleoli, and then from the heel upwards along the middle of the line of the tendo-Achilles. In the normal foot these two lines should make nearly a straight line; if there is eversion of the foot, or rather, if the os calcis is thrown out of place, falling inwards, these lines form a noticeable angle. Eversion of the foot can also be recognized by marking a line along the middle of the front of the leg, and also along the middle of the foot. These in normal limbs should form one and the same straight line; if there is eversion of the foot, they form an angle.

It is also important to determine, for the purposes of comparison, the height of the hollow portion of the foot, that is, the distance of the scaphoid from the ground, both when the weight is applied upon the foot, and also when no weight is so applied. This can be readily done by measurements by means of a small caliper. It will be readily seen that the amount of inward sag when weight is thrown upon one limb varies with different people. It exists to a slight extent in all persons normally. The amount of inward sag is, of course, proportionate to the amount of eversion, and it is desirable to determine this, and also to note its increase or diminution.

To recapitulate then, the examination of the foot should consist first, of a sole imprint; second, in a determination of the amount of eversion; third, the recognition of the depth of the hollow of the foot, and next, of the amount of inward and downward sag of the inner malleolus or inner surface of the scaphoid when weight is thrown upon the foot. It is also advisable to determine the amount of motion at the mediotarsal joint. In severe cases of flat-foot no inversion is possible, and the foot is rigidly held everted.

PROGNOSIS.

In growing children, flat-foot not infrequently corrects itself. In many instances after flat foot has developed, no pain is caused and no acute symptoms, or the reason that the muscles are sufficiently strong to prevent exaggerated strain falling upon the ligaments although the bones are displaced. Ordinarily, however, the affection is one which tends to become aggravated and to increase, developing disturbances of the foot in old age which cause much discomfort. Malformation in the shape of the bones is also observed, particularly in the head of the astragalus and os calcis. Disarrangement in the length of the ligaments following faulty position also takes place.

TREATMENT.

The treatment of this affection necessarily varies according to the severity. In the lightest cases in children no treatment is necessary beyond the furnishing of proper shoes, and gymnastic exercises to develop the tibiales and muscles of the feet.

As is well known, the shoe should be made with a sole which is straight on the inside. In cases with tendency towards flat-foot, the sole should be made not simply straight on the inner edge but with the inner edge forming a curve with the concavity inwards; all tight lacing of the boots around and above the ankle should be avoided. Gymnastic exercises of the feet and legs are advisable together with massage. In cases of children with pain in the feet and ankles, or where an increase of the deformity and osseous change is to be dreaded, support on the arch of the foot is needed. This is also true in adolescents, and in cases in adults, where, as it is usually termed, the arch of the foot is breaking down.

From the before-mentioned facts it would appear that the cause of the development of flat-foot is the inability of the arches of the foot to sustain the superincumbent weight without yielding more than is normal. This yielding is manifested by a dropping of the heads of the os calcis and astragalus downward and inward. If this is not checked a sensitiveness and strain of the ligaments must follow. An examination of the foot will show that, to prevent this sinking downward and inward, support must be given to the foot, to prevent this descent of the os calcis and astragalus. It is manifest that if a support is placed under the hollow of the foot existing when no weight is thrown upon the foot, and this support sufficiently strong, it will prevent any sinking down and in, when weight is thrown upon the foot. Where the foot is not flexible and is fixed in a position of eversion and such support is supplied, the normal flexibility and position of the foot must be regained.

The treatment of flat-foot consists, therefore, in the severer cases, first, of means to restore the normal position of the foot, and second, in means to prevent the abnormal sinking of the foot under the superincumbent weight. The first of these can be carried out ordinarily by correcting the position of the foot with the hand and applying of a plaster-of-Paris bandage. This bandage can be removed at the end of a week and a second one applied. Ordinarily in the course of three weeks, a sufficient flexibility of the foot will be attained to render further treatment by fixation unnecessary. Correction can, if necessary, be done under an anæsthetic; and in the severest cases osteotomy is rarely necessary.

The second stage of treatment, namely, the furnishing of proper supports to the feet is one requiring some little attention. The supports vary according to the shape of the arch of the foot. In the lighter cases, a leather sole-plate can be made to answer. This pad can be made in the following way: a piece of dressed cow-hide is cut of a size sufficient to extend under the sole and up the inner side as high as the scaphoid. It is moistened and placed in the shoe, and the leather adapts itself in a measure to the shape of the foot. This is trimmed, dried, and the edges smoothed off. A piece of steel, which is bent so as to arch somewhat more than the foot when the patient stands, fitting the inner arch of the foot when the foot is slightly everted and sustaining no weight, should reach from the front of the portion of the os calcis which strikes the floor to a short distance behind the head of the second metatarsal. It should have arms which extend transversely across the foot from the level of the scaphoid to beyond the proximal end of the fifth metatarsal. The leather-sole which is designed to protect the foot can be moistened at any desired part and molded upwards as may be desired to fit the steel, the steel truss can be riveted to this. When this is done, a strong support will be furnished which, properly made, will not be uncomfortable and can be placed in any shoe. The steel after it is fitted should be spring-tempered and should be sufficiently strong as to bend but slightly under superimposed weight. If necessary, a second strip can be riveted to reinforce the first.

It will be seen, however, that these plates are not as firm as what can be furnished by metal. Metal plates are more difficult to apply, but more lasting after they are thoroughly fitted. In order to understand the exact method of furnishing metal plates, it is necessary to call to mind the anatomical conditions of flat-foot. It will be seen that the heads of the os calcis and of the astragalus should be prevented from descending, that is to say, a pressure upward and slightly outward should be exerted under the inner arch. In order that this should not be painful, this pressure should fall where the bones are less prominent, and it will be found that this is slightly behind and below the scaphoid. As the transverse arch of the foot at this point slopes in a curved line downwards and outwards, it is manifest that the support should transversely have this same curve.

It must also be remembered that the so-called flat-foot is in reality an everted foot, and that whatever plate or support is worn, eversion of the front of the foot must be prevented. In lighter cases this is readily done by means of the ordinary shoe, which supports the foot in a measure laterally. In the severer cases, however, this will not be sufficient, and shoes are necessary so constructed that they force the foot in the position of eversion of the front part. A combination of a metal plate and these shoes will be needed in the severe cases of flat-foot. The metal plate, it is needless to say, should be made so as to press only where pressure is required and not where pressure causes pain. The shape of the plate necessarily depends upon the shape of the distorted foot, and the amount of flattening of the arch as well as the amount of eversion of the front of the foot. The plate is made from a cast of the foot. It can be made either of silicon bronze which can be polished, and will not tarnish, or of hard rolled aluminum plates, but the strongest and best plates are made of steel hammered upon an iron cast of the foot taken from the plaster cast. Care is necessary in taking the cast of the foot that it should be put as far as possible in a corrected position, otherwise the plates will not fit accurately. In some instances it is necessary that the plaster cast be shaved so as to increase the pressure at a desired point; this is, however, a matter which a little experience will naturally suggest.

In the severest cases, however, something more than this is required, for the reason that no plate can be worn which exerts, in these cases, as much upward pressure as is desirable. A series of successively higher plates can be used, but the result can be more speedily obtained by the use, in addition to plates of moderate height, of the oblique made by raising the sole on the inner side of the boots by lifts which are shaved off to the inner side so that the outer edge is not raised at all. In an adult the thickness should be in severe cases as much as three-fourths to one inch on the inner side. When this is applied, the patient is obliged to walk on the outer edge of the foot and eversion is prevented. As the patient's symptoms improve, the strained ligaments become rested, the weakened muscles strengthened, this sole can be removed and a metal plate substituted.

The satisfactory treatment of flat-foot does not consist simply in furnishing a support to the arch of the foot, but in placing the foot in such a position that the superincumbent weight does not fall upon a widened surface of the hollow of the foot which eversion at the medio-tarsal articulation brings in contact with the ground, but upon the normal semicircle which the outer part of the sole constitutes, together with the ball of the foot and the heel.

◆

HÆMORRHAGE INTO THE PANCREAS AS A CAUSE OF SUDDEN DEATH.[1]

With Report of a Case of Hæmorrhagic and Gangrenous Pancreatitis.

BY W. F. WHITNEY, M.D., BOSTON.

From its hidden position, the pancreas is, perhaps, the one vital organ which is most frequently overlooked at the post-mortem, and yet its lesions are so important that no autopsy is regarded as complete without a distinct mention of its condition. This is especially necessary in a legal examination, where a person in previously apparent good health is found dead. And in making an examination, it should be the invariable rule after inspecting the greater peritoneal cavity to separate the layer of omentum between the stomach and large intestine, and explore the lesser peritoneal cavity. At the posterior part of this cavity the pancreas should be seen, extending from the duodenum almost to the hilus of the spleen. It can readily be made out as a lobulated gland, the separate lobules of which stand out in slight relief against the fat tissue in which it lies imbedded; its more reddish-gray color also distinguishes it. Its shape is roughly like a hammer, the head being spread out along the duodenum, and the handle (or tail) stretching towards the spleen. Its length is about 7¾ inches, its breadth 1⅔ inches, and its thickness ⅗ of an inch. Its weight is 2⅔ ounces. Its duct, which will admit a fine probe, opens with the common duct of the liver in the papilla, about six inches below the pylorus, in the duodenum. The mouth of this duct is slit-like, and is not easily found. In practice, a good way is to pass a probe down into the intestine through the gall-duct, which can always be easily found by its bile-stained wall;

---

[1] Read at a meeting of the Massachusetts Medico-Legal Society, February 7, 1894.

then to slit up the papilla for a little distance on this guide; and upon careful search, a little opening will be found about one-eighth to one-quarter of an inch from the tip through which the probe easily passes into the pancreatic duct. Occasionally the duct has a separate opening of its own into the intestine, and then it is more difficult to find. But pressure on the gland will often force out a drop of fluid on the intestine near the papilla, and thus its seat can be located. Examination of the duct should also always be made, as its occlusion or inflammation may be the cause of important changes in the gland itself.

After death the pancreas rapidly undergoes decomposition, and its cellular elements are frequently so altered that but little reliance is to be placed on the microscopic examination.

The pancreas is often the seat of cancer, and fatty degeneration is recorded, an increase of the connective tissue causing a cirrhosis of the organ; then, too, the duct is frequently tortuous and dilated, or the organ may be partly or wholly transformed into a cyst. All of these changes require time for their completion, and the physician has usually been called long before death, not always able, perhaps, to diagnosticate the exact condition, but, at any rate, convinced in his own mind that death, when it came, was from natural causes.

There have, however, been a series of cases reported, rare, it is true, where a person died suddenly after an illness of which the time had been fixed as varying from half an hour to twenty-four hours, and where the only lesion found was a greater or less hæmorrhage in and about the pancreas. Fitz, in his monograph on acute pancreatitis,[2] gives sixteen cases which he has collected. Since then (1888) only three or four cases have been reported, showing that the condition is one of the rarest that occurs.

From an examination of these cases, it appears that the pancreas is red, usually somewhat enlarged, and the outlines of the lobules mapped out by dark-red lines, for the hæmorrhage almost always follows the interlobular connective tissue, which can be seen microscopically to be infiltrated. The amount of blood poured out was, in the majority of cases, comparatively little, perhaps one or two ounces, not enough to be the direct cause of death. There are two or three exceptions to this, one recently published by Seitz, where over two quarts flowed out upon opening the abdomen, and the source of the hæmorrhage was from the region of the pancreas. And this is the only case on record in which the hæmorrhage is sufficient to account for death.

As to the cause of the hæmorrhage, we are as yet entirely in the dark, and also as to the reason of death. None of the theories advanced cover all the cases. One, that the flow of the blood over the cardiac axis causes compression of the great sympathetic ganglion and arrests the heart, does not seem to be borne out by the condition of that organ, which is found filled with blood. Another, that the hæmorrhage is due to disturbance of the central nervous system, similar to the hæmorrhages of the lung, meets with little support, as it was associated with this condition in only one case. To say that it is due to a trophic nerve disturbance is to confess our ignorance, as the physiologists have failed to demonstrate any trophic nerve other than the vaso-motor nerve. And until this is done, their lesions can hardly be spoken about. The alcoholic habit has been marked in a number of the cases, but drunkards are not the only ones who have died in this way. Fat persons and lean ones have alike succumbed; the preponderance of the sex, however, is male, and usually past middle life.

What we know on the subject can be briefly summed up as follows: In rare instances, death has suddenly followed attacks of greater or less severity referred to the epigastric region. At the autopsy, a hæmorrhage of varying amount has been found in the pancreas and its vicinity as the only lesion.

This was the conclusion arrived at by Dr. F. W. Draper several years ago,[3] and, as far as I have been able to learn, nothing new has been added to it. His cases are the best single series that have ever been presented and give us more real knowledge than any others.

Although the above covers the entire subject of pancreatic hæmorrhage, I should like to trespass a few moments longer on your time and call attention to the subject of acute hæmorrhagic pancreatitis and its sequalæ, which have been so well worked out by Dr. Fitz in his monograph. I have seen a number of cases, and I have the specimen here of a case of this comparatively rare lesion of which I made the autopsy last week. In hæmorrhage into the pancreas the extravasation is the only lesion found. There are no evidences of an inflammatory condition in the organ, no cellular infiltration. In acute hæmorrhagic pancreatitis, in which the symptoms are of longer duration, from twenty-four hours to two or three weeks, usually, however, terminating within the first week, we do find alterations in the organ which point to an inflammatory condition. The organ, as a rule, is enlarged. There are single or multiple hæmorrhages throughout its substance, but they are not recent. The blood is not fresh; it has already been changed and very often it can only be made out from its coloring matter and not from the presence of any of the red corpuscles. With these there may be more recent hæmorrhages, and a greater or less infiltration of the connective tissue with round cells — evidences of an inflammatory condition of the organ. With this is also almost invariably associated a condition which is called fat necrosis. Throughout the fat tissue, especially in the neighborhood of the pancreas, in its interlobular fat tissue, in the root of the mesentery, at times in the omentum, and (in one case reported, all the fat tissues of the body were involved) are found opaque, white areas, quite distinct from the ordinary tissue. The presence of this necrosis has given rise to a theory, advanced first by Balzer, that it is the primary condition, and the hæmorrhagic pancreatitis is the secondary one. He considers that the changes in the fat tissue are due to disturbance in nutrition in fat people (and it should be mentioned that these cases of acute hæmorrhagic pancreatitis are very frequently associated with an overproduction of fat) in whom the fat has gradually undergone degeneration, has eroded the vessels in their neighborhood, and in this way the hæmorrhage has occurred. Fitz, on the other hand, regards the areas of fat necrosis as due to the action of pancreatic juice or some of its products on the fat tissue itself. Fitz's theory has this point in its favor, that in the greater number of cases the necrosis seems to start first in the neighborhood of the pancreas, where it is always the most extensive, and when it is found in moderate degree it is in that region alone. This would point to its being a local condition, and one referable to the pancreas rather than part of a general condition. On the other hand, such a case as Formad's, where the fat necroses were found throughout the entire fat substance of the body, does point to some cause, central in origin, which causes its destruction in these small necrotic areas. It is possible that some ferment of the pancreas may be absorbed into the blood, and in this way, of course, receive a general distribution. For the present, we have to consider each of these as a possibility. There is no question about the association of these fat necroses with hæmorrhagic pancreatitis. For the causal relation, we shall have to have more light on the subject from the careful observation of future cases, and now that attention has been attracted to it on both sides of the water, it will undoubtedly be found.

---

[2] Fitz, R. H.: Acute Pancreatitis. Cupples and Hurd, Boston, 1889.

[3] Trans. Assoc. American Physicians, vol. i (1886), page 243.

In the specimen I have just passed about, we find that the hæmorrhagic pancreatitis is largely of the organ as a whole; the size is rather increased if anything, but there is no question that it is the pancreas that we have to do with. On the other hand, there is a series of cases (I made the autopsy in one last week), in which, apparently after one of these attacks of pancreatitis, the pancreas became entirely necrosed, remaining simply a slough. It lies almost as a foreign body in the place where the pancreas had been, and if it were not for the knowledge of what might occur, we should have difficulty in recognizing that it was the pancreas. The notes of this case, which occurred in the practice of Dr. Bush, have kindly been given me by him, and are as follows:

"The case is that of a widow, aged thirty-three, whose family history is good, with the exception of father, who died of cancer of the rectum.

"December 18, 1893. The history obtained was that for a year and a half she had eaten very little food, having had a very small appetite, and had kept up with stimulants. She would not eat regularly; in fact, the sight of food or the odor of cooking produced nausea. Yet at times she would help herself to sardines, cold chicken and such cold lunches as she could pick up from the cold closet or the refrigerator.

"When I saw her she was suffering from an attack of vomiting, accompanied by urticaria, which was very troublesome. The wheals were all over her body. The legs were somewhat swollen about the ankles. There was insomnia. The tongue had a light brown coat, and there was constipation. These symptoms, with the exception of the inability to sleep, rapidly disappeared upon treatment.

"There were no renal complications and no pain. There was a great deal of lassitude. Under appropriate treatment, these features disappeared to a marked degree, and she was able to take nourishment, the quantity of stimulants taken being diminished, and with the exception of not being able to sleep, she was feeling better than she had been for two years.

"January 14th, she was up and about the house as usual, and in the afternoon was taken with severe pain in the left hypochondriac region. The pain was so severe that it required large doses of morphine, given subcutaneously, to quiet it. At one time two grains of morphine were given within forty-five minutes, the pain being so acute. There was emesis and abdominal extension. There was pain on deep pressure over the above region, and the bowels were constipated. The abdominal pain and vomiting lasted four days, accompanied with marked tympanites; at the end of that interval there were a few movements of the bowels. The general pain seemed to subside, but there was always pain upon pressure from the left back through to the front. The temperature was taken twice a day regularly, and sometimes oftener, but was never found to be higher than 101.8°. The rate of the pulse averaged 90. She was able to take a certain amount of milk in small quantities, and there was no vomiting for eight days, at which time she obtained some whiskey, of which she drank considerable, and the pain, distention and vomiting recurred. The matter ejected was of a green color, something like crème de menthe, and was mixed with mucus. The stools were extremely fetid in character. There were no urinary symptoms. Death occurred February 1, 1894."

At the autopsy, the abdomen alone was examined. Upon opening it, there was no evidence of any general peritonitis; the whole lower portions of the bowels were perfectly smooth and free, but on looking at the upper part the stomach appeared to be very much distended, and was greenish in color. On puncture, there at once came up a yellowish, thin pus, by estimate two quarts, and, exploring further, it was found not to come from the stomach, but from the lesser omental cavity. Then I suspected it was a case of pancreatic disease. The specimen was removed entire, and afterwards dissected. The stomach and duodenum were opened, and nothing of marked importance found. A probe was passed through the gall-duct, and by this guide the opening of the pancreatic duct was found, which is a little whitish track running about one-half an inch and then opening freely, with a slightly jagged edge, looking as if eaten off, into the cavity of the lesser peritoneum. In this lies a sphacelated mass, all that remains of the pancreas. A little portion of pancreatic tissue is still adherent to the intestine, and the black discoloration is evidence of the hæmorrhage which had taken place at some time into that organ. The pus had burrowed into the root of the mesentery on both sides, but had not broken through into the general peritoneal cavity.

On looking at the case, there is no question that the grave symptoms are of only two weeks' duration; that this extensive destruction of the pancreas could have occurred within that time, seems almost incredible. But we have reason to think that is probably the case. It is possible and even probable that the earlier attack in December was one of acute hæmorrhagic pancreatitis, and the condition continued until the necrosis of the organ began at the time concurrent with the second attack (January 14th), when the pus began to form and the peritoneal cavity to be distended. So this gangrenous pancreatitis is to be looked upon as the result of the hæmorrhagic pancreatitis.

There is still one other form of inflammation of the pancreas associated with the formation of the pus within the organ, which is spoken of as suppurative pancreatitis, and in which the disease is usually of long duration. It is a question, perhaps, of months — some deaths, however, occurring within the first month. But, as a rule, it has a longer course than acute hæmorrhagic pancreatitis. It is very rarely associated with any evidence of bleeding into the organ itself, and only rarely with any evidence of fat necrosis.

THE LEACH CASE.[1]

BY THOMAS M. DURELL, M.D., OF SOMERVILLE.

On the evening of April 26, 1891, about six o'clock, I was called to the house of Dr. H. M. Leach, in Somerville, by the doctor, who told me that a servant-girl at his house had been taken with a fit. He said that he had used ordinary restoratives and that they had failed. I went with the doctor to the house and upstairs into a back room. At the head of the stairs we were met by Mrs. Leach, wife of the doctor, who said, "The girl is dead, she died while you were away." Dr. Leach then told me a most plausible story, which was corroborated by his wife, of the girl's previous ill health — that she had had a severe attack of the grippe, was a sufferer from chronic lung-trouble, and was subject to attacks of fainting.

I examined the heart, and found that it had ceased to beat. I also examined the pupils, and in so doing noticed that the nose was very cold.

The whole story was apparently so straight — and there was really no cause for suspicion, except a very remarkable degree of excitement on the part of the doctor and his wife — that I told them that I would sign the certificate, and went away.

Later in the evening, the relatives of the girl called upon me, and told me an entirely different story about her sickness and death. According to their account, the girl had been well up to within two weeks of her death, and they had known nothing about her sickness except what had been told them by the Leach family. They said that the family had told them that Mary was sick, and that the doctor had given her ether to extract a tooth, but that no one of her friends had been allowed to see her before her death.

While this was going on, the undertaker came and said that the bed-clothes and the girl's clothing was saturated with blood.

With these statements I deemed a further examination necessary; and on the following morning I made an autopsy in the presence of Drs. W. D. Swan and John F. Couch.

Autopsy.— Mary Murphy, twenty-two years old. About seventeen hours after death. Rigor mortis present. Dependent parts of the body bluish-purple color. Bloody froth exuding from mouth and nose. Right side of neck swollen. Pupils moderately and equally dilated. Abdomen prominent. Breasts small and flat; areolæ slightly marked; whitish-yellow fluid exuded from nipples on pressure. There was a quantity of gas in the peritoneal cavity. The parietal peritoneum was opaque and gray. The blood-vessels were injected, and covered over with yellow, flocculent masses. The omentum was dark and friable, glued to the intestines; loops of the intestines were matted and glued together. There was considerable grayish, turbid fluid in the pelvic cavity. The lungs were normal. The heart was empty; its right side was flabby; there was a firm mixed clot in the right side; otherwise it was normal. Spleen soft. Kidneys normal. Liver soft; there was a circumscribed patch on the external aspect of the right lobe, corresponding to a spot on abdominal parietes, covered with sloughing yellowish material.

On raising the uterus an irregular shaped hole was observed in its posterior surface. Immediately behind this, lying transversely in the pelvic cavity, was a laminaria or sea-tangle tent. This tent was about the size of the thumb; one end of it was irregular in shape and corresponded exactly in shape to a hole which was seen in the walls of the uterus. The vagina was of a dirty slate color, and at the posterior commissure was an abrasion through the mucous membrane, the result of violence. The os uteri was patulous and was lacerated by many radiating fissures (the result of violent dilatation). The uterus was three and three-eighths inches in breadth at the fundus and four and one-half inches in depth. The internal surface was covered with decomposing material; and near the fundus were portions of placental tissue, also decomposed. The tubes were normal. The left ovary was normal; the right contained a corpus luteum in the state of a cyst of about the size of a cherry. The hole in the uterine wall was plainly to be seen on the inner surface, and extended directly through the substance of the organ. The bladder contained a small quantity of bloody urine; the organ was normal. The brain was normal.

The death was due to septic peritonitis, the result of an abortion.

The case has been tried twice; and both times the jury have returned a verdict of "Guilty." The first verdict was set aside on exceptions, and the exceptions on the second case are now pending.

Some very interesting questions were raised at these trials. The most important of these was the denial of the pregnancy by the defence, and the attempt to show that the material found in the uterine cavity was the result of a membranous dysmenorrhœa. A disease which Dr. Thomas says that he *thinks* he has recognized five times in his whole life, and of which Dr. Davenport, in his very valuable book on "Diseases of Women," doubts the existence; and yet a disease with which the men and women who testified for the defence, were very familiar; one young homœopathic man having had fifty or a hundred cases of it in a town in Maine of about six thousand souls. This claim was readily set aside; yet I am convinced that in another such case I should have a microscopic examination made by an expert.

Another question was as to whether a girl, pregnant for the first time, advanced three or four months in pregnancy could introduce a sea-tangle tent into her own uterus. This was strongly denied by the government; and yet a man of good standing in Boston came onto the stand for the defence and swore that from statements made to him by other women, he considered it not only possible, but probable, that this could have been done.

Another of the questions was as to the method in which the tent got into the pelvic cavity. My own theory was, that the tent was put in, and after a time an attempt was made to withdraw it, and in so doing the string was pulled out (the string was gone, the end of the tent split, and there were marks of forceps-teeth or something of that kind on the same end); that then the operator became frightened and made a desperate effort to get the tent with the forceps, and that in his efforts he pushed the tent through the already softened uterine wall. This theory was supported by the direction of the wound, that is, in the axis of the outlet. The defence claimed that the girl put it in herself, and that it worked its way up into the cavity (?) of the uterus and then ulcerated its way through. If this were possible, the direction of the hole would have been just opposite to what it was.

---

[1] Read before the Massachusetts Medico-Legal Society, February 7, 1894.

The case was most obstinately fought by all the forces which money could provide, with able counsel and all sorts of so-called medical testimony; and yet a verdict was secured in both cases.

Note.— Since writing the above the Supreme Court has overruled the exceptions in the second case, and the prisoner has been sentenced to seven years' hard labor in the State Prison.
T. M. D.

Clinical Department.

TWO CASES OF LITHOLAPAXY.[1]

BY GARDNER W. ALLEN, M.D.,
Surgeon in the Genito-Urinary Department, Boston Dispensary.

The following cases seemed to present some points of interest, and may, perhaps, be considered worth reporting.

Case I. A. S., fifty-seven years old, has been under my treatment for chronic cystitis and stricture at intervals for about four years. Micturition has been abnormally frequent and more or less difficult for many years, requiring occasionally the use of a catheter. In February, 1893, I advised internal urethrotomy, as the stricture, which admitted a No. 24 sound with difficulty, was not only a source of irritation, but interfered with catheterization. This proposition was declined by the patient, and a little later he purchased a catheter at a price which seemed to him a bargain. The first time he used it, it broke off in the urethra. After many futile attempts at removal he was seen by Dr. Burrell, who the next day did perineal section and removed that portion lying in the urethra, an inch or more being still left in the bladder. Not being prepared for cystotomy, Dr. Burrell desisted from further attempts at removal, and urged the patient to go at once to the hospital, which he declined to do. After this he suffered considerable and steadily increasing discomfort until July 16th, when I found him in great distress. Micturition was very frequent and difficult, and accompanied by an amount of suffering which was painful to witness. The passage of a sound immediately disclosed the presence of stone. The patient refused to go to the hospital, and as I was obliged to be away for several days I was unable to arrange for an operation until July 25th. On that day I did litholapaxy with the assistance of Dr. W. E. Chenery and two sons of the patient. The possibility of being obliged to cut for the stone suggested itself, and I also rather expected to begin with an internal urethrotomy; but as the lithotrite and No. 23 tube would pass, though with difficulty, it was decided not to complicate the operation. The patient took ether very badly, and it was impossible to get him thoroughly anæsthetized. His constant writhing and the difficulty of breaking up the stone with its rubber nucleus sufficiently to pass through the small evacuating tube caused considerable delay, so that it was two hours and a half before the bladder seemed clear. The detritus removed consisted of fragments of phosphatic material mixed with pieces and bits of red rubber and, when dry, weighed 124 grains.

The patient was much relieved by the operation, although, of course, he still had his cystitis, considerably aggravated by the experiences of the last few months. He passed fragments of stone and bits of catheter at intervals, and an attempt to pump out the bladder without ether about two weeks after the operation was unsuccessful on account of pain. Internal urethrotomy was done August 31st, and the calibre of the urethra brought up to 34. After recovery from this, the searcher still seeming to show fragments in the bladder, the patient was etherized September 28th and the bladder pumped out through a No. 31 tube. Only a small amount of sand was brought away, — no fragments. After this, repeated examinations with the searcher failed to reveal any foreign body, and for a while the patient's condition seemed much improved. But the cystitis gradually grew worse, in spite of treatment, until marked relief was afforded by injections of iodoform.

Case II. The patient was a Syrian, twenty-eight years old, totally ignorant of the English language, and apparently of rather less than average intelligence. Through an interpreter it was made out with some difficulty and vagueness that when ten years old he was supposed to have a stone in the bladder and that an American surgeon in Beyrout wished to do lithotomy, but the parents would not consent. After that he had no symptoms until about a year ago, when he began to have frequent and difficult micturition gradually getting worse until he was obliged to urinate every fifteen or twenty minutes, with great pain. When he came to the dispensary, August 15, 1893, he was having a mild chill and complained of abdominal pain. The temperature taken a few hours later was normal. The urine was loaded with pus and was very foul, filling the room with a fetid odor. Examination with the searcher showed stone in the bladder.

The next day the patient was seen at his home. He complained more of abdominal pain, most severe in the left inguinal region. Examination of the abdomen was negative; the abdominal walls were retracted and hard, and not especially sensitive to pressure. No great importance was attached at the time to this abdominal pain, which was supposed to be of a colicky nature. The temperature was now 101°, the pulse rapid and rather weak, and the tongue dry. There was evidently constitutional disturbance, which was attributed to septic absorption from the bladder; and it was thought best to remove the stone and wash out the bladder at once.

The operation of litholapaxy was done under ether, with the assistance of Dr. R. F. Chase and ten or a dozen Syrians, friends and relatives of the patient. After the first crushing there was some difficulty in removing the lithotrite, and there was then first noticed a bright red tumor, the size of a large orange, behind the scrotum. It was rather a startling discovery, but was soon made out to be a prolapsed rectum. It was easily reduced through the very patulous anus, but immediately reappeared every time the patient strained in the least, which was very often. One of the assistants was detailed to hold it constantly up, but it prolapsed as often as his attention was distracted by anything of interest in the proceedings, and it proved quite an annoying complication, delaying the operation considerably. The interior of the stone was very hard and was crushed with difficulty. The operation was rather long, but the patient stood it well. The bladder was washed out with a boric-acid solution.

The stone was apparently about the size of an English walnut, and consisted of superficial layers of phosphatic deposit with a hard, dark-brown nucleus as large as a hazel-nut, presumably uric acid. A good deal was lost during the operation; the remainder, when dried, weighed 138 grains.

---

[1] Read before the Surgical Section of the Suffolk District Medical Society, February 7, 1894.

The next morning the pulse was fair, temperature normal, and tongue coated but moist. The character of the urine was improved, and micturition was less frequent and painful. The patient complained less of abdominal pain. In the afternoon there was recurrence of abdominal pain accompanied with hiccough. The abdominal walls were still retracted and the pain continued most severe on the left side. The patient vomited once and had no appetite. Temperature normal. The bladder was irrigated with boric-acid solution.

The second day after the operation, August 18th, the abdominal pain had increased. There was great sensitiveness to the touch, and tympanites had developed during the night. There had been no more vomiting. The tongue was moist. The temperature was normal; the pulse very rapid and weak. The urine had become foul again, but there was no difficulty with micturition. The bladder was washed out as before. The patient failed rapidly during the day and died at 8 P. M.

Looking back at this case after it was all over, it seemed evident that there had been from the beginning a grave and probably necessarily fatal abdominal complication which was not appreciated, partly on account of the difficulty of communicating with him and partly because the urinary symptoms not only overshadowed all others but appeared to account satisfactorily for his general condition. That the state of the bladder had at least a share in the causation would seem to be indicated by the apparent temporary improvement after the operation.

◆

Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

ETHER AND CHLOROFORM IN ANÆSTHESIA.

KÖRTE[1] has read an interesting communication on this subject, in which he shows the tendency to substitute ether for chloroform. The statistics, as presented before the Association of German Surgeons, were: 133,122 cases of chloroform anæsthesia, with 46 deaths, or 1 death for 2,894 cases. According to the statistics of Kappeler, 53 deaths occurred in 152,260 cases, or 1 in 2,873.

He gives a subcutaneous injection of morphia before anæsthesia. In using ether, as much as from 30 to 50 grammes (1 to 1½ fluid ounces) should be poured on the apparatus at first, but once tolerance is established, the amount required is small. The patient should be allowed to make several deep inspirations at the beginning of etherization. At the end of one minute, the mixture of gas in the apparatus becomes constant, consisting of 2.8 to 4.7 per cent. of ether, 16.6 to 18.7 per cent. of oxygen, and 1.2 to 1.7 per cent. of carbonic acid; in other words, less than a tenth part of the carbonic acid necessary to exert an injurious influence. Tolerance is established somewhat more slowly with ether than with chloroform, requiring seven and a half minutes. Since Dr. Körte has used ether he has anæsthetized 600 patients, each operation requiring from 100 to 200 grammes (3.25 to 6.5 fluid ounces) of ether, according as the operation lasts one-half to one hour. All the patients bore the anæsthetic well. There was no slowing or weakening of the pulse, blood-pressure being sometimes even elevated.

However, there is a special action on respiration, the bronchial secretion increasing under ether, a rhoncus being at first produced, which would necessitate the suspension of chloroform anæsthesia, but which has no significance when ether is used. Vomiting was observed only sixty times in the 300 cases. The period of excitement is longer, but the sleep is calmer. In 32 cases only were the patients restless, exhibiting signs of discomfort. In one case, complete narcosis could not be obtained, though 430 grammes (14 fluid ounces) of ether were used. In three cases tetanic muscular contraction rendered the operation more difficult. In such cases about 20 drops of chloroform placed on the mask will cause the cessation of the contractions. After anæsthesia, the awakening is pleasant, and is soon succeeded by a natural sleep, due probably to the preliminary injection of morphine. It has been stated that ether produces nephritis; and in order to test the truth of this assertion, Dr. Körte examined the urine in a series of cases, before and after narcosis. Of these, 203 had no albuminuria either before or after operation. In seven patients there was albuminuria before etherization, but the nephritis from which it originated was in no way modified. Albuminuria was observed after anæsthesia in only six cases previously free from it. The influence of ether upon bronchial inflammation is incontestable, although it cannot be said that pneumonia is more frequent after ether narcosis. Recent bronchitis, however, should be considered a contraindication. Ether was given to patients suffering from empyema, in whom chloroform would have been dangerous on account of the heart. In such cases, nevertheless, the ether should be at once suspended as soon as a large quantity of fluid is observable in the bronchi.

As regards the inflammatory nature of ether, this, is but a minor inconvenience, requiring only the simple precaution of avoiding the use of the Pacquelin thermocautery about the face, mouth, nose, etc. Patients who have submitted to both ether and chloroform, state that the sensations of anæsthesia by the former are more disagreeable, but the awakening is less painful. The writer's experience confirms this.

COCAINE IN HÆMOPHILIA.

Von Manteuffel[2] (Dorpat) reports the successful treatment of a severe case of prolonged bleeding following the extraction of a molar tooth of a boy aged twelve years. After two days of unsuccessful treatment by various devices and drugs it was determined to use a Pacquelin cautery. A preliminary injection of cocaine at three places in the gum about the site of the extracted tooth caused the bleeding to immediately stop. The injection had to be repeated, however, at intervals of five or six hours for some time before the bleeding was permanently controlled.

ON THE INDICATIONS TO BE DRAWN FROM THE URINE AS TO THE SAFETY OF ANÆSTHETICS.

At a meeting of the Clinical Society of the New York Post-Graduate Medical School, Dr. W. H. Porter [3] presented a paper on anæsthetics and the indications as to their safety, presented by the state of the urinary excretion. The paper is worthy of careful consideration, and he draws the following practical deductions from this chemico-physiological analysis of chemical phenomena:

---

[1] Deutsche Med. Zeitung, February 12, 1894; The Universal Medical Journal, March, 1894.

[2] Deutsch. Med. Woch., 1893, No. 28.

(1) That ether and chloroform act upon the same principles, but with results developed by slightly different methods.

(2) That both are capable of producing death at the time of the anæsthesia; chloroform more frequently than ether.

(3) That ether causes as many, if not more, deaths than chloroform, but the fatal issue is delayed until the patient has been removed from the operating-table.

(4) That by a careful study of the density of the urine and its causes, we are in possession of exact information by which we can determine the precise nutritive condition of the system, and be forewarned as to the possible outcome of the anæsthesia. It also enables us to judge which anæsthetic is best adapted to the individual case in question.

(5) We are taught that neither ether nor chloroform should be administered until the glandular organs, in their necessarily damaged states, are put in the best possible condition to endure this extra strain. When this is a general rule, many cases that now prove fatal will be saved.

(6) It teaches that every public institution should have a paid physician who is competent to examine the urine, and determine through it the status of the physiological economy before giving the anæsthetic. It should also be the duty of this same physician to administer the anæsthetic, for he alone knows best which anæsthetic to select with a given condition of the system, and is also better able to guide the patient safely through the anæsthesia than one who knows nothing of the constitution of the patient except from a second party.

(7) While it is clear that death in some instances is directly due to the primary effects of the ether and chloroform, and in others to secondary effects, it should not deter us from using them, but stimulate us to be more thorough masters of their actions upon the system, and thus to guard against their ill-effects. When all this is accomplished, chloroform will probably hold the first place as an anæsthetic.

OPERATIVE PROCEEDINGS IN ADVANCED AGE.

Gibson [4] has presented an interesting paper on this subject, having collected 65 cases, all aged seventy or more, with a mortality of 16; and of these, eight deaths were due to uræmia, the death occurring, on an average, on the fifteenth day. There is an absence of shock as the cause of death, and the use of iodoform is to be avoided in advanced age.

THE SURGICAL TREATMENT OF PULMONARY CAVITIES.

N. P. Dandridge,[5] in a paper presented to the New York State Medical Association, presented this subject, and arrives at the following conclusions:

(1) A certain number of lung cavities can be successfully dealt with by incision and drainage.

(2) Tubercular cavities in the lower portion of the lungs — if single and superficial, and the general condition of the patient permits — should always be opened. Cavities at the apex should only be opened where free and persistent expectoration is present, and has resisted treatment, and the rest of the lung is not involved.

(3) Abscess, gangrene and hydatid cysts should be opened and drained whenever they can be located.

(4) Closure of the pleura should be present before evacuation of a cavity is attempted.

(5) In cases of pyo-pneumothorax the fistulous tract should be explored, and any cavity freely laid open by the cautery.

(6) Cavities that have been opened are best treated by packing with gauze, preferably iodoform.

(7) The further careful trial of such agents as iodoform, chlorine gas and chloride of zinc is desirable to determine as to whether the tubercular infiltration may not be modified by them.

(8) It is very desirable, for the further extension of surgical interference in pulmonary cavities, that the means of locating such cavities and of determining their size, and the exact character of the tissues that overlies them, should be perfected by further study, and for the accomplishment of this the surgeon must look to the physician.

GASTROSTOMY IN ONE STAGE.

F. T. Paul [6] has contributed an illustrated article, and recommends the following method of opening the stomach at one operation, with power to feed the patient at once:

"The proceeding is very simple. The preliminary stages of the operation are conducted as usual, but when the stomach is picked up, a portion of it is drawn out of the wound, and two running sutures of fairly stout silk are passed in a circle round the site of the intended opening, with their ends in opposite directions, care being taken not to include the mucous membrane. The opening is then made, and, each side of it being grasped with artery forceps, one of my small (3–8 in.) intestinal glass drainage-tubes is inserted, and the ligatures are drawn tight and tied. The exposed portion of the stomach is now washed and returned into the abdomen, the external wound drawn together with fishing-gut sutures, and the ends of the stomach ligatures tied over two glass rods crossing the wound, in order that the stomach may be kept in close contact with the peritoneal surface of the abdominal wall. The wound is then powdered with iodoform, dressed with cyanide gauze and salicylic wool, and a bandage applied, a piece of jaconet being placed outside over the dressings to preserve them from becoming soiled. The experience of many bowel cases has shown me that these tubes separate between the third and seventh days; therefore, from the moment of the completion of the operation to the third day, the administration of food or washing out the stomach may be carried on with impunity. On the morning of the third day, the wound should be dressed, and from this time until the tube separates, and it is clear that good adhesions have been formed, discretion should be exercised as to the amount of food given and the care with which it is administered."

ENTERO-ANASTOMOSIS FOR MALIGNANT STENOSIS OF THE DIGESTIVE TRACT.

F. H. Markoe [7] has contributed an interesting paper upon this subject, exhibiting two patients upon whom he had operated for symptoms due to malignant stricture of the digestive canal. He summarizes as follows:

---

[3] The Post-Graduate, July, 1893; Annals of Surgery, October, 1893.

[4] Annals of Surgery, vol. xviii, No. 4, October, 1893.

[5] Ibid., February, 1894.

[6] Lancet, December 23, 1893.

[7] Annals of Surgery, February, 1894.

As a result of experience, we endeavor to operate as early in the disease as possible, or if debility is already present, postpone interference until, by means of systematic lavage with careful gastric, supplemented by rectal nourishment, the general condition improves. We have also learned:

(1) That the size of the anastomotic opening must be huge on account of the tendency to contraction.

(2) That in case of the stomach it should be as near as possible to the greater curvature and nearer the fundus than the pylorus, so as to be not only as far distant as possible from the disease, but at the same time, in the most favorable situation for the passage of the contents of the stomach into the intestine.

(3) That the jejunum, about thirty inches from the pylorus, is the proper portion of the intestine to approximate, and that its opening should be placed midway between mesenteric attachment and extreme convexity.

(4) That in the approximation the loop must be so arranged that its peristaltic wave corresponds with that of the stomach.

(5) That the tide of opinion seems to favor a union which shall represent, as far as possible, that of the different anatomical layers (the ideal operation), rather than through the medium of artificial aids (Wolfler, Halsted, Barker, Abbe).

(6) That as in all intra-abdominal operations, our manipulations must be so performed as to favor the slightest degree of ultimate adhesions between adjacent structures.

NON-PARASITIC CYST OF THE LIVER.

A rare and interesting case was reported by Müller at the twenty-second German Surgical Congress.[8] It was probably a cysto-adenoma of the biliary ducts in a woman aged fifty-nine. The tumor was quite large, of slow growth, and at the time of operation (ten years after the growth was first noticed by the patient) it filled the abdominal cavity and part of the pelvis. It was mistaken for an ovarian tumor. At operation the tumor was found to be a large cyst containing over six litres of a chocolate-colored fluid (hæmorrhage into the cyst), and was attached to the liver, which appeared normal, by a thick, hollow pedicle. The cyst wall was thick, bled profusely when cut, and was formed of the remains of hepatic tissue with cystic dilated biliary ducts. The tumor was benign, that is, non-recurrent. The patient was free from recurrence at the end of one and one-half years.

SPHINCTERPLASTY AFTER EXTIRPATION OF THE RECTUM.

Willems, of Gent,[9] in order to avoid the distressing rectal incontinence occasionally seen after extirpation operations, has attempted to form a muscular sphincter by following and modifying the suggestion of v. Hacker for gastrostomy and colostomy. He has successfully demonstrated his plan on the cadaver, but not on the living subject. It consists in bringing the resected end of the rectum out through a slit in the fibres of the gluteus muscles, near its origin from the border of the sacrum, and suturing it to the skin. This slit he would make two centimetres long and parallel with the muscular fibres.

This was reported in April, 1893. In March, Gersuney operated in Vienna by a method which was intended to overcome the same difficulty, namely, rectal incontinence.[10] He solved the problem by twisting the proximal end of the resected rectum on its long axis till its lumen was sufficiently closed. This was determined by the introduction of the finger during the torsion. When this was accomplished the end was sutured to the skin. Gersuney operated on two patients suffering from rectal carcinoma. The sphincter ani was destroyed, but the rectal stump could be brought down to the skin. Both cases rapidly recovered without the sutures giving way. One had no incontinence from the first. The other at first was unable to control liquid dejections, but later (at the end of eleven weeks) recovered perfect control over the contents of the rectum.

These two procedures seem to offer a means of overcoming this painful and disagreeable sequel which has deterred many from operating on these patients, and they deserve consideration. They can be combined, perhaps, to advantage in some cases, since the Gersuney method is applicable to those cases where the excised end can be united to the skin in the usual way. The Gersuney method can also be used in forming an artificial anus where the intestine is resected so as to leave a free end.

INTESTINAL RESECTION.

Haasler reports a successful resection[11] where it was necessary to remove fifteen centimetres of the ileum with its mesentery, the ileo-cæcal valve, cæcum, vermiform appendix, ascending colon, hepatic flexure, and one-half of the transverse colon with the attached mesentery. The disease was an adeno-carcinoma which involved all the above tissues with the mesenteric lymph and retroperitoneal glands. The patient was well one year after the operation.

SUTURE OF WOUNDS OF THE LIVER.

At the recent Surgical Congress in Rome, Micheli[12] showed a case in which he had successfully sutured a wound of the liver. Laparotomy having been performed, it was found that the wound was situated on the convex surface of the left lobe, near the free margin; it was four centimetres in length and two in depth, and was directed vertically towards the lower margin of the organ. A moderate amount of hæmorrhage had taken place. The edges of the wound in the liver substance were brought together with five silk sutures and the abdomen closed. The patient (a woman) made an uninterrupted recovery and was discharged cured in twenty days. In a case of gun-shot wound of the liver, the author applied fifteen silk sutures and the hæmorrhage was so thoroughly controlled that no trace of bleeding having taken place could be found four days after the operation, when death occurred from peritoneal sepsis.

THE TREATMENT OF EXUDATIVE TUBERCULOUS PERITONITIS BY MEANS OF INTRA-PERITONEAL INJECTIONS OF STERILIZED AIR.

Nolen[13] has arrived at the conclusion, after a number of observations, that curative results can be obtained by injecting sterilized air into the peritoneal cavity through the opening made for the evacuation of the ascitic fluid. He has tried this method in three cases successfully. In two cases the cure was permanent; in the third, the patient was too much exhausted prior to the treatment to have recovered.

---

[8] Beilage z. Centbl. f. Chir., 1893, Bd. xx, 66.

[9] Centbl. f. Chir., 1893, Bd. xx, 401.

[10] Centbl. f. Chir., 1893, Bd. xx, 553.

[11] Centbl. f. Chir. Beilage, 1893, Bd. xx, 64.

[12] Rif. Med., November 7th; British Medical Journal, December 2, 1893.

[13] Berl. klin. Woch., 1893, No. 34, p. 813.

The method is as follows: Sterilized air, contained in a glass jar, is expelled by means of hydrostatic pressure and passed through sterilized cotton, then through warm, sterile water, and finally passed, by means of the puncture needle, into the peritoneal cavity. This is carried out until the abdomen is tense. The process is reversed by removing the hydrostatic pressure.

RESECTION OF THE KIDNEY.

Kümmel has reported his experience in this method.[14] After successful experimentation on animals, from which more or less of the renal parenchyma had been removed without detriment to their general condition or impairment of renal function, he operated on two patients. One was a woman forty-one years of age. The operation showed extensive suppuration, abscess formation and a renal calculus. About one-third of the kidney was excised. The patient was well at the end of three years after the operation. The other patient was a man fifty-four years old. Here a piece the size of a walnut was removed from the upper extremity of the right kidney. The remaining defect was closed by suture. He recovered from the operation in three weeks, but was not relieved. He was later found to have carcinoma of the bladder, which caused his death ten weeks later. The autopsy showed that the right kidney had perfectly healed, but was affected by interstitial nephritis. The excised portion of this kidney showed also the same process. In a third case, a woman aged thirty-four, an echinococcus cyst, the size of a hen's egg, was removed from the right kidney in a wedge-shaped section. The defect was closed by sutures. About one-half of the kidney was removed from the centre of its convex border without injuring the pelvis. The patient recovered. Other successful cases by Czerny, Bardenhauer, Socin and others, were reported by Kümmel.

Bloch (Copenhagen) has resected a small portion of a kidney which, on microscopic examination, showed bacterial infection. The operation was done for diagnostic purposes; and notwithstanding the infected condition the defect, which was closed by five or six cat-gut sutures, healed by first intention.

Küster has also removed an embolic infarction by resection from a patient aged thirty-two.

Kümmel recommends the convex border of the kidney as the most favorable site for resection, on account of the course of the renal vessels.

CHANGES AND DEGENERATIONS IN NÆVI.

Reboul[15] states that in a certain number of cases the nævi disappear after birth. If any changes occur in them, or whenever they show signs of extension of malignant degeneration, they should be removed. They are most likely to undergo malignant degeneration of the melanotic variety. They should be regarded as infectious, and great care should be taken to prevent a local infection becoming general and leading to a fatal termination.

SURGICAL TREATMENT OF CERVICAL, THORACIC AND ABDOMINAL ANEURISMS.

C. B. Nancrede[16] has presented the above subject to the Surgical Association, and submitted to them for their discussion the following propositions:

The Treatment of Cervical Aneurisms.

(1) All methods should be supplemented by recumbency and diet.

(2) Proximal compression, when feasible, should always be tried, and where the arterial coats are seriously diseased should supersede ligation.

(3) "Needling" should supplement pressure when the case is progressing rapidly; possibly it is advisable in all cases suitable for compression, and is certainly to be employed where this method fails in cases with highly atheromatous vessels.

(4) Proximal ligation, having been rendered much safer of late by the use of aseptic precautions, less absorbent ligatures and the avoidance of all injury to the arterial walls by employing the "stay-knot," is permissible when the arterial walls are relatively sound until experience decides whether or not "needling" is superior in its results.

(5) Since recurrence after proximal ligation almost certainly results from non-deposition of white thrombi, and their maintenance in contact with the aneurismal wall from lack of proper changes in its lining, "needling" is then clearly indicated.

(6) Where the location prevents proximal arrest of the blood current "needling" is the best operation; possibly distal compression — rarely feasible — might aid in the deposition of thrombi.

(7) For the reasons already given, although occasionally successful, the indications for the permanent introduction of such foreign bodies as wire, horse-hair, etc., into aneurismal sacs are so much better met by "needling" that such procedures had better not be adopted.

(8) The modern revival of the older method of extirpation of aneurisms should not be attempted for spontaneous cervical aneurisms.

The Treatment of Thoracic Aneurisms.

(1) All methods should be aided by the employment of rest in bed and diet.

(2) The permanent introduction of foreign substances should not be employed.

(3) "Needling" should be tried, aided by distal compression, when feasible, during use of the needles; if this fails, distal ligation should be resorted to.

(4) Distal interruption of the blood current by simultaneous ligation of the carotid and subclavian arteries may be tried.

(5) "Needling" is indicated when complete or partial failure follows distal ligation.

The Treatment of Abdominal Aneurisms.

(1) All methods should include recumbency and diet.

(2) "Needling," when this can be done without injury to the hollow viscera, is the most promising plan.

(3) Proximal or distal compression may be tried, with or without "needling," but to be effectual must be done under anæsthesia.

(4) The permanent introduction of foreign bodies into the sac is unadvisable (see proposition No. 7, Carotid Aneurisms).

(To be continued.)

---

[14] Centbl. f. Chir., 1893, Bd. xx, p. 78.

[15] Arch. gén. de Méd.; British Medical Journal, October 21, 1893.

[16] Annals of Surgery, September, 1893.

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

CHARLES L. SCUDDER, M.D., SECRETARY.

Regular Meeting, Wednesday, February 7, 1894, Dr. Abner Post in the chair.

Dr. G. W. Allen read a paper entitled,

TWO CASES OF LITHOLAPAXY.[1]

Dr. H. L. Burrell: The patient that Dr. Allen has so successfully operated upon came under my care last March with a catheter lodged in his urethra at the junction of the membranous and bulbous portion. The patient showed us the portion of the catheter which was broken off, and which was one of those dangerous catheters sold by pharmacists, composed of rubber and sulphur, which become friable upon keeping.

He was advised to have a perineal section done and the catheter removed. This, however, he declined, and went home. I was induced, much against my will, to try to extract the catheter at his home per urethra. A portion of the catheter was removed by forceps, but it finally broke off, and undoubtedly a piece of the catheter slipped into his bladder and formed the nucleus of the stone which Dr. Allen has removed. The operation was completed by opening his perineum and washing out the bladder, with the vain hope that the fragment would be removed. He was told that it would be necessary to have a further operation performed in order to secure the lost end of the catheter that rested in his bladder. This he declined, and he is, of course, to be congratulated on the successful removal of the fragment and the calculus which has formed about it.

Dr. Watson: Dr. Allen's first case, that in which a bit of a red-rubber catheter formed the nucleus of the stone, suggests a matter in connection with the choice of operation for stone which is interesting, I think, and which I feel should receive rather more attention than it sometimes does. I refer to the method of removing stone after rapid fragmentation through the wound of an ordinary external perineal urethrotomy. This method, which dates back for a long period, has been advocated by Mr. Reginald Harrison, and still more recently by Surgeon Major Keith, under certain conditions, the most important one being obstructive prostatic hypertrophy of such nature as to make the passage of instruments from the meatus especially difficult; or again, where there is present some condition which makes the stone very difficult to crush, such as its having a foreign body for a nucleus, a soft substance, like that in Dr. Allen's case, or a bit of lead, for example, or in cases in which there is a large stone, the crushing of which by the ordinary means would require a long time. Under such conditions this very simple perineal operation recommends itself, and the surgeon should not hesitate to adopt it, even after having begun to do the usual crushing operation, whenever these conditions arise. The only death I have had thus far from operating for stone would, I think, very likely have been averted had I employed this method of operation. It was a case in which the prostatic urethra was exceedingly difficult to pass a lithotrite through without some injury, owing to the encroachment of an enlarged prostate, and I think the deep urethra was slightly wounded, and that death was the result, probably, of the injury.

Dr. Post: It is a little curious to me to see how nicely Dr. Allen succeeded in pulverizing that catheter. My own experience would lead me to think a catheter was an extremely difficult thing to pulverize with a lithotrite. Generally enough elasticity remains to make it difficult to break up into small enough fragments to remove through the ordinary apparatus.

Dr. E. H. Bradford read a paper on

FLAT-FOOT.[2]

Dr. Harrington: For myself, I have always liked the metallic foot-plates better, for the reason that the other foot-plates, I think, are apt to give way. You often get relief from a new pair of well-fitting boots, but as they are worn and sag they get misshapen, and cease to give relief. I think the same trouble comes with plates which are not metal. The subject has been treated more from the anatomical point of view, and without much reference to symptoms. They who do not study flat-foot might expect all feet which need support to show deformity. We sometimes get the most painful feet with very little of what we would call flattening, very little that would show from tracing or measurement.

Dr. Fitz, of Cambridge: In order to test the question of the occurrence of flat-feet, I have been making arrangements to get footprints of Indians, negroes and whites on a large scale, to see how far the occurrence is distributed. For that purpose, I have experimented somewhat as to a method for quickly taking large numbers of footprints, and have devised one which may be of interest to the Society. I have in mind getting the ratio between the length of the feet and the breadths of the ball of the foot, the arch and the heel, and summing this up for the different races, to see whether there is a distribution of flattening, and how it occurs in relation to age as well as to nationality, and especially to see if it occurs more or less frequently among those wearing an arch-supporting shoe.

Dr. Newell: I have been very much interested in hearing Dr. Bradford's very interesting observations, and also to see the method of making the various impressions in the way just described by Dr. Fitz. I have been always very much opposed to the use of plates in any form for flat-foot. It seems to me these observations under the varying degrees of pressure show conclusively that the arch of the foot is an elastic movable apparatus that changes its height in accordance with the amount of weight you bear upon it. Although I have seen a good deal of flat-foot in the physically reduced cases, it seems to me the pain was due to abnormal tension, to weakening of the ligaments, and the condition has been one of wasting away of muscles or ligaments or both, and one which in almost all cases in my experience has shown marked improvement in improved physical conditions. I think there is no question that as a temporary means of relief a plate for flat-foot is useful except that it has the disadvantage that being placed under the foot it presents a very abnormal condition in the shape of a rigid, inflexible arch that keeps up a constant pressure atrophy, and patients who have come to me wearing flat-foot plates I have known to suffer a great deal from pressure atrophy; so that it seems that except as a measure of temporary relief the use of plates of any kind is contraindicated.

---

[1] See page 383 of the Journal.

[2] See page 377 of the Journal.

Dr. Harrington: We use foot-plates a good deal as we use crutches; we do not use them after the patient can get along without them. Among the severe cases of flat-foot there are many cases in which it would be absolutely impossible to get relief without foot-plates. I believe most thoroughly in the proper position of the feet, proper methods of walking, etc. The danger from pressure is not great. If the pressure is improper we get callosities and we soon find it out from the patient. The foot-plate is only a temporary means of support. Many patients wear plates for a few months and then give them up entirely or use them only from time to time.

Dr. Goldthwait: Very little remains to be said upon the subject of flat-foot, after Dr. Bradford's paper, as flat-foot is generally understood, that is, an obliteration of the longitudinal arch of the foot. Much less attention has been paid to the transverse arch which is an anatomical fact, and which at times becomes obliterated, and requires treatment of as definite a nature as in the cases in which the longitudinal arch alone is flattened. It is to this special point that I wish to confine my attention.

Normally, across the metarso-phalangeal articulation is a slight arch which becomes obliterated as the weight is borne upon the foot, but which re-forms as soon as the weight is removed. In this way the weight is received upon the inner and outer sides of the foot. The normal tracing, or impression, of the foot has this sharp re-entering angle with this tongue running up under the ball of the foot. When the arch is obliterated this sharp angle is lost, and the weight is borne more upon the middle of the foot. This condition is almost invariably present in the cases of metatarsalgia, and the acute pain is at once relieved by the correction of the arch. A specially constructed metal plate or leather pad has been used in this condition.

Dr. Bradford: I am glad Dr. Newell brought that point out, for I meant to have laid stress on the fact that it is important that patients with flat-foot should be treated with gymnastic exercises and massage. The treatment of flat-foot varies according to the severity. In the mildest cases shoes and gymnastics are all that is needed. In the less mild cases I think some slight means of throwing the foot over are needed and in these cases the soft plate is sufficient. In the severer cases, temporarily a strong support is important, and I am inclined to think we shall be able to get along very well with the leather strengthened by steel. The strong metal plate will probably be needed in the heavier cases. I do not quite agree with Dr. Newell that this necessarily causes pain. If adjusted right, I do not think pain is caused. Although, of course, there is danger of muscle atrophy during the use of a plate, the same may be said as to the application of any appliance, which is only to be used when this is unavoidable.

Dr. Newell: I have been misunderstood if I made any one think I thought the plate caused pain. My experience has been that the plate relieves pain. What I referred to is pressure atrophy. I have seen patients who have worn rigid metal plates a long time and the muscles and soft parts have been very much atrophied from non-use and constant pressure over a rigid metallic arch. What I have always found best is correction of position and the use of flexible springy supports, especially the leather ones. I once had a baby two years of age brought to me with a beautiful pair of aluminum bronze flat-foot plates in its shoes.

Dr. O. K. Newell read a paper on

THE INTERMITTENT RAPID DILATATION OF URETHRAL STRICTURE.

The paper called attention to the generally admitted fact that all strictures which can be at once treated by the introduction of metallic sounds are best effected by gradual dilatation. That true organic urethral stricture, like œsophogeal and rectal strictures, is incurable, and let alone tends with greater or less rapidity to recontraction. The paper then described a method of treating all very small calibre strictures where no progress with metallic sounds can be made, or where they have progressed to partial or complete retention. This method consisted in using a series of dilators similar in operation and construction to Dr. Newell's divulsor described some time ago. These dilating staffs range in size from No. 10 F. to No. 30 F., and their purpose is to do away with the old operation of immediate full divulsion by intermittent rapid dilation, say first from Nos. 10 to 14 or 18, then from Nos. 18 to 20 or 24, and so on. All strictures are thus made practically amenable to gradual dilatation. No detention in bed is necessary, even where there is retention, and patients are able to avoid being incapacitated from work. Also when the dilating staffs are passed in on the guide, the danger of making false pockets, as with a free metallic sound in small calibre strictures is avoided and the operation is made mechanically certain. It being only a question of how much stretching to do at each sitting.

Dr. Watson: I should like to ask in how many cases Dr. Newell has tried this method.

Dr. Newell: I have adopted it now during the last two and a half years. I have in that time treated no case of stricture in any other way. I suppose I have treated seventy to eighty cases in this way. I never yet have had any case that has not been able to keep at work. It is true, as Dr. Watson cites from Sir Henry Thompson's and his own experience, that slight disturbance of very small strictures often causes more trouble than radical interference. But by this method we do not interfere slightly, but moderately. Dilating, for instance, with retention, from the filiform up to Nos. 16 or 18 F. This relieves the retention, but is not violent enough to disable the patient, who may go about his work after the procedure.

Dr. Watson: Would you claim greater immunity from mortality when this method is used?

Dr. Newell: I do not think there is any mortality from divulsion.

Dr. Watson: The reason I ask this question is to bring out one matter with which Dr. Newell's experience in this series of cases differs widely from that of some other surgeons; for example, from Sir Henry Thompson's, who states very clearly, what other surgeons have also held and what I find to be true in my own operations, namely, that frequently far greater constitutional disturbance and more serious symptoms arise (especially in cases of the tighter strictures) after an incomplete operation than you will have after a full divulsion or internal urethrotomy or dilatation, etc. If Dr. Newell can show in a large number of cases that that is not true, it will be of decided interest to me. When I first began to do rapid dilatations and internal urethrotomies, I used to be a little afraid of carrying the operations to their full limits; but I found that the least constitutional disturbance occurred when I at once fully restored the calibre of the strictured portion of the urethra to its normal size, and the most serious followed upon partial restoration only.

I do not quite understand whether Dr. Newell classes this method which he describes as divulsion or dilatation; nor do I understand what Dr. Newell means when he says that the operation of internal urethrotomy is not applicable to structures of small calibre — for, of course, it is well known, that with the instrument of Maisonneuve any stricture through which a filiform bougie can be passed can readily be divided by an internal urethrotomy.

Dr. Douglas Graham: These cases are entirely out of my line of practice. The method of Dr. Newell is evidently a sort of internal massage. Several years ago some foreign surgeons reported a number of cases of stricture of the urethra successfully treated by massage after the so-called failure of other means. As soon as a bougie could be passed through the stricture this made a good substratum over which to use massage from the outside. By this combined method of gradual dilatation from the inside, and massage externally, thickening, narrowing and spasm were got rid of. Where practicable it would certainly seem to be a rational and natural procedure. But the mere mention of massage in such regions is sufficient to incite in some minds the idea of immorality, as it probably reminds them of some indiscretion of their youth which must have been a very different thing from *masséeing* a stricture. "Evil to him who evil thinks."

Dr. Newell: Intermittent dilatation; no divulsion is done at all. This is not a divulsor. I think it has been the experience of surgeons in the last few years that when they sterilized things there was very little heard of the so-called catheter chill. When I have seen it, it has seemed to me to be of the reflex class.

Dr. Newell said in answer to questions that this method was applicable to strictures regardless of their situation. One had to go slowly with penile ones, and there was rapid progress with the others usually.

He was opposed to cutting a stricture under any form. One must have a pretty large stricture in order to cut it. The mere linear incision of a stricture only added a cicatrix to what was already a cicatrix.

◆

MASSACHUSETTS MEDICO-LEGAL SOCIETY.

F. W. DRAPER, M.D., SECRETARY.

Regular Meeting, February 7, 1894, **Dr. Z. B. Adams**, the President, in the chair.

Dr. T. M. Durell reported

THE LEACH ABORTION CASE.[1]

Dr. W. F. Whitney: In regard to the question of membranous dysmenorrhœa. If the examination of the membrane shows the presence of villi of the chorion, that is indubitable proof of the existence of a pregnancy, for these are only formed from the ovum; they can never be formed by the uterus itself or by any of the processes of menstruation. On the other hand, a membrane is not infrequently discharged from the uterus composed of cells of a character like those in the decidua of pregnancy, the uterus being one in which, as far as can be learned, no pregnancy has taken place. I have made some observations of this kind myself, in which, from the structure of the membrane, I supposed pregnancy to have been present; but this diagnosis later events proved to be an error. The presence of villi of the chorion, which are formed alone from the ovum, and not by the uterus, is the only indubitable proof of pregnancy.

Dr. W. A. Dolan: I have had one case of abortion in which the opening was through the cul-de-sac into the peritoneal cavity, and death, as in this case, was due to septic peritonitis. I took the precaution to have the tissue of the uterus examined microscopically, so that if there had been any question of pregnancy we could have had that to fall back on.

Dr. W. F. Whitney then presented a communication on

HÆMORRHAGE INTO THE PANCREAS AS A CAUSE OF SUDDEN DEATH.[2]

Dr. J. G. Pinkham: I am not able to throw any light on this subject. I am very much interested in the paper. I have witnessed autopsies in two cases. The first one was some years ago, before this subject was particularly understood, and the autopsy was made by one of my fellow practitioners. The case was not fully understood at that time, but as I remember it, the pancreas seemed to be simply a mass of blood-clot. The mass was as large, perhaps, as a man's arm. I judge now from thinking of the case that the hæmorrhage into the tissues was very extensive indeed, so that the organ was very much enlarged in this way, and was extremely brittle as we took it out. The case was sent to some one in Boston, but was not diagnosticated as it would be at this time. It was supposed that the hæmorrhage was in the neighborhood of the pancreas, and that that organ was wasted, destroyed by disease, but I think now that the hæmorrhage was in the substance of the organ, and that that produced the peculiar condition that was observed.

In the second case I was the attending physician. The patient was a baker, a fat man. He was taken with violent epigastric pain, vomiting and great depression. He was treated, as those cases usually are, with remedies to meet the symptoms, and died after about five days. The autopsy showed the condition which has been described here, the opaque white spots which are not limited to the pancreas, but were visible in the omental fat, and very generally throughout the abdomen. I think other portions of the body were not examined because that was before the attention of the suburban practitioners, at any rate, had been called to this peculiar condition of acute pancreatitis with hæmorrhage. But that evidently was the disease, and that specimen was sent to Dr. Whitney, and upon his diagnosis the certificate of death was based. As a matter of interest, there was some dissatisfaction among the friends in regard to the fact that the man died from such a cause, and the case was reported to a distinguished homœopathic physician of Boston, who said there was no such disease.

Dr. B. H. Hartwell: I have never seen a case of what has been described by Dr. Whitney, but I think that we are under a great deal of obligation to him for bringing anew this matter to our minds. We see a great many cases of sudden death, and I am sure we are puzzled sometimes after an autopsy to state the absolute cause of death. I am sure hereafter we shall not only look more carefully for disease of the pancreas in our autopsies, but shall be better able to tell whether the pancreas enters as a factor in the case, and if any of us should fail to find the pancreatic duct, I am sure there would be some consolation to us in the fact that so eminent a pathologist has difficulty in finding it.

---

[1] See page 382 of the Journal.

[2] See page 379 of the Journal.

Dr. F. W. Draper: I am reluctant to say a word, because all the necessary words have been said either by Dr. Whitney or by the other members of the Society. Two practical points, however, have occurred to me in listening to what Dr. Whitney has said: one is that all sudden deaths by natural causes are not to be set down hastily as deaths by "heart disease"; and the other is that an autopsy is not a complete autopsy unless it includes the examination of the pancreas; that it is incumbent upon us as medical examiners to be thorough in our work, and where occasion comes to make an autopsy, to make it so that it can be worthy the name.

So far as these cases of pancreatic hæmorrhages are concerned in their relation to sudden death, I think the anatomical diagnosis is not at all a difficult one when the lesser omental cavity is opened as it always ought to be for inspection; the case declares itself almost at once; there is no reasonable room for doubt as to what one has before him. The organ itself, normally a pale yellowish white, is in these cases discolored red, and on either side and around the end of it will be found in the retro-peritoneal connective tissue an infiltration of blood that is unmistakable, which one cannot but see if he has ordinary eyes; so that it is not a matter of difficulty in diagnosis, but ordinarily a matter of neglect in the pathologist, that these cases escape observation. In some 4,000 cases of death of all sorts, I have seen 19 cases in which there was some pancreatic hæmorrhage, but in not all those nineteen was it to be assigned as the one cause of death. It was in company with other conditions, conditions relating to the liver or to the kidneys, or to the heart or to the lungs, which were complications, so to speak, making the post-mortem diagnosis a little more difficult; but in some nine or ten cases there was no other cause of death. Those were the purely typical illustrative cases Dr. Whitney has described so well. They are the cases of persons found dead, about whose clinical history one knew nothing. In only one instance that I recall at this time did I know the clinical side of the case, and that was, as it happened, the first case I ever came upon. That has been published. I will only state the facts that the symptoms were precisely as Dr. Pinkham has related — great depression, amounting almost to collapse, epigastric pain, with nausea and attempts to vomit, which generally were unsuccessful, a sinking which resulted in death in forty-five minutes after the onset of the attack. The patient, a man, died in the carriage on the way to the hospital, having been seized suddenly, and the appearances were typical and conclusive, nothing else being seen that was abnormal except this pancreatic hæmorrhage into and around the organ.

Dr. Z. B. Adams: It seems to me that there are two very valuable points for the medical examiner in the study of this thing, and the first of these is that sudden death may occur from pancreatic hæmorrhage. It should be borne in mind, and when the medical examiner is called to a case and cannot come to any positive conclusion about it, he should not be content unless he examined this organ after making the usual examination of the heart or other organs. He should not forget that sudden death may occur from hæmorrhage into the pancreas, something, I think, few of us have heretofore taken into account, but since attention was called to it we have waked up to that. Another point is in reference to the cause of death. That, as Dr. Whitney has said, is still a very obscure point; but it seems to me, if many of these cases should come into our hands, we should soon solve that problem. The cases are so rare, however, that we know little or nothing about that. Speaking of the other forms of pancreatitis, suppurative, etc., I am reminded that some fifteen years ago I had a very stout patient who died after a short illness. I secured an autopsy, and found pus at the head of the pancreas, but at that time I had heard nothing about this acute form of hæmorrhagic pancreatitis, and really did not know what to call it. I found quite a sac of pus there, and that, to me, appeared to be the only lesion. The symptoms were those of distressing pain in the epigastrium, with vomiting and inability to retain food, constipation, and that was all. He died within a very few days, greatly to my surprise, as I could see no sufficient reason for his death, and that was what I found. As soon as Dr. Fitz's paper came out I said, "There was my case."

Dr. W. F. Whitney: In making a post-mortem examination, I should say the pancreas ought to be examined before the heart or any other viscera have been disturbed, because one is very apt to get a false extravasation, which might mislead as to the source of hæmorrhage. The rule should be, after the greater cavity of the peritoneum had been inspected, the lesser cavity should be opened and the pancreas examined at that time.

In reply to Dr. Adams's question, I would say that, personally, I have not seen any cases of sudden death from hæmorrhage into the pancreas from violence or a blow. There are some cases where violence in the neighborhood of the pancreas has been found to be followed by a hæmorrhage into the organ. Dr. Fitz has recorded the autopsy in the case of a man who had a railroad injury, and the splenic artery or artery of the pancreas had been torn; he found evidences of fat necrosis in the neighborhood of the pancreas; this had developed very speedily, and is one of the strongest arguments in support of his theory that the necroses are dependent upon lesions of the pancreas.

There are a number of cases reported of extensive injury of the pancreas in which patients have recovered without untoward symptoms.

◆

THE NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, held at the New York Academy of Medicine, Tuesday evening, March 6, 1894, **Dr. M. Allen Starr**, President, in the chair.

Dr. J. Arthur Booth presented

A CASE OF EXOPHTHALMIC GOITRE: THYROIDECTOMY.

The patient was a female, aged twenty-four, single. Family and personal histories negative. About two years ago the woman first noticed an enlargement of the throat, and three months later the eyes became affected. The patient is positive that there were no heart symptoms until six months ago, when palpitation, throbbing of the vessels of the neck, shortness of breath and flushing of the face appeared. All these symptoms gradually increased in severity, and the patient became irritable, easily excited, anxious and unable to sleep because of the tumultuous action of the heart. When the woman first came under my observation both the eyes were very prominent, especially the left, and the lids did not follow the movements of the eyeballs (Graefe's symptom). The pupils were moderately dilated, reacting to light and accommodation. Fundus normal. Vision not impaired. The enlargement of the thyroid body was marked, the right lobe being the larger. Pulse 150, of high tension. Apex-beat of the heart diffused; no murmur. Respiration 24. No tremor of hands or fingers. Examination of urine negative. The patient was given daily applications of galvanism, and received one two-hundredth of a grain of aconitia twice daily, and fifteen grains of iodide of potash three times daily. She was also instructed to practise full inspiration frequently, and to rest as much as possible during the day. Under this treatment there was decided improvement in the symptoms, but only temporary in character, and on November 8, 1893, thyroidectomy was performed by Dr. B. F. Curtis at St. Luke's Hospital, the right lobe of the thyroid being removed. The patient made an uneventful recovery, and during the four months that have elapsed since the operation there has been a decided improvement in all her symptoms. The pulse-rate now ranges between 96 and 110. Many of her nervous symptoms have entirely disappeared. She sleeps well, does not suffer from palpitation, and is able to attend to her housework. The eyeballs are much less prominent. The left side of the thyroid has diminished in size to a slight extent since the operation.

DR. ROBERT SAFFORD NEWTON presented

A CASE OF EXOPHTHALMIC GOITRE: THYROIDECTOMY.

The patient was a girl aged twelve. In this case almost complete extirpation of the thyroid was performed, only a small supernumerary lobe being left. Since the operation, the exophthalmos, which was very pronounced, has almost entirely disappeared. Before the operation the pulse-rate was 180, and the child suffered from cyanosis. The systolic and diastolic heart-sounds were almost synchronous. The operation was performed by Dr. Fowler on October 21, 1893, and the child was out of bed three days afterwards. Her pulse now averages about 100. She is able to attend school, and is much improved in every way.

The PRESIDENT stated that the absolute contrast between the symptoms in exophthalmic goitre and myxœdema makes it seem very probable that many of the symptoms of the former disease are due to an excessive secretion of the thyroid gland, just as those in myxœdema are due to its suppression. Up to the present time there are not enough cases on record to permit us to make definite statements regarding it.

DR. GEORGE W. JACOBY presented

A CASE OF PROGRESSIVE MUSCULAR ATROPHY OF THE PERINEAL TYPE.

The case was that of an illegitimate child, a girl aged twelve years. The mother states that the child's father was a large, well-proportioned man, but that he was rejected for military service abroad because his muscles were weak. This is the only hereditary factor obtainable. The history of the case, in brief, is as follows: There was no trouble at the child's birth. When two years of age, some months after an attack of measles, she complained of pain in the lower extremities, which was so severe that she could not stand. This lasted about six weeks, and from that time on she appeared to have difficulty in walking. She has always been able to move her legs in every direction. When she was four years old it was noticed that one leg was weaker and thinner than the other. About one year ago it was first noticed that there was an atrophy of the thigh on the side opposite to that of the affected leg. She holds the leg in a stiff and clumsy position. There is a lack of symmetry between the two buttocks. She had marked lordosis and slight lateral curvature. The muscles of both thighs are in a continual state of unrest, almost like fibrillary twitching. The right foot is in equino-varus position. There are no sensory disturbances. There is partial reaction of degeneration in the affected muscles. The arms are not affected. The superficial reflexes are normal. The tendon reflexes are present, but somewhat reduced on the affected side. In conclusion, Dr. Jacoby said that while he regarded the case as one of progressive muscular atrophy of the perineal type, it was not an absolutely typical one, inasmuch as the atrophy, although bilateral, is asymmetrical, one leg being affected and the opposite thigh.

DR. B. SACHS said he agreed with Dr. Jacoby's diagnosis. The atypical distribution of the atrophy should not militate against the diagnosis, as that is really the last thing to be considered, although still so much insisted on by many writers. The distribution of the atrophy is largely a matter of chance. He has seen six cases of progressive muscular atrophy of the perineal type, which is, perhaps, the rarest form of the disease. In none of these was there a cross-distribution of the atrophy, as in Dr. Jacoby's case.

DR. ALEXANDER B. JOHNSON read a paper describing

A CASE OF NEURALGIA OF THE GREAT OCCIPITAL NERVE, WITH SYMPTOMS OF A DESTRUCTIVE LESION OF THE CERVICAL SYMPATHETIC.

The patient was a man sixty years old, married, a railroad conductor by occupation. Denies venereal disease; no alcoholic habit. Had malaria thirty years ago. No distinct history of rheumatism. No signs of organic disease. Over the chest and back he has several old, white, depressed scars, which he states are the result of abscesses he had many years ago, and that they were a long time in healing. The patient presented himself on November 1, 1893, complaining of a severe pain in the right side of the head, which made it impossible for him to work. This trouble began three years ago. The pain is of an aching character and occurs in paroxysms. It is referred to a point about two inches behind the lobule of the right ear, and radiates upward and backward to the vertex. There is marked tenderness on pressure over this area. The patient further complained of inability to see well with the right eye, and the upper eyelid on that side droops so far as nearly to cover the pupil when the patient looks straight before him; the lower eyelid is slightly elevated. The right pupil is contracted, smaller than the left, and does not react to light. The eye is watery, and the right side of the face is redder than the left. There is no paralysis of the face; but the skin and muscles appear less full, and feel flabby in comparison with the left side. The patient was examined by Dr. M. Allen Starr, who located the lesion in the cervical sympathetic, and advised an exploratory operation, as the patient had undergone medical treatment of various kinds without relief.

On November 4, 1893, an incision, three and one-half inches in length, was made along the posterior border of the right sterno-mastoid, beginning just below the mastoid process. The sterno-mastoid muscle and internal jugular vein were drawn forward and the internal carotid artery lifted up. The superior cervical ganglion was found to be included within the sheath of the internal carotid, to which it appeared to be distinctly adherent. The adhesions were divided and the ganglion freed, as well as the cord below to the extent of two inches. No abnormality in appearance could be recognized either in the ganglion or cord, and the wound was closed. The neuralgic pains and the tenderness of the scalp disappeared at once after the operation. The lacrymation and flushing of the face ceased. The pupil on the right side reacted slightly to light and became a little larger, and the right upper eyelid drooped so little that it was scarcely noticeable, and did not at all interfere with vision. At the end of six weeks, however, all the symptoms had returned; and at the present time the patient finds himself in no way improved.

In closing his paper, Dr. Johnson said that while the symptoms in this case were fairly typical of paralysis of, or a destructive lesion of the cervical sympathetic, it is possible that they were due to a lesion of a destructive character situated in the spinal cord, the exact location of which it is at present impossible to determine. He was unable to explain the immediate temporary benefit of the operation in this case, excepting that it was the result of a powerful peripheral impression.

Dr. William M. Leszynsky referred to a case which he presented some years ago, in which there was hæmorrhage into the cervical portion of the cord, with decided symptoms of involvement of the cervical sympathetic on the same side.

The **President** said that Krouse (*Zeitschrift für Klinische Medicin*, 1891) reports nine cases of crushing accidents to the spinal cord, involving the lower cervical and upper dorsal segments, in which there were marked symptoms referable to the cervical sympathetic. Regarding the case narrated by Dr. Johnson, Dr. Starr said his own impression was rather against the idea of a cord lesion, on account of the absence of other cord symptoms, although that was not a valid reason for excluding it entirely.

Dr. Booth presented

A CASE OF HYSTERIA, WITH PECULIAR EPILEPTOID ATTACKS.

The patient was a male, aged twenty-two, jeweller, a native of Germany. During the past two months he has had attacks when he suddenly begins to sing, to slap his knees with his hands (either one or both), and to stamp his feet. The attacks come on without apparent cause, and occur frequently during the day and occasionally at night. Each attack lasts only a few seconds, and ends with a screech. Patient does not lose consciousness. When he was eight years old he had similar attacks, extending over a period of nine months: again, three years ago, he had them for a period of about one year. At that time he went under treatment at Strasburg, Germany, but received no benefit. The attacks ceased of themselves. Patient does not smoke; drinks moderately; practised masturbation to some extent when he was younger, and continued it for three years. Family history negative. Never had a blow or fall. Denies venereal disease.

ELECTRICAL REACTIONS AND THEIR VALUE IN DIAGNOSIS AND PROGNOSIS.

The **President** stated that the subject of electrical reactions, and their value in diagnosis and prognosis, which had been taken up at the last meeting, was such an important one that it had been decided to continue it at this time.

Dr. Frederick Peterson said that in the main he agreed with the previous speakers regarding the reaction of degeneration, and with the conclusions recently published by Remak, in particular. We have found that both nerves and muscles may respond to both the faradic and galvanic currents, and yet degeneration may exist. With the galvanic current, polar changes are inconstant; CCC may be greater than AnCC. In normal muscles we occasionally find, on the other hand, that AnCC may be greater than CCC. There is one sign that may be considered as always present where there is degeneration in the spino-muscular portion of the motor tract, and that is, the sluggish, vermicular contraction of the muscle. Furthermore, in the great majority of cases of degenerative lesions in the anterior horns or peripheral nerves, the faradic reactions are diminished or lost. Dr. Peterson felt that not sufficient stress had been laid upon the actual value of electro-diagnosis in distinguishing cerebral palsies from the degenerative cases. He was convinced that most neurologists found it of the same value as heretofore, though we had modified our opinions as to the manifestations.

One of the speakers at the last meeting called attention to the occasional occurrence of atrophy with degenerative reactions in cerebral palsies, as cited in two cases by Eisenlohr some years ago. It was interesting to know that Eisenlohr had recently made autopsies in both of these cases, and found degeneration in the peripheral nerves. Other observers have found atrophic changes in the ganglion cells of the anterior horns in cases of hemiplegia with muscular atrophy. There is no evidence in those rare instances in which muscular atrophy accompanies cerebral palsy that the trophic change is produced by an affection of the trophic centres in the brain. On the contrary, all the evidence at hand shows that the atrophy depends upon degenerative lesions in the spino-muscular portion of the motor tract. The value of the electrical examination remains therefore as before.

The electric reactions are certainly of great value in the distinction of the primary muscular dystrophies from progressive spinal atrophies.

Dr. J. F. Terriberry continued the discussion. He confined his remarks to the value of electrical reactions, as regards diagnosis and prognosis, in paralysis of the facial nerve, and gave the following conclusions, which he had deducted from an analysis of twenty-four such cases coming under his observation:

(1) That we have in electricity an agent of the

highest value as an aid to diagnosis in paretic troubles of the seventh nerve.

(2) That the value of electricity as an aid to prognosis in facial paralysis is comparatively slight. Less than one-half the cases reported could be prognosticated, and even those with considerable hesitation.

(3) That those cases in which the degree of paralysis is slight are the ones of which we can speak with most confidence by the aid of electricity.

(4) That it is impossible to foretell the issue of severe cases by means of the electrical examination.

(5) That the teachings of Erb respecting the diagnosis and prognosis of the lesions of the motor peripheral nerves by means of electricity are the best at our command, although very imperfect.

Dr. William J. Morton sent a communication on the subject of electrical reactions, which was read by the Secretary. He stated that in case of degeneration of the nerve, the faradic and galvanic excitability is diminished or lost, while in case of degeneration of the muscle the faradic excitability is lost, but there is an exaggeration of the galvanic excitability and an inversion of its normal polar action. This abnormal reaction of an abnormal muscle was, indeed, a most brilliant discovery by Erb, but it has always seemed to him that an over-refinement of diagnostic and prognostic significance has been attached to it. As regards diagnosis, the electrical reaction is often the only means of deciding that a given nerve or muscle is in process of degeneration. In traumatic neuritis, in multiple neuritis, in the sciatic, facial and many other neurites, in the dystrophies and spinal lesions due to affection of the nerve cells of the anterior cornu, it is certainly a great satisfaction to feel sure that the degenerative process exists, and this satisfaction is easily acquired by aid of the electric reactions. He did not, however, consider the reactions of much value in making a differential diagnosis between one and another of the above affections, or between a multiple and migrating neuritis, or between sub-acute or chronic anterior poliomyelitis and a progressive muscular atrophy, or lastly, between a cerebral and spinal lesion. As regards the prognostic value of electrical reactions, Dr. Morton believed that overconfidence is placed in the deductions to be drawn from "the complete" and the "incomplete reaction of degeneration." In its complete form, as we sometimes see it in grave facial paralysis and in infantile spinal paralysis, our prognosis is unmistakably bad and fairly exact. It is in the incomplete reaction of degeneration that we are often proven to be mistaken if we indulge in a too exact prognosis. In cases where the electrical reactions of both nerve and muscle have been completely lost, he has known the muscle to regain some part of its former volume and the normal electrical reactions to return by means of long-continued local treatment by aid of sparks from an influence machine. He considers that the earliest sign of reaction of degeneration is the failure of a muscle to respond to a spark which will set a corresponding normal muscle into contraction.

Dr. Leszynsky said that in making the differential diagnosis between peripheral and cerebral lesions in cases of facial paralysis, the quantitative changes should be taken into consideration: in the peripheral cases there is a quantitative diminution, while in the cerebral cases there is a quantitative increase. In paretic conditions he still relies on electricity, both as regards diagnosis and prognosis. There are cases in which we make mistakes, but in the vast majority of instances the laws laid down by Erb are correct.

Dr. B. Sachs said that if the discussion of this subject at the last meeting had a nihilistic tendency, it was due to the fact that it was treated from the neurologist's point of view, and the speakers were attempting to make out in what way the current would be of value in refinements of diagnosis. He expressed the view that all of us still recognize the vast importance of electricity in the differential diagnosis between cerebral and peripheral cases, or cerebral and spinal cases, and also its great value in functional cases.

Dr. E. D. Fisher said that in the main he agreed with the statements made by the previous speakers. In certain diseases, such as dystrophies, chronic anterior poliomyelitis and progressive muscular atrophy, the electrical reactions are of great value. It is true that in the dystrophies we do not get an absolute loss of the faradic response until very late in the disease; with marked atrophy we may still get a response to the faradic current wherever the fibres remain. As regards the differential diagnosis between cases of progressive muscular atrophy and chronic poliomyelitis, in the former we do not, as a rule, get a complete reaction of degeneration — we may get a partial one — while in the latter we are very apt to get complete reaction of degeneration. In differentiating between cerebral and spinal lesions, electricity is of value, although not always essential.

Recent Literature.

Hospitals, Dispensaries and Nursing. Papers and Discussions in the International Congress of Charities, Correction and Philanthropy, Section III, Chicago, June 12 to 17, 1893. Edited by John S. Billings, M.D. and Henry M. Hurd, M.D. Baltimore: The Johns Hopkins Press. London: The Scientific Press (limited). 1894.

The seven hundred and ten pages of this report contain seventy-five papers, with the discussions on them, so condensed as to make the volume a necessary reference-book on the subjects to which it pertains, and so full of matters of vital interest on all questions connected with the care of the sick that it can be read with profit by every one who wishes to keep informed on modern social science. It should be studied by physicians, and hospital officers and visitors engaged in solving the difficult problems discussed therein. We cannot enumerate by title, with our limited space, the many excellent essays which were read; nor can we, as we would like, call attention in detail to the able treatment of the several topics of argument and debate.

The admirable papers on the function and duties of the modern hospital by Dr. Billings and Dr. Cowles are fully supplemented by thirty-five others covering all points of hospital administration, including the education of physicians and surgeons and training schools for nurses. The greatest advances in the last two decades have naturally been in the way of hygiene, cleanliness in its broadest sense, in development of the system of training highly-qualified nurses, and in a more general use of cottage hospitals in the smaller cities and towns. The next movement must lie in the more intelligent control of infectious diseases by abolishing the "pest-house" and by the construction of isolation hospitals for scarlet fever and diphtheria particularly, of which there are so few in this country. Dr. Thorne Thorne had hardly made the remark that a small-pox hospital should not be within a mile of an inhabited house, as quoted by Dr. Rowe, before more recent researches showed such over-caution to be only consistent with the pest-house idea; while Dr. Davis regards a furnace for garbage, rooms for disinfection by superheated steam and a crematory for the dead quite essential within the grounds of every hospital for infectious diseases.

The one hundred and eighty-six pages given to the consideration of nursing of the sick will amply repay a careful reading.

Dr. Field's description of the reception pavilion for the insane at Bellevue Hospital, with his appeal for the establishment of similar detention hospitals for deciding questions of insanity, and the proper treatment of each person examined in them, in every large city of the United States, and Miss May's six pages on nursing of the insane, comprise all of the volume which is devoted to that important branch of hospital care of the sick. The search-light that has been so well directed to the general hospitals has not yet fully reached the hospitals for the insane, although the advances there, too, have been great.

Medical Jurisprudence, Forensic Medicine and Toxicology. By R. A. Witthaus, A.M., M.D., Professor of Chemistry, Physics and Hygiene in the University of the City of New York, etc., and Tracy C. Becker, A.B., LL.B., Counsellor-at-Law and Professor of Criminal Law and Medical Jurisprudence in the University of Buffalo. With the aid of numerous collaborators. In four volumes. Vol. I. New York: William Wood & Co. 1894.

The obvious intention of the projectors of this extensive work has been to collect in one publication all matters concerning which law and medicine have a hyphenated interest through their mutual relations one with the other, embracing all topics which usage and propriety designate as medico-legal. And it is a pleasure to state at once that if the standard of excellence illustrated in this initial volume is maintained in the three volumes to follow, the two professions of law and medicine will have at their disposal an encyclopædic work of the highest character. The critical reader finds much to praise and little to censure in the plan and execution of so much of the treatise as the present volume exhibits. As is usually the case with a book of composite authorship, there is some inequality in the various chapters; a few appear to have been written hastily and under stress of a pressing requisition for material to be supplied before a stated time, but nearly all the contributions show care, study and finish. Taken as a whole, this volume represents wide research, judicial fairness and freedom from dogmatic self-assertion. The announced list of contributors leads us to anticipate a continuation of these characteristics in the remaining volumes and to declare that as a comprehensive reference-book relative to all medico-legal subjects, this will stand without a peer.

The title of the work offers a novelty in nomenclature. It has been customary to regard Medical Jurisprudence, Forensic Medicine and Legal Medicine as interchangeable and synonymous terms, and this custom still prevails. But it is explained in the introduction to this volume that there is a real difference which should be recognized, that Medical Jurisprudence treats of "medical law" and that Forensic Medicine deals with "the application of medical, surgical or obstetrical knowledge to the purposes of legal trials." We cannot avoid thinking that this differentiation is arbitrary and unnecessary. That its adoption would be difficult among medico-legal writers and students is well illustrated by the fact that it is not uniformly respected in this volume or, indeed, by the editor himself in the later pages of his introduction.

But the distinction above mentioned offers a convenient opportunity for a broad classification of legal and medical topics in the body of the book. Under the caption of Medical Jurisprudence, several able legal writers have contributed chapters which set forth the legal principles, the judicial decisions and the statutory regulations which govern and control medical practice. The legal rights and duties of medical men in the care of the sick, in the court-room, in the autopsy-room and wherever else they exercise their professional knowledge, are fully and satisfactorily defined. It is interesting to note, in passing, that in the admirable digest of the laws governing the practice of medicine, Massachusetts and New Hampshire are designated as the only States which are without special statutes designed to protect the public from quackery.

In that portion of the book devoted to medical rather than legal themes, are chapters on medico-legal autopsies, personal identity, wounds, death by heat, cold, electricity, hanging, strangling, suffocation, drowning, and starvation. All these subjects are elaborately treated and some of them, like the Medico-Legal Relations of Electricity, for example, have special value because of the contemporaneous interest in the topic and the thoroughness of the author's method in discussing it. The entire volume shows a manifest purpose on the part of its contributors to present whatever they have found to be of medico-legal utility in the latest advances in medical science and all concerned in the preparation of the work, editors, collaborators and publishers, can be congratulated cordially upon the genuine success which has marked their endeavor.

The Principles and Practice of Surgery. By John Ashhurst, Jr., M.D., Barton Professor of Surgery and Professor of Clinical Surgery in the University of Pennsylvania; Surgeon to the Pennsylvania Hospital; Senior Surgeon to the University Hospital and to the Children's Hospital; Consulting Surgeon to the Woman's Hospital, to St. Christopher's Hospital, etc. Sixth Edition, enlarged and thoroughly revised. Philadelphia: Lea Brothers & Co. 1893.

This is the sixth edition of a work which has been very popular. The author has endeavored to incorporate many of the more important recent observations in surgical science. "An entirely new chapter has been introduced, on Surgical Bacteriology," by Prof. Charles B. Nancrede of the University of Michigan. The specialties on the eye and ear have been scrutinized and revised by colleagues of the author.

The author "ventures to express a hope that in its present form, his volume, though necessarily compendious in its mode of dealing with different subjects, may be considered as affording a satisfactory representation of modern surgery." The work is one of those few works which have survived the advent of modern methods; and while much of value is retained which existed before antiseptics, yet a strenuous effort has been made to introduce the valuable parts of modern methods. In this we do not believe the author has fully succeeded. The book is condensed, well written, and intended to cover the whole field of surgery; but we cannot help believing that it would be improved by omitting the parts on special surgery. As a matter of example, the presentation of the subject of diseases of the joints and of orthopædic surgery is lamentably behind the times. In this work Americans stand well towards the head; and the apparatus which is represented and the methods spoken of are those of the English school of orthopædics of thirty odd years ago.

The book has a distinct value in that the author retains many of the points and hints of treatment with which the older books were filled; but, as a whole, it cannot be considered a work representing modern surgery.

Infectious Diseases, Notification and Prevention. By Louis C. Parkes, M.D., London, D.P.H. Pp. 185. London: H. K. Lewis. 1894.

This compact and handy manual contains all the existing English laws upon the sanitary management and control of infectious diseases. Part I presents these laws, together with full explanatory notes by the author. Part II contains much useful information in a condensed form, upon various practical subjects relating to the diagnosis and the prevention of infectious diseases. The special topics treated are Incubation Periods, Quarantine, Infective Periods, Sources of Infection, Infectious Outbreaks in Schools, Isolation at Home, Disinfection, the Relation of the Medical Officer of Health to the Medical Practitioners of his District.

The clear and intelligent arrangement of the descriptive matter under the different infectious diseases will commend the book to every practical sanitarian. The tables were collated from the report of a committee appointed by the Clinical Society of London to investigate the periods of incubation and contagiousness of certain infectious diseases.

This extremely practical hand-book should be in the hands of every American health-officer, and will be found very useful to the general practitioner.

Diseases of the Eye. A Practical Treatise for Students of Ophthalmology. By George A. Berry, M.B., F.R.C.S. Ed., Ophthalmic Surgeon, Edinburgh Royal Infirmary, etc. Second edition, revised and enlarged, with colored illustrations from original drawings. Pp. 727. Philadelphia: Lea Brothers & Co. 1893.

This book is emphatically what its sub-title states it to be, "a practical treatise for students of ophthalmology." It is comprehensive and concisely written, and a judicious proportion has been observed in the allotment of space to the different subjects. The illustrations which are incorporated in the text are, in the main, colored prints from original drawings. Those representing the external diseases of the eye are, with a few exceptions, satisfactory, and much superior to any we remember to have seen in students' text-books. The plates representing diseases of the fundus are even better, and are beautiful specimens both of drawing and reproduction.

With regard to the much-discussed question of whether to do an iridectomy or not in cataract operations, our author has but one opinion, and that is, that a small iridectomy should always be done, and dismisses the whole subject as follows: "The only disadvantages (of an iridectomy) are, therefore, a wound in the iris and a less beautiful pupil. . . . The cosmetic advantages of a round, active pupil, when it can be obtained, are altogether trifling in those elderly individuals who are the usual subjects of cataract extraction. The game is, in fact, not worth the candle."

In regard to the after-treatment of cataract, he places his bandage only over the operated eye, as, in his opinion, the pain caused by moving the eyes about before the anterior chamber is re-established is sufficient to compel the patient to refrain from using his eyes. He believes that the patient should be kept in bed "at least two days," and the room in semi darkness.

The subject of treatment throughout the book is clearly and conservatively written. In the treatment of trachoma, while excision of the retrotarsal fold is described, no mention is made of expression of the follicles, as is so commonly done in America; and we were surprised to note that no mention of antiseptic collyria or ointments is made.

Upon the whole, however, the book is an eminently satisfactory text-book.

A Practical Treatise on Medical Diagnosis. For Students and Physicians. By John H. Musser, M.D., Assistant Professor of Clinical Medicine in the University of Pennsylvania, Philadelphia; President of the Pathological Society of Philadelphia, etc. Octavo, 873 pages, 162 engravings and 2 colored plates. Philadelphia: Lea Brothers & Co. 1894.

The number of treatises on the Theory and Practice of Medicine by American authors is rapidly increasing. The one before us by Dr. Musser on Medical Diagnosis is in many respects a very good book. Its arrangement is simple. It is divided into two parts: Part I is devoted to General Diagnosis, and consists of chapters on General Observations; the Data obtained by Inquiry; the Data obtained by Observation; Bacteriological Diagnosis; the Examinations of Exudations, Transudations, Cystic Fluids; the Morbid Processes and their Symptomatology. Part II is devoted to Special Diagnosis. The first seven chapters deal with Anatomical or Regional Diagnoses; chapter eight deals with Diseases of the Blood and Ductless Glands; chapter nine with Constitutional Diseases; chapter ten with the Infectious Diseases; chapter eleven with Diseases of the Nervous System.

The book emphasizes the extent to which instruments of precision and laboratory processes have superseded, or at least simplified, the older and slower methods of minute observation and elaborate systems of differential diagnosis. But we do not wish to indicate by this statement that the author underrates the importance of careful inquiry and observation. The pages merely show plainly, what every hospital physician or teacher of long experience realizes daily more and more, that the last ten years have revolutionized in many ways the means, the methods and the details of diagnosis. This is nowhere more apparent than in diseases of the blood, than in the information to be had from microscopical examinations of the blood and exudations. A differential diagnosis of typhoid fever, or the stage of a pneumonia, may be determined in the laboratory; and even the stethoscope and the thermometer are being shorn of some of their glory.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, APRIL 19, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

THE DOCTOR IN FICTION.

It is well worth the contemplation of an idle hour to consider the position held by the medical man in the fiction which, in the reading world of to-day, plays so important a part. We have all of us seen the doctor appear in the drama — the apostle of science, the wise counsellor to the interesting invalid, the good elderly walking-man of the piece; and we have all no doubt wondered whether we individually appear to the world at large, such mild inanities. In fact, it must be admitted that the doctor has hitherto not been accorded a very prominent place in light literature, especially in English literature, when compared to that granted to the clergyman or lawyer. Perhaps the reason for this is that English society, which the novel tries to depict, still lingers in the miasma of feudalism, and the doctor whose career leads neither to place nor power has no proper position in a society which grants precedence to title inherited by primogeniture or to the dignity of landed estates.

To Richardson, Fielding, Addison, Goldsmith and Sterne, the doctor had little that was picturesque or interesting: and the earlier great writers, Chaucer, Spenser, Milton, of course, found little use for the leech or the barber-surgeon. Shakespeare, who mirrored all life, used the doctor only occasionally as in a minor part, finding him of no more importance than the apothecary, or the wise woman who was consulted in regard to Falstaff's health.

Now and then, in later literature, a mention is to be found of a medical man, as when Cowley, in poetic frenzy, compares Dr. Scarborough cutting for stone to Moses striking the rock. Mr. Samuel Warren, as is well known, a physician of repute and note of the past generation, has written at least one novel "£10,000 a Year" which has outlived his time, and has vitality to-day. But these are exceptions. The great novelists, Scott, Thackeray and Dickens, found little employment for doctors in their works, although the former must have lived in an atmosphere in Edinburgh redolent with the fame of surgeons. Thackeray dedicated one of his novels to his physician who had "brought him through" a severe illness; but to him doctors were apt to be socially off color, and it is put to Pendennis's credit that he did not deny the fact that his father drove a gig and visited patients. Dickens exercised some of his humor upon doctors, making the doings of the young "Sawbones" amusement for a generation. Trollope, considering how much he wrote and that, too, in the low tone of mild realism, with sober tints well suited to the sombre character of the doctor, made but little of the physician as compared with the clergyman or lawyer.

Charlotte Bronté introduces a physician prominently in "Villette." George Eliot, however, makes a great exception in "Middlemarch"; her character of Lydgate — one of her most interesting creations — illustrates well the aspirations of a young and ambitious physician, and the pitfalls and easy path to failure. Miss Evans always worked carefully and evidently in thorough sympathy with medical life; and in her description of Lydgate's treating a case of delirium tremens, the authoress gave evidence of her thorough study of the subject, for she makes her medical hero anxious to try the treatment advocated by Dr. John Ware, of Boston, in a monograph which, if known in the medical thinking world of that day, is almost forgotten now, even in his native city.

In France, doctors seem to have always been in popular favor, even in the days when their absurdities were such as to be made famous by the wit of Molière. Their prominence in the community inspired the critical genius of the dramatist; and the medical profession of succeeding generations are his debtors for the immortal life he gave to those errors and follies which the successful practitioner, to-day as in the seventeenth century, should seek to avoid. But of all writers of fiction Honoré de Balzac, the greatest of the novelists of the modern school, as well as the founder of that school, was most in sympathy with the physician. He was fond of introducing in his "Comédie Humaine" the mythical Bianchon, the enthusiastic student in the École de Médicine, laboring hard at the cliniques and laboratories, while his contemporary, Rastignac, was seeking to advance his fortunes by intrigue in the salons and boudoirs of the Fauburg St. Germain or at the Tuileries. Later, Bianchon becomes the famous surgeon, who lives a successful life devoted to professional work, while fortunes and intrigues have fallen in the foolish worldly game of personal advancement. To Balzac's mind evidently the physician lived a life of calm content in his own work; and in his devotion to that science which was above the folly of courts, outlived revolution and dynasties and fulfilled a career high in its purpose and broad in its scope, with the ideal enthusiasm of a religious devotee. In the "Médecin en Campagne," Balzac has presented not only the highest type of a physician in fiction, but has given to posterity a figure to be respected by all. A strong man is portrayed whose life was blasted in early youth by the consequences of youthful indiscretion, but who rose from the chastisement to the noble work of elevating a community, not only helping the sick, but teaching by example and by personal influence the wisdom of a sane life. Beloved and respected by all, not a self-seeker, but arbitrary in enforcing what was best for the health of his patients and of the community, broad, far-seeing, strong and self-sacrificing, M. de Benassis will live to remind the reading world of the possibilities in a medical career — possibilities which the annals of the medical biographies in every community show not to be simply figments of the brain of a romancer.

Recent French literature has produced nothing equal to Balzac, and no medical figure equal to his "Country Doctor"; but one of the most dramatic scenes in that best of recent novels, "Les Rois en Exile," is laid in a physician's office, where the last of one of the royal families of Europe is brought *incognitus* to seek advice, bearing the curse of a malady inherited from a father who thought more of the Jardin Mabille than his lost throne; the queen-mother sits in the waiting-room of a celebrated surgeon with peasants and tradespeople, and, when her turn comes, hears from the oracle of that science which knows no kings or royalty, that her son's blood, the noblest blood in Europe, is tainted.

In America, the doctor has always been a man of influence, and we should expect he would receive due attention in literature. The American novel, however, is of recent growth; for Cooper worked on European models, his matter, except in descriptions of scenery, was not American, or at best only what Cooper thought was American. Hawthorne, our great romancer, did not study real life in the commonplace world around him; he was a morbid psychologist, a mental pathologist with wonderful beauty of language. He has, however, left us a sketch of a medical recluse in "Dr. Grimshaw," which shows the handiwork of a master even in its outline. An excellent physician appears in "Elsie Venner," alive with the intelligence of the author, our honored Professor Emeritus, the Autocrat of the Breakfast Table. Our working American novelists, James, Howells and Cable, have all tried their hands on doctors. Mr. James, who is essentially the novelist of good manners, and who writes from the point of view of a man of the world, evidently recognizes the fact that the doctor in America may perfectly well be a man of good society, which appears not to be the case in London. Still Mr. James's attempts at creating doctors have not been successful; they are doctors only by title, without any medical vitality. Mr. Howells has done better with Dr. Mulbridge in "Dr. Breen's Practice"; but to our minds, Dr. Sevier, the central figure in one of Mr. Cable's best stories, is a creation of much more than passing excellence. The force, the quick and broad sympathy, the impatience of shams, the *sæva indignatio* at the silliness and imbecility of the average of mankind, are not only well depicted, but true to the type of physician. The creole is represented as being a man of large practice, of a lonely life, of much sorrow, and with the acuteness to see that his sorrow was earned by violation of the laws of health and must be manfully borne. Miss Jewett has produced a valuable study with an abundance of local color, in her "Country Doctor"; and Judge Grant, in his "Reflections of a Married Man," intimates that in American society, even among "smart" people, the presence of a few distinguished specialists is desirable to complete the social gathering. In this author's last book, "The Opinions of a Philosopher," there is a "snap" pen-picture of Miss Cora Jacket, M.D., "a regular practitioner in the allopathic line," and Winona, the hero's pretty daughter, becomes a practising Christian Scientist. Crawford, in his last story, "Katherine Lauderdale," the scene of which is laid in New York, gives us a pleasant glimpse, in the person of Dr. Routh, of the general practitioner who is the family friend and adviser, whose aid and counsel are sought in a delicate and perplexing emergency, and who saves the honor of his patient by a letter to the newspapers, as he saves his health by dietetic prescriptions.

The female physician has already been served up in several different forms; but she will probably appear again, as the subject is one which is not yet exhausted.

A fact to be noted is the *début* in the world of fiction of our celebrated specialists, Dr. Weir Mitchell and Dr. Hammond. The latter, in addition to those novels already written, promises to write two every year, thinking that physicians have an inexhaustible fund of knowledge of human nature, dealing as they do in humanity as their staple commodity and sampling it in different grades, for the stamp of different treatment. There seems to be no reason why physicians should not write novels, now that novel writing is becoming a pastime, like bicycling or base-ball or tennis. Of course, the professionals are the masters, but the amateurs may make a good deal of fame for themselves. We shall have all the neurologists and alienists illustrating their views of life by some horrid example held up to the terrified public. It affords an amusing relaxation, and will do but little harm. In fact, it must steady the nerves harassed by care; at least, Lord Beaconsfield found it so, and consoled himself when vanquished by publishing "Endymion." Why should not physicians also partake of this new anodyne, if they can find the time after their severer labors?

◆

THE DISCUSSION ON THE PARASITISM OF CANCER AT THE ELEVENTH INTERNATIONAL CONGRESS OF MEDICAL SCIENCES.

One of the most interesting discussions at the Eleventh International Congress of Medicine, held recently in Rome, was that on the parasitism of cancer, in which Pio-Foa, Cornil, Duplay, Cazin, Ruffer and others took part. It is known that Pio-Foa, referee, is one of the most strenuous advocates of the parasitic or infectious nature of malignant neoplasms. The "parasites" are certain protoplasmic bodies — when fully developed enclosed in a distinct capsule — contained in the cancer cell, sometimes within, sometimes without, the nucleus, and resembling the spores of protozoa. Soudakevitch, Ruffer, Walker, Clarke and others have described such elements, which they regard as sporoza, bearing a resemblance to the hæmatozoa of malarial fever. These parasites are common to almost all cancers of glandular origin. The peripheral portions of the neoplasm contain parasites of small dimensions, while at some depth from the surface are found large sporocysts.

In parts which are rich with parasites, karyokinesis is wanting or is little marked. On the other hand, in parts where the proliferation of the tissues is active, the parasites are wanting, or are few in number. This shows that they live, but in tissues whose vitality is low. Arguments were advanced to prove that these strange bodies were not degenerate cell nuclei. Pio-Foa claims to have followed all the stages of development of these parasites from a little corpuscle the size of a nucleolus, to the sporocyst as large as a full-sized cell nucleus. Thus far, it has been impossible to obtain cultures of these parasites. Cancer is not inoculable by grafting, except in individuals of the same animal species.

Though parasites may not be found in all tumors manifestly cancerous, they doubtless exist there in the state of spores difficult to distinguish from nuclei. These spores "infect other cells, and are transported with them into the secondary nodules where the parasite develops anew, and where it infects other histological elements. The cells containing the parasites eventually die and disintegrate, while the surrounding cells undergo a process of active proliferation.

Professor Cornil, of Paris, declares himself as yet far from convinced that the forms which Foa and others described were parasites. We find in cancer a great number of modifications of the form of cells and of nuclei which might easily be taken for parasites. The nuclei of cancerous cells divide sometimes into two, sometimes into three, four or more secondary nuclei, and these divisions end in the production of two or more cells, each containing a nucleus, or in the production of several nuclei inhabiting the protoplasm of several cells.

The nuclei of the cells undergoing division are small, rich in chromatic material, but they soon become fimbriated on their borders, knobbed, with predominance of liquid in their interior; they may become completely achromatic. They will then present the most varied shapes, from crescents to double sacs, crowns, little knobby or spherical masses (secondary nuclei) containing little coloring substance. These transformed nuclei sometimes present an œdematous appearance (hydropic nuclei).

Much of Cornil's description we omit as being too long and too technical. The result of close observation with staining methods has convinced him that Foa's parasites are only metamorphosed nuclei, a product of morbid karyokinesis. According to Cornil, there are found also in cancer degenerated cells whose protoplasm stains red, and which contain in place of nuclei granules, filaments, or masses of nuclein representing the different forms of indirect division, without the occurrence of achromatic filaments or of clear space around the divided nuclein. These are cell degenerations arrested in one of the phases of indirect division of the nuclei. Cornil remarked that even migrating leucocytes interposed between cancer cells had been mistaken for parasites, especially when they had retrograded and had broken up into fragments of nuclein.

Duplay and Cazin, of Paris, stated that their researches on the structure of the constituent elements of epithelial cancers had led them to the same conclusions as those of Professor Cornil. The coccidia of Foa and others are only forms of cell degeneration, products of "indirect division," and have no parasitic character.

Ruffer, of London, spoke in support of the claims of Pio-Foa, corroborating his conclusions, while Morpurgo, of Turin, as stoutly confirmed the position of Cornil, Duplay and Cazin. So that the parasitic, and in particular the psorospermic origin of cancer, may be considered as still *sub-judice.* We have to oppose to the weight of Professor Cornil's assurance that the "organisms" are simply altered histological elements, the decided opinion of Metchnikoff and Sims Woodhead that they are "undoubted coccidia." Admitting the nature of these bodies to be parasitic, it might be claimed that they are only accompaniments of malignant growths, not the cause. The conditions of their growth and development, according to Dr. Sims Woodhead are a lowered condition of the vitality of the epithelial elements in which they make their habitat. Finding a suitable soil, they multiply, secrete their toxines, and by their irritant action on the parts which they invade, resemble certain well-known pathogenic microbes, especially Koch's bacillus, in the degenerative processes and products which they entail. One extremely weak link in the chain of evidence, as Dr. Woodhead admits, is that hitherto inoculation experiments with cancerous material have very rarely been successful in producing any cancerous reaction.

VITAL STATISTICS OF ENGLAND FOR 1893.

The Registrar-General of England publishes an advance-sheet or abstract of the vital statistics of England and Wales at a much earlier date than that of the annual report, which is rarely published till a year later. From this advance-sheet, just received, we learn that he estimates the population as 29,731,100 at the middle of the year 1893, this being an increase of 728,575 over the number of the population as taken by the Decennial Census of April 6, 1891.

The marriages in 1893 were 218,251; the births were 914,189; and the deaths were 569.923. These figures give a marriage-rate of 7.34 per 1,000 of the estimated population (14.68 persons married), a birth-rate of 30.75, and a death-rate of 19.17. Estimating the excess of females over males to have maintained the same rate of increase as for the ten-year period 1882–1891, the death-rate of males was 20.27, and that of females 18.14 per 1,000, or as 1,000 females to 1,117 males in equal numbers living.

The figures for London were as follows (1893): marriage-rate, 8.58 (persons married, 17.17); birth-rate, 30.86; death-rate, 20.83.

The healthy excess of the birth-rate over the death-rate in England, amounting to nearly 50 per cent. (48.1), presents a strong contrast with the vital statistics of France, which are as follows for the years 1891 and 1892:

	1891	1892
Marriages	285,458	290,319
Births	866,377	855,847
Deaths	876,882	875,888
Excess of deaths over births	10,505	20,041
Marriage-rate	7.4	7.5
(Persons married)	14.8	15.0
Birth-rate	22.5	22.2
Death-rate	22.8	22.7

◆

MEDICAL NOTES.

Small-Pox at Sing Sing. — Three new cases of small-pox occurred this week among the men working in the rag department of Sing Sing Prison.

United States Quarantine Physicians for European Ports. — The detail of surgeons from the Marine-Hospital Service for duty at European ports during the coming summer has been made. Three of the appointments are the same as last year: Dr. Woodward to Hamburg, Dr. Stimpson to Rotterdam, and Dr. Brown to Havre. The other appointments are as follows: Dr. Magruder to Naples, Dr. Perry to Genoa, Dr. Vaughn to Bremen, Dr. Carmichar to Antwerp.

BOSTON AND NEW ENGLAND.

Boston City Hospital House-Officers. — The rules of the Boston City Hospital have been changed so as to open the competitive examinations for positions as house-officers to graduates in medicine of not over three years' standing.

Acute Infectious Diseases in Boston. — During the six days ending at noon, April 17, 1894, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 28, scarlet fever 37, measles 11, typhoid fever 15, small-pox 1 (with 1 death). There are now 6 patients in the hospital. During the same period 8 cases of small-pox were reported to the State Board of Health, 3 from Chicopee and 5 from Holyoke.

The Boston School Committee and Vaccination. — At a recent meeting of the Boston School Committee the question of enforcing the present statute requiring vaccination of pupils in the public schools was brought to a vote, and was decided most properly in the affirmative. Six members of the board voted to do away with the regulation. They were Miss Hastings, Miss Pingree and Messrs. Blanchard, Estes, Winship and Wise. A most excellent example, surely, to set the young aspirant for citizenship, to disregard the law at the very threshold of the public school! ! "As the twig is bent" —

Diphtheria at Wareham. — So many cases of diphtheria have occurred during the last week at Wareham, Mass., that the public schools have been closed.

The Small-pox at Chicopee. — The number of cases of small-pox at Chicopee has become so large that the Board of Health has decided to build a quarantine hospital, as first proposed in the winter ,but rejected on account of expense.

The State Supervision of Vaccine Farms. — The Committee on Public Health of the Massachusetts Legislature, in response to the hearing at which committees from the Norfolk and Suffolk District Societies presented petitions with the draft of a bill to establish State farms for the production of vaccine virus, has reported, not the desired measure, but a bill to place "all vaccine institutions in the commonwealth under the supervision of the State Board of Health." Such an act, if passed, will make the last state of the matter worse than the present one. The bill confers no defined powers and prescribes no penalties. It establishes a supervision which does not supervise, and private institutions will be the sole gainers, in being able to claim for their products State guarantee, while the public at large will be led to rest in a false security.

The Rhode Island Anti-Vaccination Bill. — The Anti-Vaccination Bill before the Rhode Island Legislature came dangerously near being passed by the House last week. Although a bill carrying such a menace to the public health was under consideration, there was such a disgraceful apathy on the part of the legislators that the House was obliged to sit for four hours with locked doors to compel the attendance of members. After a bitter discussion, the bill was finally lost on the deciding vote of the speaker. That such a proceeding could have occurred in a civilized community in the year 1894 is not a fact to be passed over lightly. If anything marks the true advance of a community towards a higher plane of social enlightenment, it is the attention which such a community pays to questions of public sanitation and hygiene. The average community is not overprotected by proper and sensible statutes regarding public health; but if there is one such, it is beyond question the enforcement of vaccination. To abolish any such regulation is to step back two centuries.

Condition of the Mather Schoolhouse. — The Committee appointed by the Boston School Board to inquire into the sanitary condition of the Mather Schoolhouse, in view of the numerous cases of contagious disease among the pupils during the early winter, has reported as follows: "The Mather Schoolhouse is an old building, far too small for the number of rooms into which it is divided; the lot is about one-half the size of an ordinary schoolhouse lot. Each class of fifty-six pupils is occupying floor space equal to about two-thirds the area of a modern schoolroom. The windows in the rear of the school building are close to the sanitaries. The windows of the police station, which ventilate the cells, open on the schoolhouse-yard and emit foul odors a few feet from the schoolhouse windows.

The Sixty-first Year of the Boston Lying-in Hospital. — The annual report of the Boston Lying-in Hospital for 1893 shows a continued high record of usefulness. The year just closed is the first completed in the finished new hospital, and the building has proved in every way to be admirably adapted for its purposes. Five hundred and one women were treated in the hospital, an increase of one over 1892. There were 505 children born during the year. In the Out-Patient Department 1,352 women were cared for — an increase of 274. Out of this total of 1,853 patients only 4 died, a mortality of less than one-quarter of one per cent. One woman died in the hospital in convulsions from chronic Bright's disease twenty-eight days after entrance. Among the out-patients two women died of pulmonary embolism and one of eclampsia. In addition to these, three out-patients were sent to the general hospitals suffering from septicæmia: one recovered, one died from mania, and one of old cardiac and pulmonary disease. Certainly such a record is one to be proud of. The work, especially among the out-patients, has increased so much that the number of house-officers has been raised to three — each officer now serving two months as junior in the house, two months as assistant physician to out-patients, and two months as senior house officer. The house-patients were 206 Americans and 295 foreigners. Three hundred and eight were married, 193 single. The training-school for nurses gave diplomas to fifteen graduates.

NEW YORK.

Vaccination Required of the Crews of Netherland Steamers. — Dr. Jenkins, Health Officer of the port, has notified the Netherlands line, two of whose steamships have recently arrived with cases of small-pox on board, that their vessels will not be allowed to enter the port of New York unless their crews have been vaccinated before leaving Rotterdam. He has also notified the United States Consul at Rotterdam that clearances for New York should not be given to the Netherlands line steamships until this provision has been carried out and until disinfection of the persons of all their passengers and seamen has been made.

Mortality. — The general health of the city continues unusually good for this season of the year. During the week ending April 14th there were reported 833 deaths, which was 21 less than in the previous week, and represents an annual death-rate of 22.37 per thousand of the estimated population. The cold and stormy weather had apparently some effect in increasing the mortality from pneumonia, which caused 125 deaths, a larger number than occurred from any other one disease. Diphtheria caused the largest number of deaths among the contagious diseases, 41. The mortality from scarlet fever amounted to 20, and from small-pox, to 7. During the week 1,012 births were reported.

◆

Miscellany.

VACCINATION IN THE JAPANESE NAVY.

The annual report of the health of the Imperial Japanese Navy for the twenty-fifth year of Meiji (1892), just published, gives some interesting details as to the success or failure of over 5,000 cases of vaccination.

Of the vaccinations for the first time, 38 were successful and 65 unsuccessful (36.89 and 63.11 per cent.); of the cases vaccinated for the second time, 220 were successful and 457 failed (32.50 and 67.50 per cent.); of third vaccinations, 404 succeeded and 973 failed (29.34 and 70.66 per cent.); of fourth vaccinations, 386 took and 854 failed (31.13 and 68.87 per cent.); of fifth vaccinations, 195 were successes and 562 failures (25.76 and 74.24 per cent; of those vaccinated for the sixth time or over, 141 were successful and 498 unsuccessful (22.07 and 77.93 per cent.). In cases in which there was an uncertainty as to scars from small-pox, 119 vaccinations took and 193 failed. In all there were 1,503 successes and 3,602 failures, a percentage of 29.44 and 70.56 respectively.

The ratio of success or failure per hundred cases of vaccination during the period of nine years from 1883 to 1891 was 38.98 and 61.02 for all cases; the ratios for the various classes of first, second, third, etc., vaccination being 58.68 and 41.32, 46.80 and 53.20, 35.57 and 64.43, 32.36 and 67.34, 28.25 and 71.75, 26.83 and 73.17.

This last series particularly shows that while the chance of successful vaccination steadily diminishes with each repetition, namely, from 58 to 26, there is still more than one chance in four that even a sixth vaccination will take — a fact which should emphasize the importance of a general revaccination of persons of all ages at the time of any public need.

◆

TAPPING OF THE LATERAL VENTRICLES.

No longer abashed by the fear of entering the peritoneal cavity the surgical Charmides now seeks to penetrate other sanctuaries — even into the inmost recesses of the brain. Tapping through a fontanelle for hydrocephalus is no new procedure; but it is only within a few years that any technical perfection has been reached in withdrawing fluid from an overdistended cerebral ventricle. Dr. Frank, of Chicago, reports[1] two interesting cases of his own, in which the results obtained were sufficiently marked to justify the operation, although both patients died. One was a case of acute hydrops ventriculi resulting from severe injury to the head with multiple fractures of the base, which were made out post-mortem only. After trephining, the ventricle was opened by an aspirating needle corresponding to a No. 3 catheter (American scale), and about three ounces of fluid withdrawn. There was considerable relief from the pressure symptoms. The second case was one of idiocy following hydrops ventriculorum due to cerebro-spinal meningitis.

---

[1] Annals of Surgery, April, 1894.

After reviewing the history of this radical though rational procedure and discussing the surgical ease and safety with which it can be done, he draws the following conclusions, which are of interest:

"Trephining and tapping the lateral ventricles —

"(1) For distention of the ventricles from acute, simple or tubercular meningitis, is a therapeutic measure clearly indicated, and other things being equal, promises recovery.

"(2) For effusion of blood into the ventricles from trauma or disease, makes recovery a possibility.

"(3) For abscess, involving the ventricles, is immediately and imperatively demanded.

"(4) For effusion into the ventricles, from brain tumors, may afford relief to symptoms.

"(5) For chronic hydrocephalus, moderate distention of the ventricles, without enlargement of head, may afford relief.

"For chronic hydrocephalus, great distention of ventricles, enlargement of head, will lead to a fatal result."

◆

SURGICAL TREATMENT OF PULMONARY CAVITIES.

The surgical treatment of pulmonary cavities is a department of therapeutic technique which has much to commend it to careful attention. While experiments upon animals and a few remarkable cases have shown that considerable portions of lung tissue may be removed without serious impairment to health, there has been great hesitancy in applying surgical treatment to cases of pulmonary disease which are properly open to it.

In a paper read before the New York State Medical Association, N. Pendleton Dandridge, M.D., of Cincinnati,[1] gives the following conclusions concerning operative treatment:

(1) A certain number of lung cavities can be successfully dealt with by incision and drainage.

(2) Tubercular cavities in the lower portion of the lungs — if single and superficial, and the general condition of the patient permits — should always be opened. Cavities at the apex should only be opened where free and persistent fetid expectoration is present, and has resisted treatment, and the rest of the lung is not involved.

(3) Abscess, gangrene and hydatid cyst should be opened and drained whenever they can be located.

(4) Closure of the pleura should be present before evacuation of a cavity is attempted.

(5) In cases of pyopneumothorax the fistulous track should be explored, and any cavity freely laid open by the cautery.

(6) Cavities that have been opened are best treated by packing with gauze, preferably iodoform.

(7) The further careful trial of such agents as iodoform, chlorine gas, and chloride of zinc, is desirable to determine as to whether the tubercular infiltration may not be modified by them.

(8) It is very desirable, for the further extension of surgical interference in pulmonary cavities, that the means of locating such cavities, and of determining their size, and the exact character of the tissue that overlies them, should be perfected by further study, and for the accomplishment of this the surgeon must look to the physician.

◆

TWO ATTACKS OF TYPHOID FEVER IN THE SAME PERSON.

The few opportunities for accurate observation of two attacks of typhoid fever in the same patient, especially under similar conditions, make reports of such cases of considerable interest.

Drs. Hand and Patek report[1] such a case from the service of the German Hospital in Philadelphia. The patient, a woman aged nineteen years, entered the hospital March 29, 1893, having been unwell for several weeks, and in bed six days. She had a typical mild attack of typhoid fever, and was discharged in good health five and a half weeks after entrance. On September 21, 1893, she was readmitted. On the ninth day she had a second attack of well-marked typhoid fever. This ran an uncomplicated course, and she was discharged in four weeks. In each attack there was enlarged spleen, gurgling in the right iliac fossa and typical rose-spots. The treatment was the same during each attack: a bath every three hours when the temperature was over 102°. During the first illness she had forty-three baths, and in the second thirty-eight. The temperature reached normal on the same day on each occasion.

◆

THE MUÑIZ COLLECTION OF SKULLS.[2]

The nineteen trephined skulls selected from the large collection of over a thousand crania gathered by Señor Manuel Antonio Muñiz, M.D., Surgeon-General of the Peruvian Army, form the largest and most instructive collection of specimens of primitive trephining thus far brought together. They show distinctly three types of operation.

The first is that in which a rectangular button was removed by means of four linear incisions made in parallel pairs intersecting at right angles. The incisions are narrow, v-shaped in cross-section, and gradually increasing in depth from ends to centre, thus indicating that the instrument was a pointed bit of stone or arrow-head held vertically and operated by reciprocal motion. This type of operation is rude and the resulting traumatism is jagged, each incision extending perhaps half an inch beyond the button at each extremity. There is no indication of the purpose of the operation of this type in any case, and nothing to suggest that if the operation was ante-mortem the individual survived.

In the second type of operation the incision was evidently made also by a rudely-pointed instrument, probably of stone, held vertically and moved reciprocally; but as the cutting reached and penetrated the inner table, the locus of incision was moved forward and at the same time the direction of the sawing was changed so as to produce a rudely-curved cut and, when two such incisions were made, an irregularly elliptical button.

---

[1] Annals of Surgery, February 1, 1894.

[1] Medical News, April 14, 1894.

[2] Bulletin of the Johns Hopkins Hospital, vol. v, No. 37.

The third type of operation was performed largely or wholly by scraping in such manner as to remove the outer table and diploë and reduce the inner table to a feather-edge. Some of the examples suggest that the scraping, which may easily have been effected with stone instruments and gives no indications of the use of metal, represents the final part of an operation began by the curved incision. The deftness of the operators may be inferred from one specimen in which, although the skull is fully a quarter of an inch thick, the parallel incisions are not more than three-eighths of an inch apart. Several of the skulls show that the patient had survived one or even two trephinings only to perish during a later operation.

The collection is of especial value as demonstrating certain points heretofore obscure, and warranting the following conclusions: (1) That the operation was ante-mortem, since five individuals out of the nineteen represented certainly, and two or three more probably, survived one or more operations; and (2) that the trephining was surgical. Two provisional conclusions of importance are also indicated by the collection: (3) that the operation was used in a medical way to relieve a general pathologic condition; and (4) that the operation was, as indicated by the total absence of marks of metallic instruments, anterior in date to the Spanish invasion and thus essentially prehistoric. Two of the crania are to be given to this country, one to the Bureau of American Ethnology and one to the Army Medical Museum.

◆

THERAPEUTIC NOTES.

To Render Castor Oil Palatable. — An ordinary dose of castor oil may be rendered odorless and tasteless by simply shaking it thoroughly in a flask with warm milk.

Treatment of Measles by Eucalyptus Inunction. — Dr. C. E. Shelly reports[2] the use of eucalyptus inunction in a series of cases of measles. The favorable reports of other observers were not confirmed. The total number of cases observed was seventy-three. Of these, five received the treatment by eucalyptus. Inunction was begun directly they came under observation, night and morning for three days, and subsequently once a day for the first week. Eucalyptus emulsion was given internally, some of the fluid was placed in saucers about the room, and when cough was troublesome eucalyptus inhalations were given. The results were not at all favorable. There was unusual drowsiness: "all five patients sleeping almost constantly, being aroused with some difficulty to take their food, and remaining awake only just long enough to consume it." All five had tongues thickly coated with white fur, contrasting markedly with the tongues of others under different treatment. The eruption of the rash was delayed in four of the cases and in all there was a relatively prolonged pyrexia. Convalescence was in all five cases more tardy than usual, and desquamation much more profuse. In general the symptoms "seemed to indicate an undue retention of morbid products, rather than that speedy and complete destruction of the infective poison which the advocates of this treatment claim as one of its special advantages."

---

[2] Practitioner, November, 1893.

Correspondence.

THE MASSACHUSETTS HOMŒOPATHIC MEDICAL SOCIETY LUNCHEON.

Boston, April 14, 1894.

Mr. Editor: The following appears in your number of April 12, 1894: "The programme of the annual meeting of the Massachusetts Homœopathic Medical Society included a luncheon at the State Insane Hospital at Westborough."

I wish to say that the luncheon alluded to was paid for by the Massachusetts Homœopathic Medical Society, and not by the State Insane Hospital at Westborough.

Respectfully yours,

Charles R. Codman,

Chairman of the Board of Trustees of the Westborough Insane Hospital.

RECORD OF MORTALITY

For the Week ending Saturday, April 7, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diphtheria and croup.	Scarlet fever.	Measles.
New York . .	1,891,306	850	339	17.76	18.36	7.92	2.52	3.00
Chicago . . .	1,438,000	—	—	—	—	—	—	—
Philadelphia .	1,115,562	440	146	12.88	10.81	6.21	2.07	1.38
Brooklyn . .	978,394	400	181	18.75	18.75	7.00	3.50	2.25
St. Louis . . .	560,000	—	—	—	—	—	—	—
Boston . . .	487,397	222	66	8.10	16.20	3.60	1.35	—
Baltimore . .	500,000	—	—	—	—	—	—	—
Washington .	308,431	139	56	10.08	23.76	2.16	.72	—
Cincinnati . .	305,000	—	—	—	—	—	—	—
Cleveland . .	290,000	108	49	15.64	11.96	1.84	4.60	4.60
Pittsburg . .	263,709	—	—	—	—	—	—	—
Milwaukee . .	250,000	73	16	22.39	15.07	6.85	—	6.85
Nashville . .	87,754	24	9	8.32	4.16	—	4.16	—
Charleston . .	65,165	32	8	6.26	3.13	—	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	96,217	25	11	16.00	20.00	4.00	—	4.00
Fall River . .	87,411	—	—	—	—	—	—	—
Lowell . . .	87,191	34	11	2.94	32.34	2.94	—	—
Cambridge . .	77,100	25	9	20.00	8.00	4.00	4.00	—
Lynn	62,656	19	2	21.04	10.52	—	—	—
Springfield . .	48,684	18	3	11.11	27.77	—	—	—
Lawrence . .	48,355	—	—	—	—	—	—	—
New Bedford .	45,886	19	11	10.52	15.78	10.52	—	—
Holyoke . . .	41,278	—	—	—	—	—	—	—
Salem	32,233	16	1	—	6.25	—	—	—
Brockton . .	32,140	9	2	11.11	66.66	—	—	—
Haverhill . .	31,396	13	6	—	15.38	—	—	—
Chelsea . . .	30,264	9	3	—	11.11	—	—	—
Malden . . .	29,394	7	0	14.28	14.28	-	14.28	—
Newton . . .	27,556	6	3	16.66	16.66	16.66	—	—
Fitchburg . .	27,146	8	1	—	—	—	—	—
Taunton . . .	26,972	10	1	20.00	20.00	—	—	—
Gloucester . .	26,688	10	3	10.00	—	—	—	—
Waltham . .	22,058	3	2	33.33	—	—	33.33	—
Quincy . . .	19,642	6	2	—	—	—	—	—
Pittsfield . .	18,802	2	1	50.00	—	—	—	—
Everett . . .	16,585	7	1	14.28	—	14.28	—	—
Northampton .	16,331	3	0	—	—	—	—	—
Newburyport .	14,073	6	2	—	—	—	—	—
Amesbury . .	10,920	3	1	33.33	33.33	—	—	33.33

Deaths reported 2,597: under five years of age 957; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 382, consumption 328, acute lung diseases 317, diphtheria and croup 147, scarlet fever 60, measles 51, diarrhœal diseases 28, typhoid fever 26, whooping-cough 20, cerebro-spinal meningitis 15, small-pox 14, erysipelas 9.

From diarrhœal diseases New York 11, Brooklyn and Milwaukee 4 each, Philadelphia, Washington, Cambridge and Taunton 2 each, Cleveland 1. From typhoid fever Philadelphia 7, New York 6, Milwaukee 3, Brooklyn and Boston 2 each, Washington, Nashville, Worcester, Cambridge, Springfield and Brockton 1 each. From whooping-cough Brooklyn 6, New York 5, Philadelphia, Cleveland and Nashville 2 each, Boston, Washington and Charleston 1 each. From cerebro-spinal meningitis Washington 5, New York, Cleveland and Lynn 2 each, Worcester, Somerville, Gloucester and Pittsfield 1 each. From small-pox Brooklyn 7, New York 5, Boston 2. From malarial fever Brooklyn 5, New York 4, Philadelphia 2, Springfield 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending March 31st, the death-rate was 20.0. Deaths reported 4,010: acute diseases of the respiratory organs (London) 347, measles 210, whooping-cough 158, diphtheria 96, scarlet fever 51, fever 46, diarrhœa 40, small-pox (West Ham 5, Birmingham 3, Bristol, Manchester and Oldham 1 each) 11.

The death-rates ranged from 12.2 in Portsmouth to 25.8 in Salford; Birmingham 20.0, Bradford 17.2, Bristol 14.5, Croydon 19.6, Halifax 21 3, Hull 18.4, Leeds 15.0, Leicester 19.8, Liverpool 24.5, London 20.8, Manchester 22.7, Newcastle-on-Tyne 21.2, Norwich 19.2, Nottingham 20.8, Plymouth 23.7, Sheffield 18.6, Sunderland 19.9, Swansea 16.9, West Ham 15.8.

METEOROLOGICAL RECORD.

For the week ending April 7th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S.. 1	29.68	55	63	47	54	46	50	W.	N.W.	14	15	O.	O.	
M.. 2	30.00	38	46	31	56	32	44	N.	N.	14	15	O.	C.	
T.. 3	30.31	34	46	23	50	50	50	N.W.	S.W.	10	16	C.	C.	
W. 4	29.95	42	53	32	63	90	76	S.	S.W.	17	17	O.	R.	0.31
T.. 5	29.86	52	56	47	74	59	66	W.	W.	18	12	C.	C.	0.13
F.. 6	29.96	42	45	38	70	54	62	W.	N.	9	12	O.	O.	0.02
S.. 7	30.16	41	32	30	47	55	51	N.W.	S.	10	15	C.	O.	
☞	29.99		49	35			63							0.46

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 7, 1894, TO APRIL 13, 1894.

Leave of absence for one month is hereby granted **Captain Ogden Rafferty**, assistant surgeon, with permission to apply for an extension until the 20th of May next.

The following named officers of the Medical Department will report in person for temporary duty until further orders, as follows: **First-Lieut. Charles Willcox**, assistant surgeon, to the commanding officer, Angel Island, California. **First-Lieut. Charles E. B. Flagg**, assistant surgeon, to the commanding officer, Alcatraz Island, California.

THE INTERNATIONAL ASSOCIATION FOR THE ADVANCEMENT OF HYGIENE.

The Ninth Exposition of Hygienic and Alimentary Products, under the auspices of this Society will be held at Rome, in June next, in the Palais des Beaux-Arts, under the Presidency of Dr. Baccelli, Minister of Public Instruction.

Authors and editors of publications relative to hygiene are requested to send copies of their works to M. Louis De Vriese, Administrator-General, Rue des Régnesses 3, à Gaud, Belgium.

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The next lecture will be given on Wednesday evening, April 25th, by Assistant Professor T. M. Rotch, at 8 o'clock. Subject, "Infant Feeding." Physicians are cordially invited.

SOCIETY NOTICES.

Boston Society for Medical Improvement. – A regular meeting of the Society will be held at the Medical Library, No. 19 Boylston Place, on Monday, April 23, 1894, at 8 o'clock, P. M.

Dr. A. Thorndike: "Acute Arthritis in Infants, in the Hip-Joint." Discussion opened by Drs. E. H. Bradford and H. L. Burrell.

Dr. G. H. Washburn: "An Interesting Obstetrical Case." Discussion by Drs. J. G. Blake, C. E. Stedman, E. Reynolds.

John T. Bowen, M.D., *Secretary.*

The Boston Medico-Psychological Society will hold its next meeting on Thursday evening, April 19, at eight o'clock, at the University Club, 270 Beacon Street, Drs. Walter Channing, R. T. Edes, E. V. Scribner and C. E Woodbury, entertaining.

The Society invites the Faculty of the Harvard Medical School and the Staffs of the Massachusetts General Hospital and City Hospital to be present.

Dr. H. M. Hurd, of Baltimore, will read a paper entitled, "Some of the Mental Disorders of Childhood and Youth."

Members are requested to inform the Secretary whether or not they can be present.

H. C. Baldwin, M D., *Secretary.*

Pennsylvania State Medical Society.— The annual meeting of the Pennsylvania State Medical Society will be held in Philadelphia, May 15, 16, 17 and 18, 1894. The annual addresses before the various sections will be given by the following gentlemen: "Medicine," W. S. Foster, M.D., Pittsburg; "Surgery," G. D. Nutt, M.D., Williamsport; "Obstetrics," E. E. Montgomery, M.D., Philadelphia; "Mental Disorders," T. M. T. McKennan, M.D., Pittsburg; "Hygiene," J. H. Wilson, M.D., Beaver; "Ophthalmology," Geo. E. de Schweinitz, M.D., Philadelphia.

RECENT DEATHS.

Daniel E. Marston, M.D., died in Monmouth, Me., April 14th, aged fifty-eight years. He graduated from Bowdoin in 1859 and served in the army during the rebellion.

Corydon C. Foid, M.D., for forty years Professor of Anatomy and Physiology in the University of Michigan, died at Ann Arbor, April 14th, aged eighty-one years.

Joseph H. Workman, M.D., died April 15th, aged eighty-nine years. He was the first President of the Ontario Medical Council and was for twenty-five years Superintendent of the Toronto Asylum for the Insane.

Sebastien Didier Lheritier, M.D., died in Paris recently, aged eighty-five years. He was private physician to Napoleon III and a prominent member at the court during the Second Empire. He was inspector of the mineral springs at Piombières.

BOOKS AND PAMPHLETS RECEIVED.

Pernicious Malarial Fever. By George Dock, M.D., of Ann Arbor, Michigan. Reprint. 1894.

Charaka-Sambita. Translated into English and published by the Avinash Chandra Kaviratna. Part VII. Calcutta. 1894.

The Johns Hopkins Hospital Reports, Vol. IV, No. I. Report on Typhoid Fever. Baltimore: The Johns Hopkins Press. 1894.

Faradism as an Analgesic in the Loosening of Joint-Adhesions. By Douglas Graham, M.D., Boston, Mass. Reprint. 1893.

The Hospital at 24 McLean Street, A Statement of its History, its Managers, its Doings and the Result of its Work in 1893. The Sixty-first Year of the Boston Lying-in Hospital. Boston. 1894.

Lectures on Surgery. By David W. Cheever, A.B., M.D (Harv.), Professor of Surgery, Emeritus, in the Medical School of Harvard University; Senior Surgeon of the Boston City Hospital, etc. Boston: Damrell & Upham. 1894.

Clinical Manual of the Study of Diseases of the Throat. By James Walker Downie, M.B., Fellow and Examiner in Aural Surgery for the Fellowship of the Faculty of Physicians and Surgeons, Glasgow. New York: Macmillan & Co. 1894.

Transactions of the American Dermatological Association at its Seventeenth Annual Meeting held at Milwaukee, Wis., on the 5th and 6th of September, 1893. Official Report of the Proceedings by George Thomas Jackson, M.D , Secretary. New York. 1894.

Gonorrhœa; Being the Translation of Blenorrhœa of the Sexual Organ and its Complications. By Dr. Ernest Finger, Docent at the University of Vienna. Third revised and enlarged edition, with seven full-page plates in colors and thirty-six wood engravings in the text. New York: William Wood & Co. 1894.

A Manual of Practical Obstetrics. By Edward P. Davis, A.M., M.D., Professor of Obstetrics and Diseases of Children in the Philadelphia Polyclinic; Clinical Lecturer on Obstetrics in the Jefferson Medical College; Clinical Professor of Diseases of Children in Woman's Medical College, etc. Second edition, revised and enlarged, with 134 illustrations and 16 full-page plates, several of which are colored. Philadelphia: P. Blakiston, Son & Co. 1894.

Methods of Pathological Histology. By C. von Kahlden, Assistant Professor of Pathology in the University of Freiburg. Translated and edited by H. Morley Fletcher, M.A., M.D., Cantab., M.R.C.P., Casualty Physician to St. Bartholomew's Hospital and Assistant Demonstrator of Physiology in the Medical School. With an introduction by G. Sims Woodhead, M.D., Director of the Laboratories of the Conjoint Board of the Royal Colleges of Physicians (Lond.) and Surgeons (Eng.). London and New York: Macmillan & Co. 1894.

time she not only took long walks, but did a good deal of mountain climbing, without any unfavorable effect. She is forty-eight years old, and has had a large tumor for many years, with, at times, profuse hæmorrhage, which has not yet wholly ceased.

As to the treatment of the anæmia and debility, which are the results of the long continued loss of blood, I have nothing to say which would justify me for trespassing any longer upon your attention.

The surgical treatment of uterine fibroid has until lately been rarely attempted, on account of the large mortality which attended it; but the great improvements in abdominal surgery which have accompanied the adoption of antiseptic methods, justify the hope that many cases of this disease in which life, even if not in actual danger, is an almost intolerable burden, may be permanently relieved by such means.

THE NON-SURGICAL TREATMENT OF CHRONIC PELVIC INFLAMMATIONS AND THEIR SEQUELÆ.[1]

BY F. H. DAVENPORT, M.D.

Some of the most perplexing problems in gynæcology are the common ones which meet us in the course of our every-day practice. There are, of course, the grave cases where the physician is called upon to decide the question of an operation involving life and death, but these, fortunately, are rare. On the other hand, the majority of the cases we are called upon to treat are of such a nature that the appropriate methods of treatment suggest themselves, and the consensus of medical opinion, justified and backed up by experience, approves the choice. The retroversion is rectified, and the displaced organ held comfortably in its normal position by a pessary. The lacerated cervix, causing a long train of local and general symptoms, is sutured, and the troublesome symptoms gradually disappear. The rupture of the perineum which has destroyed the integrity of the pelvic floor is repaired, with gratifying result. A uterine polypus is snipped off, and a troublesome, perhaps dangerous, hæmorrhage is instantly checked.

These are familiar examples of that class of cases where the trouble instantly suggests the appropriate measures for its relief. They are the most satisfactory to the physician and the patient as well.

Between these two sets of cases occur in moderate frequency those where there is no well-recognized line of treatment, and where the consultant is obliged to choose, out of a large variety of therapeutic measures, that which seems best adapted to the case, with the hope that it may afford some measure of relief.

These rather trite general considerations have been suggested to my mind by my experience in the last few years in the treatment of the secondary results of chronic pelvic inflammations. Not that I feel that I can claim any new or royal road to success in such unpromising cases, but with enlarged opportunity and experience one unconsciously weeds out what seems superfluous, and in following large numbers of cases for a length of time, can estimate final results with a more unprejudiced mind. It is also with a hope of learning from other men what they have found of value in such cases that I have ventured to discuss this rather threadbare subject.

And, first, I would like to define as clearly as I may what I mean by chronic pelvic inflammations and their sequelæ.

Pathologically, we can in general say that the starting-point is some more or less extensive localized pelvic peritonitis. As a consequence of this, we have adhesions between the layers of the peritoneum investing the pelvic viscera, resulting in displacements and thickenings. These processes may be so extensive that the whole pelvis is affected, or they may be confined to one side, or to a single limited area of one side. Thus the uterus, ovaries, tubes and anterior wall of the rectum may be so matted together that they form one mass, in which the various organs are indistinguishable by bimanual examination, or there may be present but a single thickened point to mark the presence of a former inflammation. These are the cases which ten and fifteen years ago were all classed under the head of pelvic cellulitis. We now recognize that they are the effects of a localized pelvic peritonitis, the cause of which may be obscure, but which in the majority of cases is the result of the extension of some inflammatory process from the uterus through the tubes to the peritoneum. Gonorrhœal abortions, septic processes, the result of meddlesome or uncleanly treatment, or trauma, are the most common sources of such affections. While adhesions are the most evident results of the peritonitis, yet the uterine, tubal and ovarian conditions which precede or accompany the peritonitis go to make up the complete pathological picture, and may be considered as part of the disease to be treated. It is the general condition of the whole pelvic organs, the congested uterus, the catarrhally-affected tube, the adherent, prolapsed ovary, and the thickened, glued-together layers of the peritoneum, which I consider under the title of chronic pelvic inflammations and their sequelæ.

As a rule, these women come to us only when their symptoms have existed so long and have become so burdensome that relief is imperative. I need not go into a detailed account of the symptoms complained of. They are those common to the majority of pelvic lesions, and there is nothing pathognomic among them. Even a history of any acute attack is often wanting. In a general way they are: pain of all varieties and degrees of intensity, menstrual disturbances, leucorrhœa and reflex functional disorders. To attempt to describe them in detail would be to give a list of almost all the possible ills that "flesh is heir to."

On examination, what do we find? Very often there is so much sensitiveness that our examination is very unsatisfactory. We may find, and perhaps this is as common a condition as any, a congested, sensitive uterus in a position of retroversion or flexion, partially fixed or quite immovable, and very probably the seat of a catarrhal endocervicitis. In the neighborhood, either at the sides or behind, are sensitive swellings. What these are it is usually impossible to say at our first examination, for the extreme sensitiveness precludes all possibility of making any differential diagnosis.

Such is the clinical aspects of these cases, and such the anatomical condition as far as our examination can reveal it. I purposely in this paper exclude pyosalpinx, believing that for that condition palliative measures rarely are sufficient, and that the line of treatment to be outlined later has in it an element of danger.

---

[1] Read before the Obstetrical Society of Boston, February 10, 1894.

Suppose such a patient presents herself for treatment, and on examination we find the complex conditions which I have described. All that we can say certainly is that the uterus is displaced backwards and bound down, and that in the immediate neighborhood there are sensitive swellings. In the absence of direct evidence that we have pus tubes or ovarian or parovarian tumors to deal with, I claim that our prognosis, though guarded, should not be discouraging, and that our treatment should be conservative.

As the main obstacle to a more accurate diagnosis is the sensitiveness, our first efforts should be towards overcoming this. No agent has proved half so efficacious in my hands towards this end than glycerine. The hot-water douche cannot begin to compare with it in efficacy, first, because the principle on which it acts is not the correct one, and second, because its effect is not so lasting. The douche, by contracting the blood-vessels, drives the blood out of the parts, to be sure, but probably acts only on the surface and a short distance below it, and fails to reach the deeper tissues. Glycerine, from its affinity for water, draws from the blood-vessels the serum, and thus, by directly unloading those in the immediate vicinity, promotes a more regular and natural circulation in the part. To accomplish this end, however, a large amount of glycerine must be used, and in such a way as to be easily borne. For this purpose I use a prepared wool, which has the great advantage over cotton that it is very elastic, does not mat, and will hold a large amount of glycerine in its meshes. This I roll up into such a sized tampon as will suit the case, tie a string about it, and thoroughly soak it in glycerine. Such a tampon will need half an ounce to do thoroughly good work. I place this in the vault of the vagina, and direct the patient to wear it for forty-eight hours if it is comfortably borne. If it becomes uncomfortable, she may remove it and take a douche.

A tampon of this size will usually cause enough watery discharge to necessitate the use of from four to six napkins in the first two days. The discharge then usually stops, and the tampon ceases to be of use except as a moderate support. The fact that it is of some value as a support is a second respect in which it is of more advantage than the hot-water douche.

The third day I repeat it, and each third or fourth day until the sensitiveness is diminished enough to admit of the second step in the treatment.

Painting the vault of the vagina with Churchill's iodine is of considerable value as a secondary means of relieving pain and congestion. I have, however, found ichthyol much more effective as an analgesiac, and it can be very conveniently combined with the glycerine treatment. A small wool tampon soaked with a mixture of ichthyol and glycerine, one part to eight, is first placed against the cervix, and the larger tampon inserted after it. I cannot say that I have observed the melting away of inflammatory products under the use of ichthyol which have been reported by some writers, but its effect on pain has been very marked.

The second indication for treatment is to restore the mobility of the uterus, and to stretch or break up the adhesions. This can only be attempted after the sensitiveness has been materially lessened. The method may be conveniently described as consisting of two steps: first, putting the adhesions on the stretch, and second, keeping them so. In the first place, I would warn against the use of the sound or any repositor to replace the uterus. Such an instrument used for such a purpose is uncertain and dangerous. There is no better or safer repositor than the finger. In order to bring the adhesions on the stretch, the anterior lip of the uterus is seized with the double tenaculum and moderate traction made on it, while one or two fingers of the left hand, inserted into the posterior cul-de-sac, gently lift the uterus and carry it forward. In this way the adhesions can usually be felt or the inflammatory swellings palpated. A very effective massage may now be practised, of short duration, but with gradually increasing force, gently putting the tight bands on the stretch, or rubbing the hard masses with the tips of the fingers. I lay great stress in the treatment of these conditions on this lifting and massage of the uterus, and the inflammatory products in its immediate neighborhood. I am confident that I can get good results in much less time than I could formerly by packing alone.

When the uterus has been raised as much as is safe, the vagina is then thoroughly packed, just as firmly as the patient can bear, and the tampon left three, or at the most, four days. I usually pack a second time before repeating the lifting and massage, as it is apt to cause sensitiveness if it is repeated at too short intervals.

There will come a time in the treatment of some of these cases when further attempts at restoring the uterus to its normal position seem useless. The adhesions are too firm to be separated, and though there is some improvement, yet the pelvic conditions are not yet normal. Sometimes the uterus is still retroverted and the inflammatory thickenings still prominent. To suspend treatment here is to lose all we have gained, and the most satisfactory way to prevent a return to the former condition is the use of a pessary.

Two or three years ago my attention was called to an article in the *American Journal of Obstetrics* for 1891, by Dr. Sarah E. Post, on the use of the inflated ring-pessaries, and as their principle seemed to me to be a good one for the class of cases which I am now describing, I determined to adopt it. I came to the conclusion, however, after a short trial, that the solid elastic rings of large calibre, did better than the inflated pessaries, as giving more efficient support, and not causing trouble by gradually collapsing. These rings come of several sizes. There are two varieties, the solid rubber ones, and those composed of a spiral spring covered with rubber. The former are very much to be preferred, as after having been used a while the latter become wrinkled, and are apt to cause irritation.

I have found this pessary of great value in these cases. In the first place, it supports and elevates the uterus. This it does without causing as much pressure on any particular part of the vaginal vault as do the pessaries constructed on the Hodge model, which are very apt to press on just the most sensitive points; nor does it push the uterus up quite so high as the others, which in an adherent uterus is an advantage. It also relieves pain by immobilizing the organ to a certain extent, and yet allowing more freedom of motion than a Hodge. It encircles the cervix with a firm, elastic pressure, and while yielding perfectly to the natural movements of the uterus, it prevents any sudden jar from dislocating the organ too much. A second factor in relieving the pain has to do with the circulation of

Original Articles.

OBSERVATIONS ON CASES OF FIBROID TUMOR OF THE WOMB.[1]

BY FRANCIS MINOT, M.D.

In offering some remarks on the cases of uterine fibroid which have come under my notice, I do not pretend to advance any new views as to the etiology, the symptoms or the treatment of the disease. I shall chiefly allude to certain points in connection with its diagnosis, and to some of the symptoms which appear to me to be of interest, and to indicate their practical value.

It is remarkable that a structural disease of the womb, causing a considerable enlargement of the organ, sometimes giving rise to an annoying disfigurement, especially if the patient be unmarried, and generally accompanied by a more or less profuse hæmorrhage which often lasts for years, should in many cases not only be free from danger to life, but that it should often interfere but little with the occupations and the comfort of the patient.

I regret that out of a large number of patients with fibroid tumor, who have come under my observation during a practice of forty years, I have preserved sufficiently detailed notes to be of value in only thirty-four cases. Of these, the number of patients who were, or who had been married, is twenty-one, their average age being thirty-six years. The oldest patient was fifty-two years; the youngest, twenty years old.

The age at which the first symptoms of the disease appeared in twenty-six cases of which trustworthy statements could be obtained, varied from twenty years to fifty-two years. Arranged according to decades, the first symptoms were noticed:

Between the ages of 20 and 30	in 10 cases
Between the ages of 30 and 40	in 13 cases
Between the ages of 40 and 50	in 2 cases
Between the ages of 50 and 60	in 1 case

In one case the first symptom appeared at the age of twenty years and two months; in another at twenty-two years; in another at fifty-two years. The average age was about thirty years. So far as this small number of statistics goes, it appears that the social state has but little influence in the etiology of uterine fibroid, and that the disease may appear at any period of life after twenty, perhaps most frequently between thirty and forty, and either in single or married women.

The diagnosis of uterine fibroid is in many cases comparatively easy. The combination of profuse menorrhagia, often passing into metrorrhagia, with a hard tumor connected with the uterus and felt through the abdominal wall, is usually enough to remove all doubts as to the disease. Both of these symptoms, however, may be absent.

(1) There may be absolutely no menorrhagia, or the flow may amount to no more than is often observed in patients who are free from uterine disease, as in the following case:

A lady, twenty-eight years old, single, was brought to me March 11, 1873, by her physician, in consequence of a feeling of distention in the abdomen and the discovery of a tumor in the left iliac region. There was no menorrhagia. A large, rounded tumor occupied the left pubic region, extending nearly to the navel, and a little to the right of the median line. It was irregular, but not distinctly lobular, cervix uteri very low, just beneath the pubes. The posterior region of the pelvis was filled by the tumor, as was evident by rectal examination. The tumor was somewhat movable above. August 17, 1893 (more than twenty years afterwards), the patient's physician wrote to me: "There has been occasionally some increase of menstrual flow, but never amounting to excess; she is nearly reduced to her natural size, is in fair condition and enjoys life."

April 29, 1875, I saw in consultation with the late Dr. D. H. Storer, a patient with a "large uterine tumor, divided into several distinct lobules, distending the abdomen as much as a pregnant uterus at the fifth or sixth month; no hæmorrhage; no pain."

The first symptom noticed may even be a suppression of the menses. A young woman, twenty-one years old, was brought to me by the late Dr. Snow of Newburyport, August 14, 1888. She had had no catamenia since the previous November. In all other respects her health had been good. There had been progressive enlargement of the belly. The abdomen was distended by a smooth, hard tumor, occupying its lower half, which was found by bimanual examination, to be connected with the uterus. The navel was nearly obliterated, as in pregnancy at the eighth month. No fœtal heart-beat and no placental murmur could be heard. The breasts were virginal in appearance, the hymen was intact, ballottement gave no evidence of pregnancy.

(2) As regards abdominal tumor, we must remember that this is usually absent in uterine polypus unless the latter be extremely large; and if there be no hæmorrhage, it might not be suspected. I saw, with the late Dr. A. B. Hall, June 21, 1868, a mulatto woman forty years old, who for a year previously had complained of uneasy sensations in the pelvis and a profuse vaginal mucous discharge. There was no hæmorrhage, and no abdominal tumor could be felt, but the vagina was completely filled with a firm mass, connected with the interior of the uterus by a pedicle one inch thick. The pedicle was severed close to the uterine wall with scissors, and the tumor removed with very little loss of blood. It was an ordinary fibroid, about the size of the fist. The patient did well.

An intro-mural tumor may be so small as not to be felt, either by external or internal examination, and yet give rise to much hæmorrhage. Several years ago a domestic in the family of Dr. Davidson of Gloucester, twenty-eight years old, married, had had for more than a year abundant and frequent uterine hæmorrhages. There was no tumor to be felt by Dr. Davidson, who accordingly dilated the cervix uteri with sponge tents, and detected a tumor in the uterine wall apparently about the size of a boy's marble. He sent her to the Massachusetts General Hospital, where the tumor was removed. It was an ordinary fibroid, "as large as a very large horse-chestnut." The patient did well.

The diagnosis of uterine fibroid may be obscured by the prominence of symptoms which are not characteristic of that disease. May 24, 1889, I was called to see a nursery-maid, thirty-six years old, who had always enjoyed good health. Menstruation rather free, but otherwise normal. She had never had any bladder trouble before, but on that day, on rising, she was unable to make water. After breakfast she had a movement of the bowels, as usual, but still could make no water. Although feeling uncomfortable, she took one of the children to school. In the course of a few hours, the discomfort amounted to distress, in which condition I found her at three o'clock P. M., and drew off with a catheter about two quarts of urine without any difficulty, and a tumor was felt, *per vaginam*, nearly filling the pelvis. Externally, the tumor was felt occupying nearly the whole of the supra-pubic region, and extending halfway up to the navel, with a projection towards each flank. April 11, 1890, nearly a year afterward, I was called to see her again for the same difficulty, and drew off about three pints of urine. During the interval between my two visits she had had no difficulty in micturition. She had had no unusual fatigue, and no exposure to cold. Since my previous visit, the tumor had extended upwards as far as the navel, and also downward in the pelvis; the os uteri was low down and closed, and the cervix was obliterated. The catamenia were regular, profuse, lasting eight or nine days. Quite recently I have been informed that the patient has had no farther recurrence of the bladder difficulty, and is in good health.

---

[1] Read before the Obstetrical Society of Boston, February 10, 1894.

Urgent urinary symptoms have been comparatively rare in cases of uterine fibroid under my observation, but in several instances there was more or less irritability of the bladder; several patients complained of painful and frequent micturition. One case was complicated with pelvic inflammation and cystitis. One patient had frequent micturition day and night. In another case, the first symptom noticed was frequent micturition; the patient made water every few hours during the day, and several times during the night. There was no pain in the act, but much pain if she was compelled to hold her urine long.

Interference with the functions of the rectum was reported by none of the patients of whose cases I have preserved notes.

The diagnosis between fibroid tumor of the womb and pregnancy is generally easy, though not always so, and it is hardly necessary to say that the most careful examination should be made in such cases before giving an opinion which might compromise the reputation of a patient. I have already mentioned the case of an unmarried woman whose external appearance, caused by a large uterine fibroid, was strongly suggestive of pregnancy. Another case was that of an unmarried lady, a teacher of a young ladies' school, who consulted me on account of the disfigurement caused by a large fibroid of the womb.

Cases of fibroid complicated with pregnancy are not very rare, and it is remarkable that the latter is often not interfered with, that the labor may be attended with no serious difficulty, and the child be born alive. In April, 1876, I saw with Dr. Winslow of Groton, a lady who, four weeks previously, had been confined at full time, the child being alive and well at the time of my visit. There had been some delay in the passage of the head, which was found to be caused by a fibroid growth of the size of the fist, attached by a pedicle to the posterior wall of the uterus. A few days after the labor, the patient was attacked by phlebitis of both arms and one of the legs, and she died a week after I saw her, but there seemed to be no connection between the presence of the tumor and the phlebitis.

In March, 1887, I saw a lady who had been married somewhat over a year. A short time before her marriage (the menstruation having always been remarkably regular, without pain, and normal in amount), she had noticed a tumor in the abdomen, which had remained of the same apparent size ever since. The last appearance of the menses was about three months before my visit, and the patient exhibited the usual subjective and objective symptoms of pregnancy. The tumor was smooth, rounded, hard, not tender, and was situated above the right pubic ramus, towards the iliac fossa. The upper margin was about three inches below the navel. It was somewhat movable, and was connected with the womb, as was shown by bi-manual exploration. The patient was a stranger visiting Boston, and I have not heard of her since.

Fibroid tumor of the womb may, of course, give rise to abortion. A woman twenty-six years old, who had been married eight months, consulted me January 10, 1879. She had never had menorrhagia, though frequently dysmenorrhœa, before marriage. Twice since marriage, she had suspension of the catamenia for one or two periods, followed by hæmorrhage and the expulsion of a mass. In the left iliac region was a round, hard movable body of the size of a horse-chestnut, and a large tumor occupied the left side of the pelvis, reaching as high as the brim, connected with the uterus and with the smaller one. There was no external enlargement from the tumor.

Of the symptoms connected with fibroid disease of the womb, perhaps the most serious, certainly the most rebellious to treatment and the most annoying to the patient, is metrorrhagia. Patients are sometimes encouraged to believe that after the period of the menopause, there will be a permanent suppression of the hæmorrhage. This, no doubt, often occurs, but in my experience there have been several exceptions to the rule, and I have at present four such under my observation. A remarkable feature of the symptom, in many cases, is its capricious behavior. It may long resist treatment, and then, after treatment has been abandoned, it may cease spontaneously for years, only to return again, to the despair of the patient and of the doctor. In two cases which have been under my observation for many years, there have been intervals of complete suspension of hæmorrhage lasting in one patient, for eight years, and in the other for two years, apparently not due to treatment; but in each there was a subsequent return of the bleeding. In some cases, the hæmorrhage is replaced by a profuse serous discharge, which is hardly less annoying to the patient.

As a rule, the treatment for hæmorrhage from uterine fibroids is unsatisfactory. It is rarely that a patient is cured, though in many cases, an arrest of the bleeding for a longer or shorter time may be obtained. Among the various remedies which have been recommended, ergot has the highest reputation. It will often check the hæmorrhage temporarily, but I have not met with an instance of cure following its use, unless in patients who have nearly reached the period of the menopause, when there is in many cases a spontaneous cessation of the flow. Chian turpentine has also in my hands proved a valuable remedy, perhaps superior to ergot, but I have not had enough experience in its employment to be sure of this. To be of any use, these remedies must be given in full doses and several times a day.

We should suppose that restriction from active exercise would be essential in the treatment of the hæmorrhage, but two of my patients assured me that exercise had no effect in increasing it. One of them had spent several weeks in the Adirondacks, during which were swollen, red, infiltrated with bloody fluid, large vesicles beneath the epidermis, and in places on the calf of leg the epidermis had desquamated. The arteries of both extremities occluded by thrombi. On the right side the thrombus extended up to the middle of the femoral artery; on the left side up to the popliteal. The occluded arteries were smooth, the thrombi tightly adherent.

On microscopic examination of the peritoneal exudation, colon bacilli were found in large numbers, and cultures from the peritoneum and from the other organs showed a general infection with colon bacilli. No other organisms were present in the cultures.

This case is of interest from the extent of the embolism, and also as showing peritonitis certainly produced by the colon bacilli, with a general infection of the other organs. From the examination of the intestine and the superior mesenteric artery, it would seem probable that there were here two emboli of different dates. The embolus towards the end of the artery, corresponding to the area of beginning hæmorrhagic infarction and necrosis, is evidently of older date than the one occluding the artery nearer its origin.

Case III was from an autopsy in the Massachusetts Hospital for which I am indebted to Dr. W. F. Whitney. The clinical history is as follows:

A. B., seaman, aged sixty-two. At age of twenty, in bed for six months with general muscular tenderness and inability to use arms and legs. During this time there was some dyspnœa and slight palpitation. Since then he has had many similar painful attacks, but no cardiac symptoms until six months ago, when there was a sense of constriction in the region of the heart and marked shortness of breath. This condition increased constantly, and finally compelled him to cease work. Orthopnœa and anasarca then appeared, and have existed for the last month. When he entered the hospital the skin was somewhat jaundiced, and the respiration had at times the general Cheyne-Stokes characteristics. Four days later the abdomen became quite tender. On the following day the tenderness increased, and frequent loose stools occurred. There was hæmoptysis with physical signs of consolidation, and the pulse became very rapid and irregular. Four days later death took place. The abdominal pain and diarrhœa, with some elevation of temperature, persisting until the end.

I showed the mesenteric artery, with a portion of the intestine, from this case. Almost the entire small intestine was in a condition of hæmorrhagic infarction. The bowel contained a thin hæmorrhagic fluid; the walls of the intestine were greatly thickened from hæmorrhage. On the peritoneal surface of the intestine everywhere there was a very slight fibrinous exudation. The mesenteric artery from its beginning was entirely occluded by a thrombus. The source of the thrombus was not definitely made out. The heart was greatly enlarged. The aorta dilated, roughened, and the aortic valves relatively insufficient. It is probable that the thrombus in the mesenteric artery was of embolic origin, and came from a thrombus which had formed in the roughened aorta.

These cases are all of interest. In the first the clinical picture was that of obstruction without peritonitis. In the second there was a marked peritonitis and in the third only a slight beginning peritonitis. The cause of the peritonitis in the second case was evidently due to the colon bacillus. It is not necessary to have an ulceration of the intestine or perforation in order for this organism to enter into the peritoneal cavity or into the tissues. There is no organism so commonly found in cultures from the various organs as is the colon bacillus. It is found in disturbances of the circulation of the intestine, such as is given in extreme chronic passive congestion. The resistance of the tissue in these cases is apparently so lowered that the organism finds entrance into the tissues. In all cases in which there are lesions of the mucous membrane of the intestine, it matters not how slight in character, the tissues will be invaded by this organism. In the second case in which there was marked peritonitis, the bacillus apparently found suitable conditions for growth in the necrotic tissue of the intestine, and it evidently passed through, or grew through, the intestinal wall into the peritoneal cavity. In a case which I autopsied at the City Hospital lately, there was a general fibrino-purulent peritonitis of slight degree in which the colon bacillus was found to be the only organism both in the peritoneal cavity and in the cultures. The source of the peritonitis in this case was in a small area of the intestine which had been incarcerated in a hernia. In the incarcerated portion of the intestine there was intense congestion with slight necrosis of the mucous membrane.

Hæmorrhagic infarction of the intestine resulting from obstruction of the mesenteric artery is an extremely interesting condition. In spite of the size of the mesenteric artery and in spite of the angle in which it leaves the aorta, which would appear to favor the entry of emboli into it, large emboli appear to be extremely rare. It is probable that small emboli frequently do enter the artery, but from the character of the circulation of the intestine and the abundant anastomosis which are found between the small branches of the artery, these small emboli produce no harm. The superior mesenteric artery is in no way a terminal artery in the sense of Cohnheim. There are numerous anastomoses, not only between the very small branches, but with the gastro-duodenal and inferior mesenteric. The area of tissue supplied by the artery, and the extreme length of the intestine are unfavorable for the development of a sufficient collateral circulation. In the dog, tying of the superior mesenteric near its origin always produced complete hæmorrhagic infarction of the intestine. The infarction is due to the entry of blood into the anæmic territory from the anastomoses above and below. It is remarkable that in the three cases which I show, the hæmorrhagic infarction should have been so slightly developed. In only one case, that from the Massachusetts Hospital, was it at all extensive. In the second case, although the entire artery was obstructed, there was only a beginning infarction in a small area of the intestine corresponding to the first embolus. In the first case it is probable that the thrombus of the aorta extending into the artery was not a totally occluding one. Only in this case was obstruction of the intestine a prominent clinical feature. It is probable that sufficient blood entered through the obstructed artery and through the anastomosis to preserve the integrity of the vessels sufficiently to prevent diapedesis and infarction, but not sufficient to provide the necessary enervation. It is important to know that obstruction of the superior mesenteric artery may give rise to paralysis of the intestine, obstruction and to peritonitis, and it is a condition which is beyond surgical interference.

LAMINECTOMY ELEVEN MONTHS AFTER INJURY TO THE SPINE.[1]

BY WALTER B. PLATT F.R.C.S, (ENG.), BALTIMORE, MD.

More than twelve hundred years ago Paul of Ægina, that famous Greek physician, definitely proposed the operation of laminectomy after injury to the spine, in these words: "Wherefore, having first given warning of the danger, we must if possible attempt to extract by an incision the compressing bone, or if not, we must soothe the part by the anti-inflammatory treatment. But if any of the processes of the vertebræ of which the spine as it is called consists, be broken off, it will readily be felt upon examination with the finger; the broken piece yielding and returning again to its position, and therefore we must make an incision of the skin externally and extract it, and having united the wound with sutures, pursue the treatment for recent wounds."

Later, Albucasis also recommends that, when a piece of the spine is broken off and causing great irritation, an incision be made and the piece removed.

So great a period between the conception of an operation and its successful practical execution as exists in the case of laminectomy can scarcely be paralleled in the history of surgery.

We must not forget that eminent men have performed this operation again and again between that time and this, and that it was again and again advised as the right thing to do, while nearly always the result was fatal, apart from the mortality of the injury preceding the operation, in which other important structures and organs, notably the kidney, were damaged. Why the result was so fatal, we now know. It is an operation that can only succeed with the most perfect aseptic or antiseptic precautions.

Laurence Heister, Professor of Surgery in the German University of Helmstadt, writing in 1739, advises: "If in any case the spinal marrow should be divided, Death will generally be an inevitable Consequence. But to offer the patient no Assistance because we despair, would seem cruel and uncharitable; therefore we must try our Skill, though our Attempt should be in vain. In order to which, the Surgeon must lay bare the fractured Vertebræ with a Scalpel, and replace or else remove, such Fragments as injured the spinal-marrow. The Wound is afterward gently cleansed as usual, and dressed with the balsams . . . to be held on with the Napkin and Scapulary, till the wound Shall terminate either in a perfect Cure or Death."

In 1762 Louis removed fragments of the laminæ through a gunshot wound, and the man recovered with partial paralysis. This is, however, a very different matter from making an incision where no wound exists.

It is probable that Henry Cline, in the year 1814, was the first to do this (in other words, to do a laminectomy), and his patient died. For doing the operation he was severely condemned by his colleagues. Then comes a long list of laminectomies every one of which was fatal, each operator thinking that perhaps his method or the conditions in his case might admit of a good result.

There is a rather indefinite report of a case done by Dr. H. A. Potter, of Geneva, N. Y., where the patient survived. Hamilton ("Dislocation and Fractures") gives a list of 14 operations by various surgeons all of which were attended by fatal results. Sir Astley Cooper ("Manual of Surgery," 1837) recommends the operation, but advises against it in the same breath. Hamilton, as late as 1875, tell us that "we are reluctantly compelled to declare that the expedient is scarcely worthy of a trial" ("Fractures and Dislocations").

Samuel Cooper ("Practice of Surgery," London, 1820), writes: "We read of incisions being made, and of the fragments of bone causing pressure on the spinal marrow being elevated or extracted; but what considerate surgeon would venture to imitate such practice." Bransby Cooper ("Surgical Essays," etc., London, 1843), in speaking of removing fragments of broken laminæ after an injury, by making an incision, says: "I believe there are cases which may warrant the importance of this operation, although at the same time I believe there are but few cases in which success is to be expected." Sir Benjamin Brodie ("Injuries of the Spinal Cord" in "Med. Chirurg. Transactions," London, 1837), says: "I am not aware that in any of the cases in which it has hitherto been performed the operation has been the means of preserving the patient's life or even of relieving any of the more important symptoms." Liston ("Practical Surgery," London, 1840), writes: "It has been proposed to make incisions on the broken bone to examine the extent of the fracture and displacement, and to attempt the removal of the pressure on the chord by trephining. . . . By these means, now generally and very properly looked upon as unwarrantable, effused blood could not be removed nor lacerations repaired, while the chance of inflammatory action would be much increased."

Gross, as late as 1862 ("System of Surgery"), writes: "Trephining will not be likely to be of any service; the operation has been tried in a number of cases of depressed fracture of the vertebræ, but in none has it ever been productive of any benefit."

Erichsen ("System of Surgery," "Science and Art of Surgery," 1872), in speaking of the removal of broken laminæ after spinal injury, writes: "But though so far the result has been but little satisfactory, ought surgeons to discard the operation? I think not."

Bryant ("Practice of Surgery," 1872,) mentions a successful instance of trephining by Gordon of Dublin, and adds one of his own where he removed the spinous process and laminæ of the fourth cervical vertebra, with recovery from the operation and decided improvement in motor power. The modern surgery of the spine is of but ten short years' duration, and most of the successful cases are within the last five years. Macewen, in 1883, did a laminectomy of three dorsal vertebræ, for complete paraplegia of two years' duration caused by angular deformity of the spine. The patient is said to have completely recovered (Treves, "Operative Surgery"). In June, 1888, Gowers and Horsley reported a case of the successful removal by laminectomy of a tumor from the spinal cord. Since then there have been a number of laminectomies reported, among them those of DeForest Willard, William White, Abbé, Burrell, Deaver, Dawbarn, and Richardson in this country, as well as Macewen, Lane, Wright and Duncan in Great Britain.

Dr. J. William White of Philadelphia and Dr. H. L. Burrell of Boston have made admirable reviews of the cases and results up to three years ago, when it is fair to believe that the technique of the operation was pretty well understood.

---

[1] Read at the semi-annual meeting of the Medical Chirurgical Faculty of Maryland, November 21, 1893.

the uterus. The even pressure around the cervix and upwards must to a certain extent equalize and regulate the blood-supply, and so favor the relief of the congestion. This will in turn diminish the sensitiveness of the nerves.

Not the least beneficial effect of this pessary is seen in the changes which gradually take place in the pelvic tissues themselves. Wearing it has resulted in, to a degree, restoring the mobility of the uterus, improving its position by thinning and stretching bands of adhesions, rendering sensitive swellings smaller and less sensitive, and reducing the size of the womb itself. This result had followed too often to be a chance coincidence, and I now confidently expect these results to a greater or less degree in all suitable cases. Examination from month to month will show a gradual improvement in the condition of the pelvic organs, which goes hand-in-hand with such an amelioration of the patients' general health that they call themselves practically well.

This *résumé* of my method of procedure in this class of cases, the wool-glycerine tampon, ichthyol, massage and packing, and finally, the cushion-pessary, does not, I confess, compare in brilliancy with the well-known surgical procedures which are advocated for this type of gynæcological cases, but I claim, first, that where doubt exists as to the true condition of the pelvic organs, this method clears up the diagnosis, and in a majority of cases, and I speak advisedly, renders an operation unnecessary; and second, that the results obtained are sufficiently gratifying to render the prognosis less grave than is often supposed.

By way of illustration, I propose to give briefly the histories of a few cases in which this line of treatment has been carried out either in part or wholly.

Case I. Mrs. B., thirty-five years old, was brought to me in December, 1891, by her physician, who had treated her for an obstinate retroflexion for a long time. She had had one child six years ago. Her principal complaints were great pain and soreness in the lower abdomen and back, especially the coccyx, dysmenorrhœa, irritable stomach, severe headaches and inability to take much exercise. Her physician had tried to relieve her symptoms, and to replace the uterus by applications and tampons, but without success. I found a heavy, retroflexed uterus only moderately movable, a slightly-lacerated cervix and a sundered perineum. Behind the uterus were several round bodies, about the size of a filbert, which were exquisitely sensitive to the touch, and which I took to be swollen glands. Any attempt to raise the uterus bimanually was accompanied by so much pain from pressure on these bodies that it had to be abandoned. So, too, the wearing of a retroversion or flexion pessary was impossible.

After a little preliminary packing I adjusted a cushion-pessary, which gave her more relief than anything else. She has now worn that for about six months, and lately has been able to take care of it herself. The last time I saw her there was a most marked improvement in the condition of the pelvic organs. The uterus was much more movable, and could be raised nearly to its normal position, the sensitive bodies behind in Douglas's cul-de-sac had nearly disappeared, and she is now ready to have the cervix and perineum repaired.

Case II. Mrs. B., twenty-seven years old, consulted me in July, 1891, for menorrhagia and dysmenorrhœa. Six years previous to my seeing her she had jumped from the box of a stage-coach to the ground, which was followed by an attack of pelvic peritonitis which confined her to bed for six weeks. After her recovery from the acute attack she suffered from severe pain at her monthly periods and profuse hæmorrhages. Her general health, especially as regards her nervous strength, had begun to suffer. She had never had any local treatment. Examination showed a firmly adherent, retroverted uterus, cul-de-sac partly obliterated by thickened tissue, and yielding very little to pressure by the finger. As she expected to be married in a month or two, no treatment was begun for about six months. Then tampons, packing and iodine were used for some time, and a Meigs ring was finally inserted. The improvement was most marked, both as regards her symptoms and the condition of the pelvic organs. The uterus, while still in the first degree of retroversion, was smaller and the adhesions less firm, allowing considerable mobility. Two years after marriage she miscarried at two months. A second pregnancy has resulted happily in the birth of a child last December.

Case III. Miss C. first consulted me in 1888. Was twenty-one years old. Had a fall when eleven years old, since which time has suffered from a lame back, pain in back and right groin, headaches, delayed menstruation, usually five weeks, but occasionally going from three to six months, dysmenorrhœa lasting from half a day to a day, leucorrhœa and depression of spirits. She was wearing a pessary when she came to me, but I found the uterus retroflexed over the top of it, and apparently adherent. The right ovary was enlarged and sensitive and prolapsed. She had consulted one of the most eminent gynæcologists in New York, who had advised removal of the tubes and ovaries. After packing firmly for a month, although the uterus was not thoroughly forward, a bulb pessary was introduced, to be worn during the catamenia. This proved so comfortable that she wore it all summer. In September the uterus was in a position of right lateral flexion, a position that I have often observed an adherent uterus assume as it changes from a backward position to the normal. Sometimes, as in this case, it remains drawn to one side. In March, 1889, she married, became pregnant in June, and is now the mother of three children.

Case IV. Miss M., thirty-three years old, had been well until two years ago, when, after running a heavy machine, she began to suffer with a feeling of pressure and darting pains in the rectum, and a feeling of heat in the lower part of the back. She also suffered from leucorrhœa. She was unable to work on account of the pain in her back. I first saw her October 18, 1892, and found the uterus retroverted and tightly bound down by adhesions, some of which, especially on the right side, could be felt as strong bands. Three weeks' treatment by firm packing and raising the uterus manually brought the uterus into fair position, though one strong band of adhesion on the right failed to give way. A cushion-pessary was introduced, and by January she was able to resume work. She still is wearing the support, and there is steady improvement in the mobility of the fundus, and the adhesions grow more defined and thinner.

These cases may, perhaps, be considered typical of the class in which I have found the treatment I have outlined of benefit. As I said at the outset, there is no new principle involved, but possibly the particular application of these various remedial agents may be suggestive. It will, at any rate, emphasize what may be called the conservative way of looking at the treatment of pelvic inflammations and their results.

◆

THREE CASES OF OCCLUSION OF THE SUPERIOR MESENTERIC ARTERY.[1]

BY W. T. COUNCILMAN, M.D.,
Shattuck Professor of Pathological Anatomy, Harvard University; Pathologist to the Boston City Hospital.

The cases which I present to-night are not only interesting in themselves, but show the tendency of rare pathological conditions to occur in groups. All of the autopsies were made within the last two weeks, and they are the first specimens of the sort which I have seen for a number of years.

Case I. The first specimen which I shall show comes from an autopsy made for Dr. J. L. Hildreth. The clinical history of the case is as follows:

Mrs. X., aged eighty-five. Although feeble for a number of years, the general health was fairly good with the exception of attacks of bronchitis at intervals. Twelve days before death she had not been feeling well, and went to bed somewhat earlier than the usual hour. She was not able to sleep, and called an attendant at ten complaining of pain in the bowels. The pain became more intense, and Dr. Hildreth first saw her at 2 A. M. At that time she was restless, complained of intense pain in the bowels; pulse 70. No physical signs could be made out either in chest or abdomen. The pain was referred vaguely to the right iliac fossa. An opiate was administered, and repeated until pain was allayed. In the morning the pain returned in the same place. A large enema was given, which produced no results. There was no passage of flatus from the bowels. The abdomen became more distended, and the pain seemed localized in the right iliac fossa. At the end of the third day the condition continued the same. No vomiting. The temperature 1° sub-normal. Dr. Marcy, of Cambridge, saw patient in consultation on the fourth day. Diagnosis made of complete obstruction of bowels. An operation was suggested, but not urged. All of the symptoms continued until the seventh day when the temperature was 2½° sub-normal. From this point the temperature gradually arose, and before death reached 2° above normal. Vomiting commenced on the fourth day before death, finally becoming fæcal. The pulse became quicker and weaker, and death took place twelve days after the first attack.

At the autopsy the abdomen was greatly distended. The intestines were enormously distended and somewhat congested. In the lower lobes of both lungs and in the posterior portions of the upper lobes there were numerous areas of consolidation. The pleura over these portions of lung was covered with a fine fibrinous exudation. The consolidation in the upper lobes had a distinctly lobular distribution. In the lower lobe of the left lung the consolidation was more extensive, but here, also, was apparently produced by the confluence of smaller foci. There was extreme fatty degeneration and atrophy of the heart and extensive atheromatous degeneration of the aorta. The heart was perfectly flaccid and so soft that the finger could be thrust through the ventricle at any point. The entire abdominal aorta was covered with flakes of calcification. On these rough, calcified plates there were numerous thrombi. The most extensive thrombus was on the anterior surface of the aorta just above the origin of the superior mesenteric, and almost completely occluded the opening of the artery. The thrombus extended for a very short distance into the artery, but the artery itself was free from both emboli and thrombi. The small intestine was greatly distended, and in places there were a few small ecchymoses; but there was neither intense congestion nor at any point complete infarction.

In this case it seems probable that the partial occlusion of the artery by the thrombus in the aorta was, in the weakened condition of her circulation, sufficient to cause entire paralysis of the bowel and obstruction from this reason.

Cultures made from the tissues gave pneumococci in the consolidated portions of the lung, in the spleen and in the liver. In all of the organs colon bacilli were found.

Case II. The clinical history of this case, of which the heart, aorta and mesentery were shown, is this:

R. T., aged sixty-one. Entered hospital January 19th. Complained of pain in left foot and ankle. The parts were much swollen, cold and blue. Three days afterwards the right foot showed the same process. Two days before death complained of pain in abdomen, pulse gradually sank and death took place.

At the autopsy the intestines were found enormously distended. The peritoneum was covered with a fibrino-purulent exudation, which in places produced a slight adhesion of the loops of the intestine. Pockets of pus were here and there found between the adherent loops of intestine. The entire small intestine was deeply injected and in the jejunum for a distance of about sixty centimetres the wall was greatly thickened and hæmorrhagic. In endeavoring to discover the cause of the peritonitis all the ordinary sources could be excluded. There was no evidence at any point of intestinal perforation. The mesenteric artery, however, was seen to be completely occluded by a thrombus about half-way between its origin and the intestine. This thrombus was firmly adherent to the wall and was totally occlusive. Beyond the thrombus there was a short space in the artery which was filled with a soft, dark coagulum, and further up, just opposite the area of intestine which shows the hæmorrhagic infarction and at a point in the artery where three branches are given off together. there was another thrombus which was also firmly adherent. On opening the intestine it was seen that on the mucous surface, in addition to the infarction, there were areas of distinct necrosis — some of these areas passing through the intestine. The source of the thrombus masses in the artery was evident from an examination of the aorta just above the heart. Here a roughened, calcified plate on the intima of the artery was seen, and adherent to this was a large thrombus. The thrombus in the aorta was evidently of a rather old date. In the kidney and in the spleen there were numerous infarctions produced by emboli. Some of these infarctions were anæmic, others hæmorrhagic. In some of them there was organization of the anæmic territory with cicatrization.

In both lower extremities, more marked on the right side, there was gangrene extending nearly up the knee. No line of demarcation as yet produced. The parts

---

[1] Specimens of these cases were shown at a meeting of the Boston Society for Medical Improvement.

The results in laminectomy, vary of course as to whether it is done immediately after the injury or some time afterward. Again, whether it is done for Pott's disease or for the removal of a tumor within the cord. Dr. William White has shown that out of 37 operations recently performed with antiseptic precautions, after fracture of the vertebræ, there were 6 complete recoveries; 6 were benefited, and recovered from the operation; 11 recovered, unimpróved; and 14 died ("American Text-Book of Surgery"), a mortality of 38 per cent.

Careful observations show a very large per cent. of fractured laminæ in all cases of fractured spine. The pressure of the broken portions is often the exciting cause of secondary changes in the cord. This was probably true in the case now reported by me where the paralysis came on some three weeks after the injury. It is likely that the laminæ fractured at the time of the accident became displaced later and pressed upon the cord. It will be seen that operation was delayed until eleven months after the accident, and at least ten months after total paralysis, making the case a most unpromising one at the outset, both from the total long-existing paraplegia, and the extremely poor general condition. The operation was the only hope for the least benefit.

In the operations undertaken to relieve paralysis due to Pott's disease, the results have been brilliant. In one case where the paralysis of motion and sensation had existed for two years with paralysis of rectal and vesical sphincters, the boy was able (after five years) to play football. Laminectomy should never be done to relieve the paralysis of Pott's disease until the failure of all other approved methods of treatment, and the patient is steadily growing worse. Statistics show that over 80 per cent. of such cases recover without operation.

The mortality of laminectomies in traumatic cases, as stated by Chipault (*Revue de Chirurgie*, March, 1893), out of 160 cases, was 65, with 15 unknown results. He further states that in delayed operations after injury, myelitis sets in after two or three days, and after some weeks sclerosis of the cord; that delayed operations have never given satisfactory results, while early ones have nearly always had the contrary result.

We see then that in cases of broken back, instead of allowing the patient to die a miserable death, he should be operated on at an early date, and the compression removed, as is often possible by a laminectomy, when there is a good chance of, at least partially, restoring the patient to good health.

The patient J. L., white, thirteen years old, was admitted to the Garrett Hospital for Children, August 23, 1893, with the following history: In October, 1892, in coming down stairs the patient slipped, and in trying to recover his balance the back was bent sharply backward. In consequence of this, he suffered pain in the spinal column, which pain persisted. Two weeks later he fell from a car, striking his side upon a curbstone. One week later, while walking along the street the patient was suddenly seized with peculiar sensations in his legs and abdomen — tingling and numbness. This was accompanied by weakness of the lower extremities, whereupon he went to bed. In three days there was complete paralysis of motion and sensation as high as the margin of the ribs. Four days later loss of control of the bladder and rectum was noted. One month after taking to bed, that is, about seven weeks after injury, a long, round curvature appeared in the dorsal region. The first bed-sore was over the sacrum, and this occurred about the end of December, 1892.

On entrance to the hospital, August 23, 1893, the patient exhibited the following physical signs: Anæmic, emaciated. Had a tight cough, no expectoration. Night-sweats present. Afternoon temperature 102.2°; pulse 128; respiration 32. Marked anterior posterior curvature of spine, from sixth to tenth dorsal vertebræ. The vertebra spines in question could not be felt by reason of the general thickening over the whole region. There was considerable swelling laterally, marked on the right side, where there was also some rise of temperature superficially. Tenderness and œdema, but no fluctuation. The swelling occupied the entire interscapular region. Scapulæ stood out prominently. There was dulness on percussion on the right side of the chest below the nipple in front, extending into the axillary region, and nearly all over the back. Loud pleuritic friction-sounds could be felt and heard over the right back posteriorly, below the scapula. The skin over the paralyzed region was dry, shiny and desquamating. Small, round, fæcal masses could be plainly felt along the tract of the ascending colon. There was complete paraplegia, both motor and sensory. There was great wasting of all the muscles in the paralyzed area. The paralysis extended as high as the line of the tenth rib behind, and one inch from the costal margin in front. There was a wide zone of hyperæsthesia immediately above the line of paralysis. There was a line about one inch wide below the hyperæsthetic zone, where sensation was dulled, but not absent. Below this paralysis was complete. Entire loss of control over sphincters of bladder and rectum. There were seven or eight bed-sores, some large, some much smaller. They were situated over the sacrum, trochanters, heels, and over the right fibula below, etc. The pleuritic friction-sound rapidly diminished, and finally disappeared after four or five days. There was never any pus or discharge from the back, except such as arose from the bed-sores.

OPERATION, SEPTEMBER 6, 1893.

The patient being etherized, two longitudinal parallel incisions were made, one on each side of the dorsal spine, five inches long, extending from the fourth to the ninth vertebral spines. These were connected at the top by a transverse incision after the completion of the others, and after the hæmorrhage had been checked. The latter was abundant and of very dark blood.

The longitudinal incisions were made just to the inner side of the transverse processes, which were with difficulty made out, with the patient in the semi-prone position; the planes of the incision were directed toward the median line as well as downward. The hæmorrhage was checked by pressure with pads of sterilized gauze, thrust into the wounds. The interspinous ligament was now divided at the bottom of the transverse incision, and the laminæ of three vertebræ, the fifth, sixth and seventh, divided close to the transverse processes by oblique-cutting forceps. A number of loose fragments of laminæ were felt and removed when the longitudinal incisions were first made. The flap, consisting of skin, muscle, ligaments and bone, was turned downward, exposing the dura mater of the cord. All pieces of bone which could be felt in the reversed flap were now detached from their connections. The pieces were irregular in outline, and evidently remnants of partially absorbed laminæ and spines. The dura was exposed for a distance of four inches. It appeared to be perfectly healthy, and was not therefore opened. The spinal canal above and below the seat of operation was smooth, and of normal calibre. The dura was pale blue in color, not thickened externally, neither was there any pus or exudation seen anywhere in the course of the operation.

The flap was now replaced, and stitched in place by a number of silkworm-gut and a few silk sutures. These were for the most part inserted as deeply as possible. No arteries required ligature. A rubber drainage-tube was inserted at each outer, upper angle of the wound. Iodoform gauze, sterilized gauze, and absorbent cotton were applied, and the whole kept in place by a gauze bandage.

The operation lasted one hour and twenty minutes. During the night the patient seemed very weak, but reacted well considering his exceedingly feeble state; and the day following he seemed but little weaker than before the operation.

September 11th. Patient has some cough, but is steadily gaining in strength each day.

September 12th. Yesterday patient complained of his toes feeling cold and as if electricity were passing through them. Nine centimetres above umbilicus he has skin sensation. Deep pressure can be felt much lower down. Touching skin just above the totally paralyzed area excites reflex movements of opposite left (right) hand. Pressure in right hypochondrium excites immediate pain in the left. Bed-sores looking better. There is occasionally a faint, dry cough.

September 13th. Said he felt the catheter when it was passed.

September 14th. Seven sutures removed, some pus about stitches.

At the present date (November 21) the patient is as emaciated as before. The bed-sores have nearly all healed a great deal since the operation. Some are entirely well. The patient, as a rule, eats with an excellent appetite. He can now lie on either side with comfort, something impossible before the operation. There is no perceptible gain in skin sensation. The anæsthesia (to touch) is as marked as before the operation. The patient is, however, considerably more sensative to abdominal pressure, and much more so to the stimulation of the faradic current. He now feels the faradic current in both thighs, legs and feet, when applied over the tracts of the large nerves with firm pressure. Application of the current to one limb will often cause decided sensation in the opposite limb. Wherever the current is applied, whether to thigh or leg, patient complains of feeling the current in the feet. There is absolutely no contraction of any muscle below the paralyzed area to any amount of faradic stimulation. The lines of operation are entirely healed, with the exception of a small granulating surface at one upper angle one-quarter of an inch in diameter. There are no sinuses left after the operation. Patient sits propped up in bed a few minutes at a time without undue fatigue.

The net result of the operation at the time of writing this paper, may be stated to be: No improvement whatever in motion since operation, some decided increase in sensitiveness to faradic stimulation, healing of bed-sores to a considerable extent. The patient is able to lie on either side for a time without fatigue, something impossible before, although he was in the hospital two weeks before operation. He has apparently reached a standstill in improvement in his general condition. He no longer has night-sweats.

I was never able to convince myself of the existence of tuberculosis of the lungs. He has had the most careful nursing, and the most generous diet that he could take, wine and whiskey being allowed with his meals. When his temperature rose he was immediately put upon a suitable diet. One four-hundredth of a grain of atropia at night will control the sweats perfectly, as we repeatedly determined. He has always been catheterized twice daily, and the bladder washed out when urine became turbid or ammoniacal.

In performing the operation the following points were noted:

The copious venous hæmorrhage, controlled by pressure with pads of sterilized gauze wrung out of hot boiled water.

The unusual retraction of the skin, which rather assisted than acted as an obstacle in carrying out the operation.

The difficulty in dividing the laminæ, and the care that had to be used in keeping within the transverse processes so as not to go wide of the objective point.

The operation is considerably easier on the living than on the cadaver, on account of the bowing of the back usually present in the patient, and the comparative wasting of the muscular substance.

With ordinary care there is little danger of wounding the spinal cord.

The cutting bone-forceps should be directed well inwards, so as to divide the laminæ at a right angle to their axes.

We are not only justified in considering, but we are bound to regard laminectomy of the spine in the same way as we do trephining of the skull, that is to say, the mortality of the operation after an injury is to be attributed in large part to the injury which is the occasion of the operation, and not to the operation itself.

As in trephining the skull, the mortality should be reckoned by the number of deaths occurring when performed for disease. The mortality should, moreover, be distributed according to groups; for example, the number of deaths after an operation to remove broken or displaced laminæ might be widely different from a laminectomy to relieve pressure of an exudation between the laminæ and the bone, or for hæmorrhage without or within the dura, etc. No useful purpose or rules for guidance can be formed by grouping unlike cases together. As in skull-trephining after accident, the bad results after spine trepining are largely due to the laceration of the nervous substance which may be injured, beyond any possibility of repair, by the force of the blow constituting the accident — not due to the surgical operation, but in spite of it.

A large portion of the back of a cadaver was here exhibited, showing the facility with which a sufficiently large section of the cord may be exposed without loss of substance; the ease of replacing the flap which was turned down; the depth below the surface of the latter, reminding one strongly of the railroad at the bottom of a "cut." The disadvantages of this operation were also shown, there being two long incisions instead of one to heal, twice as many vessels divided, and the muscles close to the median line cut transversely above.

Practically I do not believe these objections in any degree important.

FURTHER HISTORY.

The patient seemed to be gradually losing strength the first week in December. He was taken home (five hours by rail) against advice, by his father, December 24th, and died December 31, 1893, 116 days after the operation. This was one of those cases where there was reason to fear a total transverse lesion of the cord; but as the operation offered the only hope of relief, it was performed. No autopsy was obtained.

◆

Clinical Department.

CLINICAL NOTE-TAKING, WITH A LIST OF FOUR HUNDRED AND NINETY-ONE MEDICAL CASES SHOWN TO THE THIRD CLASS OF THE HARVARD MEDICAL SCHOOL.[1]

BY ELLIOTT P. JOSLIN, A.B., PH.B.,
Harvard Medical School.

Many advantages accrue from note-taking at a clinic, but for these notes to be of permanent value to the student they must be accessible. With this end in view the following method has been adopted by the writer.

The record of each patient was taken on a separate sheet of paper. At the head of the sheet was printed

Diagnosis
Duration Sex Married Single Age
Name
Residence Occupation

If the case required more than one sheet, blank slips of the same size were used, and the pages numbered. This allowed easy insertion of subsequent reports of the progress of the individual. The same plan allowed a ready classification, since all the notes were turned into a card catalogue by a simple grouping of cases. These were arranged in a box with index cards of appropriate size denoting the various diseases. As a result, a student can have at the end of his course a very serviceable text-book of medicine, containing the teachings of several clinicians emphasized by and based on what he has himself seen. How valuable this "text-book of notes" may be, can be judged from the following list of cases which were shown by Drs. R. H. Fitz, F. C. Shattuck, A. L. Mason and H. F. Vickery at the Massachusetts General and City Hospitals. The list covers a period of about twelve school-year months, and represents the cases seen by one member of the present third class of the Harvard Medical School.

Specific Infectious Diseases.

Typhoid fever 21, vaccination 1, mumps 1, influenza 3, sequelæ of diphtheria 2, malaria 7, syphilis 7, tuberculosis of lymph glands 3, tuberculosis of lungs 19, tuberculosis of peritoneum 3, tuberculosis of meninges 1, general tuberculosis 3. Total, 71.

Constitutional Diseases.

Rheumatic fever 2, chronic rheumatism 6, pseudo-rheumatic affections 4, muscular rheumatism 2, arthritis deformans 2, gout 2, diabetes mellitus 12, rickets 4. Total, 34.

Diseases of the Digestive System.

Stomatitis 1, chronic tonsillitis 2, cancer of the œsophagus 1, gastric catarrh 1, dyspepsia 2, nervous vomiting 1, dilatation of stomach 8, gastric ulcer 2, gastric cancer 11, diarrhœa 1, appendicitis 11, intestinal obstruction 1, constipation 1, catarrhal jaundice 4, gall stones 7, cirrhosis of liver 13, abscess of liver 2, neoplasm of liver 2, dislocation of liver 2, hypertrophy of spleen 1. Total, 74.

Diseases of the Respiratory System.

Acute bronchitis 1, chronic bronchitis 4, bronchitis and emphysema 3, bronchial asthma 5, partial occlusion of bronchus 1, œdema of lung 1, acute fibrinous pneumonia 18, chronic interstitial pneumonia 2, emphysema 1, gangrene of lung 1, abscess of lung 1, acute pleurisy 15, chronic pleurisy 8, cancer of pleura 1. Total, 62.

Diseases of the Circulatory System.

Pericarditis 4, endocarditis 2, chronic valvular disease 34, hypertrophy and dilatation 4, myocarditis 4, neuroses of heart 4, arteriosclerosis 3, aneurism 5, phlebitis 2, abnormal position of pulse 1. Total, 63.

Diseases of the Blood and Ductless Glands.

Secondary anæmia 5, chlorosis 4, progressive pernicious anæmia 2, leukæmia 8, pseudo-leukæmia 6, goitre 2, exophthalmic goitre 7, myxœdema 2. Total, 36.

Diseases of the Kidneys.

Hyperæmia 1, floating kidney 6, paroxysmal hæmaglobinuria 1, chyluria 1, acute nephritis 7, chronic nephritis 16, renal calculus 4, tumors 2, perinephritic abscess 1, incontinence of urine 1, cystitis 1. Total 41.

Diseases of the Nervous System.

Neuritis 11, Menière's disease 1, sciatica 3, diffuse myelitis 1, ascending lateral degeneration 1, descending lateral degeneration 1, locomotor ataxia 7, compression of spinal cord 1, cerebral meningitis 2, aphasia 1, hemiplegia 15, insular sclerosis 1, general paralysis of the insane 2, brain tumors 3, chorea 6, epilepsy 5, migraine 1, occupation neurosis 1, hysteria 2, neurasthenia 4, hemianæsthesia 1, acromegalia 1, scleroderma 1, melancholia after delivery 1. Total, 73.

Drug Poisoning.

Alcoholism 4, opium 2, lead 10, arsenic 2, tobacco 2, illuminating gas 2, aconite 1, copaiba 1. Total 24.

Miscellaneous.

Tumors 8, sexual impotence 1, debility 2, elephantiasis 1, "chronic unemployed" 1. Total 13. Total number of cases shown, 491.

◆

Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

Concluded from No. 16, p. 387.

TRAUMATIC ANEURISM OF THE VERTEBRAL ARTERY.

Matas[17] records a case of aneurism of the vertebral artery, which was cured by extirpation of the sac. The author concludes: "That in certain favorable cases of traumatic aneurism in the upper and more superficial part of the vertebral artery, recovery without operative interference is possible. In every case when the danger of rupture of the sac is not immediate, good results may be expected, if only as adjuvants to future radical treatment, from the systematic application of cold and pressure to the sac, or digital pressure over the artery below the carotid tubercle. In most cases there is a tendency in the aneurism to progress rapidly to rupture, such tendency being often favored by the increased tension caused by ligature of the carotid trunks under mistaken diagnosis. This error may always be avoided by carefully observing the effects of temporary compression of the carotid on the circulation in the tumor. Free exposure of the bleeding region and temporary plugging have hitherto given the most satisfactory results. The use of coagulant injections is especially to be condemned. In the extremely rare cases of idiopathic cervical aneurism, and in circumscribed traumatic aneurisms situated high up in the posterior triangle, proximal ligature might be attempted with some prospect of success, especially if cold pressure and rest be resorted to as adjuvants in the treatment. In aneurisms situated low down in the posterior angle, the Hunterian operation will almost certainly fail, as it will be found impossible to reach the trunk of the artery without involving the sac in the incision. When in a case of an aneurism well circumscribed and situated high up in the neck, the ordinary local treatment has failed and it has been decided to open the sac, it is justifiable to expose the vertebral artery below the anterior tubercle of the sixth cervical process, and to compress the vessel until its wounded part has been definitely secured at the bottom of the aneurismal cavity. In the management of non-aneurismal wounds of the vertebral artery, the surgeon should apply the same treatment as in cases of traumatic aneurisms in this vessel. In some rare cases, however, and especially in gunshot injuries through the mouth, in which more than one vessel may be injured, a direct attack on the bleeding point is impossible. As plugging through the mouth is impossible, the only hope for the patient lies in the immediate but provisional control of both the common carotid and vertebral arteries of the same side, with a view of cutting off the entire arterial supply from the injured region. After the precise seat of the hæmorrhage has been deliberately made out, the definitive ligature may then be applied to either of the exposed arteries, or to both, if necessary. In the more common cases the difficulties in applying direct pressure to the bleeding point are less in the upper part of the neck than in the lower part where the artery is surrounded by vital structures."

---

[1] Read at a meeting of the Boylston Medical Society, April 13, 1894.

[17] Annals of Surgery, November, 1893; British Medical Journal, December 9, 1893.

A MODE OF CONTROLLING THE CIRCULATION THROUGH THE ABDOMINAL AORTA.

William McEwen[18] suggests a method which he has used for the last fifteen years for controlling the abdominal aorta. It is as follows:

"As the patient lies on his back on the table, the assistant, facing patient's feet, stands on the left side of the table in a line with the patient's umbilicus. He then places his closed right hand upon the patient's abdomen, a little to the left of the middle line, the knuckles of the index finger touching the upper border of the umbilicus, so that the whole hand will embrace about three inches of the distal extremity of the aorta above its bifurcation. The assistant, then standing upon his left foot, his right foot crossing his left and resting upon the toes of the right — an attitude commonly assumed by public speakers — leans upon his right hand, and thereby exercises the necessary amount of pressure. With the index finger of the assistant's left hand, the weight necessary for the purpose can easily be estimated by the effect produced upon the flow of blood through the common femoral at the brim of the pelvis. Whenever the flow of blood through the femorals is absolutely arrested the abdominal aorta is sufficiently controlled, and no further weight ought to be applied.

"The weight exercised can be varied at will by increasing or decreasing the angle which the assistant's body makes with the floor. The position which the assistant assumes relatively to the patient is represented in the accompanying photographs.

"As the abdominal aorta sometimes bifurcates higher than usual, before the operation is commenced a trial of the effect of the pressure at the part selected ought to be made, testing the result of pressure on both femorals. When *both* are equally controlled, the bifurcation occurs below the point pressed on; when only one is controlled the hand requires to be placed on a more proximal part.

"As there is no direct muscular effort required in maintaining the pressure further than the preservation of the equilibrium, the position can be maintained by the assistant without undue strain on his part, and without shifting his hand for at least half an hour, a time amply sufficient for the performance of most operations requiring the control of the circulation through the abdominal aorta."

SUTURE OF NERVES.

Gneiss[19] reports eleven cases of nerve-suture at Brun's clinic. Four were cases of primary operations, and seven secondary. The following nerves were sutured: the median, five times; the ulnar, three times; the radial, four times; the perineal nerves once. All but one operation was successful. An interesting point of the report is the description of Brun's technique. In the cases of primary operation the ends were united at once; in the secondary cases the ends were usually refreshed and the cicatricial mass removed. One case, as shown by illustration, was treated by making a slit in the nerve trunk, which split the cicatrix and extended into sound nerve tissue; the ends of the cut were then approximated so that the sides were brought in contact, and the line of incision at right angles to the long axis of the nerve trunk. Sutures passed through these lateral projections secured the nerve in its new position. Catgut was the material used for suture. In four cases the nerve was protected from pressure during healing by a decalcified bone tube. The article is a valuable one, and contains many interesting details.

SUPPURATIVE TENO-SYNOVITIS.

Tollemer and Macaigne[20] relate a case in a man aged nineteen. On the fifth day of the gonorrhœa he had pain and swelling in the small joints of the left hand. On the fourteenth day the right hand, and chiefly the tendon of the index finger, were affected. Here a lymphangitis also appeared. The pus was let out, and movement was eventually completely restored. The tendon of the left little finger also became involved. The inflammation was here adhesive only, and the tendon remained adherent to the sheath with limitation of movement. In the above-named pus, a micro-organism — proved to be the gonococcus (1) by its form, (2) by its presence in the cells, and (3) by its decolorization by Gram's method — was found in pure culture. Cultivation experiments were also made. There is now no doubt that gonorrhœa may assume the character of a general disease. The micro-organism has rarely been found in the articular serous effusions, but the negative results may be due to its rapid disappearance. There was practically no fever during the whole of the illness. Owing to the limited vitality of the gonococcus, the suppuration seems to end as soon as the pus is let out.

MALLET FINGER.

Robert T. Morris[21] describes a condition which he states is not uncommon among men engaged in athletic sports. The injury consists, not in a bodily separation of the tendon from its points of attachment, but rather in a thinning of the tendon cephalad from the principal point of attachment to the phalanx, and from the fibres that form the posterior ligament of the last phalangeal articulation. A few fibres of the tendon are undoubtedly ruptured, but most of them slide away from each other very much as the threads of a textile fabric separate when the fabric is violently stretched, but not torn, the structure retaining its original general appearance.

---

[18] Annals of Surgery, January, 1894.

[19] Briträge zur Klin. Chir., 1893, Bd. x, Heft 2.

[20] Rev. de Méd., November, 1893; British Medical Journal, December 16th.

[21] Medical News, September 9, 1893.

Immediately after the occurrence of the injury to the tendon, the last phalanx of the finger assumes a semi-flexed position, and the deformity is usually permanent, the extensor tendon then having little or no influence upon the freed phalanx. Aside from the uncanny appearance of such a finger, the deformity is a source of annoyance to the patient.

The tendon is repaired without much difficulty by making a longitudinal incision two centimetres in length over the site of the injury, dividing the thinned tendon longitudinally into the two principal fasciculi into which it naturally separates, dividing the tendon cephalad transversely from the thinnest point, and advancing each fasciculus to a point upon its own side of the finger, near the base of the finger-nail. At this point the fasciculus is sutured to the under surface of the skin rather than to the periosteum and tendinous remains, because the former structure affords a firmer hold; and the cut end of the tendon makes as good a union with the phalanx as it would if sutured directly to the periosteum.

TREATMENT OF TUBERCULAR COXITIS BY IODOFORM INJECTIONS.

C. Bunger[22] considers this method advantageous, and recommends Keuster's technique. He injects into the hip-joint through a puncture made at a point (the inner border of the sartorius) in a horizontal line drawn from the femoral artery where it crosses the pubic bone to the trochanter. The injection is made with a hypodermic syringe having a needle five to seven centimetres long. Two and one-half grammes of a twenty-per-cent mixture of iodoform and glycerine are injected every eighth to fourteenth day.

OSSIFYING HÆMATOMA.

Arsdale[23] has reported a case occurring in a man twenty-two years of age, who had a severe contusion on the right arm, just below the insertion of the deltoid. When first seen a fluctuating tumor was there. At the end of six weeks a tumor of bony hardness was present. Aspiration having failed, it was decided to remove the tumor. This was done, and the patient was discharged cured. The function of the arm at the end of two years was perfect. The points of interest in this case are that an ossifying hæmatoma may be readily confounded with an osteoma, periostitis, myositis ossificans and osteosarcoma.

SOME POINTS OF PRACTICAL IMPORTANCE IN THE USE OF CURVED SKIN INCISIONS.

In an interesting article, Peyton T. B. Beale[24] has summarized the advantages of curved over straight incisions wherever the former is practicable.

"(1) It heals more rapidly, and for these reasons: there is really only one edge of the wound, that belonging to the flap, that is movable, the other edge being still adherent to the subjacent tissue; moreover, the flap having been stitched to the neighboring skin or held well away from the seat of operation, both edges of the wound are quite uninjured by the time the sutures are inserted. (2) The resulting scar is smaller, though this is only of importance in certain parts, for the skin may be incised obliquely in making a curved incision, so that the epidermis on the edge of the flap is slightly in advance of the true skin. (3) It fully exposes the part to be operated upon, assuming that the base of the flap is twice or three times its length, and gives the operator plenty of room in which to work. (4) Suturing the edges is easier than in the case of a straight incision, especially if the skin be pricked in one or two situations exactly opposite to one another before the incision is made, and more often the curved wound is adapted to the shape of the part than a straight one. (5) The resulting cicatrix is not over the seat of operation. (6) Drainage is often most perfect by inserting a tube through an incision in the base, or some part of the flap, thus giving no hinderance to the primary union of the incision, and preventing any possible discharge from infecting the edges. (7) Incision through inflamed or diseased skin may be avoided, and yet the disease is easily reached. (8) There need be no tension on the edges of the wound, as the flap of skin is, so to speak, loose, and if there is fear of tension, a silk suture can be passed through the base or some part of the flap and out again, and then through the skin on the other side of the incision, and there fixed, thus avoiding a long suture beneath either edge of the wound. I think that the form of skin incision, its subsequent result to the patient, and its immediate results to the surgeon during the progress of an operation, are matters often neglected, and not sufficiently considered before the operation is undertaken, and I feel sure that there are many points of interest connected with the subject."

BLOODLESS AMPUTATION AT THE HIP-JOINT.

Dr. John A. Wyeth[25] reports 40 cases operated upon by his method. This is undoubtedly one of the best methods we have for controlling hæmorrhage in this formidable operation. He says: "Without discussing statistics, I claim it safe to conclude that by the method given bleeding after hip-joint amputation is as safely and surely controlled as for an amputation of the thigh lower down. In no single case has it failed, and it has been employed by operators of all grades of experience. The 40 cases are divided as follows: sarcoma, 17 (mortality, 11.76 per cent.); inflammatory bone disease, 18 (mortality, 16.6 per cent.); violence, 4 (mortality, 100 per cent.); nerve injury, 1 (mortality, ——); for disease, 36 (mortality, 13.88 per cent.); for injury, 4 (mortality, 100 per cent.); giving a total death-rate of 22.5.

SACRAL OSTEO-PLASTIC OPERATIONS.

Czerny's[26] report at the last meeting of the German Surgical Congress, in which he describes the removal of intra-pelvic tumors by the sacral route, is a very interesting one. It describes in detail numerous operations performed for the removal of such neoplasms, and is too long to give more than the writer's conclusions. An excellent abstract has been published, however, by Warbasse.[27] Czerny thinks that the sacral method of operating on intra-pelvic tumors will pass through the same stages as the sacral extirpation of the rectum. It was at first received with indifference or reserve, then practised too enthusiastically, but gradually has taken its proper and legitimate place, and is considered an operation of value in selected cases. He also thinks the sacral route is the shortest to the parametrial region for the enucleation of paracervical myomata, or similarly situated growths.

---

[22] Centralblatt für Chir., 1893, No. 51.

[23] Annals of Surgery, vol. xviii, No. 1, July, 1893.

[24] Lancet, July 8, 1893.

[25] Medical News, December 9, 1893.

[26] Verhandlung der deutschen Gesellschaft für Chir., xxii Kongress, 1893.

[27] Annals of Surgery, 1893, vol. xviii, 561.

ON THE ADVANTAGES OF THE STEEL SCREW IN THE TREATMENT OF UNUNITED FRACTURES.

W. Arbuthnot Lane[28] suggests the use of steel screws in immobilizing ununited fractures. He speaks of the difficulty of retaining the sawn surfaces in position by means of silver wire, and believes that the two following conditions must be complied with to ensure success:

"(1) The surgeon must not be satisfied with removing a thin surface of bone on each side of the fibrous ankylosis, but a good, thick slice must be taken off the end of either fragment, so as to expose the normal structure of the shaft. It would seem that the bone in the immediate vicinity of the acquired amphiarthrodial joint undergoes such vascular changes as interfere with its taking an active share in the formation of callus and bony ankylosis of the fragments. If a thick slice of bone, which has been sawn off one of the fragments in such an operation, is divided vertically, the bone in immediate relation with the false joint will be found to be dense and comparatively evascular, and this condition will be found to extend for an unexpected distance into the shaft. Therefore, in order to obtain bony union with any certainty, it is necessary to sacrifice a considerable portion of the length of the limb, and the amount of bone removed from each fragment must bear a direct relationship to the duration of the interval that has elapsed since the injury. Such operations are sometimes the most difficult in surgery, especially when performed for ununited fracture of the tibia in its upper third. The difficulty is sometimes greatly increased by the necessary removal of a portion of the fibula, this bone not having been broken at the same time as the tibia, or, if it had been, union had ensued in it. Such conditions of non-union of fractures in the leg are, in my experience, always the result of the application of the principle of the vertical foot-piece, and I trust that, since the fallacy of that treatment has been satisfactorily exploded, surgeons will not have to deal with such difficult cases in the future.

"(2) The recently sawn surfaces of bone must be retained immovably in accurate apposition. I have frequently found the greatest difficulty in retaining the freshly sawn surfaces of bone in accurate and firm apposition by means of the silver wire, for the reason that the oblique sectional planes presented by the fragments are in different vertical levels, and tend, when fastened together with wire, to separate vertically, however firmly they may be clamped together during the boring of the holes, and however great the strain exerted on the wire during its fixation in position. Again, the circumstances are quite different from those present in a recent fracture, where, as is well known, if sufficient care and trouble are taken, the broken surfaces will correspond exactly. In the case of the ununited fracture, the plane of the fracture is often only to be guessed at, since it has been much modified by the formation of callus, etc. I have been much disappointed on several occasions, on cutting down on cases of ununited fracture in which an operation had been performed without success, to find the loop of wire lying comparatively loose in the bones. I therefore determined to try what I could do by using screws instead of wire, and then found that I was able to bring and to retain the opposing surfaces of bone into most accurate and forcible apposition by means of this powerful instrument. The use of two screws is much more advantageous than one alone, for the reason that any rotation of the bony surfaces around the screw as an axis is completely obviated. The screws produce no irritation whatever, and do not require to be removed. I should have found some of these operations impracticable but for Gowan's osteotome, which is an invaluable instrument under the circumstances. With it, one is enabled to ensure accuracy of parallelism in the sectional planes with a minimum of damage to adjacent vessels (a matter occasionally of no little importance), and by using the clamp portion of the instrument without the saw, the cut surfaces can be held firmly and immovably in apposition during the boring of the holes and while the screw is being driven in. It is well to remember that it is by means of the final turns of the screw that firmness and accuracy of apposition are obtained."

SEPARATION OF THE LOWER FEMORAL EPIPHYSIS.

Mayo Robson[29] directs attention to this accident, which is usually the result of direct violence. Shortening the projection of the diaphysis in the popliteal space, and of the epiphysis anteriorly, combined with the interference in the circulation, are the physical signs present. If there is any difficulty in reduction an anæsthetic should be used and the tendo-Achillis divided. A weight and pulley are needed in the after-treatment. If the large vessels are ruptured and gangrene supervenes, of course amputation is necessary.

TREATMENT OF GUNSHOT WOUNDS OF THE ABDOMEN.

Von Bramau[30] has reported eight cases of gunshot wound of the abdomen, and has been led to form the following conclusions: (1) In all cases of gunshot wounds of the abdomen in which signs of injury of stomach or intestine, or of profuse internal bleeding, are presented immediately after the injury, prompt laparotomy is imperatively indicated. (2) The operation is especially indicated in every case in which the direction taken by the bullet leads not only to a probability, but even to a possibility, of the existence of a wound of the stomach. In 90 per cent. of cases of such injury to the stomach, death is inevitable under any plan of expectant treatment. (3) When undetected, laparotomy should be performed as soon as possible in cases of gunshot wound of the abdomen, as the prognosis becomes more and more unfavorable after every hour, and — particularly as a result of septic perforation — peritonitis is very bad indeed after an interval of twenty-four hours. (4) The indications for laparotomy thus furnished by the results of abdominal gunshot wounds in civil practice are still more imperative in the practice of military surgery. (5) Hæmorrhage caused by gunshot wounds of the liver and spleen should be assisted by plugging after laparotomy. (6) Operative interference and extirpation in cases of gunshot wound of the kidney are indicated only by profuse and persistent bleeding. (7) Lateral wound of the ureter may heal spontaneously; complete division, however, indicates stitching, and in case of failure of this plan, nephrectomy. (8) Gunshot wound of the bladder should invariably indicate suprapubic section and closure of the wound by sutures, and the retention during the healing of a urethral catheter.

---

[28] Lancet, December 16, 1893.

[29] Annals of Surgery, vol. xviii, No. 1, July, 1893.

[30] Centralbl. f. Chir. Beilage, No. 30, 1893.

BIBLIOGRAPHY.

H. A. Hare and E. Q. Thornton. A study of the influence of chloroform upon respiration and circulation. Lancet, October 21, 1893.

Leopold Hudson. Sea voyages for surgical convalescents (with statistical tables). Lancet, October 21, 1893.

Lesi. Tetanus cured by serum of an immunized horse. British Medical Journal, October 7, 1893.

Roswell Park. The importance to the surgeon of familiarity with the bacillus coli communis. Annals of Surgery, September, 1893.

Major. An improved method of draining the antrum of Highmore. New York Medical Journal, August, 1893.

Krause. Priority of operation for intra-cranial neurectomy of the fifth nerve (bibliography). Annals of Surgery, 1893, vol. xviii, 362.

Nasse. Tumors of the salivary glands. Arch. f. Klin. Chir., vol. xliv.

C. J. Bond. On the ultimate condition of cleft palate cases after operation. Lancet, September 9, 1893, p. 627.

William Pepper. Spasmodic and organic stricture of the œsophagus; a report of two cases. Medical News, November 25, 1893.

Rudolph Matas. Notes on some congenital anomalies connected with the branchial apparatus. Medical News, December 2, 1893.

Delorme. A new method of opening the thoracic cavity. Temporary resection of several ribs, modification of "Eslander." Annals of Surgery, 1893, vol. xviii, p. 77.

Barling. Surgical treatment of perforating gastric ulcer. Birmingham Medical Review, September, 1893.

Editorial. Successful celiotomy for perforating gastric ulcer. Medical News, November 11, 1893.

Ederbohls. Technique of total extirpation of the uterus for fibromata. Annals of Surgery, 1893, vol. xviii, 398.

Harrington. Intra-peritoneal cystotomy. Annals of Surgery, vol. xviii, No. 4, October, 1893.

Berger. Operative treatment of congenital umbilical hernia. Rev. der Chirurgie, October, 1893.

Zeidler. Gangrene in strangulated hernia; resection *versus* anus præternaturalis; conclusions from 576 cases. Annals of Surgery, 1893, vol. xviii, 351.

Howard A. Kelly. Uretero-ureteral anastomosis — uretero-ureterostomy. Annals of Surgery, January, 1894.

Bacon. Stricture of the rectum. Annals of Surgery, May, 1893.

Kosima. Tuberculous disease of the elbow-joint, statistical. Annals of Surgery, vol. xviii, 108.

J. Collins Warren. Hypertrophies and degenerations of cicatrices and cicatricial tissue. Annals of Surgery, September, 1893, p. 253.

Lipps. Ligature of external carotid. Arch. f. Klin. Chir., Bd. 42, Hft. 1.

V. Ziemssen. Diagnostic and therapeutic value of puncture of the spinal cord. Annals of Surgery, 1893, vol. xviii, 235.

Coley. Treatment of malignant tumors by repeated inoculations of erysipelas. American Journal of Medical Sciences, 1893.

Herbert Snow. The so-called "parasitic protozoa" of mammary carcinoma. Lancet, November 11, 1893.

Krause. Transplantation of large skin-flaps without a pedicle Annals of Surgery, 1893, vol. xviii, 450.

Lauenstein, Carl. A method for obtaining double skin-flaps for plastic operations. Annals of Surgery, 1893, vol. xviii, 574.

Bier. Plastic improvement of amputation stump of the leg. Annals of Surgery, 1893, vol. xviii, 584.

Stephen Smith. Some facts bearing on the condition and serviceableness of the stump after amputations in the lower extremity at different points and by various methods. Medical News, September 9, 1893.

N. Senn. A new method of direct fixation of the fragments in compound and ununited fractures. Annals of Surgery, August, 1893.

R. Henry Anglin Whitelocke. The detachment of the epiphyses for the anterior inferior spinous process of the ilium through enforced muscular action. Lancet, November 25, 1893.

John B. Roberts. Simplicity in the treatment of fractures. Medical News, July 8, 1893.

A. H. Tubbey. Traumatic separation of the epiphyses of the lower extremity. Annals of Surgery, March, 1894, p. 289.

Arbuthnot Lane. Applicability of the Partney tool or angular gouge to the surgery of the skull. British Medical Journal, November 11, 1893.

◆

Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Meeting February 10, 1894, the President, Dr. Charles M. Green, in the chair.

Dr. F. Minot read a paper entitled

OBSERVATIONS ON CASES OF FIBROID TUMOR OF THE WOMB.[1]

Dr. J. B. Ayer spoke of a case that had formerly serious hæmorrhages. She is now forty-eight years old and the hæmorrhages have practically ceased, although he was called to see her about a year ago for retention of urine. He could recall other cases where the symptoms improved but the tumor remained of the same size.

Dr. W. H. Baker said he was much interested in the paper and thought it was very unusual for nearly one third of the cases to be between twenty and thirty years of age. The youngest case he could recall was twenty-three years old. Retention of urine he had found to be rather rare, as the bladder can usually accommodate itself to the growing tumor. As regards pregnancy, he had found that the fibroids increase very rapidly in size during the pregnant state, while after delivery they diminished very rapidly and sometimes disappeared, the process of involution extending to the tumors.

Dr. F. Minot mentioned a case of spontaneous expulsion of a fibroid tumor without any immediate unpleasant effect. In a few weeks the patient began to cough, became tuberculous and died in a few months. In another case, after a severe hæmorrhage, spontaneous expulsion of a large fibroid tumor took place.

Dr. W. L. Burrage said that in his experience these tumors, as a rule, cause comparatively little interference with micturition. They occasionally cause inflammation in the pelvis which clears up; as regards their effect on the rectum, chronic and obstinate constipation often occurred. The cases Dr. Minot reported of absence of hæmorrhage for a long period were particularly interesting.

Dr. F. H. Davenport had seen but few patients with vesicle trouble due to fibroids. One was a case of multiple fibroid tumor he had seen to-day who has occasionally had retention of urine needing the catheter. In another case there was slight hæmorrhage from the bladder. He found here a small fibroid projecting from the anterior wall of the uterus and pressing against the bladder. On raising the uterus the hæmorrhage ceased.

Dr. A. Worcester said he had heard a good deal said on the necessity of operating on every case of fibroid of the uterus. He wished he could feel that the operation was a safe one. He had watched patients who have carried fibroids for years, cases that had been handed down to him from other physicians. One is a lady of fifty years who has been cognizant of the tumor for twenty-five years. The tumor is so large it rises above the umbilicus and seems like preg nancy at full term. She menstruates regularly, and has never suffered from menorrhagia or dysmenorrhœa; in fact, she is perfectly well and is able to do an immense amount of work. Another case, which had also been handed down to him, was supposed to have a fibroid tumor before 1855. She has never been ill with it, but a short time ago it began to increase in size. Dr. Homans saw it, and found it to be not a fibroid but an ovarian tumor, and removed it. Another case had a fibroid as large as an orange on the right side of the uterus, very prominent during pregnancy. After delivery she made a poor recovery, complaining of pains in the pelvis, an enlarged ovary being found. The ovary was removed by laparotomy, and the fibroid was found to have nearly disappeared, having decreased to the size of the thumb.

---

[1] See page 405 of the Journal.

Dr. Green recalled one case in which a large fibroid was spontaneously expelled: the tumor was about as large as a fœtal head. The patient had previously declined operative treatment, and was given ergot, tampons being occasionally used to control hæmorrhage. He had seen five or six cases in which labor was complicated by the presence of a fibroid tumor: where the tumor is seated low, perhaps filling the pelvic cavity, it may obstruct labor and necessitate abdominal delivery of the child or embryotomy; but in each of the cases he had seen the tumor recede, as labor advanced, and the child was delivered either spontaneously or by the aid of forceps. When the tumor is seated somewhat higher, it may interfere with the ordinary mechanism of labor; or, what is more serious, it may interfere with the retraction of the uterus. If, by chance, the placenta is attached wholly or in part over the tumor, serious and even fatal hæmorrhage may result. In regard to the subsequent shrinkage in fibroid tumors after pregnancy, he thought that usually the tumor involuted with the uterus: such was the case in two patients he had seen within a year. In one of these cases, which was in the Boston Lying-in Hospital, at the beginning of labor the tumor entirely filled the pelvis; but it receded, and the child, which presented the breech, was extracted alive without especial difficulty. The uterus and tumor both involuted, and at the conclusion of convalescence the tumor had shrunk to such a degree that it would scarcely have been detected without careful examination. Dr. Green thought that it was well to remember in these days of operative zeal that fibroid tumors very often not only do not grow rapidly but even remain stationary for years. He had seen a case the day before which he had observed for four or five years: the tumor, which was sub-peritoneal, reached nearly to the umbilicus; but he had been able to detect no change in size during the time mentioned. The patient was forty-seven years of age, and there was reason to hope that with the menopause so near at hand there might be no further increase in the tumor. At present, certainly, there was no indication for operative treatment, as there was neither pain nor hæmorrhage, and the patient was inconvenienced only by the weight of the tumor.

Dr. Edw. Reynolds said he had watched a fibroid grow to the size of a mandarin orange in the second pregnancy and then dwindle to the size of the little finger. In the third pregnancy it grew to the size of two clenched fists, and is now, six weeks after delivery, growing small again. He had observed this same thing in another case.

He had seen six cases of labor complicated with fibroids, all of which did well eventually. One had severe post-partem hæmorrhage; one had a very difficult face presentation, owing to the fibroid; but these were the only cases in which there was any difficulty.

Dr. A. D. Sinclair mentioned a case where a fibroid the size of a fist disappeared after confinement.

Dr. F. H. Davenport read a paper on

THE NON-SURGICAL TREATMENT OF CHRONIC PELVIC INFLAMMATIONS AND THEIR SEQUELÆ.[2]

Dr. W. H. Baker said he would rather be asked to speak on the surgical side, but as that was ruled out by the paper he would quite agree with the method of Dr. Davenport, which puts the matter within the hands of the general practitioner and enables them to do good work.

Dr. G. Haven said he would fully agree with Dr. Davenport in the value of the treatment by massage.

Dr. A. D. Sinclair said that glycerine, ichthyol, and massage were three very important things. Their proper application took time, but the results were good.

Dr. A. Worcester would emphatically endorse massage.

Dr. Edw. Reynolds reported a

CASE OF EXTRA-UTERINE PREGNANCY

and showed specimen.

◆

Recent Literature.

Wimmer's Table and Notes on Human Osteology. For the Use of Students of Medicine. By **Sebastian J. Wimmer, M.A., M.D.** With a preface by **Prof. William F. Waugh.** Philadelphia: The Medical Publishing Company. 1894.

Our opposition to anything of the nature of an anatomical compend has been so persistent and (in our own opinion) so well founded, that we find it difficult to give the praise to this little work which is no more than its due. None the less it states the main facts of osteology so clearly, simply and correctly that we must say that if used, and not abused by being taken as a substitute for a text-book, it is distinctly a valuable help to the student.

Syllabus of the Obstetrical Lectures in the Medical Department of the University of Pennsylvania. By **Richard C. Norris, A.M., M.D.**, Demonstrator of Obstetrics, University of Pennsylvania; Assistant Obstetrician, University Maternity; Physician to the Methodist Episcopal Hospital; Obstetrical Registrar, Philadelphia Hospital; Consulting Obstetrician and attending Gynæcologist, South Eastern Dispensary and Hospital for Women and Children. Third edition. Philadelphia: W. B. Saunders. 1894.

The primary and chief value of this work is, of course, to the students of the University of Pennsylvania, for whose use it was written. It is secondarily of interest to the specialist as offering an easy method of judging of the obstetrical instruction given in so prominent a school. The book is exactly what its title implies — a syllabus of Dr. Hirst's lectures — and little can be added to its title-page by a review except to say that it seems to be a good syllabus.

---

[2] See page 407 of the Journal.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, APRIL 26, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

IDIOPATHIC HYPERTROPHY OF THE HEART.

It was formerly taught that hypertrophy of the heart is always consecutive to some valvular lesion or some other more or less distant impediment to the free circulation of the blood; the heart enlarges to overcome the obstruction, whether this exists in the valves or in the blood-vessels. It is only thirty years ago that Bour, in a thesis published in Giessen, described eighteen cases of hypertrophy of the heart without any discoverable valvular or arterial alterations.

Since this time, many memoirs have appeared in various parts of the world, especially in Germany, substantiating the existence of an idiopathic hypertrophy of the heart. Many of the cases reported were typical instances of the bovine heart. There is a group of cases of dilatation and hypertrophy consequent on prolonged overexertion, and treated of by the French writers under the head of *le cœur surmené* (the overworked heart). This affection was first noticed by Peacock among the Cornwall miners; was next described by Clifford Albutt, and was afterwards observed and studied by Da Costa and others, in soldiers who had, during the late American war, been disabled by forced marches and other hardships.

Osler writes of patients who frequently come under the observation of the physician: "They are able-bodied men, at the middle period of life, and complain first of palpitation or irregularity of the action of the heart, shortness of breath, and subsequently the usual symptoms of cardiac insufficiency develop. On inquiring into the history of these patients, none of the usual etiological factors causing valve disease are present, but they have always been engaged in laborious occupations, and have usually been in the habit of taking stimulants freely."

Schott, of Nauheim, says that the existence of such a condition following overstrain can no longer be doubted. He has made experiments with the view of producing acute overstrain of the heart in healthy and vigorous men by making them struggle till dyspnœa came on. In a recent series of experiments the body of the struggling person was compressed by a girdle applied below the arch of the ribs, thus increasing the intracardiac pressure and making the action of the heart extraordinarily difficult. All the symptoms characteristic of acute overstrain of the heart were thus produced, namely, dyspnœa, arythmia of the pulse, tachycardia, etc., and above all dilatation of the heart, including auricles and ventricles. In the second series of experiments the heart sometimes assumed quite considerable dimensions. Cases were also mentioned in which symptoms of acute overstrain of the heart were produced by lifting heavy objects, climbing mountains, dancing, and particularly tight-lacing and velocipede-riding.[1] Such cases are reported by Jackson in a paper recently published in the Journal.[2] And in connection with this subject it is well to be acquainted with the class of cases described by Da Costa, under the head of "Cardiac Asthenia, or Heart Exhaustion." [3]

At the recent meeting of the International Medical Congress held in Rome (March 29 to April 6, 1894) Laache, of Christiania, Norway, spoke of the subject of idiopathic hypertrophy in connection especially with alcoholism and overexertion. Alcohol is a prominent etiological factor, and in particular, beer-drinking. Here he is in accord with Bollinger who has published some interesting researches on idiopathic hypertrophy of the heart, and assigns to beer-drinking an important etiological part. According to these writers, the plethora provoked by the immoderate ingestion of beer, and the augmentation in the blood-pressure therefrom resulting, joined to a direct noxious action on the heart-muscle explains the hypertrophy and other heart troubles which are becoming increasingly frequent in certain cities of the Empire, "resulting in a mortality scarcely less than that caused by tuberculosis." The condition of the heart thereby caused is spoken of in Bavarian parlance as the *beer-heart.* This *beer-heart* is very prone to fatty degeneration; secondary valve-disease due to consecutive endocarditis is not rare. Strümpell affirms that this condition is very common in the draymen and workers in the breweries of Erlangen, very few of whom pass the forty-fifth year without indications of dilatation and hypertrophy of the heart (Osler). At the post-mortem examination the valves may be quite healthy, the aorta smooth, and no extensive arterio-sclerosis, or renal disease be found. The heart weighs from eighteen to twenty-five ounces.

Laache admits the frequent occurrence of cardiac hypertrophy among the Scandinavian nations from overstrain, especially in conjunction with heredity and habits of alcoholism. The Norwegians are very fond of gymnastic exercises, and these when indulged in immoderately cause overstrain of the heart. A medical *confrère* of his lost his life by heart-rupture after a long tramp on the Norwegian "ski" or skates. Sudden death is, in fact, according to the writer, a very frequent termination of idiopathic cardiac hypertrophy with degeneration. So frequent, in fact, is this form of death in Scandinavia, that (in the words of this writer) "one can hardly open a newspaper without meeting with an account of a case of the kind, brought on by heart-failure or heart-paralysis." But, he does not overlook the wonderful recuperative power sometimes displayed by the heart, and which led Haller in his day to apply to it the epithet *ultimum moriens*.

---

[1] Quoted from Sajous' Annual, 1891.
[2] February 1, 1894, p. 112.
[3] American Journal of the Medical Sciences, April, 1894.

With regard to the word *idiopathic* as applied to the cardiac enlargement resulting from the causes above mentioned, the word is quite correct. An idiopathic disease is a disease which exists by itself, and is not dependent on another (Robin). Some writers have spoken of an idiopathic hypertrophy of the heart as an affection occurring without discoverable cause. There is no sufficient evidence that any such affection has ever existed. The mechanism of idiopathic hypertrophy is not essentially different from that of hypertrophy secondary to valvular disease or renal sclerosis, and may be summed up in these words: *augmentation of blood-pressure.*

◆

THE ELEVENTH INTERNATIONAL MEDICAL CONGRESS.

ALL accounts of the Eleventh International Congress — those directly from Italian sources, those sent to the English, to the German and to our own journals, and those which we get directly from returning delegates — concur in indicating that it was at once the largest and the least well-organized of these international medical gatherings. There was no lack of good-will or of hospitable intention on the part of the hosts; but there unquestionably was an evident lack of previous appreciation of the inherent difficulties, of the great numbers, of the necessary conveniences, as well as a lack of executive capacity.

The truth is, the very success of these meetings threatens to be their ruin. It is next to impossible to provide properly for thousands of men speaking different languages who come together for five or six days, and it is quite impossible to do any sort of justice even to a small part of four thousand papers in three or four different languages.

The picnic side of these gatherings is the one which has developed the most strikingly, and which threatens to overshadow the rest. For those who can afford the time and the expense, the outing is excellent, moreover, they may make interesting professional acquaintances. Those who stay at home may console themselves with the reflection that they get the scientific results — a little later, perhaps, but always more fully and more satisfactorily — without the fuss and the scrabble which are getting to be inevitable accompaniments of the Congress. It seems a fair question whether the unrestrained acceptance of many thousand papers is to be approved. It offers a golden opportunity, to be sure, for many to obtain the happiness of capitalized print; but a judicious selection would add much to the merit of the meetings.

MEDICAL NOTES.

CHARCOT'S SUCCESSOR. — Dr. Raymond of the Salpétrière has been chosen by the Faculté de Médecine as Charcot's successor by a vote of thirty in thirty-one.

YELLOW FEVER AT RIO JANEIRO. — The yellow fever still continues to increase at Rio Janeiro, the deaths now numbering nearly a hundred every day, while there are between four and five hundred new cases every week.

A CASE OF SMALL-POX AT SUSSEX, N. B. — A case of small-pox has occurred in Sussex, N. B., the patient being a physician just returned from New York where he had attended a case of small-pox the week before in connection with his hospital work.

SAMUEL WARREN, D.C.L. — For the benefit of those of our readers who were misled by a statement in our editorial of last week on "The Doctor in Fiction," we call attention to the fact that Samuel Warren was not a physician, though he might have been. He studied medicine at Edinburgh, but lapsed into the law, which profession he followed with some distinction.

THE REAPPEARANCE OF CHOLERA. — The cholera has made its appearance again for the summer of this year. Throughout the winter there have been smouldering centres of the disease in Russia and in some Turkish districts, though not acknowledged by the governments of those countries. Since the first of April so many cases have occurred in Czenstochov, in Poland, that the town has been quarantined. The disease is now admitted to be epidemic in Kovno, Kaliss, Plock and Warsaw. In Constantinople, there are officially no cases, but the disease has been spreading rapidly throughout the city, no longer being confined to the poorer classes. Several of the foreign legations have left the city for more healthy quarters. On April 23d, 65 cases of "cholerine" were reported to the health authorities of Lisbon, and on the following day 104. The disease is reported to be present in many villages in the interior.

THE D. HAYES AGNEW MEMORIAL. — The D. Hayes Agnew Memorial Committee, organized a year ago to secure a lasting memorial of Dr. Agnew in connection with the University Hospital, Philadelphia, report that subscriptions have been promised of sufficient amount to give reasonable assurance of the successful carrying out of this plan which includes not only a children's ward, but also an amphitheatre and ward class-rooms, with wards for men and for women, — the whole to be a model in perfection of details and completeness of appliances, and thus a fitting representation of the work of Dr. Agnew. The State Legislature, at its last session, made an appropriation of $80,000 to the University Hospital for building purposes, provided that an equal sum of $80,000 be raised by the friends of the Hospital. Of this sum about $60,000 has already been raised, leaving only about $20,000 more to be secured by May 1, 1894.

It is hoped to secure, in addition to this sum, a nucleus for an endowment fund for the new wing, which is to be given the name of D. Hayes Agnew.

Small-Pox in Chicago. — The small-pox epidemic in Chicago is at present assuming most threatening proportions. Throughout the early winter scattered cases were reported and cared for in the hospital, but during the last two months the cases have increased so rapidly that the health department has been entirely unable to control the spread of the disease. During March there were 308 cases, and at present there are 200 patients in the small-pox hospital, which is so crowded that many of the sick are sleeping on mattresses on the floor. Ten small-pox patients have been taken into the County Hospital, which is now quarantined with its 300 other patients, who cannot be discharged. Sixty patients are already quarantined in forty-eight private houses throughout the city for want of any kind of hospital to send them to. The house-to-house canvass shows a wide dissemination throughout the city, and the increase of cases during the last week was 126. The most seriously affected portion of the city is the southwestern section. In many cases the disease has not been reported until after death, the inspectors finding three bodies in one house last week.

ECHOES OF THE CONGRESS AT ROME.

Among other interesting facts gleaned from an Italian source we learn that there were consumed at the luncheon given at the Baths of Caracalla, six thousand bottles of wine, of which three thousand were champagne; eighty lambs; five hundred fillets of beef; one thousand chickens; twenty-two thousand sweet-cakes; twelve barrels (*caratelli*) of beer; and forty thousand rolls (*pagnotelle*). This was accomplished by about ten thousand participants. The Italian accounts of the scene around the buffet at the reception given in the great Capitoline Hall read more like an epic rendering of an Irish wake than the story of a public official reception of the world's representatives of medical science in one of the oldest European capitals. But the reminiscences of that famous Berlin banquet at the last Congress should have prepared us for the possibility of these things. "Congressists" who have discussed and listened to many papers require much food and drink; and after all what is a *pasta dolce* and a *bicchierino di marsala* among one — especially after he has fought for it!

A correspondent writes us of the absolute failure of the attempt made to organize a bureau of information for the members from the United States and Canada, where those who knew no Italian (the large majority) might be directed in their need. As none of the Italians even seemed able to give any information or to know anything about it at all, the attempt naturally came to an undeserved and lamentable end. As the *Medical Record* says, "A more go-as-you-please and never-get-there Congress was probably never held."

Mr. Ruskin has called opera as sung in Italy "the vomiting up of hopelessly damned souls out of still carnal throats," but a theatre full of Congressists paid six dollars a seat to hear Verdi's "Traviata" poorly sung.

The site of the Policlinico was not chosen for convenient reaching by the members of the Congress. It was well enough in Rome to take a cab out, but they did not wait during the meetings. One could readily ride out, *sed retrogrere gradum hic labor est*, along a newly-built and dusty Roman road — when there is no luncheon in one's stomach and no idea of what has really been said is within one's mind.

It was a serious grievance to many of the wives of the members that they were not received by the Queen. They could not appreciate the etiquette which excluded them as not having been previously presented at Court.

An International Honor to Dr. Murphy. — The International Medical Congress, in appointing its honorary presidents for the year, made Dr. J. B. Murphy, of Chicago, president for the United States.

A Proposed International Pediatric Association. — During the International Medical Congress at Rome a meeting was held at the house of Dr. Blasi, President of the Section of Pediatrics, to arrange the preliminaries for the organization of an International Pediatric Association, one of the chief objects of which will be to improve the present methods and facilities for giving instruction in diseases of childhood.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the eight days ending at noon, April 25, 1894, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 36, scarlet fever 60, measles 22, typhoid fever 16, small-pox 3 (and 1 death). There are now seven cases of small-pox in the hospital. For the six days ending April 25th, 24 cases of small-pox were reported to the State Board of Health, 23 from Chicopee and 1 from Holyoke.

A Warning to Physicians in Boston.— Physicians in Boston and vicinity are warned against a swindler who calls in the doctor's absence with a pretended order to repair the rubber stamps.

An Outbreak of Diphtheria in Williamstown. — The Board of Health has closed the Centre school of Williamstown on account of the prevalence of diphtheria. This school includes high, grammar and primary grades.

One Hundred and One Years Old. — Mrs. Betsey Davis, of Mansfield, Mass., celebrated her one hundred and first birthday on April 18th. She was the daughter of an early French settler named Dausance, and the house in which she was born is still standing in Whiteville, a part of East Foxboro.

The First Conviction Under the Connecticut Medical Practice Act. — The first case brought to trial under the new Medical Practice Act of Connecticut occurred last week at Waterbury, in that State, when a "Dr." Helen Ashley Keene was fined one hundred dollars and costs for practising without a license. She has appealed to the District Court under bonds.

The New England Cremation Society. — A meeting of the New England Cremation Society, which was made open to the public, was held in Boston on April 17th. The report of the Society shows a membership of nearly two hundred, among whom are sixteen physicians and five clergymen.

Typhoid Fever at Windsor, Vt. — A most serious epidemic of typhoid fever exists at Windsor, Vt., there being at present 130 cases. There have been eight deaths already. The serious nature of the situation can be appreciated when it is realized that the ratio of sick to the total population is about one to five or six. The investigation of the outbreak has given a most convincing. and it is to be hoped useful, lesson upon the danger of contaminated water-supply. In January last, a case of typhoid of doubtful origin occurred in a farm-house about 200 feet from the spring and brook which supply the town reservoir. The house stood about 30 feet above the level of the brook, and there was a natural surface drain from the house and out-buildings to the valley below. There is no evidence of any especial precautions having been taken during the illness of the patient to prevent the discharges being mingled with the usual drainage. During the spring thaws all these infected excreta found their way into the brook and the town reservoir. In March, several cases broke out in the village; and within a few days the disease was general and widespread. Since the undoubted pollution of the regular water-supply has been proved, the local Board of Health has issued a warning against the use of water from the town reservoir, and has supplied water from springs in other localities to families who have no wells of their own. Several cases of typhoid fever have occurred in neighboring towns, it is said, among those who derive their water in part from Windsor. Business and all social life are at a complete standstill, and the labor devolving upon the physicians and those not yet ill, has become most taxing. It is to be hoped that so plain a lesson will be remembered, and that in each of the hundred houses now visited care is taken that all the wells and other springs in the town are not further infected.

NEW YORK.

Vaccinating under Police Protection. — On the night of April 18th a corps of fifty vaccinators from the Health Department, escorted by one hundred policemen, made a descent upon what is known as Red Hook, a thickly populated tenement-house district of Brooklyn, and vaccinated five thousand people. The territory covered includes eight blocks, and two weeks ago the health officers attempted to carry out a similar crusade; but, as they were then unaccompanied by the police, the inhabitants resisted and drove them off the field with clubs and broomsticks.

William A. Conway, M.D. — Dr. William A. Conway, Coroner's Physician, died at his residence, 270 East Broadway, on April 17th, after a month's illness. He was born in New York City in 1840. He received his collegiate education at St. Francis Xavier College, and in 1866 was graduated from the College of Physicians and Surgeons, New York. He was connected with the coroner's office for nine years, and had just entered his fourth term of office as deputy coroner. Dr. Conway had always practised in his native city, and was especially identified with the east side of New York, where he had grown up and where he was held in high esteem by a large circle of friends.

PHILADELPHIA.

Philadelphia County Medical Society and the Code. — At a meeting of the Philadelphia County Medical Society, held April 18th, the following resolutions were adopted:

Whereas, The Code of Ethics of the American Medical Association declares it derogatory to professional character for a physictan to dispense or in any way promote the use of a secret nostrum; and the American Medical Association, by a resolution unanimously adopted at its meeting in 1892, forbade the advertising of such nostrums in its journal; and

Whereas, The Journal of the Association has continued to advertise such nostrums, and, in defence of its course in this particular, has published an anonymous personal attack on a member of the American Association and of this Society;

Resolved, That the Philadelphia County Medical Society respectfully demands that the Trustees of the Journal shall in their public official acts respect the spirit and letter of its Code of Ethics, and that the columns of its Journal shall not be used for the anonymous personal abuse of members in good standing.

Resolved, That a copy of these resolutions be transmitted to the Medical Society of the State of Pennsylvania, and to the American Medical Association and to the weekly medical journals.

Miscellany.

DR. WILLIAM PEPPER'S RESIGNATION AS PROVOST OF THE UNIVERSITY OF PENNSYLVANIA.

Dr. William Pepper has presented his resignation of the office of Provost in the following communication to the Trustees of the University of Pennsylvania:

With deep thankfulness I recognize that the University has reached a stage of development and prosperity which justifies me in laying down the high office you intrusted to me more than thirteen years ago, and which I have held as long as it was possible to combine the administrative labors of Provost with the demands of medical teaching and practice. This time has now passed, and I beg therefore to tender my resignation to take effect after the coming Commencement.

The close of the current session will witness the completion of the formative period of the University. From a group of disconnected schools there has been gradually organized a great academic body, complete in its unity and instinct with varied yet harmonious activities. Mutual confidence and co-operation have developed a system strong enough for effective central control, yet so flexible as to admit affiliation with many separate organizations.

To our University is due the credit of establishing university extension in America, yet the important and successful society which controls this movement has no organic relations with the University, save that the Provost is *ex officio* the Honorary President. The Wistar Institute of Anatomy and Biology, a magnificent memorial of the founder of American Anatomy, has a separate charter and is not owned by the University, yet is governed by a Board the majority of whose members are appointed by yourselves. The University Hospital, which has grown so prosperously, is a special trust administered by a Board of twenty-two members, only four of whom are appointed by the Trustees of the University.

The Department of Archæology and Paleontology, under whose energetic operations there is developing rapidly a Museum of high rank, is governed by a Board of not less than thirty-six members, of whom only six are appointed by the Trustees of the University. Reference is made to these familiar instances to illustrate the admirable results which may develop under a system which excludes rigid control, and rests upon mutual confidence and a common devotion to a great cause.

It has been a chief aim of your Board to demonstrate to the people of this great Commonwealth that the University is truly the voluntary association of all persons and of all agencies who wish to unite in work for the elevation of society by the pursuit and diffusion of knowledge and truth. No less important has been the establishment of the principle that the University, so far from being a private and exclusive corporation, is essentially and organically a part of the municipality. The large future of the University was secured when, in 1872 and in 1883, City Councils voted, without a dissenting voice, the transfer to the University of splendid tracts of ground in consideration of the establishment in perpetuity of fifty free beds in the Hospital for the poor of Philadelphia, and of fifty prize scholarships in the College, to be awarded to graduates of the public schools of Philadelphia. The subsequent accessions of territory which have brought the domain of the University up to fifty-two acres, in a compact body in the centre of the city, have been the logical consequences of these great steps; and so faithfully have all the trusts and conditions been executed, that it has come to be recognized by the municipal authorities that it is more profitable to the city to give freely to the University anything in its power to bestow which is needed for the development of that institution than to dispose of it elsewhere even at a great price. It needs only the resolute continuance of this wise policy to secure for the University full recognition as a branch of the City Government with a duly accredited representative of its great constituency in her Councils.

Progress has also been made toward the establishment of the essential principle that the University is in right, and should be in fact, the head of the educational system of the entire Commonwealth. We may fairly claim to have done much toward securing a recognition of the view that the encouragement of higher education, by the municipality and the legislature, is as proper and important in the older communities of America as it has been decided to be in the newer States.

While the unification of the University and the establishment of broad lines of policy may seem to be the most important work of the past thirteen years, it will be found that the resources of the University and the educational work in each department have been successfully promoted. In 1881 its property was fifteen acres, while at present there are owned or controlled by the University, in a continuous tract and solely for educational purposes, not less than fifty-two acres. The value of the lands, buildings and endowment in 1881 may be estimated at $1,600,000; it is now over $5,000,000. Prior to the date of the late John Henry Towne's great bequest, the University had never received a single large gift or legacy. During the current year ending September 1, 1884, there will be acquired in lands, buildings, money and subscriptions not less than $1,000,000. The members of the teaching force in 1881 numbered 88, and the students in all departments 981; at this time the former are 268, and the attendance has reached 2,180, representing every State of the Union and no less than thirty-eight foreign countries. The College Department has attained a national distinction, and its complete reorganization, which has now been accomplished successfully, gives sure promise of sound and rapid progress. The Medical School has been advanced to preeminence in equipment and prosperity, while plans now maturing will place it abreast of the great schools of Europe. The Law School has effected the prolongation and elevation of its curriculum, and has deservedly won national repute. Encouraging progress has been made toward providing an admirable building on an approved site, so that the future eminence of the school is assured. Gratifying reports may be made of the position of the Dental and Veterinary Departments; and well-considered plans for their still further development need only time for their fulfilment. Upon this vigorous basis rests the Department of Philosophy, which, although organized as late as 1884, and still without special endowment, has already one hundred and fifty-four students. It represents the University in its highest and best intellectual life; it affords inspiration to teachers and students; it has enabled us to extend the richest privileges of the University to women on equal terms with men; it points the way to large endowment of rich research and advanced scholarship.

The necessity of dormitories to the development of the best university life has come to be clearly recognized by your Board, and generous friends stand ready to supply this important need.

It is pleasant, in these days of strength and prosperity, to reflect upon those of doubt and struggle, when ridicule met the assertion, the truth of which is now freely conceded, that nowhere can a great university be developed so favorably as in a great city.

In closing my term of service as provost, I may be permitted to allude to the motives which impel me to this step. The labor of these thirteen years has been so severe, in connection with my professional duties in the Medical School, and with the extensive medical practice necessary to provide the funds which have enabled me to initiate nearly all of the large movements undertaken during this time, that I have often felt that my life was specially preserved for the work. It has, however, been growing evident, for several years past, that the time was approaching when the immense extent of the University interests would demand the undivided activity of the most energetic man. It has now become necessary for me to choose between administrative work and medical science. My devotion to the latter has determined the choice.

No official has ever been associated with more affectionate and indulgent colleagues, or has enjoyed more loyal co-operation than has been extended to me. I am confident that the choice of my successor will be wisely and promptly made. I do not leave the service of the University, but will remain, with more free hands, ready to serve her every interest with utmost devotion.

I invoke upon your continued labors in the government of this grand institution the richest blessings of Almighty God, who has in the past so signally guarded it.

◆

THE SEWAGE SYSTEM IN FITCHBURG.

THE sanitary relations of one community to another are in no wise different from those of individual persons. A man is safe from filth disease if he himself, his house, and his surroundings are clean; but, it is little security for him to know that his own house is properly plumbed, if his sewage enters a sewer without any outlet, or his next-door neighbor enters all his waste sewage into a sluggish-flowing brook which runs by his premises. With cities it is the same. The increasing intercommunication of our cities and towns — in the way of business, especially in supplying food or milk, the one to the other — makes the sanitary arrangements which shall prevent an outbreak of typhoid or other communicable disease in any town a matter of no small interest to a wide circle of settlements. A recent address of Dr. C. W. Spring, the city physician of Fitchburg, Mass., calls attention to a state of matters which might well be seriously considered. He says:

"The system of sewage disposal in Fitchburg, if such a process can be called a system, is to discharge the sewage, and almost everything else that is not needed, into the Nashua River. The river entering the town at its south-westerly corner, is a small stream, which is soon increased in size by the junction of two brooks. From a point above these tributaries, at the extreme upper end of the city, to South Fitchburg, a distance of about 6.3 miles, the river has a fall of about 275 feet. The valley through which the river flows is quite narrow, and along its banks is located the greater part of the population of the city. Within this distance the river receives the sewage of some 20 miles of sewers from 21 separate openings, and the refuse, in whole or in part, of 13 paper mills, 3 worsted mills, 3 yarn mills, 1 cotton-batting mill, 5 gingham mills, a gas works, various machine shops, and many other establishments of various kinds — to say nothing of the large amount of rubbish which is thrown directly into its waters. Below the city the valley widens, and the river is joined by Baker's Brook, which though it drains an area about one-fourth as large as that drained by the main stream, is almost free from sewage pollution."

The pollution of the river is well shown by the summary of analyses made at different points along its course. Shortly after reaching the city the river water begins to assume its characteristic milky appearance. The total solid matter, both dissolved and suspended, is 8 parts in 100,000, and the number of bacteria for each cubic centimetre is 496. Shortly after being joined by the first brook the water contains 16 parts of solids and 7,600 bacteria. For a short distance there is slight improvement, but the pollution rapidly increases, lower in the city, to 17 parts of solids and 45,600 bacteria, to 21 parts of solids with 56,400 bacteria, until half a mile below the last paper mill the maximum pollution is reached — the water being thick, muddy and offensive to the smell, the solids reaching 23 parts and the number of bacteria 111,600. The increase in pollution in the fifteen years from 1876 to 1891 was nearly 300 per cent.; the figures showing in 1876 an increase between the most northern and southern points in the river from 2.64 to 7.46, and in 1891 from 7.50 to 20.50.

"The Nashua River is not, however, the only stream in the city which is made a public sewer. Punch Brook has long been, and now is, a public nuisance. It receives a large amount of sewage, either directly or indirectly, and running as it does often concealed from view, and underneath houses, its danger is all the greater. If it was open its whole distance its waters might become a little less foul from the natural oxidation which would take place by contact with fresh air. It is hardly necessary to say that such a nuisance should be abated."

A BILL TO PROVIDE FOR THE REGISTRATION OF PHYSICIANS AND SURGEONS IN THE STATE OF MASSACHUSETTS.

The following bill has been passed by the Massachusetts Senate:

Section 1. The governor, with the advice and consent of the council, shall appoint seven persons, resident in this Commonwealth, who shall be graduates of a legally chartered medical college or university having the power to confer degrees in medicine, and who shall have been actively employed in the practice of their profession for a period of ten years, who shall constitute a board of registration in medicine. Such persons shall be appointed and hold office for terms of one, two, three, four, five, six and seven years, respectively, beginning with the first day of July in the present year, and until their respective successors are appointed, and thereafter the governor, with the advice and consent of the council, shall appoint before the first day of July in each year one person qualified as aforesaid to hold office for seven years from the first day of July next ensuing. No member of said board shall belong to the faculty of any medical college or university. Vacancies in said board shall be filled in accordance with the provisions of this act for the establishment of the original board, and the person appointed to fill a vacancy shall hold office during the unexpired term of the member whose place he fills. Any member of said board may be removed from office for cause by the governor with the advice and consent of the executive council, and not more than three members of said board shall at one time be members of any one chartered State medical society.

Sect. 2. The members of said board shall meet on the second Tuesday of July next, at such time and place as they may determine, and shall immediately proceed to organize by electing a chairman and secretary, who shall hold their respective offices for the term of one year. The secretary shall give to the treasurer and receiver-general of the Commonwealth a bond in the penal sum of five thousand dollars, with sufficient sureties to be approved by the governor and council for the faithful discharge of the duties of his office. The said board shall hold three regular meetings in each year, one on the second Tuesday of March, one on the second Tuesday of July and one on the second Tuesday of November, and such additional meetings at such times and places as it may determine.

Sect. 3. It shall be the duty of said board immediately upon its organization to notify all persons practising medicine in this Commonwealth of the provisions of this act by publication in one or more newspapers in each county, and every such person who is a graduate of a legally chartered medical college or university having power to confer degrees in medicine, and every person who has been a practitioner of medicine in this Commonwealth continuously for a period of three years next prior to the passage hereof, shall upon the payment of a fee of one dollar be entitled to registration, and said board shall issue to him a certificate thereof signed by the chairman and secretary.

Sect. 4. Any person not entitled to registration as aforesaid shall, upon payment of a fee of ten dollars, be entitled to examination, and if found qualified by four or more members of said board shall be registered as a qualified physician and shall receive a certificate thereof as provided in section three. Any person refused registration may be re-examined at any regular meeting of said board within two years of the time of such refusal, without additional fee, and thereafter he may be examined as often as he may desire upon the payment of the fee of ten dollars for each examination. Said board, for criminal cause shown and after hearing, may by unanimous vote revoke any certificate issued by them and cancel the registration of the person to whom the same was issued. All fees received by the board under this act shall be paid by the secretary thereof into the treasury of the Commonwealth once in each month.

Sect. 5. The compensation, incidental and travelling expenses of the board shall be paid from the treasury of the Commonwealth. The compensation of the board shall be ten dollars each for every day actually spent in the discharge of their duties, and three cents per mile each way for necessary travelling expenses in attending the meetings of the board, but in no case shall any more be paid than was actually expended. Such compensation and the incidental and travelling expenses shall be approved by the board and sent to the auditor of the Commonwealth, who shall certify to the governor and council the amounts due as in case of all other bills and accounts approved by him under the provisions of law: *provided*, that the amounts so paid shall not exceed the amount received by the treasurer and receiver-general of the Commonwealth from the board in fees as herein specified, and so much of said receipts as may be necessary is hereby appropriated for the compensation and expenses of the board as aforesaid.

Sect. 6. The board shall keep a record of the names of all persons registered hereunder, and a record of all moneys received and disbursed by said board, and said records or duplicates thereof shall always be open to inspection in the office of the secretary of the Commonwealth. Said board shall annually report to the governor, on or before the first day of January in each year, the condition of medicine and surgery in this Commonwealth, which report shall contain a full and complete record of all its official acts during the year, and shall also contain a statement of the receipts and disbursements of the board.

Sect. 7. It shall be the duty of the board to investigate all complaints of disregard, non-compliance or violation of the provisions of this act, and to bring all such cases to the notice of the proper prosecuting officers.

Sect. 8. On and after the first day of January, in the year eighteen hundred and ninety-five, the board shall examine all applicants for registration as licensed physicians or surgeons in this Commonwealth. Applicants must give satisfactory proof of being twenty-one years of age and of good moral character; and every applicant who is a graduate of and has received a degree of M.D. from a legally chartered medical college or university having power to confer degrees in medicine in this Commonwealth, shall be entitled prima facie to be registered under this act upon payment of the fees herein provided.

Sect. 9. Examinations shall be, in whole or in part, in writing, and shall be of an elementary and practical character. They shall embrace the general subjects of surgery, physiology, pathology, obstetrics and practice of medicine, and shall be sufficiently strict to test the qualifications of the candidate as a practitioner of medicine.

Sect. 10. Whoever not being registered as aforesaid, shall advertise or hold himself out to the public as a physician or surgeon in this Commonwealth, by appending to his name the letters "M.D.," or using the title of doctor, meaning thereby a doctor of medicine, shall be punished by a fine of not less than one hundred nor more than five hundred dollars for each offence, or by imprisonment in jail for three months, or both.

Sect. 11. This act shall not apply to commissioned officers of the United States Army, Navy or Marine-Hospital Service, or to a physician or surgeon who is called from another State to treat a particular case, and who does not otherwise practise in this State, or to prohibit gratuitous services; nor to clairvoyants, or to persons practising hypnotism, magnetic healing, mind cure, massage methods, Christian science, cosmopathic or any other method of healing: *provided*, such persons do not violate any of the provisions of Section ten of this act.

Sect. 12. For the purposes of the appointment of said board, and of registration of persons by it hereunder, this act shall take effect upon its passage, and shall take full effect on the first day of January in the year eighteen hundred and ninety-five.

◆

PROFESSOR TYNDALL.

Professor Huxley[1] draws the following clear picture of Tyndall's character, at the time when he first became acquainted with him:

"My elder by some five years, Tyndall's very marked and vigorous personality must have long taken its final set when we foregathered in 1851. But I found my new friend a difficult subject — *incertæ sedis*, as the naturalists say; in other words, hard to get into any of my pigeon-holes. Before one knew him well, it seemed possible to give an exhaustive definition of him in a string of epigrammatic antitheses, such as those in which the older historians delight to sum up the character of a king or leading statesman. Impulsive vehemence was associated with a singular power of self-control and a deep-seated reserve, not easily penetrated. Free-handed generosity lay side by side with much tenacity of insistence on any right, small or great; intense self-respect and a somewhat stern independence, with a sympathetic geniality of manner, especially toward children, with whom Tyndall was always a great favorite. Flights of imaginative rhetoric, which amused (and sometimes amazed) more phlegmatic people, proceeded from a singularly clear and hard-headed reasoner, overscrupulous, if that may be, about keeping within the strictest limits of logical demonstration; and sincere to the core. A bright and even playful companion, Tyndall had little of that quick appreciation of the humorous side of things in general, and of one's self in particular, which is as oil to the waves of life, and is a chief component of the worthier kind of tact; indeed, the best reward of the utterer of a small witticism, or play upon words, in his presence, was the blank, if benevolent, perplexity with which he received it. And I suppose that the character-sketch would be incomplete, without an explanation of its peculiarities by a reference to the mixture of two sets of hereditary tendencies, the one eminently Hibernian, the other derived from the stock of the English Bible translator and Reformer."

◆

MEASLES AND THEOLOGY.

About two years ago a curious incident was reported from a Swiss village, regarding an epidemic of measles which attacked the children only of Catholic parents. A repetition of this doctrinal distribution of disease is now reported by Dr. Gryglewicz, of Jutroschin.[1]

Under the date of January 11th, he writes that for three weeks there had been a sharp epidemic of measles, and in all that time he had found the disease only among Catholic children. Some grades of the Catholic schools were closed as over eighty per cent. of the pupils were ill. Upon inquiry among the evangelical schools, it was found that not a child was absent. In his practice, he had seen no Protestant children ill. The 2,000 inhabitants of Jutroschin are about evenly divided between Catholics and Protestants; and there are about 150 Jews in the town, among whom there was one case of measles. No explanation of this curious occurrence has yet been found. If in the future the present difficulties of bacteriological etiology and diagnosis are to be further involved by theological and denominational difficulties, the path of the advancing scientific physician will be no easy road to fact or fame.

◆

THE HINDU SYSTEM OF MEDICINE AND THE SECRET OF SUCCESS IN PRACTICE.

The eighth fascicle of the *Charaka Samhita* contains a most interesting account of the basis of the Hindu system of medicine as it includes a classification of all illnesses. "Diseases that occur are of four kinds: first, accidental, as wounds inflicted by nails, or falls, incantations, curses, assaults of evil spirits, acts of violence, binding, cords, burns and lightning. All other diseases are constitutional, and have three classes due to disorders of wind, bile and phlegm. Accidental diseases arise at first with pain, and afterwards cause disorders of wind, bile and phlegm. In constitutional diseases, wind, bile and phlegm in the first instance become disordered and afterwards lead to pain.

"The respective divisions of the body that constitute the seats of the three faults are as follows: The hypogastric or pubic region, the place where the fæces collect, the regions about the loins, the thighs, the feet, and the bones, are the seats of wind. That portion of the stomach, however, where digestion goes on, among the seats of wind, is in particular the seat thereof. Sweat, the thorax saliva, blood, and that portion of the stomach where undigested food remains, are the seats of bile. Amongst these all, the last is especially the seat of bile. The thorax, the head, the throat, and all the joints, that portion of the stomach which holds the undigested food, and the fat, are the seats of phlegm. Amongst these all, the thorax is especially the seat of phlegm. Verily, wind, bile and phlegm wander over every part of the body. In their normal or unexcited state they produce beneficial results, such as growth, strength, good complexion and clearness of senses. When not in their normal state, they produce many evil consequences called disease."

---

[1] Popular Science Monthly, March, 1894.

[1] Deutsche Med. Zeitung, 1894, No. 29.

There then follows a most extended nosology of the diseases due to those three causes, from which it is readily perceived that wind, bile and phlegm are used as technical terms implying certain states of the physical constitution and not at all in the ordinary sense of atmosphere, hepatic secretion or mucous exudations. Having carefully enumerated each with its appropriate treatment, the eighty diseases of wind, the forty of bile, and the twenty most common of the innumerable diseases due to phlegm, the writer closes with the following injunction to the reader:

"The diseases should first be carefully ascertained. After this, the medicine to be applied should be carefully selected. Subsequent to this the physician should, with full knowledge of consequences, commence the treatment. That physician who, without carefully ascertaining the disease, commences the treatment, seldom meets with success even if he be well conversant with medicines and their application. That physician who is well conversant with the features of disease, who has a thorough acquaintance with all medicine, and who has knowledge of the considerations dependant upon time and place, achieves success without doubt."

Correspondence.

[Special Correspondence.]

LETTERS FROM ROME.

THE ELEVENTH INTERNATIONAL MEDICAL CONGRESS.

Rome, April 10, 1894.

Mr. Editor. — A few words relative to the Eleventh International Medical Congress just closed in Rome may be of some slight interest to your readers. In some respects the Congress was as much of a success as can be expected of such large and democratic medical assemblies. About 7,000 physicians were registered from all over the world and about 1,500 guests, a larger number than was at Berlin at the last meeting. American physicians were more conspicuous by their absence than by their presence, not quite 200 being on the list, while at Berlin there were over 600. Those who sailed from New York on March 17th, with the expectation of landing in Genoa on the 28th, among whom was Dr. Jacobi, the chairman of the American delegation, were doomed to disappointment. Although the *Kaiser Wilhelm* left her dock promptly at seven o'clock in the morning, she as promptly ran on to the bar in the harbor, and lay there seven or eight hours, thus causing us to lose a day. Over thirty of her passengers were physicians, and they did not reach Rome until Friday, too late for the opening exercises, which took place on Thursday in the presence of the King and Queen of Italy, and a large assemblage completely filling the Costanzi Theatre. Signor Crispi made the address of welcome on the part of the king, Dr. Baccelli followed in a Latin discourse, and Prince Ruspoli greeted the members "in the name of the city of Rome." Virchow gave an admirable paper on the growth of medical science, laying especial emphasis upon "Morgagni and his influence upon anatomical thought."

During the Congress notable addresses were made by Nothnagel of Austria, on "Modifications of the Organism in consequence of Pathological Alterations"; Bouchard, "On Fevers"; Professor Babes, of Bucharest, "The State in its Relation to the Results of Modern Bacteriological Researches"; Stovis, on "Chemistry and Materia Medica"; Kocher, on "Projectiles and their Effect upon the Wounded." Dr. Murphy, of Chicago, created a very favorable impression with his paper on "Cholecystenterostomy, Twenty Successful Cases"; he also reported 145 laparotomies for appendicitis. Dr. Link, of Terre Haute, Ind., presented a paper in which he claims to have proved by experiments on dogs, as well as by clinical experience, that at least three inches of the tibia and fibula with the periosteum may be removed, as in a compound and comminuted fracture, and new bone be formed *without shortening!* The dressing consists of old linen and thin wooden splints, which are not removed till the patient is well. He lays great stress upon frequent and long-continued douching with water as hot as can be borne. Dr. Turck, of Chicago, read a paper upon the value of swabbing out the stomach with a sponge. He demonstrated his method upon a man said to have a dilated stomach. The apparatus consists of a wire about three feet long with a sponge looking not unlike a sponge tent, about two and a half inches in length by three-fourths of an inch in diameter, fastened to one end. The wire protected by rubber tubing is attached to a rotary machine resembling an egg-beater, or a hand-drill. On introducing the wire into the stomach and turning the handle the sponge is made to revolve rapidly, and can be felt externally in a thin person. Dr. Turck claims that he can thoroughly cleanse not only the stomach in this manner, but that he also pushes the sponge into the duodenum. The patient bore the manipulation very well indeed, often turning the crank himself! There was no vomiting attending the demonstration. We were given to understand that this method is in daily use in the doctor's practice.

The scientific work of the Congress was done in sections, there being seventeen or more of them. As over 4,000 papers were presented, it may be easily imagined that the work of some of the sections was hurried and hence unsatisfactory. An idea may be formed of the work crowded into some of the sections from the fact, that in the official list 50 papers would be put down for one day in physiology, 25 in anatomy, 36 in pathology and pathological anatomy, 43 in obstetrics and gynæcology, 93 in surgery, and 124 in internal medicine. The papers were not repeated from day to day in the list. I am told that some rather startling jumps were made in some of the lists, in one instance going from No. 4 to No. 92. The sections began work at eight o'clock in the morning and the general sessions, held a mile away, at four in the afternoon.

The exhibit of surgical instruments and appliances was not as extensive as at Berlin. One noticeable article in the collection was an operating-table made by Stillé, of Stockholm, which was adjustable to many positions, and, while being strong and firm, was yet simple and free from complicated contrivances, so liable to get out of order or to refuse to work at critical moments. The electrical exhibit was quite good, a hand-light for the throat being very noticeable.

The social part of the Congress was by no means slighted. Perhaps the most satisfactory feature was the garden-party given at the palace by their Majesties, the King and Queen. At least, it was satisfactory to those who were fortunate enough to receive invitations. The ladies were handsome, the dresses were beautiful, the music by two bands was fine, the weather was perfect, their Majesties were gracious; and upon this occasion, which was almost the only one of which that can be said, the crowd was not too large. The reception given at the Capitol by the city was a great success as regards numbers, elegant toilets, etc. The climax, however, was reached on the last day of the Congress, when a lunch was served at the Baths of Caracalla. Tables were set for about a thousand, while several thousand were present. The struggle to get something to drink — or eat — which took place about those two tables may be imagined. The position of the two waiters, who were pelted with hard rolls of bread and an occasional plate, was not an enviable one. The crowd was jolly, good-natured and noisy. It almost seemed to be a fit occasion for a repetition of the miracle of the loaves and fishes.

The festivities wound up with a "Battle of Roses" upon the "Corso" in the afternoon, and a torch-light procession in the evening. To those not familiar with the famous carnivals of Rome, it may be said that the "Battle of the Roses" consists of crowds of people in carriages and on foot, promenading up and down this, one of the principal streets, and throwing flowers to whomsoever they choose. When friends meet the scenes are often animated and exciting. The windows are crowded, as well as the streets; everybody is happy, and to a stranger the scene is a novel and interesting one.

The Italians seem highly pleased at the success of the Congress, and certainly great efforts were made by them to make it a success. There were rumors that the next meeting would be held at St. Petersburg.

Very truly yours,
George W. Gay, M.D.

A FEW NOTES ON ROME AND THE LATE INTERNATIONAL MEDICAL CONGRESS.

Rome, April 6, 1894.

Mr. Editor: — A little more than two years ago, (Oct. 8, 1891), it was my privilege to have a short communication published in the columns of the veteran *Boston Medical and Surgical Journal*, on "Rome, Her Sanitation and Her Facilities for Holding a Polyglot Medical Congress," in which I ventured to predict, from what I could then learn from a tour through the Eternal City and her suburbs, that though the medical brethren might mobilize from every point of the compass, over all those roads which lead to Rome, yet the old city could abundantly and comfortably provide for all; that the city was well drained, healthy and delightful at every season of the year, though she was at her best in the early spring.

Well! the weary pilgrims came; they have held their Congress, and again scattered, over land and water, to their own countries. All were well-fed and housed, at moderate rates. All were received with a royal welcome, in which the King himself and his beautiful Queen actively participated; luncheon parties and banquets were held on a munificent scale; transportation of every kind was accessible and moderate; and more than five thousand visiting medical practitioners and their friends have left for home without any serious cases of illness developing which could be ascribed to local causes.

Never before did the medical profession, to a greater extent or in a more substantial manner, demonstrate to the world its cosmopolitan character and its integral common brotherhood.

Here, they massed, many of the most eminent and distinguished members of their profession, to offer from a common altar, the fruit of their life-long studies, observations and investigations, not for the benefit of any sect, nation or race, but for the alleviation of the sufferings, and for the well-being of all humanity. The Policlinico, the building in which the Congress convened, was well adapted for the purpose. In it eighteen sections daily convened and all the national committees assembled simultaneously. It consisted of a series of eight large, two-storied, lofty pavilions, with superb marble stair-ways, large windows and porticos, and immense areas or courts for light and ventilation. It is intended, as its designation intimates, to be the principal Infirmary and centre for teaching for all Italy. Its capacity when complete will be for about fourteen hundred beds, which, with the extensive laboratories and spacious operating-theatres and lecture-rooms, will be one of the best-equipped institutions for teaching in all Europe.

The only possible objection to it, as a visiting place, was its distance from Piazza-Colonna, or the centre of the city — about two miles — and because of its newness it was yet rather damp and chilly.

The language most generally spoken at the Congress was French. All the Italian doctors seem to have a speaking knowledge of this tongue, and even the Spaniards from South America could make themselves readily understood, through its employment. German came second, although the Germans did not attend in very large numbers. English came in a poor third; and he whose linguistic capacity was limited to this language, was at a great disadvantage. It might be stated, without fear of over-stating the truth, that English-speaking readers were barely tolerated. Essayists who read English or discussed contributions, were restrained within the severest limits; while the French, Italians and Germans had *carte blanche* and consumed as much time as they liked. Perhaps the Romans were not so much to blame for this, as the French element was there in great strength, and seemed to vastly predominate in influence. Moreover, there seemed to be a disposition on the side of both Italians and French to re-establish the old *entente cordiale* so long interrupted.

The attendance from the United States was not large, nor representative of the leading members of the profession. This, no doubt, was attributable to the season of the year, when all the schools were in session, and many famous teachers were unable to be present. In the committee rooms of the American delegation, however, one hundred and seven registered; the greater number of them being from the West and South. But our army, navy and marine-hospital services were amply represented by medical officers of advanced rank, who attended the sessions in full uniform.

The general sessions were held in the Eldorado on the via Genova, every afternoon during the five days of the Congressional sessions, at three in the afternoon. Here, only on the last day, was America accorded the privilege of entertaining the assembled multitude with a public address. This was presented by Dr. Abram Jacobi of New York, whose effort was well worthy of the distinguished speaker and the country of his adoption.

As might be expected, the scientific portion of it dealt chiefly with the maladies of children; but, as he proceeded, he considered the present status of the healing art in the United States, and dealt the over-specializing tendencies of modern times some crushing blows. The reckless, useless mutilations so often practised, at present, as current operations, he declared were little short of murder; and he anathematized the performers of them as those whose hands were so stained that no amount of sterilization could purify; and whose souls were so corrupted that no chemical fluid could preserve or restore them. Modern antipyretics he declared had killed more than they cured, and the profession was responsible for the position which proprietary medicines occupied.

One feature of the Congress, of interest to Americans, and which did good service for our scattered delegates, was the organization of the American Delegation, in Section C of the Polyclinic. Here the delegates from the United States and Canada organized a bureau for information, with Dr. Abram Jacobi for President, Dr. Thomas H. Manley, of New York, Dr. William Tobin, of Halifax, and Dr. G. A. Simmons, of Sacramento, Cal., as an Executive Committee, and Dr. Douglas H. Stewart, of New York, as Secretary.

During their second day's session the delegation was visited by the American Ambassador to Italy, the Hon. Wayne McVeagh, who made a short address, in which he declared that it afforded him great pleasure to meet the American contingent. He bespoke for them a hospitable reception from their Italian *confrères*, and reminded the delegates that he would be ready to serve them at any time during their stay, by every possible means within his power.

In conclusion it may be said that while the late Congress did not in every particular fulfil all that was expected of it, yet, considering the many difficulties in the way, the anticipations of the majority were more than realized. At all events, when it is remembered that the English, French and Italian railways reduced their travelling rates for passengers fifty per cent., and that an opportunity was permitted to visit the principal cities and hospitals of Europe *en route*, the time consumed by the Americans was not misspent, and they will return to their homes with renewed energy after their short holiday, and all the better equipped for the duties which await them on their arrival.

Un Voyageur.

◆

THE PROPOSED REDUCTION IN THE ARMY MEDICAL SERVICE.

Groveland, Mass., April 10, 1894.

Mr. Editor: — I noticed your correspondent's anonymous communication (April 5, 1894), signed "Medicus," concerning the "Proposed Reduction of the Army Medical Corps," with a secondary title, "An Attempted Legislative Outrage!" I do not like to reply to, or even notice, any communication in which the author, for certain reasons best known to himself, conceals his name.

The statement concerning acting assistant-surgeons, which title pleases not your grumbling incog. (who is probably a member of the Medical Corps) that "there is *no* provision of law whereby they (acting assistant-surgeons) can be placed in charge of the medical department at a military post," is either a malicious lie or an ignorant assertion of erroneous views. In either case it is untrue. There are some younglings, bursting with importance, who know little of military medical history in this country, particularly during the late Civil War, who *pretend* to imagine that by scorning acting assistant-surgeons as "contract-doctors" they in some measure increase their own prominence. It would take too much of your time to name hundreds of prominent medical men who were once acting assistant-surgeons to the United States Army. These and their associates have all "been placed in charge of the medical department at a military post" time and again. Some have served as acting medical directors of a department, some in charge of large hospitals, camps, transports, etc. Some preferred capture in battle rather than to desert their wounded. If "Medicus" will read the records of the Association of Acting Assistant-Surgeons, United States Army, he will learn the history of many medical men who have become eminent in medical history, and whose position socially and professionally is *equalled by few* of the so-called regular officers of the medical department, who are so well paid and yet have so little to do.

Prominent generals of the army and prominent members of the army medical department have gladly offered their testimony in favor of the bill for the acting assistant-surgeons which has been lately presented to Congress. Your own kindly notice of the Association of Acting Assistant-Surgeons in a recent number of the Journal reflects the best professional opinion concerning them.

For some years an influence has been exerted by a selfish clique, under the leadership of the Surgeon-General's Office, to make the way of the acting assistant-surgeon a hard road to travel. Any one acquainted with the true facts must have seen how pernicious and unmanly this influence has been. The acting assistant-surgeon has invariably accepted the duties of military medical life with the miserable pay offered, and he has also known the perilous detail, when the more favored surgeon remained comfortably at home and received the extra fees from outside practice.

In my opinion, the sneers and misinformation contained in the communication of "Medicus" are unwarranted, unkind and ungentlemanly, and deserve to be disapproved of by all medical men. I have known the acting assistant-surgeons for over a quarter of a century, and I have always found them faithful, competent and honorable, deserving a much better status. It is very remarkable that members of a medical corps so well paid (much better paid than the medical officers of any other army) should attempt to persecute reputable medical officers who perform the same duties, and with exactly as much skill as the more favored members of the so-called Medical Corps.

Little can be hoped for, so far as justice is concerned. Acting assistant-surgeons who have faced the perils of Indian warfare are just as much heroes as those who served in the war of the Rebellion. An acting assistant-surgeon is peer of any medical officer, and from real men and true gentlemen receives every courtesy.

Yours truly, W. Thornton Parker, M.D.

New York, April 15, 1894.

Mr. Editor: — In a recent number of the Journal I called attention to the legislative outrage now being attempted in Congress of cutting off from the Medical Corps of the Army thirty-five of its members, on the buncombe plea of economy, and in spite of the strenuous objections of the Surgeon-General, Dr. Sternberg, and the commander-in-chief of the United States Army, Gen. J. M. Schofield, both of whom have clearly shown that these men are really needed. As General Schofield put it in a letter to the Secretary of War, dated March 15, 1894, this pending bill would be "seriously injurious to the military service"; also, "the Medical Corps of the Army is none too large for the necessities of the service."

I am therefore surprised that any self-respecting doctor could write in defence of this measure, so utterly unworthy of support. Indeed, not alone the *Boston Medical and Surgical Journal*, but following it, the *New York Medical Journal*, the *Philadelphia Medical News*, the *New York Medical Record*, and many more of the most influential and able medical publications of this country, have recently published vigorous editorial denunciations of this insult to our profession: a measure which, if successful, will result at once in stopping the working of the new Army Medical School, which, under General Sternberg's able lead, is doing such scientific work among the younger surgeons in the army, educating them in sanitation of military hospitals and troops, commissary knowledge, bacteriology, military surgery, etc.

The tone, the evident animus, of the gentleman who has seen fit to honor me with his attack deprives his letter of weight, even aside from its misstatements. Nevertheless, let me point out to your readers, Mr. Editor, the fact that he seems to regard this bill as one which, if it passes, dropping thereby thirty-five regular medical officers, will enable contract-doctors to take their places; and he looks upon my letter as an onslaught against contract-doctors in general, whom he proceeds to defend.

There is not a line, not a word, in my letter to justify this excited rhetoric.

What I said in this context is as follows: "There is now no appropriation made for contract-doctors, though formerly this was the case; and even if there were, *there is no provision of law whereby they can be placed in charge of the medical department at a military post.* Therefore, they cannot take charge of the discipline and field-drill of the Hospital Corps detachment, nor be responsible for the post-hospital with its supplies. To effect economy as far as practicable, the Surgeon-General has long employed only private physicians at all the arsenal-posts in the country, these being small ones."

The doctor attacking my letter denies the truth of the statement which I have put in italics, and becomes vituperative thereupon regarding my ignorance.

Let me reply that this statement was made by me upon authority of the words of the Surgeon-General himself. Indeed, every figure, every assertion in my letter was absolutely accurate, having been furnished me by one of the medical officers of highest rank in the army, and with a view to publication.

Whatever powers the contract-surgeons had during war times, the fact as to the law *to-day* is precisely as stated in my letter. If this gentleman who went off at half-cock, and loaded only with blank cartridge, will apply to Surgeon-General Sternberg for much-needed information, every word that I have stated will be corroborated.

In conclusion, Mr. Editor, allow me to say with reference to the remarks on anonymous contributions, that you were furnished with my name, and, had you seen fit, could have signed it to my letter. Very properly, you did not regard my own personality as one that had anything to do with the question at issue, which is not a personal matter, but one affecting the well-being of forty-three thousand soldiers and civilians in the army, with their wives and children, and also involving the self-respect and dignity of the noblest of professions.

Very respectfully,

ROBERT H. M. DAWBARN, M.D.,
105 West 74th Street.

◆

PERFORATING WOUND OF THE HEART.

BALTIMORE, MD., April 20, 1894.

MR. EDITOR: — Seeing a case reported in the JOURNAL from California, where a pistol-ball went through the heart and the man lived thirteen hours after the injury, reminds me of a case which I reported to the Baltimore Clinical Society in the year 1889.

It was that of a woman, age about twenty-two years, who was stabbed and thrown from her husband's knee to the floor. She died six days and fifteen hours after receiving the wound and the blow. It was shown post-mortem, ten hours after death, that a wound in left breast to the right of left nipple, between the third and fourth ribs, passed through the pericardium, making a slit one inch in length. In the pericardium, two tablespoonfuls of partly-clotted blood were found. The wound then entered the right ventricle a little to the right of the ventricular septum, passing entirely through the anterior portion of the ventricle, being about a half-inch long on its outer aspect and about one-quarter of an inch on the inner side. On the outer side of the heart there was a thin layer of lymph, and through the opening made in the heart there was a solid plug of lymph extending somewhat into the heart. A very small quantity of fluid blood was found in the heart. The blow brought on an abortion, as she was between two and three months pregnant, and she eventually died of septicæmia. She was jaundiced, liver was fatty, mesentery and serous coats of the bowels were of a golden hue, and there was peritonitis. The point that I made in my paper was that, had it not been that the woman was pregnant, she would have undoubtedly recovered from the stab-wound through the heart, as nature was making every effort to heal the breach. Hence I say that stab or pistol wounds into the heart are not necessarily fatal, as the records from the history of the late war will show.

Yours truly, R. M. HALL, M.D.

METEOROLOGICAL RECORD.

For the week ending April 14th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: -

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..8	30.08	32	34	31	100	95	98	N.E.	N.	25	29	N.	N.	1.18
M..9	30.16	34	39	30	92	63	78	N.W.	N.	18	9	N.	C.	0.13
T..10	30.17	38	42	35	50	65	58	N.E.	N.E.	13	12	F.	F.	
W..11	29.92	34	36	33	72	95	84	N.E.	N.E.	25	44	O.	N.	
T..12	29.91	34	37	32	100	96	98	N.E.	N.E.	26	36	N.	R.	[illegible]
F..13	9.84	36	39	34	87	84	86	N.	N.	25	28	N.	R.	[illegible]
S..14	29.92	39	44	34	86	79	82	N.	N.E.	18	20	O.	R.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, APRIL 14, 1894

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Scarlet fever.
New York	1,891,306	333	333	16.92	19.32	2.52	6.24	2.40
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,115,562	408	139	12.75	16.00	.50	6.50	.50
Brooklyn	978,394	347	141	20.59	20.30	.58	10.44	2.61
St. Louis	560,000	—	—	—	—	—	—	—
Boston	487,397	208	69	10.56	15.36	—	7.20	—
Baltimore	500,000	—	—	—	—	—	—	—
Washington	308,431	106	32	3.76	19.74	1.88	—	—
Cincinnati	305,000	109	30	6.36	20.24	—	2.76	—
Cleveland	290,000	97	—	14.42	12.36	3.09	3.09	3.09
Pittsburg	263,709	—	—	—	—	—	—	—
Milwaukee	250,000	88	28	4.56	14.82	2.28	2.28	—
Nashville	87,754	25	11	12.00	12.00	—	4.00	4.00
Charleston	65,165	30	12	—	—	—	—	
Portland	40,000	—	—	—	—	—	—	
Worcester	96,217	30	13	6.66	20.00	—	3.33	
Fall River	87,411	—	—	—	—	—	—	—
Lowell	87,191	30	11	6.66	33.33	3.33	—	—
Cambridge	77,100	21	12	19.04	23.80	—	—	19.04
Lynn	62,656	14	4	14.28	14.28	—	—	7.14
Springfield	48,684	15	3	13.33	13.33	6.66	6.66	—
Lawrence	48,355	—	—	—	—	—	—	—
New Bedford	45,886	17	5	5.88	17.64	5.88	—	—
Holyoke	41,278	—	—	—	—	—	—	
Salem	32,233	16	4	—	12.50	—	—	—
Brockton	32,140	11	5	—	9.09		—	—
Haverhill	31,396	13	1	7.69	30.76	—	—	—
Chelsea	30,264	12	4	16.66	8.33	8.33	8.33	—
Malden	29,394	10	5	10.00	20.00	—	—	10.00
Newton	27,556	10	1	—	20.00	—	—	—
Fitchburg	27,146	6	2	—	—	—	—	—
Taunton	26,972	18	7	5.55	11.11	5.55	—	—
Gloucester	26,688	5	1	—	—	—	—	—
Waltham	22,058	5	3	—	40.00	—	—	—
Quincy	19,642	—	—	—	—	—	—	
Pittsfield	18,802	5	0	40.00	20.00	—	—	20.00
Everett	16,585	5	3	60.00	40.00	20.00	20.00	—
Northampton	16,331	5	3	20.00	20.00	—	—	—
Newburyport	14,073	6	1	—	—	—	—	—
Amesbury	10,920	1	0	—	—	—	—	—

Deaths reported 2,556: under five years of age 888; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 340, acute lung diseases 453, consumption 296, diphtheria and croup 142, scarlet fever 42, diarrhœal diseases 58, measles 57, whooping-cough 30, typhoid fever 17, small-pox 16, cerebro-spinal meningitis 14, erysipelas 4.

From small-pox New York 7, Brooklyn 6, Boston 3. From measles New York 16, Brooklyn 10, Philadelphia and Cleveland 5 each, Northampton 1. From whooping-cough New York 10, Philadelphia and Brooklyn 6 each, Boston 3, Cincinnati, Nashville, Lowell, Everett and Hyde Park 1 each. From typhoid fever New York and Philadelphia 5 each, Cincinnati 3, Brooklyn, Washington, Lynn and Haverhill 1 each. From cerebro-spinal meningitis New York 9, Boston, Washington, Worcester, Somerville and Pittsfield 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending April 7th, the death-rate was 19.6. Deaths reported [illegible]; acute diseases of the respiratory organs (London) 314, measles 210, whooping-cough 148, diphtheria 80, scarlet fever 39, diarrhœa 29, fever 28, small-pox (Birmingham 4, London and West Ham 2 each, Bradford 1) 9.

The death-rates ranged from 12.7 in Brighton to 27.4 in Salford; Birmingham 23.0, Bradford 15.1, Bristol 18.9, Croydon 16.3, Hull 17.9, Leeds 20.5, Leicester 14.9, Liverpool 25.3, London 19.0, Manchester 21.6, Newcastle-on-Tyne 22.2, Nottingham 18.4, Portsmouth 16.5, Sheffield 18.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 14, 1894, TO APRIL 20, 1894

FIRST-LIEUT. ALLEN M. SMITH, assistant surgeon, will be relieved from duty at Fort Custer, Montana, at the expiration of his present leave of absence and will report in person to the commanding officer, Fort Reno, Oklahoma Territory, for duty at that post.

FIRST LIEUT. JAMES M. KENNEDY, assistant surgeon, is relieved from duty at Fort Riley, Kansas, and ordered to Fort Custer, Montana, for duty.

By direction of the President, CAPTAIN ALONZO R. CHAPIN, assistant surgeon, will report in person to the president of the Army retiring board at Fort Bliss, Texas, for examination by the board.

The leave of absence granted **Captain Ogden Rafferty**, assistant surgeon, is extended eighteen days.

First-Lieut. Charles Willcox, assistant surgeon, is relieved from temporary duty at Angel Island, Cal., and will rejoin his proper station, the Presidio of San Francisco, Cal.

Par. 2, S. O. No. 68, A. G. O., is so amended as to direct **First-Lieut. Harlan E. McVay**, assistant surgeon, on being relieved from duty at San Carlos, Arizona Territory, by **First-Lieut. Straub**, assistant surgeon, to report for duty at Angel Island, Cal., instead of Fort Huachuca, Arizona Territory.

So much of Par. 13, S. O. No. 79, A. G. O. as relates to **Major Peter J. A. Cleary**, surgeon, is so amended as to direct him on being relieved from duty at Fort McPherson, Georgia, to report for duty at Fort Wingate, New Mexico, instead of Fort Custer, Montana, for duty at that post, to relieve **Major Washington Matthews**, surgeon

Major Matthews, on being so relieved, will repair to Washington City and report in person to the surgeon-general for temporary duty in his office.

PROMOTION.

Captain James C. Merrill, assistant surgeon, to be surgeon with the rank of Major, March 13, 1894, *vice* **Bartholt** retired from active service.

SOCIETY NOTICES.

The Suffolk District Medical Society, Surgical Section. — The Surgical Section of the Suffolk District Medical Society will hold its regular monthly meeting on Wednesday evening, May 2d, at 19 Boylston Place, at 8 o'clock.

Dr. M. H. Richardson will make a report of "Cases of Intestinal Resection with Subsequent Suture of the Bowel."

Charles L. Scudder, M.D., *Secretary.*

Suffolk District Medical Society. — The annual meeting will be held at 19 Boylston Place, on Saturday, April 28, 1894, at 8 p. m.

Papers. Dr. F. S. Watson, "Some of the Clinical Features and the Surgical Treatment of Primary Tuberculosis of the Urinary Organs." Discussion by Dr. P. Thorndike and others. Dr. F. H. Williams, "Diphtheria." Dr. W. A. Morrison, "The Value of the Stomach-Tube in Feeding after Intubation" – based upon twenty-eight cases. Discussion by Dr. F. B. Harrington, Dr. Gannett, Dr. C. M. Whitney and Dr. Prescott.

Business. Report of the treasurer and the librarian. Election of officers. Appointment of delegates to the American Medical Association.

Supper after the meeting.

A. L. Mason, M.D., *President.*
James J. Minot, M.D., *Secretary.*

American Pediatric Society. — The American Pediatric Society will hold its sixth annual meeting at Washington, D. C., May 29, 30, 31 and June 1, 1894. The sessions will be held at the Arlington.

American Dermatological Association. — The eighteenth annual meeting of the American Dermatological Association will be held at the Arlington Hotel, Washington, D. C., May 29, 30, 31 and June 1, 1894.

The general session of the Congress will be held at 3.30 p. m. on May 30th, the subject for discussion being "The Distribution and Control of Leprosy in North America."

R. B. Morison, M.D., *President*, Baltimore.
C. W. Allen, M.D., *Secretary*, New York.

Association of American Anatomists. — The sixth annual meeting of the Association of American Anatomists will be held in connection with the Congress of American Physicians and Surgeons, May 29 to June 1, 1894, in the city of Washington, D. C. This will be the first meeting since that of December 27 to 29, 1892, at Princeton, N. J. The sessions will be held in the Preparatory Department of the Columbian University.

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The next lecture will be given on Wednesday evening, May 2d, at 8 o'clock, by Assistant Professor T. M. Rotch. Subject, "Infant Feeding." Physicians are cordially invited.

RESIGNATION.

Dr. John Lovett Morse, has resigned the position of Registrar at the Carney Hospital.

THE MIDDLETON GOLDSMITH LECTURE.

The Middleton Goldsmith Lecture of the New York Pathological Society for 1894, will be delivered at the New York Academy of Medicine on Saturday, April 28th, at 8.30 p. m., by Prof. William H. Welch, of Johns Hopkins University. Subject: "Mixed and Secondary Infections."

RECENT DEATHS.

William V. Keating, M.D., died in Philadelphia, April 19th, aged seventy years.

David Crary, Sr., M.D., died in Hartford, Conn., April 16th, aged eighty-eight years. He graduated from the Medical College at Castleton, Vt., in 1834, and had practised in Hartford since 1838. He was present at the first administration of ether by Dr. Wells and had attended over three thousand cases of childbirth. He was a member of the Connecticut Medical Society.

Dr. Fritschi, Privat-docent in the University of Freiburg, and the oldest privat-docent in Germany, died recently, aged eighty-two years.

F. W. Weber, M.D., Ph.D., died at Nieheim, Westphalia, April 5th, aged eighty-one years. Besides his reputation as a physician in his own province he was one of the best-known poets of the present time in Germany, and for thirty-two years represented his district in the Prussian Landtag.

Jean Edouard Juhel-Renoy, M.D., one of the ablest of the younger physicians of Paris, died in that city, March 19th, aged thirty-nine years. He was physician to the Hôpital Cochin and had contributed many articles to medical literature, especially in the "Dictionnaire de Médicine et de Chirurgie" and the "Dictionnaire Encyclopédique des Sciences Médicales." By a curious fatality he died of typhoid fever contracted from a patient while preparing a paper on the treatment of that disease to be read at the International Medical Congress in Rome.

Henry Smith, F.R.C.S., England, Emeritus Professor of Surgery at Kings College, London, died at Summerhill, Horsell, Surrey, March 25th, aged seventy years. He was, in his earlier days, assistant to Sir William Ferguson, and was consulting surgeon to Kings College Hospital and at one time President of the Medical Society of London. Following Ferguson's lead he gave great attention to advocating a more conservative treatment of bone and joint disease than the then too common amputation. His chief surgical reputation, however, was made in the department of diseases of the rectum and he will be long remembered as the introducer of the clamp and cautery treatment of hæmorrhoids. He was Lettsomian Lecturer in 1865 and chose as his subject "The Surgery of the Rectum." He was an ardent lover of natural history and a most enthusiastic fisherman, his clinical and didactic lectures on surgery being constantly interspersed with anecdotes and illustrations from his favorite sport.

BOOKS AND PAMPHLETS RECEIVED.

A Modern Wizard. By Rodrigues Ottolengui. New York: G. P. Putnam's Sons. 1894.

Report of the Jefferson Medical College and Hospital for the Year ending September 30, 1893.

Laparo-Hysterotomy: Its Indications and Technique. By N. Senn, M.D., Ph.D., LL.D. Reprint. 1893.

The Annual Report of the Health of the Imperial Navy for the Twenty-fifth Year of Meiji (1892) Tōkyō.

Remarks upon Appendicitis based upon a Personal Experience of 181 Cases. By Maurice H. Richardson, M.D., of Boston. Reprint. 1894.

Clinical Diagnosis. By Albert Abrams, M.D. (Heidelberg). Third edition, revised and enlarged. Illustrated. New York: E. B. Treat. 1894.

Some Considerations Bearing Upon Practice with Dynamic Antagonists in Cases of Drug-Poisoning. By Chas. S. Mack, M.D. Reprint. 1894.

The International Medical Annual and Practitioners' Index; A Work of Reference for Medical Practitioners. Twelfth year. New York: E. B. Treat. 1894.

The Diagnosis of Mitral Valvulitis, with a Report of Three Cases. In Memoriam, John M. Keating, M.D., LL D. By Judson Daland, M.D., Philadelphia. Reprints. 1894.

Station-List of Officers of the Medical Department and Hospital Stewards of the Hospital Corps, United States Army, April 1, 1894, or at date of last report received at this office. Washington. 1894.

Sixteenth Annual Report of the State Board of Health of the State of Connecticut for the Year ending June 30, 1893, with the Registration Report for 1892 Relating to Births, Marriages, Deaths and Divorces. New Haven. 1894.

Original Articles.

THE AFTER-TREATMENT OF OPERATIONS FOR APPENDICITIS.[1]

BY HERBERT L. BURRELL, M.D.,
Instructor in Clinical Surgery, Harvard Medical School; Surgeon, Boston City Hospital.

The following details and questions have presented themselves to me in the after-treatment of operations for appendicitis:

(1) The method and material to be used in securing the stump of the appendix. While, strictly speaking, the treatment of the stump of the appendix is a part of the operation, yet I shall speak of the method and material to be used as I believe it influences the treatment. I have been in the habit of using silk, and in the majority of instances it has been satisfactory; but it is occasionally open to the objection that it becomes a foreign body in the wound and may be cast off after a time, varying from weeks to months, and has made a troublesome sinus and required (in one or two instances) curetting under ether in order to remove it. While we may use silk which is perfectly aseptic it is, of course, immediately contaminated by foul septic fluids, and hence does not become organized. Catgut of sufficient size has seemed to me to be equally efficient in holding the stump of the appendix, and only occasionally have I found it necessary to use interrupted Lembert sutures to invert the peritoneal surfaces covering the stump of the divided appendix. In fact, wherever time has been of great importance I have simply thrown a ligature around the end of the appendix close to its origin, and have cut away the remaining end. In operations where there is but little pus I see no objection to using silk, but where there is a good deal of pus until I see some reason to change my method I shall use catgut in securing the stump of an appendix.

(2) Closure of the wound. I think that all surgeons would agree that the best time to operate upon an appendix is between the attacks. At this time we have a wound free from pus, and while the appendix is difficult at times to isolate, yet having once secured and removed it a clean wound is left, which can be sewed up and the patient left with but little anxiety. In several instances where I have operated between the attacks I have been surprised to find a few drops of pus, and in one instance I found while operating between the attacks, the patient having been about for some time after the previous attack, a fæcal concretion the size of a cranberry bean, which was loose in the peritoneal cavity. There was also a minute perforation of the appendix. These conditions would contaminate the wound unless the septic material were removed mechanically, and the cavity rendered relatively sterile. Where time is an object I have used sutures transfixing the abdominal walls. Where the wound could be closed at leisure I have used three lines of sutures, one in the peritoneum, one in the transversalis fascia and muscles, and the third in the skin. These have usually been of silk of small size, although I prefer silkworm-gut.

(3) The treatment of shock following operation. In addition to alcoholic stimulants, brandy, whiskey, etc., heaters and rectal enemata of brandy, atropia ($\frac{1}{100}$ gr.), strychnia ($\frac{1}{60}$ gr.) and digitalin ($\frac{1}{100}$ gr.) have been used subcutaneously to much advantage in the critical cases.

(4) The feeding of patients. I have given patients only cracked ice, beef tea, and a little milk for the first twenty-four to forty-eight hours. Opiates are used freely, for I believe that the patient loses more from suffering pain than he gains by the free action of the intestines from saline cathartics. I am sure that in one instance by the use of saline cathartics I turned the scale against the patient's recovery.

The vomiting which follows operations of this description I have treated by morphia, one-eighth to one-quarter of a grain doses, combined with cracked ice, siphon of soda and champagne. Not infrequently I have withheld all food by mouth, and have depended entirely upon nutrient enemata for from twenty-four to forty-eight hours where vomiting has been a prominent symptom. Occasionally the white of an egg has been retained where other substances have been rejected. In one instance at the end of three days where the vomiting continued I washed out the stomach with the result that the vomiting ceased. If, however, the vomiting continues beyond the third or fourth day I have usually regarded the case as hopeless.

(5) The indications and contra-indications for the use of saline cathartics. These I have used freely, and whenever there has been any rise in temperature after the first forty-eight hours, any increase in the frequency of the pulse, or a glazing of the tongue, I have used a saturated solution of salts in teaspoonful doses, or even in half-drachm doses, combined with soda water from a siphon, the drink to be given very cold. When there is any tendency to vomiting I have used half-drachm doses of the saturated solution of salts combined with a siphon of soda water, the drink to be given very cold, every hour. Occasionally where there has been vomiting I have used a saturated solution of salts by enema with excellent results, and at times a glycerine suppository enema combined with the saline enema has been efficient in establishing intestinal drainage, and I am convinced that while saline cathartics are of great value in producing intestinal drainage in septic peritonitis, yet the withholding of morphia in order to attain the full action of the salts is at times unwise. I can see no reason why opiates and saline cathartics should not be given at the same time. Of course, we must recognize that they counteract one another, but I have found that in using them in conjunction with one another I have obtained the benefits of each.

(6) The kind, amount and frequency of irrigating fluids to be used. I feel safer in mechanically flushing out with sterile water or boracic-acid solution a cavity of an appendicitis operation than I do in using solutions of corrosive sublimate. In one instance where there was a small amount of pus and a septic condition of the surrounding tissues the wound was cleansed thoroughly with hydrogen di-oxide (50 volumes), and then the septic purulent surfaces were touched with the actual cautery and the wound sewed up; but it had to be reopened on the fifth day in order to evacuate pus. This case, however, recovered very rapidly after the wound was dilated and irrigated, and at the end of six weeks the wound was completely healed and the patient up and about. It has seemed to me that it was better to depend upon flushing with sterile water than to rely upon the germicidal action

---

[1] Read before the Boston Society for Medical Improvement, February 12, 1893.

of antiseptics in the removal of septic material from an appendiceal wound.

The question of how frequently to irrigate a wound depends upon what kind of material is used to drain it. When there is a temperature above 101° after the third day I have usually irrigated frequently and freely, sometimes every four or six hours during the twenty-four.

(7) The next three questions may be discussed together. They are, when to drain and not to drain; what material to use as a drain, whether tubes, gauze or rubber dam; and how long to drain.

If there is no pus in the abdomen, of course the wound is closed. I have found that when there is a slight amount of pus in the wound, where the cavity can be completely cleansed, one can safely close it. However, it is safer to err on the side of drainage than non-drainage.

Whether to use iodoform gauze, rubber-dam or rubber tubing has been to me an important question. Rubber tubes, I believe, are indicated where there is a large pus cavity with walls which do not collapse; rubber-dam or iodoform gauze are indicated where the cavity is collapsable; where the intestines fall into the abscess cavity the gauze can be insinuated into nooks and corners and crevices which a tube can never reach. I am sure that it is wiser to use gauze than to use tubing in those cases of early operation for appendicitis where the appendiceal inflammation is not walled off. Where in doubt, and yet where I have closed the wound, I have placed between the edges of the wound a narrow strip of iodoform gauze or rubber-dam, which I have removed on the third or fourth day if it were not found necessary before. The cases which I always feel demand iodoform gauze are those where in operating within forty-eight hours from the beginning of the attack a perforated appendix is found, especially when it is a question whether the general peritoneal cavity is invaded.

In these cases I have left iodoform wicks in for weeks at a time, gradually withdrawing them until every vestige of septic material was removed from the wound by washing with boracic acid or sterile water.

How long to drain is a question that has never been settled in my mind. When the temperature reaches to normal, and when there ceases to be an evening rise in temperature, I usually remove a few of the iodoform wicks or the tube. The wound is, of course, irrigated out daily, and if there is much discharge iodoform is dusted over the open wound. It has been my practice where I removed an appendix, — and I never feel satisfied that I have given the patient the best chance unless I have removed the appendix, — to carry the iodoform gauze down to the stump of the appendix, believing that if this could be covered by granulation tissue a firmer cicatrix would be gained, and less liability to hernia would exist.

As a rule, I have been inclined to remove the drainage too early, judging alone from the wound, and in my later cases have come to depend upon, not alone the condition of the wound, but the patient's temperature, pulse, and the condition of the general peritoneal cavity, whether showing evidence of inflammation or not.

(8) The indications for reopening a closed wound or for exploring an open wound following an appendix operation. To reopen a closed wound offends one's surgical sense, but to allow a patient to die from septic absorption from defective drainage is, to put it mildly, very unfortunate. On the other hand, to explore an open wound following an appendicitis operation is a thing that I have been led to do in a number of instances. I always think of doing it whenever there is a continued rise in temperature after the fifth day or a chill, where a wound tends to gape, or from which pus flows, a drachm at a time, at indefinite intervals; and whenever there is associated with it evidences of infection of the general peritoneal cavity I believe that the patient should be etherized, the wound carefully explored with the finger, and any pocket of pus or septic material that is loose should be washed out thoroughly. I am sure that this is an important thing to do, and a moment's thought must make it clear that a cavity filled with coils of intestines is very difficult, and at times almost impossible, to free from septic material at the time of operation.

In three instances last summer, between the tenth and twelfth days, after the temperature had been normal, I was obliged to reopen wounds on account of a sudden and continued rise in temperature and chills. An abscess was suspected, but in none of these cases was an abscess found. On opening up the wound, however, and separating the coils of intestines, there escaped a large quantity of offensive gas. It was so marked that in one case a bystander said, "Why, there must be a perforation of the intestines." I suspect that this gas had something to do with the continued high temperature, for in each instance the wounds were repacked, the temperature fell to normal in a short time, and convalescence was established.

In one case I explored a wound on the tenth day, and found an abscess pointing toward the loin. A counter-opening was made in the back, a drainage-tube inserted and through-and-through irrigation established. Where the appendix rests high up in the loin, and where there is a large amount of pus, I am inclined to believe that this through-and-through drainage would at times be of great value.

In two instances I have had fæcal fistulæ develop, but by thoroughly cleansing (by irrigation) the wound it has been possible to bring about a complete, although delayed closure of the wound.

I have presented these questions in the after-treatment of this operation as they have occurred to my mind. There is, of course, room for difference of opinion, and it is impossible at present to lay down principles in the after-treatment of this operation; but I am sure of one principle, and that is, that when we are in doubt the wound and abdomen should be freed from all septic material.

◆

THE PRODUCTION OF VACCINE VIRUS.[1]

BY D. D. GILBERT, M.D., CHAIRMAN, DORCHESTER, MASS.

Your committee have visited the two principal depots from which the vaccine stock is supplied to this section, namely, the New England Vaccine Company's operating-rooms in Chelsea, and the operating-rooms of the late Henry A. Martin, M.D. We were welcomed with gentlemanly courtesy and attention at both places, where the processes were freely shown and explained. We have also had freely given from Codman & Shurtleff a description of the process pursued by them at their farm in Stoughton, which we were cordially invited to visit. Also, I will state that, at the meeting of the Norfolk District Society where this report was originally made, Dr. Francis C. Martin made some remarks in regard to the course pursued by him at his establishment.

---

[1] The report of a committee appointed by the Norfolk District Medical Society to investigate the production of vaccine virus.

At Chelsea we found buildings well adapted for the purpose — a stable so built with cemented floors, gutters and walls, that it could be thoroughly flushed; and it had evidently so been, for not a particle of stable *débris* was present. Leading from this stable, separated by an entry and double-doors, is the operating-room proper. This room has a floor of artificial stone, tiled walls, and is heated by steam. It is furnished with sets of stanchions in which to securely and comfortably confine the cattle undergoing the operations, and with a closet of fine-wire gauze, for the drying of the freshly charged points, admitting the air but excluding the coarser particles of dust. This room can also be thoroughly flushed, and it is claimed that it is so treated with antiseptic solutions from time to time. There is an evident intent to preserve the appearance, at least, of asepsis, but one notices a carelessness of the employés in handling the charged points, etc., with hands which are certainly not surgically aseptic. Whether this comes from ignorance of what science has a right to demand in such a process, or whether it is the carelessness which familiarity with routine work almost necessarily begets, I do not know. In regard to the results I will speak later.

The operating-room at the Martin establishment is an ordinary room opening directly from the carriage-house of the stable. This room has wooden floor and walls, and has no conveniences whatever for producing aseptic conditions other than such as accompany ordinary cleanliness. Mr. Reed told us they made no pretensions to do more.

The process of securing the lymph at the two establishments differs in many ways. At the New England, they use mature animals, about four years old. These are vaccinated on the back of the buttocks, in about a dozen large confluent patches, three to four inches square. At the Martin establishment they use immature animals, preferably under one year of age. These are vaccinated on the back of one buttock and on one side of the belly, in small patches about three-fourths of an inch square, which do not materially enlarge in development. At the New England establishment the animal while undergoing operation remains standing, confined by a set of stanchions. At the Martin establishment the work is done upon the animal lying on its side, and strapped to a table. At Codman & Shurtleff's, and at Dr. Francis C. Martin's, the age of animals and the process are practically the same as at the Martin stable in Brookline.

Dr. Perry, of our committee, has kindly prepared some rough diagrams which will give you a better idea of how the animals are vaccinated than will any verbal description.

Mr. Reed, of the Martin establishment, claimed that the advantages of using young animals are the lesser danger of their being diseased, and the greater facility of handling them. At the New England institute there seems to be no difficulty of handling the animals with the facilities which they have, and each animal before it is taken into their stable has been examined by a veterinary surgeon, and a certificate of its healthy condition issued to the company. This certificate is numbered, and the cow is tagged with a corresponding number which is recorded. By means of this system of numbering the company are able to know from what animal any issued points have been taken. The same system of numbering, but not of veterinary examination, is pursued at the Martin establishment. Codman & Shurtleff have all their animals examined by a regular physician, and a record of each animal is kept.

At the first glance at the animal vaccinated and ready for use, the sight is repulsive, and the broken-down, suppurating crust seems a most disagreeable thing to inoculate into the human organism. These crusts and their accompanying *débris*, you are told, are ground up with glycerine and regularly dispensed as vaccine stock in some foreign countries. *Here* the crust and all loose tissue are removed, thus exposing the base of the vesicle. At the New England institute, this, with the surrounding skin, is thoroughly washed with a sponge and clean water, and after a few minutes the serum exudes and, the animal standing in an upright position, trickles down to the lower edge of the patch from which it is taken upon the points. The first flow is a little discolored with blood, and is kept to revaccinate new animals with. After a while the flow of serum is obtained perfectly clear and of a slightly yellowish shade. By this method, at the New England institute, the points are not brought at all in contact with the raw surface but receive the lymph as it trickles down to the sound skin. The points are then laid upon a nickel-plated metal tray, channelled and adapted for the purpose. When the tray is filled, it is placed inside the gauze closet to dry.

At the Martin establishment, as I have said, the vesicles are individually smaller, and, after having been freed from the crust, are not washed but are wiped with a towel which seems to have done some service in the same direction before. From these vesicles, there being less tension of the tissues than where the patches are larger, the lymph does not exude itself but is squeezed out by compression of the base with forceps, and the points are charged directly from the denuded surface; therefore all are more or less discolored with blood. At the New England establishment the points having been received from the factory are sterilized before being charged — subjected for an hour to a temperature of 212°. At the other place, as I have said, no attempt at asepsis is made.

At Codman & Shurtleff's establishment the process is similar to that at the Martin, except that, instead of dipping the points into the lymph exuding from the raw base of the vesicle, the lymph is collected in little glass cups, and any *débris* present in it is allowed to settle or is skimmed off, after which the points are charged with the clear lymph.

Now, while neither of these processes approach what we know as surgical asepsis, yet the fact remains that we never hear of septic inflammation setting in within a few hours after vaccination, which it surely would do if septic matter were directly introduced into the system; so that we must believe that the charged points are not septic even if the process of preparing them is not ideal.

On the other hand, when suppuration does occur, it sets in as a secondary result to the mature vesicle. This it is claimed, and justly it would seem, is due to atmospheric germs having found their way within the ruptured capsule of a broken vesicle. Therefore, when this occurs in this secondary manner, it is after the vaccinia has been produced, and it does not, as is sometimes claimed, interfere with the protective power of the vaccination. The resulting sore should therefore be treated antiseptically from that time on, and healed as soon as possible.

Dr. Cutler, at the head of the New England establishment, maintains that a small vesicle should always be obtained, and that, from the commencement, it should be kept as dry as possible, no moist or oily dressing ever being used. A small vesicle produces less inflammation — and so less necrosis of subjacent tissue, less areola, and so less constitutional disturbance. Moreover, it is far less liable to crack and rupture. He claims that the size and accompanying characteristics of the vesicle may be absolutely determined by the size of the original scarification, which had better be a mere puncture, and never should exceed one-sixteenth of an inch in diameter. There should be two or three of these vesicles situated nearly two inches apart, so that they may never become confluent with one another. He exclaimed, "It was a bad day when we were taught to scarify instead of the old-style puncture." His explanation of this and of his theory that a large scarification makes a confluent and highly inflamed vesicle is, that, while it is necessary to spread the inert virus obtained from calves over a large scarification, to get any result — uncertain at best — the lymph obtained from mature animals is richer in germs which become implanted all over the scarification and start numerous colonies, each a nucleus of vesicles which, as they grow, coalesce until they form the large confluent vesicle.

When a large confluent vesicle is produced in the human subject, the resulting cicatrix often fails to present the minute pits which the older vaccinators considered characteristic of successful vaccination, but this is really of no importance. In the human subject vaccinia produces a deeper inflammation than in the cow, and this fact, taken in connection with the high degree of inflammation produced by a large confluent vesicle, accounts for the necrosis of tissue which destroys the natural base of the vesicle with its characteristic pits. The simple appearance of a cicatrix affords no evidence as to the amount of protection. A cicatrix is only presumptive evidence of previous vaccination, and, if it is more than five years old, vaccination should be done in the presence of an epidemic. The only real evidence of protection is the insusceptibility to vaccinia under the most favorable conditions. Insusceptibility to vaccinia under such conditions is insusceptibility to variola. In the early history of vaccination some bold experiments were made at the small-pox hospital established by the Boston Board of Health at Noddle's Island. Massachusetts, by the way, was the first colony to introduce small-pox inoculation, and the first State to introduce kine-pox vaccination. "On August 16, 1802, 19 boys were vaccinated, and all passed through the regular stages of the cow-pox; and on November 9th following, 12 of them, together with the son of Dr. Bartlett, who had previously had the cow-pox, were inoculated for the small-pox with matter taken from a patient in the most infectious stage of the disease; and no trouble whatever followed." These facts are given in a report signed by eleven physicians, including Benj. Waterhouse and James Lloyd. A full and official account of the affair is found in the *Columbian Centinel*, December 18, 1802.

The formation of the areola is claimed to be the only test of constitutional or protective vaccination. If a person has been infected with small-pox, vaccination will not modify the disease unless the areola forms before the small-pox symptoms show. If, however, the stage of areola is reached before the symptoms of the graver disease appear. that disease will be aborted or modified by the vaccination.

Distinct, probably, from the various post-vaccinal eruptions which are sometimes called into activity by the excitement of vaccination, is a more or less widely distributed exanthem, or roseola, which is claimed to be simply a distributed areola, and need give rise to no anxiety, since it runs the same course as, and disappears with, the areola.

In conclusion, your committee are inclined to believe, from the limited observation which they have been able to make, that the New England virus is the more active and therefore the more dangerous virus to use; that the Martin virus is not as active and consequently may be the safer for general use. In reference to this, the New England people state that the danger of excessive result should not be laid at the door of active virus, which is necessary to fight an epidemic with, but is due to the ignorance of the proper technique of vaccination among some members of the medical profession, and especially among laymen who often do not hesitate to perform the operation. On the other hand, the late Dr. H. A. Martin has maintained that the serum from the large confluent vesicle on the cow, with its higher degree of inflammation, is alone responsible for the greater degree of irritation in the human subject. Your committee believe that these points can only be settled by a more careful attention, on the part of physicians, to the technique of the operation, and an observation of subsequent results.

Further, your committee are led to the positive belief that the whole subject of preparation of vaccine stock should not be left in the hands of rival commercial companies, but should be wholly under the official control of either city or State.

◆

WHAT MIGHT BE DONE BY THE OBSTETRICAL SOCIETY TO ADVANCE THE TRAINING OF NURSES.[1]

BY A. WORCESTER, M.D., WALTHAM.

In the successful management of obstetric cases much depends upon the nursing service. Indeed, in normal cases, more depends upon the nurse than upon the physician. And in abnormal cases, especially where surgical interference is exercised, after the operation or the delivery is over, then even more responsibility falls upon the nurse for the happy uninterrupted recovery of the patient. If, to this is added the responsibility of starting a baby on a prosperous career of health and happiness, it would seem as if the monthly nurse always ought to be at least an angel. Sometimes she is one: sometimes she — isn't.

If obstetricians have poor or only tolerable nurses, it is their own fault: if they submit their patients to positively bad nursing service, then their fault is inexcusable. In other words, the physician is not blameless if his patient suffers from faulty nursing.

This particular responsibility of the doctor is of comparatively recent origin, and is due to the fact that within the last few years the profession of nursing has been revolutionized.

---

[1] Read before the Obstetrical Society of Boston, March 10, 1894.

Monthly nurses used to be expected to know everything about mothers and babies. They did just as they pleased. They followed the suggestions of the physicians, if they saw fit to do so. Among these old-time nurses were many whose long experience, whose sterling common-sense and unfailing devotion entitled them to far greater rewards than they ever received. Some few of these old nurses or of their legitimate descendants may still be found in the old-fashioned households. But their type is fast passing from the stage.

In their place have come young women who have *studied* nursing. How contemptuously would the real old-timer have spoken of a *student* nurse! And how densely ignorant she would have seemed to the modern training-school graduate! Neither could understand the other. The revolution in nursing is complete.

With the old nurse the doctor's responsibility for the nursing service was very faint. She would brook but little criticism. Her unfailing defence lay in her silence. She would report only what she chose to report, and whatever happened she would never acknowledge her ignorance. Indeed, had she done so, her usefulness would have been abridged, for her families took comfort in her supposed infallibility. And much of the uncouth traditionary household physiology and pathology of to-day has its origin in the speculations of the old monthly nurse.

With the modern nurse, on the other hand, the doctor's responsibility as to the nursing service is like that of the captain for the safety of his ship. Both are alike responsible for the execution of their orders. The modern nurse recognizes her position to be that of an executive officer: and when she is working under a physician who so recognizes her position, then all goes well. Where the modern nurse fails to give satisfactory service, the failure is generally due either to her improper training or to the inexact and unintelligible orders under which she was working. In either case the failure is primarily the physician's. For it is his business to train his nurses, or at least to secure trained-nurses for his patients, as it is also his business to give his directions in such exact intelligible fashion as will effectually prevent any misunderstanding.

Of course, it is possible that the failure of satisfactory service is due to the nurse's personal unfitness for her work; but, even so the physician is not free from accountability, for he ought to know the characteristics of his nurses and their fitness or unfitness for his different families and patients. The physician must apportion their service, just as a general must, by taking into account his subordinates' special fitness for various positions of responsibility. The personal equation nowadays is of constantly increasing importance. This is the age of specialists, and nurses equally good in all kinds of work and under all sorts of conditions are not to be found seeking employment.

If I am right in thus stating the responsibility now resting upon the medical profession as regards the nursing of their patients, it must be admitted that this responsibility is not generally acknowledged. Many physicians still scold about their nurses. Few take any pains to improve them, or take any interest in the methods of training. In short, the revolution in nursing has not yet penetrated the apprehension of such physicians.

My object in asking the attention of this Society to this subject is to enlist the coöperation of all who are interested in advancing the new movement. It is high time that concerted efforts should be made to secure, first, more trained nurses; second, better trained nurses; and, third, a more serviceable working relationship between doctors and nurses.

In this paper I purpose to consider especially the subject of obstetric nursing. Let us then, first, inquire how the supply of monthly nurses may be increased.

It is, of course, plain that the training schools of the lying-in hospitals cannot more than begin to supply the demand even of their immediate vicinity. When the birth-rate of the community is considered in comparison with the possible number of such graduates, it is only too apparent that not one out of every ten confinement cases can be so cared for.

Where the supply is so limited high wages rule, and only the rich can afford to employ trained nurses; accordingly physicians whose practice is mainly among the wealthy do not appreciate the scarcity. But women of moderate means, and of no means, need trained nurses just as much, if not more, than do their wealthy neighbors. Moreover, the physicians who attend such women in their confinements need the assistance of trained nurses.

The problem thus becomes one of economics at the very start. Its solution is not impossible. For just as is the case with physicians, so it should be with nurses: the poor now receive their medical attention at the hands of beginners or as a direct charity, and so they must receive their needed nursing service. Families of moderate means employ medical attendants who are willing to work for moderate fees. As these physicians and surgeons acquire greater reputation they take new patients only for increased fees, and so it goes on until only the very rich or those suffering from some pathological rarity can enjoy the privileged service of the very distinguished practitioners. So it must be with nurses. In a properly adjusted system of training, student nurses would practise, under the direction of their teachers, among the poor and those of moderate means. Immediately after graduation, instead of demanding at once the highest wages, they should expect to work for moderate pay among those who cannot afford more; and only after several years of increasing experience should trained nurses expect the highest wages.

At present the nursing profession in matters of compensation is too much like the clerical, where experience and proved usefulness count for little against youth and "brilliant promise."

It is, therefore, in this solution of the economic problem that we may discover how to increase the number of trained nurses. Not by increasing the lying-in hospitals, however desirable otherwise that may be, but by utilizing the opportunities for training that now surround us in the homes of the poor and of those moderately circumstanced. Thus, too, may be secured better nurses, and also that final desideratum — a more serviceable relationship between the two professions.

Until recently it has been held that nurses could be trained only within hospital walls. Whereas the truth is that nurses so trained begin their private practice under great disadvantages when compared with others, whose training has been in part in the private practice of their instructors. And in recognition of this fact, many of the best training schools have already arranged to send out their student nurses to private work for a part of their training.

Meanwhile, the special problem before us is to arrange for the instruction in obstetric nursing of the hundreds of student-nurses and training-school graduates in this vicinity who now have no chance to learn the art. For, so long as our large training-schools graduate nurses, whose only instruction in obstetrics has been one or two lectures on the subject, we need not expect any spontaneous improvement. The graduates of these large schools may know how to manage a typhoid-fever patient, but many of them do not know a nipple-shield from a breast-pump; they, of course, do know how to arrange a room, and instruments and dressings, and the patient for an aseptic surgical operation, but they do not know how to prepare for ordinary obstetric cases. And yet, when they seek for private work, they soon find that surgical cases are not so common as confinements. Their general training, of course, helps them greatly in obstetric work if they bravely undertake it, but they have no opportunities hereabouts for instruction in this branch unless they enter the lying-in hospital courses, which at most could not accommodate one-tenth of those who should receive instruction before receiving their diplomas.

Physicians have to study surgery and obstetrics, even if they from the first intend to practise only as specialists in other branches. And it is accepted as axiomatic that some preliminary general practice is necessary to highest development in any specialty. Even more truly is this the case in the profession of nursing. No training should be considered complete that does not include obstetrics: nor should any obstetric nurse be considered as well trained who has not also been trained in the nursing of surgical and medical cases.

And yet the custom still prevails in Boston of training nurses only in specialties. Obstetric nurses, and nurses for infants, for lunatics, for neurasthenics, are graduated annually from various institutions; but very few nurses can be found who have received all of the different diplomas, and this in spite of the possibilities that neurasthenic women may have to be delivered and may become insane. Consulting specialists may so supplant the general practitioner that his type shall become extinct; but in the profession of nursing the good, all-around nurse is what is wanted now, and will be forever.

As a remedy for the present confusion, it might be thought possible to secure some coöperation among the different training-schools, such as has been secured in other cities; but that hope need not be entertained for Boston, for so jealously guarded are their doors, that not even the graduates and superintendents of other schools are allowed opportunity to study each other's methods of training. In other cities, both in this country and abroad, such opportunities are most hospitably afforded. In Boston, it would be considered most impudent even to suggest to any one training-school the possibility of its being improved by association with any others, and any appeal for a more general distribution of its peculiar advantages is met by the courteous announcement of its weekly lectures and monthly conferences, which by the liberality of the trustees are open to outsiders.

The means of improvement must, therefore, be sought independently of present organizations. It would be easy, for instance, for the Obstetrical Society to inaugurate, or at least to matronize, a course of post-graduate instruction in obstetric nursing which should include a stiff course of lectures, recitations and examinations, with practice under approved instructors in the dispensary districts and in the homes where only very moderate wages could be afforded. The diploma granted to those who earned it would give a rating like that of the London Obstetrical Society. Were such a course of instruction offered, hundreds would apply. There would be an immediate supply of nurses for the poor, and for those who can pay at most only a few dollars for their care during confinement. The instructors in this post-graduate school, in return for their teaching, would have an abundance of assistance, and would be saved many hours of weary nursing service which they now endure.

In the same way, other societies might inaugurate special post-graduate courses of instruction in other departments of nursing. Thus nurses might be taught how to take care of infants, a department now most sadly neglected.

But better far than separate and independent post-graduate courses would be a central post-graduate school which would have general management. Such a school could do more for the advancement of the nursing profession, and consequently, for the advancement of the practice of medicine, than any agency within the realm of things possible and practicable.

Such a school would need no endowment. From its inception it would be more than self-supporting. Out of it would grow perfect systems for the registration and the distribution of nurses. In place of feeble guilds and graduate clubs would grow a large, strong association of all the members of the nursing profession. And finally, Boston might so regain her old-time preëminence as an educational centre for nurses.

One of the many advantages that would result from such a central post-graduate school would be that of uniformity in the matter of giving diplomas to nurses. The course of instruction would have to be lengthened, which by no means should be considered a disadvantage. Graduates of the present schools might then seek work as they do now, or they might take the different courses and examinations of the post-graduate school in the surety that, having obtained the advanced diploma, their services would be in greater demand.

This in time would naturally lessen the apparent value of the diploma now given by the different schools; but if it led, as well it might lead, to a uniform examination by the central licensing board, the greatest benefit would result.

Thus, in the special department of instruction under our present consideration, there is now no uniformity in the different diploma-giving schools, and we have no means of ascertaining what instruction has been given to the nurses who are engaged for our obstetric cases. For this we have only ourselves to blame, for if we instituted even examinations for nurses in this department, the different schools would at once try to conform their instruction in this branch in order that their graduates might with least difficulty obtain the advanced diploma.

As is true in every professional school where the diploma carries with it any certificate of fitness to practise, the diploma is open to suspicion if it be granted solely by the instructors of that particular school. Thus, for instance, the possessor of such a diploma may be better versed in the different instructors' whims than in real knowledge.

If, then, we cannot at once arrange for post-graduate instruction for nurses, let us at least arrange for the examination of nurses, and so secure some sort of uniformity in their training.

◆

THE GASTRIC AND RESPIRATORY SYMPTOMS CAUSED BY THE DUST OF CURLED HAIR.[1]

BY ARTHUR P. CHADBOURNE, M.D.,

Physician to Out-Patients, Carney Hospital; Demonstrator of Experimental Pharmacology, Harvard Medical School.

Considering the great differences in the composition of the various kinds of "dust" that are known to cause so-called "dust-disease," it is somewhat surprising that it should have been possible to group almost all the resulting symptoms under the single disease called "fibroid phthisis," or "pneumokoniosis."[2] The list of industries that are recognized as being dangerous to the workmen on this account is already a long one, and a single addition to the number would be of little interest. The patient who is here to-night, however, has no evident signs of a "fibroid" change in the lungs, though his symptoms undoubtedly arose from continued exposure to dust in the factory where he has worked for many years.

Before giving the history of the present case, let us consider what this dust really is, and in what ways it would be likely to act in producing disease. Though there are hardly any two of the "dust-producing trades" in which the composition of the dust is exactly the same, yet in all the dust is alike made up of minute particles, so small as to float about for some time and be easily drawn in with the air breathed by the workmen. The action of these minute particles may be purely *mechanical*, and it is largely, if not entirely, from this mechanical irritation that so-called "fibroid phthisis" is commonly believed to arise. In the second place, the great differences in the *composition* of the different kinds of dust might well be expected to influence its *local action*, if nothing more. Among the substances that make up these minute particles are some that are known to have a marked action on the human organism as a whole; in others the effects are more local, or confined to one or more groups of organs; some are accumulative, others active poisons; while still others are probably inert, at least in the form in which they occur in the dust, and finally, quite a number are used as medicines. Plant and animal products, as well as inorganic matter, are among them.

Such substances may reach the larynx and respiratory tract, either by way of the nose and naso-pharynx, or directly through the mouth; but a part of the inhaled dust must be carried into the œsophagus, and in this way may enter the stomach. The portion of the foreign matter that can be absorbed, either changed or unchanged in chemical constitution by the secretions and tissues with which it may come in contact; and its characteristic general symptoms will then follow if the amount which thus enters the system is sufficiently great.

To return to the history of the present case, in which the action of the dust is certainly not that of a purely mechanical irritant.

J. D. came to the Carney Hospital (A. P. D.) in January, 1894. His family history was excellent. He had never been "sick in bed a day in his life that he could remember"; nor had he had any "lung trouble," except a few days' cough when "he had taken cold," and when working in the dust of the factory. On Sundays and holidays never coughed at all. Habits and personal history good.

For twenty years he has steadily worked in the same factory, with the exception of a few months when he was "train-band" on a railroad, but this was thirteen years ago. In the factory, "curled hair" is prepared for mattresses, etc. Both horses' and pigs' hair is used, but only the latter is dyed; and it is when this dyed hair is used that he is troubled with his present symptoms. The pigs' hair is "disinfected" as soon as it is received at the factory, and is then thrown into large vats, which contain a mixture of logwood (*hæmatoxylon*) and copperas (iron sulphate, with copper sulphate as an impurity, and more or less sesquichloride of iron[3]). When thoroughly stained, the hair is removed and dried; it is then piled up ready to be put through a machine called a "separator." The "separator" pulls apart the tangled masses of hair, while a blast of air is at the same time forced through to remove the dirt, broken pieces of hair and other dust. This dust completely fills the air, and rapidly accumulates around and on the machine. The patient "feeds," that is, keeps the "separator" supplied with hair from the heap already mentioned, and has, therefore, been obliged to breathe the dust-filled air near that machine for almost twenty years.

He describes his symptoms somewhat as follows: When actually in the dust he always has more or less cough, and raises a "little thin, frothy spit, which is rather blue-colored"; but as soon as he stops work the cough stops also. For two or three weeks before I saw him he had what he called a cold, and was then raising more or less sputum all day and more at night. When working with the dyed hair the color was blue, but in the morning white and "lumpy." The specimen brought me was muco-purulent, white, and careful examination failed to show tubercle bacilli. The chief complaint, however, was of his "stomach," which had "hurt him in the same way ever since he had been in the factory, but was getting worse lately." When undyed hair was being prepared his "stomach was much better always." There was a sharp, burning pain, beginning just below the sternum, and going straight up to his "Adam's apple" (larynx) and his "mouth tasted bitter and like brass." There was pain in the epigastrium, which increased with pressure. Appetite fair. Bowels always regular, and dejections natural color. No vomiting; nausea occasional. These symptoms begin two or three hours after he has worked with the dyed material, and sometimes last a day or two after he has stopped using the dyed material. No marked loss of flesh.

On *examination*, the patient was thin, and, though poorly developed and hollow-chested, was not emaciated. Marked cyanosis and dyspnœa were absent. The tongue was thickly covered with a yellowish-brown fur. The chest showed nothing abnormal, except slight signs of a localized bronchitis at the right base behind.

---

[1] Read before the Section of Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, February 21, 1894.

[2] Dust which contains lead, arsenic, etc., of course an exception.

[3] Lead, zinc and arsenic were tested for in the dust, but were not present.

He was given ten drops of terebene for cough p. r. n., also told to take the white of a raw egg when he felt the burning pain coming on, and about ten minutes later to take ten grains of bicarbonate of soda. Maltine given as a tonic.

On his return about a week later, he reported (considerably to my surprise) that the "stomach trouble" had entirely stopped, and for two days he had not been obliged to take the medicine. The day previous he had worked with the dyed hair, but without the usual discomfort. The sputum, which he brought me, was: (1) Specimen raised in the morning before going to work, and after having been in the *dyed dust* the day before: it contained a few small fragments of dyed hair and unidentified foreign matter. No logwood fibres. There was a very slight reaction for copper, and a well-marked test for iron. (2) Specimen raised at noon after a half-day's exposure to the *dyed dust:* The sputum was frothy, mucous and strongly tinted with blue, while in it were many dark-blue specks. Microscopically, these blue fragments were evidently plant-fibres of some kind, and around each was a kind of halo of lighter blue; they were undoubtedly bits of logwood. The broken fragments of hair were surprisingly few; almost all were dyed, but the undyed hairs were most of them quite different in form from the stained specimens, and must have been horse-hair. Chemically, the copper and iron tests were much stronger than in the first specimen. (3) Specimen after a morning's work with undyed horse-hair: The sputum was very small in amount, frothy, thin and unstained. Microscopically, it showed a few unstained fragments of hair, similar to the unstained fragments of the second specimen, but no logwood fibres. The chemical tests for iron and copper were negative. No bacilli of tuberculosis could be found in any of the specimens. The examination of the dust from under the "separator" corresponded with that of the sputum; iron and copper, dyed bits of hair and unstained fragments, evidently from a different animal, bits of logwood and foreign matter being found. As already stated, zinc, arsenic and lead were absent in the dust.

Since he first came to the hospital I have seen the patient several times, and the gastric symptoms always return soon after exposure to the dyed-hair dust; but they have thus far always yielded to the treatment first prescribed. The signs in the lung finally disappeared, and when he was seen by Dr. F. C. Shattuck, who most kindly examined him for me a few weeks ago, nothing abnormal was detected in the chest.

Two points seem to me of special interest in this case: first, the absence of any signs of an abnormal condition either in the larynx or lungs after twenty years of almost daily exposure to this dense dust; second, the evident symptoms of marked irritation of the digestive mucous membrane, without a similar condition in that of the respiratory tract, though the latter would seem likely to be the most easily reached by the irritating particles. To what extent absorption has taken place in the present instance — if such has occurred at all — it is, I think, impossible to say.

To try to determine this question, and also to, if possible, show the probable condition of the lungs from exposure to this dust, I have kept some animals for several hours each day in a close cage, into which this dust is blown continuously. Judging from similar experiments with coal-dust, it will be from sixty to ninety days before any pathological change is likely to occur.[4]

◆

Clinical Department.

THE OPEN INCISION IN UNCOMPLICATED CASES OF HYDROCELE.

BY PAUL CLENDENIN, M.D., FORT BRADY, SAULT ST. MARIE, MICH.,
Captain and Assistant Surgeon, U. S. A.

I read with a great deal of interest the paper by Dr. M. F. Gavin, and the discussion thereon, in your issue of March 1st. I cannot accept the doctor's *dictum*, "No simple, uncomplicated case of hydrocele ought to be treated other than by injection." And I must take exception to his statement, "The open incision, with or without excision of the sac, means the administration of an anæsthetic [general, I suppose he means], detention in bed for a varying period from one week to four, while to undergo an operation has considerable effect on the minds of most of our patients."

Permit me to refer to my own experience, limited though it be, to show the simplicity of the open incision in uncomplicated cases.

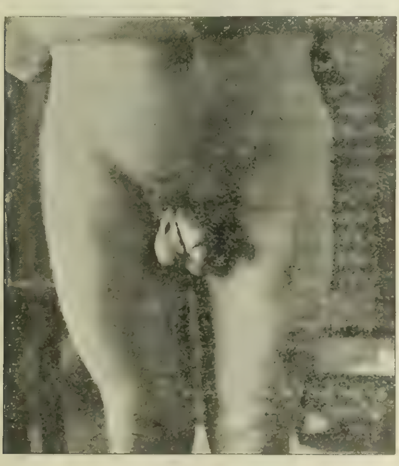
Case I. H. K., soldier, German, thirty-two years old, of fine physique and in vigorous health. This man presented himself at the hospital November 8, 1891, expressing the desire that I should look at his scrotum, and, if possible, relieve his discomfort. Inspection showed a swelling of five and a half inches in length by about three and a half inches in greatest width, situated in the right compartment of the scrotum. It was easily determined to be a simple hydrocele. The man stated that he had first noticed the swelling six or eight months previously, but had paid no attention to it until the tumor became an annoyance on account of its size. It was at no time painful. I had examined this man as a recruit in November, 1890, and I know the tumor did not then exist. Despite the fact that the hydrocele was of comparatively recent origin, and that the wall of the sac presumably was not thickened to any extent — I say *presumably* on account of its recent growth, for the tumor was so tense that it was impossible to determine positively the amount of thickening — and notwithstanding it barely exceeded the limit in size usually laid down for cases suitable for operation, I decided to perform Volkman's operation rather than trust to paracentesis and injection of some irritating fluid, which, to me, is a most unsurgical procedure.

Having done a Volkman's operation three years before, and been rewarded by seeing recovery without the appearance of a single drop of pus, I made every effort to obtain the repetition of so desirable a result.

---

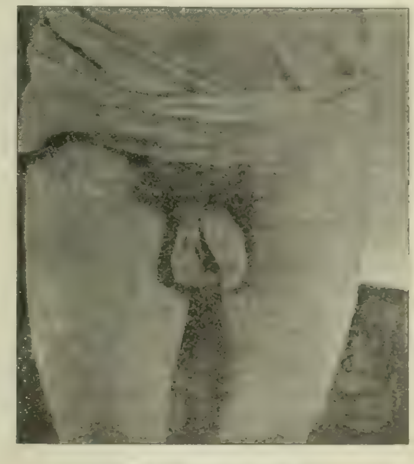
[4] On March 16th one of the rabbits referred to above was found dead in its cage. During about five hours (average) each day it had been in a closed cage, to which a steady current of air filled with dust from under the separator was supplied and kept in motion by a forced blast. For two days before death the animal had not seemed well, and had, therefore, not been placed in the dust cages. There had been no cough and no sneezing, except during the first week; and until March 15th the appetite was good. Up to March 12th (the twenty-sixth day) there had been a loss of one-quarter of the original body-weight. Death occurred on the thirtieth day. On post-mortem examination, twenty-four hours later, nothing abnormal was found, except that the mucous lining of the stomach was throughout thickly studded with small spots and larger patches of dark brown or black, which, microscopically, proved to be *not a post-mortem change*, but a *hæmorrhagic gastritis.* A pathological change in the lungs was not to be expected after so short a time of exposure to the dust; and it is as yet too soon to determine the results of a sufficiently long exposure under the same conditions.

After a bath, the man's abdomen, pubes, scrotum, perineum and thighs were shaved from the umbilicus to mid-thigh, the parts then scrubbed with soap and water, and afterwards with ether, and finally laved with a solution of bichloride of mercury (1–1000). Equal care was bestowed on the toilet of my hands. The instruments were boiled, and afterwards immersed in a solution of carbolic acid (1–20). A length of rubber tubing (also treated to a bath in the carbolic solution) was wound tightly around the base of the penis and scrotum and secured. Sixty minims of a four-per-cent. solution of cocaine hydrochlorate were injected along the line of the intended incision, resulting in complete abolition of painful sensation in about eight minutes. An incision of about two and a half inches was then made through the integument and down to the sac. Loops of silk were passed through the sac wall at the end of the incision and tied, as my former experience had taught me that the retraction of the tissues due to the subsequent irritation of the interior of the sac caused it to be difficult to secure nice coaptation of integument and serous membrane in the subsequent suturing. The sac was then incised to a trifle less extent than was the integument; the hydrocele fluid was evacuated; and the cavity of the sac swabbed with a five-per-cent. solution of carbolic acid in glycerine, as recommended by Gerster. The edges of the parietal layer of the *tunica vaginalis testis* were then united to the edges of the integument by a continuous suture of catgut, very much as a tailor makes a button-hole. In making this suture, it was found that the skin and the sac wall had both retracted more than the cellular tissue lying between them. This was so because of the cocaine injected — such, at least, is my opinion, for it was gelatinous and clear, and had the appearance of infiltration of fluid; furthermore, there was no such appearance in my former case, in which general anæsthesia was obtained by ether. This redundant tissue was removed by the scissors before suturing. The sac was washed out with a bichloride solution (1–3000), and the surrounding parts bathed in the same. A second swabbing of the interior of the sac with the carbolic solution was done, and the wound was dressed. A drainage-tube was carried to the lowest part of the cavity and secured by a safety-pin after slipping it through a hole in a piece of rubber protective-tissue long enough to cover the wound with a small margin. This was covered with a layer of hydroscopic gauze moistened with bichloride solution (1–3000), which in turn was covered with dry gauze, and over all a double layer of protective extending (with a wide margin) over the entire dressing. The dressing was secured by a firm bandage, so arranged as to apply considerable pressure and support the parts. As each layer of the dressing was applied, a hole was cut in it and the penis drawn through. The man was directed to turn on his side in urinating, and cautioned by no means to allow any urine to soil the dressings. The bandage was arranged to avoid as much as possible any soiling of the dressing by the fæcal discharges, and an inspection of the dressing after each evacuation ordered made by the nurse.



Case I. Cremaster contracted.

The man was permitted to sit up as soon as he felt so inclined, which was on the third day, the only restriction being to refrain from walking around. The dressing was not disturbed until the bandage became loose, which occurred on the ninth day, when we were rewarded by the sight of a clean, dry wound, perfectly odorless except for the odor of the rubber protective.



Case I. Cremaster relaxed.

The scrotum was considerably swollen, and had a doughy feel. The sutures had disappeared, and the drainage-tube had been pushed out and was in the dressings. The incision was a deep sulcus in the side of the scrotum, by parting the lips of which a pink line could be seen apparently perfectly healed. The dressing had been stained by the serum, and had a brownish color, but there was no evidence of pus. There had been no pain, no rise of temperature. Mindful of the caution of Knester, as quoted by Senn in his article on "Hydrocele" in Buck's Hand-book, that failure attends this operation at times because of the too early suspension of antiseptic precautions, a dressing similar to the first one was applied after a thorough washing of the part with the 1–3000 bichloride solution, discarding the first layer of protective.

On the fourteenth day the dressings became disarranged on account of the active movements of the man, and the wound was again inspected. The gauze was slightly stained, and at the lower part of the cut corresponding to the site of the drainage-tube were a few granulations. These were touched lightly with nitrate of silver, a little calomel dusted in the sulcus, and a dry dressing applied and held in place by a suspensory bandage. The man was fit for duty at this time, but was kept under observation until the twentieth day, and engaged in such occupations as are suitable for a convalescent. When the man returned to duty the scrotum and contents seemed normal in size. No cicatrix was visible, nothing but a deep sulcus (see photograph). The scrotal wall was adherent at one point; apparently the sac was obliterated.

Case II. The case referred to as operated on three years previous is that of a young man of twenty, a railroad brakeman, on whom I operated at Laredo, Tex. In this case the tumor was five inches in length and of about a year's growth, situated also on the right side. I operated precisely as in the case just reported, except that ether was used for anæsthesia, and the dressing was the same, except that iodoform was used. The dressings were removed the eighth day, disclosing a dry, clean cicatrix. The young man insisted on going to his home in Corpus Christi, Tex., as soon as the second dressing was applied, and went back to work on the road the next week. Either of these men would have been at work a week after the operation had they been professional or business men.

It seems to me that open incision is the only operation for simple hydrocele of any size. The operation is not formidable with cocaine anæsthesia. My soldier watched the operation with interest, commenting on the various steps in "asides" to the nurse, and seemed quite cheerful.

I have characterized the practice of paracentesis and injection with an irritating fluid as unsurgical. I do not draw on any extended experience for this opinion, for I have treated but one case by this means. A comrade of my brakeman came to me a short time after the operation with the request that I operate in like manner on him. He exhibited a hydrocele about the size of a large hen's egg, from which I removed the fluid, having thrown a few drops of cocaine solution into the site of my puncture, and then injected the sac with twenty minims of pure carbolic acid, as recommended by Levis, at the same time promising to operate as he desired in the event of a recurrence. I have never seen the man since. I heard indirectly that he was "all right," by which I felt assured that none of the accidents which sometimes follow injection — as suppuration of the sac, gangrene of the scrotum, or even of the testicle — had occurred, but was left in ignorance of the success or failure of the purpose of the operation.

It is on general principles that I object to the injection of an irritating fluid into the hydrocele sac. It seems to me unsurgical and unscientific to set up an inflammation in a closed sac, which at once proceeds beyond your control, has no drainage, and may do serious damage to important structures. Agnew states that he has had but one failure in a number of years with the injection of tincture of iodine. Other surgeons have not had such brilliant success. According to Senn, in the article above referred to, nearly as high as fifty per cent. of failures have been reported as the result of this operation. Nineteen cases were reported by Bardeleben showing sixty-five per cent. successful; and there are cases on record of serious results, involving even loss of life, following the injection of the tincture of iodine. The use of carbolic acid seems to promise better results, but I am not able to find any statistics concerning them.

Injection, then, does not appear to be either safe or sure; still it is spoken of by Agnew, Wyeth and others as the conservative method, to be tried in the majority of cases before attempting the more formidable procedure of Volkmann. If we had the power to set up just a sufficiency of inflammation to obliterate the sac, and not enough to do any damage to the structures involved, injection would be the ideal operation; but, unfortunately, the most of us have no such power. To be sure, the interior of the sac is irritated by swabbing with the carbolic-acid solution in the open treatment; but it is quite another matter to irritate a tissue after drainage is established.

The operation of Volkmann appears to me to be the safest and surest. With cocaine anæsthesia it is not formidable, and with attention to antiseptic precautions it ought not to be serious. The man is incapacitated for duty but a few days, not much longer than the rest recommended after injection. And with attention to the irritation of the interior of the sac by the carbolic acid, the result should be fairly sure, the failure being frequently, if not usually, due to the non-obliteration of the sac on account of the "too antiseptic" healing of the wound.

◆

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

J. T. BOWEN, M.D., SECRETARY.

Regular meeting, Monday, February 12, 1894, the President, Dr. C. F. Folsom, in the chair.

Dr. A. T. Cabot reported a case, illustrative of

THE CHANGE OF A BENIGNANT TUMOR INTO A SCIRRHOUS CANCER IN THE BREAST.

The patient was a lady fifty-four years of age, who had had more or less trouble in her breast for over twenty years, this having first appeared at the time that she was nursing her first child, now twenty-six years of age. For ten years she had noticed a lump in the outer segment of the right breast which during that time had not materially altered in size.

She was seen by Dr. Cabot in February, 1893. This little mass then was about the size of a large English walnut. It was movable, and seemingly not attached, either below or to the skin. She had noticed that this lump sometimes increased and became painful at the times of her monthly sickness, but then resumed its usual condition.

Dr. Cabot saw it again in July, when it seemed possibly a little larger than at the previous examination. The skin over it showed a little irregularity of surface, the irregularity seeming to be caused by a network of fluid spaces close under the outer layer of the skin. At no time could anything be felt in the axilla.

The patient was seen again in December, she having in the meantime had some electrical treatment, in the hopes of dissipating the lump. The condition of the skin was unchanged, and it was deemed wise to remove the mass, not because it seemed like a cancer, but in order to leave no chance of neglecting a serious thing.

The growth was removed, with considerable tissue on both sides of it, and on section, it was found to present the characteristic appearance of a scirrhous cancer. At once the rest of the breast and the skin lying over it, and all of the axillary contents, together with the loose, connective tissue lying between the breast and the axilla, were thoroughly removed.

Dr. Whitney, who made the microscopical examination of the specimen, reported the nodule to be a scirrhous cancer, and after a careful search through the glands in the axilla, could find none in which any cancerous change had commenced. The dimpling of the skin seemed to be due to the drawing of little fibres, running from the growth to the under surface of the skin at one or two points.

The case was interesting, as showing how a benignant tumor may insidiously take on a malignant character, and illustrated the importance of keeping such a tumor under observation and of removing it early, if any appearance about it suggested a suspicion of its character.

The wound healed by first intention. Care was taken to make the section of the growth with a knife which was not used further in the operation; and the hands were carefully washed after this examination was made, before proceeding with the operation, in order to obviate the danger of any of the cancerous cells being transferred to the healthy parts. It seemed like a remarkably favorable case for a cure.

Dr. W. T. **Councilman** showed specimens of

PERITONITIS DUE TO EMBOLISM OF THE MESENTERIC ARTERY.[1]

Dr. A. T. **Cabot** said that he had urged at a recent meeting of the Massachusetts Medical Society the importance of recognizing embolism of the mesenteric vessels as an occasional cause of obstruction of the bowels, and that the cases shown by Professor Councilman were interesting as bearing out this view. He said that he had seen cases in which a diagnosis of volvulus was made and in which he had no doubt this embolism existed.

Dr. M. H. **Richardson**: I think with Dr. Cabot that Dr. Councilman's remarks upon this possible cause of peritonitis are of great interest. That a general fatal peritonitis may be due to an interference with the intestinal circulation which is beyond surgical relief, is a fact of the greatest importance. I have considered the question of interference in such cases several times this last year. In the one of which Dr. Cabot speaks, volvulus was thought to be present. I made the autopsy, and sent the abdominal organs to the hospital. Dr. Fitz was unable to demonstrate the precise lesion. Dr. Cabot will remember two cases at the hospital of supposed general peritonitis following fractures of the thigh. There was some question of thrombosis or fat embolism at that time.[2] In the first case fat embolism was found at the autopsy; the second case was not examined post-mortem. Not long ago, in consultation with Dr. Shattuck, the question was considered of operating in the following case of apparent general peritonitis and obstruction following typhoid fever. It seemed very probable that there was a portal thrombosis or an embolism — something which no operation could relieve.

Mrs. H., aged twenty-three, was convalescing in the fourth week of typhoid fever. The attack, mild throughout, was uneventful till thirty-six hours before my examination, made at 2 A. M., October 22, 1893. Eight days before she had had pain in both legs, for which a hypodermic injection of morphine had been given. At one o'clock, Friday, she was seized with severe epigastric pain relieved by half a grain of morphine. This was followed in twelve hours by vomiting, which soon became stercoraceous. Her bowels moved freely Saturday night from a glycerine enema. Her pulse Sunday morning was 132, the temperature 99°. The facies was peritoneal and the general condition bad. There was some tenderness above and to the left of the umbilicus, where distended coils of intestine could be felt distinctly. There was no general distention, though the abdomen was rather full. The patient's condition was deemed hopeless, and no operation was advised. The diagnosis by exclusion indicated portal thrombosis as the probable lesion, though the possibility of some pancreatic affection was considered. Death took place in forty-eight hours. The autopsy by Dr. Whitney was unsatisfactory on account of the interference with the pathological appearances caused by the undertaker's fluid. There was no lesion of the intestinal tube, however, nor was anything found incompatible with the diagnosis of portal thrombosis.

In this case, as in the one referred to by Dr. Cabot, and in a fatal[3] appendicitis the most marked physical sign was the distended coil of small intestine. In such cases the segment of bowel is darkly congested, and heavy with blood and fluid. The sensation of tension and resistance through the abdominal wall is characteristic of a tightly distended coil, but no inference can be drawn as to its exact cause without careful consideration of the history and accompanying physical signs. The clinical features of cases of this kind are of the greatest interest to me; a satisfactory pathological explanation of them that will enable us to avoid operating in hopeless cases will be extremely valuable.

I have no doubt that we have erred in our diagnosis even at the operations for fatal cases of apparent peritonitis, not only because it is impossible at times to tell the exact pathological lesion, but because no autopsy is allowed. All who operate in acute abdominal conditions must be able to recall such cases.

I was very much interested in what Dr. Councilman said about the colon bacillus and its means of invading the tissues. I have had cultures taken in all abdominal operations in the last six or eight months. The fact that many of the alimentary micro-organisms will not grow in the ordinary media is very interesting, but it does not militate against the important clinical observation that, as a rule, if the cultures fail the patients get well; if the colon bacillus from a general exudate does grow on the culture media, the patient dies. This has been the invariable rule since I have made cultures, but the number of observations is still too small for any sweeping statements.

STRICTURE OF THE URETHRA, WITH SPECIMEN.

Dr. **Richardson**: This specimen is a firm, fibrous stricture of the urethra, dilated just in front of the bulb. The patient, a man of about thirty, received some years ago a blow in the perinæum which resulted in a stricture that was almost impervious. The urine escaped constantly by drops. The bladder was enormously distended. Nothing could be introduced. By perinæal section the fibrous mass was easily exposed. Above the constriction the urethra was much dilated; below, though healthy, it was flattened and contracted from practical disuse. By transverse cuts above and below, the whole mass was removed. The ends of healthy urethra were brought together easily upon a No. 18 English sound, and fixed in satisfactory approximation by means of interrupted silk sutures. The deep union was immediate. The urethra was at once restored to its normal function. The patient has gained thirty pounds, and is in perfect health.

---

[1] See page 410 of the Journal.

[2] See paper by W. F. Whitney, Boston Medical and Surgical Journal, February 18, 1892.

[3] Case of G. W. S., in Boston Medical and Surgical Journal, January 19, 1893.

SPECIMEN OF APPENDIX.

Dr. J. W. Elliot: I removed this appendix about ten days ago from a boy of thirteen. He never had an attack before. The attack began on Thursday, and his bowels were moved with oil and he was better on Friday. On Saturday more pain, and on Sunday his bowels moved again. On Tuesday I saw him and operated at once. He had a temperature of 101°, pulse of 90. The abdomen was not tympanitic, but there was a certain cakiness, on the right side, which I thought was omentum and which turned out to be omentum. The interesting thing about this specimen is that although the attack was acute, the appendix looks like a chronic appendicitis. The whole appendix is thickened and stiff. The acute part was due to the sloughing of the tip, which is opened and perforated; the omentum was wound round the appendix and saved the boy's life. There was about a teaspoonful of pus near the gangrenous tip with omentum round it. The boy made a good recovery.

Dr. W. T. Councilman: I should like to say that a short while ago I made an autopsy in which there was congenital absence of the appendix. I made the dissection with the greatest ease, and no traces of an appendix could be found either on the outside or in the inside, but in the small intestine just above the valve there was a small diverticulum extending into the tissue for about one-half to one inch, which I do not think was at all analogous with the appendix. But it was interesting to find this diverticulum at the end of the small intestine with entire absence of an appendix.

Dr. H. L. Burrell read a paper on

THE AFTER-TREATMENT OF APPENDICITIS.[4]

Dr. G. W. Gay: I was interested to hear Dr. Burrell describe his method of treating the stump of the appendix. In some cases, as we all know, that is the only thing we can do; the appendix is so rotten, that there is no taking sutures of any sort in the appendix itself, and in some cases, of course, nature does all that herself. The ideal way of treating an appendix, where you can, is to dissect off the outside covering, tie the appendix itself with catgut, bring the cover up over, and sew with a fine catgut suture. I most heartily agree with Dr. Burrell, when he says that he does not use silk about the appendix. I never leave silk in the peritoneal cavity if I have any suspicion of suppuration afterwards, because it often acts as a foreign body and keeps up a sinus for an indefinite length of time. It is not easy to open a wound and find a suture buried at the bottom; it may be covered with granulations. I have in mind two cases of removal of the Fallopian tubes in which the tubes were tied off with silk, and the sinuses have never closed. Theoretically, the proper way is to close the stump of the appendix in a way to bring other tissues together than the mucous tissues. If you cannot do that, I like to use the gauze drainage. I do not like rubber tubes for drainage. The wound shrinks in twenty-four hours so that all the drainage you get is what is about the tubes, and it is not so thorough and efficient as it is to pack the wound with sterilized gauze, leaving that in three to five or six days. You probably get in that way as good drainage as it is possible to get in these cases, provided it is not a large pus cavity, when it is simply a case of putting in drainage-tubes and washing out as you would any abscess.

In regard to the use of saline cathartics or cathartics of any sort, I feel very much indebted to the gentlemen who have called me in consultation for one thing, and that is, I have learned the effects of cathartics. Almost all the cases I have been called to have had cathartics, and I have had a good chance to study their effects. In many cases they have been given where I should not dare to use them. In some cases they seem to do good, in some cases harm. In the case of acute sharp appendicitis I should not dare to give cathartics. In the case of moderate appendicitis I think it does not make so much difference if you give a saline or a dose of castor oil. I have seen a good many cases where they have received those remedies, and at the end of four or five days they have turned the corner and got well. In a severe case I think it is pretty well agreed that it is better not to give laxatives at all. After the operation the question comes, When shall we give cathartics? I do not like to give a cathartic under three or four days. I have the fear that by starting up peristalsis I may rupture the catgut ligature or perhaps produce a leak through the stump of the appendix, which perhaps drainage will not control. That is an objection which may perhaps be theoretical. As soon as I feel reasonably sure of the stump of the appendix, so that if any contents do come out they can be readily taken care of, I believe most thoroughly in salines given in small doses and frequently repeated. Vomiting is no bar to giving saline cathartics. I think I have seen vomiting stopped in peritonitis in other operations about the pelvis by giving saline cathartics; and my rule in threatening peritonitis is to give them in teaspoonful doses every hour, vomiting or no vomiting, until the bowels are evacuated.

In regard to opiates, I never have let my patients suffer very much for the want of an opiate. I think that pain has a good deal of depressing action upon the patient's strength, and I think probably the opium does more good than harm. One of the best tonics or stimulants after these operations, as after all peritoneal operations, is strychnine. I think it is better even than the alcoholics or better than anything else I know.

In regard to the time of removing the drainage, as Dr. Burrell says, it has got to be decided in every case, and you have got to go by your judgment. If there is going to be any walling off of the wound, it takes place within two or three days generally. After that you may begin to remove the gauze and, so far as I know, I have never seen any symptoms arise, which showed that the gauze was removed too soon, and the peritoneal cavity reinfected. Rubber-dam in these cases I have not used much for drainage. I have used it in breasts, and I think it is pretty good there. I believe where there is no pus, in closing the peritoneal cavity, as Dr. Burrell says, a line of sutures for the peritoneum, another for the muscles and transversalis fascia, and another for the muscles and skin. I believe that the more attention wounds get the better. Even if you close the abdominal cavity up tight, I always like to see it at the end of three days, and I never let a wound go over five days without looking at it. If there is to be trouble, I think you will find it on the third day, as a rule; from the third to the fifth day have been the critical times in my experience. I believe in seeing the wound pretty often, and then you can take steps to correct mistakes or unfortunate occurrences. The other points that Dr. Burrell brings up are so well founded in my opinion, that I have nothing to say in relation to them.

---

[4] See page 433 of the Journal.

Dr. M. H. Richardson: This subject should be divided for discussion into two or three distinct classes:

First, the cases in which the comparatively normal appendix is removed in the period of abeyance, when it is possible to close the abdominal cavity at once. In these cases, as far as I have observed, it makes no difference whether we use catgut or silk for tying the appendix or whether we cover the stump with peritoneum or not; whether we simply cut off the appendix and sear it with the actual cautery; whether we touch the pedicle with peroxide of hydrogen or corrosive sublimate or whether we drop it back untouched. These cases all get well as far as I have observed in this community. Not that in so safe an operation there is no danger; the accidents inherent even to the simplest procedures make a probable mortality in this of two or three per cent. The only occasion for drainage in this class is when there is a septic exudation about the appendix. Under such circumstances a slender gauze wick should be used, to be withdrawn in forty-eight hours.

Secondly, the gangrenous appendices with more or less extensive extravasations. In these cases the material used and the manner of applying the ligatures are indifferent so long as two things are accomplished — the restraining of further extravasations and the controlling of hæmorrhage. To spend valuable time in attempting to cover in the stump of the gangrenous appendix — inflamed, swollen, and friable, like those I have just exhibited — is often impossible, is always unnecessary and unwise. The only object for such a procedure is to make immediate closure and first intention possible; for extravasations are effectually restrained by the ligature, or if that gives way, they are provided for by the gauze or tube drainage.

I do not believe in the use of salines before operation, because the first symptoms in most severe cases of appendicitis are caused by fæcal extravasation, often aggravated by cathartics. The opening in the appendix and into the cæcum may be as large as the opening of a bullet wound. I have seen thin fæcal matter escaping from the appendix in several instances. I have not the slightest doubt, therefore, that salines have killed a good many people who, perhaps, would otherwise not have died. After operation, when the appendix has been securely tied, or when extravasation has been provided for by drainage, salines fulfil a very useful purpose in exciting abundant liquid discharges and in eliminating the toxic products of germ growth. Yet I cannot help feeling that perhaps too much reliance is placed upon their use; that in a general peritonitis, with the intestines paralyzed, the abdomen distended, and the patient constantly vomiting, salines do no good whatever. They may even do harm by adding to the patient's burdens. I have never yet seen a case recover under these conditions, with any method of treatment.

With regard to intestinal drainage by enterotomy, I have seen this done once with marked success by Dr. Warren. The peritonitis had been going on for some time, and was not of the fulminating variety. Recently, in another case of general septic infection, I opened the cæcum after having drained in the median line for appendicitis with extravasation. The adjacent segments of the large intestine emptied themselves through the lumbar opening without any permanent benefit. The patient soon succumbed.

Third, abscesses in which the general peritoneal cavity is not infected generally do well, whatever method of drainage may have been used, provided it is effectual. I prefer the use of both tube and gauze, the latter in slender wicks. Gauze tightly packed often acts as a plug and prevents the escape of pus. I have used many methods of irrigation in circumscribed abscesses. None is more effectual than thorough flushing with boiled water. Recently I have tried peroxide of hydrogen in these cases, followed by that of the normal salt solution, as recommended by Dr. Morris, of New York. I have not observed any improvement in results by this method. On the other hand, I believe that there is a distinct disadvantage in the use of irrigation in local infections which have not become general — in which the adhesions are broken down, but in which there has been as yet no extensive soiling of intestinal coils. The use of warm water, under such circumstances, is hazardous, because it may spread to distant parts colonies of bacteria which by the dry-gauze method would be confined to the immediate vicinity of the drainage-tube.

In many cases of circumscribed abscess drainage has been followed by a fistula. This appears usually some days after operation, and often results from the sloughing of the stump. In these cases, with one exception, the fistula has closed spontaneously. In two instances occurring in the practice of others I have closed the fistula by resecting the intestine. In two cases malignant disease of the cæcum eventually complicated, if they did not cause, the fistula.

I have never seen any bad results from the presence of germs in a well-drained wound.

Too much gauze sometimes causes obstruction, either by direct pressure or by keeping the intestines in a faulty position until adhesions form and cause acute obstruction. Such a case I have had in the last four weeks. By opening the wound and separating the recent adhesions the patient was permanently cured. I am afraid of iodoform freely used. Except in very rare instances I use only sterile gauze.

Care must be taken not to drain a cavity too long. A permanent fistula may be formed which will close only very slowly.

I cannot believe that it is justifiable always to remove the appendix. In circumscribed peritonitis separation of the adhesions adds enormously to the dangers of general peritonitis. I cannot understand how it can be regarded in any other light. Cases of abscess with localized peritonitis get well almost invariably; as large a percentage recover as in the operation for recurrent appendicitis. I know of one or two cases in which there have been subsequent attacks; in these the first opening was probably near the tip of the appendix, another fæcal stone near the base causing the second attack. Nevertheless I do not believe that in many cases there is any recurrence of the trouble, even if the appendix is not taken out.

The reopening of the wound for any cause seems a grave sequel. I dislike very much indeed, once having operated, to go in again, for the reason that the peritoneum is shut off by adhesions so recent and delicate that you cannot avoid frequently infecting with your finger the peritoneal cavity. Perhaps this danger is not so great as it seems. When I have been obliged to reopen the wound and explore extensively, no untoward results have followed.

I have closed the wound only in the recurring cases, or in those operations in which the appendix seemed but slightly affected. I use the same method which I learned from Dr. Homans, that of applying but one row of interrupted stitches. For a short time this year we united the abdominal wall by layers. There seemed no advantage in this method, and it was soon abandoned. I do not think that hernia has followed any oftener in my abdominal cases than in those of most surgeons. In my opinion a line of stitches in the peritoneum is of little importance, and adds no strength. If you are going to bring together by a separate line of sutures the strongest layer in the abdominal wall, you ought to put a row in the external oblique.

I have had practically about as good results in those cases in which I have left the patient in the hands of the general practitioner as at the hospital where they have had the care of experienced men. Certain cases will die wherever they may be or whatever the treatment. In a small percentage of patients the result will be directly affected by the knowledge and skill of the attendant. On the whole, however, the results are about the same in one place as in another, by one method of treatment as by another. A series of three cases last summer shows that some are essentially, necessarily fatal. All three cases died. The trouble was not in the way the tube was put in, or the way the case was treated afterwards, but in the nature of the case; in every one there was general peritonitis. In one the colon bacillus was found, and in all a fatal termination was unavoidable. I do not believe that these cases could have been saved by any method of treatment that is known at the present time.

I would not be understood as saying that the after-treatment makes no difference, however. In my belief and experience it does make some. The result depends more upon causes beyond our reach than it does upon any special method of treatment.

Dr. Cabot said that while there was no doubt that the patients did very well when the appendix was simply tied and cut off, still he preferred the method of stripping back a cuff of the serous coat, then tying the mucous and submucous coats with catgut, and after cutting off the appendix, bringing the serous coat together over the stump with fine silk sutures.

Among the possible causes for persistent vomiting after the operation, he would include iodoform-poisoning, which he thought was sometimes overlooked.

In regard to the closure of the wound, he said that he always used a single line of sutures, including the peritoneum, both deep and superficial fascia and the skin. He had noticed that in some cases while he was at work, if the patient coughed, the wound was drawn firmly together instead of being separated by the action of the muscles. He thought that this occurred when the incision was carried just through the edge of the rectus sheath, having the tendinous linea semilunaris just outside of it. He always tried, therefore, to make his incision at this point.

Dr. Elliot: I would say, in regard to the material used to ligature the stump, that I have always put silk in the abdominal cavity in septic cases and every other case, and never had any sinuses or fistulas connected with the silk. I do not believe it makes the slightest difference what material you put in. I think probably the old sinuses from salpingitis and tubes are due to part of the tube being left or part of the thickened tissue left. If the silk ligatures are sterilized, I do not believe they often make trouble. Having done several hundred cases of laparotomy, and having left silk in all of them, I think I should have seen trouble if silk was objectionable.

I agree with Dr. Richardson that it does not make much difference which way you treat the stump. If I had time enough, I should do as Dr. Burrell suggests.

So far as the after-treatment of the wound is concerned, I have some rather decided ideas of my own, and one is I almost never wash out an appendicitis wound. I am very much afraid of washing into the peritoneal cavity. I suck and swab it out. I think if you have a suppurating wound under the fascia, where pus is forming rapidly, you need a drainage-tube, because the fascia closes so tightly on the gauze that it leaves a very small opening indeed. If the gauze were changed often enough, it would counteract that pulling together of the fascia; but you hardly want to take the gauze out two or three times a day and put it back again.

Dr. Burrell: I differ entirely from Dr. Richardson in regard to the classes of cases. Up to last June I felt exactly the way he does in regard to this subject, that there were a certain number of cases going to die any way and a certain number of cases going to get well. I started in on my service last summer with the intention of investigating and seeing if there was not some possibility of saving those cases which are classed as fatal, simply from the fact that they have general peritonitis; and I satisfied myself, at least, that I could save a certain number of them.

I can recall at this moment four cases of distinct general peritonitis, not of the fulminating type, but where the abdomen was tympanitic, and where there were chills, yet these patients got well by care in their after-treatment.

Dr. Richardson: I would not for a moment be understood as maintaining that these cases of general peritonitis ought to be left to die unrelieved. Far from it. I have found at times a much more favorable condition of things than I had expected. Indeed, so completely may we be misled by the general appearance, the local conditions, and the constitutional disturbance, that all cases, unless actually dying, should be explored. Unfortunately the cases in which we are deceived are very rare. Only those should be described as general peritonitis in which by bacteriological examination the presence of micro-organisms is demonstrated *in the general exudate*, although, as Dr. Councilman remarks, some forms of bacteria doubtless fail to grow on the ordinary culture media. My experience may have been unfortunate, but in no case has recovery followed a general bacterial infection, as shown by cultures from the general exudate. Cultures from the appendix alone are of no value whatever in deciding the question of a general infection. Practically, all appendices contain either pure colonies of the colon bacillus or a mixed culture, as shown by Mr. Darling in examination of my cases. Unless these micro-organisms have escaped into the general peritoneal cavity, there can be no general infection, and results following operations upon a supposed general peritonitis are of no value.

I have closed the stump as Dr. Burrell has suggested in every case in which the appendix was not gangrenous or infiltrated.

Dr. Burrell: I simply wish to place on record, Mr. President, that cultures were taken in all of these cases of general peritonitis, so that we know that the colon bacillus was present.

Dr. J. G. Mumford: When the abdominal wound has been closed over an amputated appendix stump, the treatment is the simplest imaginable. I have never seen harm come from getting the patient onto a plain, regular diet by the sixth day, moving the bowels by an enema on the third day and giving a mild laxative each day subsequently. Even those cases in which a large incision has been made, and the wound filled with gauze-wicking and drainage-tubes may be conducted by common-sense rules.

The more I see of these cases the less I am inclined to feel that immediate movement of the bowels is essential. In perhaps the first fifty cases which came under my care I tried the use of cathartics — salines — as soon as possible after the operation. During the past year and more I have become much less eager to encourage peristalsis early. The patient's bowels are usually not loaded, though the rectum is often full. If there has been vomiting, the small intestine usually contains nothing but gas. The intestinal drainage is well accomplished through the artifical opening. It must be remembered, too, that this wound is an unusually painful one during the first day or two.

For these reasons I always order a large hypodermic of morphia to be given before the patient's recovery from ether, and except for washing out the rectum, direct that the bowels remain undisturbed for thirty-six or forty-eight hours. I then begin on cathartics, and of these I eschew salines. I was led to this first from finding the frequent impossibility of such treatment in children; I substituted for salts minute and frequently repeated doses of calomel. One-tenth of a grain repeated at fifteen-minute intervals will very often move the bowels before a whole grain has been thus given. Patients take this readily, the stomach is not disturbed, and nausea is apparently thus frequently checked. When the bowels have once been started they may be kept open by a mild laxative given every day.

As to the diet, to give nothing by the mouth the first sixteen hours, and then, beginning with liquids, to gradually work up to a full diet on the fifth day, is a good safe rule, if the case goes well. Stimulants should be given freely by rectum or hypodermically during the first two days. I prefer large enemata of the normal salt solution, or four ounces of black coffee combined with strychnia, given three or four times during the first twenty-four hours.

In regard to the care of the wound there is little I can add. The main point is to keep the dressings clean and the tubes clear during the first two days especially. The outer layers of the dressing should be changed once or twice daily and the tubes very gently syringed out with boiled water. If there is much pain and distention, I usually order a large creolin pad to cover the whole belly, and change it every three hours. This often gives the patient a surprising degree of comfort.

I think we are inclined to pull out the deep gauze drains too soon and to leave in the tubes too long. The gauze wicks may usually be left in four or five days, and pulled out as they loosen. There is always some suppuration behind them. The new wicks should be very lightly placed. At the end of the week, if the case does well, we may begin to shorten the tubes. I seldom see occasion to leave them in longer than three weeks.

◆

MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

HENRY JACKSON, M.D., SECRETARY.

Regular meeting, Wednesday, February 21, 1894, Dr. Frederick C. Shattuck in the chair.

THE PRODUCTION OF VACCINE VIRUS.[1]

Dr. D. D. Gilbert, of Dorchester, gave the report of a committee appointed by the Norfolk District Medical Society to investigate the production of vaccine virus.

After the reading of this report at the Norfolk District Society a motion was made that a committee be appointed to urge upon the legislature the establishment of a State institution for the propagation and supply of vaccine stock; that since vaccination is made compulsory by the law of the State it seems incumbent upon the State to provide for its inhabitants as pure and efficient vaccine stock as science can produce. That vote was passed, and a committee was appointed. That committee was instructed to ask the co-operation of the Suffolk District Society in bringing the matter before the legislature, and I suppose to your knowledge of that fact I am indebted for the privilege of reading this report to you to-night.

Dr. S. W. Abbott: My interest in this subject is not merely a recent one, but dates back thirty years or more. I think it is not generally known among the profession that animals were vaccinated so long ago; but a considerable quantity of the lymph used in the army from 1861 to 1865 was obtained from cows. My preceptors, Drs. Benjamin Cutter & Son, of Woburn, took a very lively and personal interest in it at that time. The report upon that subject is to be had in the reports of the United States army of that period by Surgeon Milhau.[2] The method has been criticised from this fact, that some of the animals were vaccinated upon the principle of retro-vaccination, that is, by vaccinating a cow from a healthy infant. There is not the slightest objection to that method in my opinion. It is endorsed by the German government,[3] and advised by them at the present day.

---

[1] See page 433 of the Journal.

[2] See Medical and Surgical History of War of the Rebellion, Part III, Medical Volume.

[3] Extract from Decree of the Bundesrath of April 28, 188[illegible].

Section 18, relative to the method to be taken for beginning a succession of animal vaccinations: "In the vaccination of animals there may be used, (a) humanized lymph taken from the vesicles of a primary vaccination, subject to the laws of the Bundesrath of June 18, provided the infant be healthy in all respects, and it is as easy to obtain a healthy infant as a healthy cow. There is no evidence to show any real difference in the vaccine lymph thus produced, when two or three removes from the healthy infant, as compared with that which is obtained by continuous vaccination, beginning with the lymph derived from a case of cow-pox in the cow. You may vaccinate from an infant to a heifer to-day and back again indefinitely, or take a series of infants and vaccinate from one to the other, or a series of cows from one to the other; and no evidence is as yet given to show an actual difference in the character of the lymph produced in efficiency or protective power. One of the great reasons for the change was the possibility of communicating syphilis, which is a very rare occurrence. Dr. Corey, of London, submitted himself to be vaccinated from a syphilitic infant, in 1881, and went through the stages of syphilis himself.

I took up animal vaccination again during the epidemic of small-pox in 1872, and continued the practice some twelve years, but at no time using the method of extensive scarification spoken of to-night. I employed a simple incision not over one-fourth of an inch in length, and just going through the skin, making four incisions at once, with an instrument which I devised for the purpose.[4] For the last twelve or thirteen years I have had little to do with the practical side of the question in any way.

I have had some opportunity to study the methods that have been adopted abroad, and find that they differ in a great many points from the methods adopted here. In almost every country on the other side of the water the practice that has been advised by the committee to-night is in vogue, that is, to have the government take charge of the work. It is not usually a commercial business abroad. There are, it is true, a few private vaccinal institutes in France and some other countries, and lymph may be found for sale in some large cities, but the possibility of its being a trade or occupation or money-making business is largely removed, especially in Germany. Some twenty-four cities in Germany have their own vaccine institutions under the government of the country, the Imperial Board of Health having a general supervision. The most important is that of Berlin, and I think the next in size is in Cologne; others are in Munich, Hamburg, Frankfort, and almost all the large German cities.

The German law upon this subject is quoted in full in "Wood's Reference Hand-book," Vol. VII. The method of preservation with ivory points is not much used abroad. It is a very convenient method. The lymph used abroad is chiefly the glycerinized pulp. It is, I think, the method advised by Dr. Warlomont, of Brussels, who might well be called the father of bovine vaccination. His own work in Brussels is so carefully conducted that every animal is slaughtered and examined to find out whether the animal is healthy before the lymph is sent out. That is not done in all places. In London, the work is under the care of the Local Government Board, and Dr. Corey, who has been connected with that work for the last ten or fifteen years is well known everywhere as an accomplished expert in such work. He has made as many as fifty thousand vaccinations of infants without a single failure, and does not believe in so-called insusceptibility of infants to vaccination.[5] In England, the parents or guardians are obliged under penalty for refusal to bring the infants at the proper time to the station to be examined, to find out whether the vaccination has taken or not, and in that way they obtain the records. In Italy, the government assumes control of vaccination, but in a more limited manner as to lymph-production. So also in Austria, Sweden and in some other countries. The following provision is made in the Italian law:

> ARTICLE 3. Animal lymph may be preserved by the medical officer of the province, either at an institute for the production of lymph established by the provincial authority, or at an existing private institute for the production of lymph which has received official recognition from the provincial authority. In either case the institute must be put under the supervision of the medical officer. The medical officer is also empowered to make use of the National Vaccine Establishment at the office of the Department of Public Health (in Rome). [From the Regulations issued at Rome, June 18, 1891.]

There is one other point upon which I should like to speak, in which there is a great difference in all foreign countries from the practice now in this country, and that is as to the time for collecting the lymph from the animal. The time may be perhaps most accurately stated in hours. One hundred and sixty-eight hours (7 days) is the time that has been employed most commonly in this country, that is, a cow or heifer is vaccinated upon a certain day of the week and the lymph collected upon the same day of the week following. I think there may be some instances where it is taken a day earlier, but in no place either in Germany, in Paris or in London is the time longer than six days, and often it is five days or even less. I will read a few of the places where the time is stated: Berlin often 72 hours, Hanover 96 hours, Munich at the end of the fourth or beginning of the fifth day, Dresden three and a half days, Strasburg 117 to 144 hours. In one case a period of six days is mentioned. There is a reason for the difference, and I have no doubt that the reason is of a commercial character, so far as American methods are concerned. The amount of lymph that can be collected on the seventh day is very much greater than on the fifth or sixth day; and, as a general rule, I have no doubt that the lymph collected on the seventh day is perfectly good to use, but not always. Frequently on the seventh day I have seen vesicles that not only had much lymph in them, but they had also a purulent appearance, and certainly it would not be desirable to use lymph of that character. It has been used, and no trouble may have supervened; but I can believe that that is one of the reasons why such lymph is regarded with suspicion by persons who have made a thorough scientific study of the subject unbiased by financial considerations. It seems to me it would be a wise thing on the part of this State to send some young medical man to study this whole subject for a period of six months, or more, if necessary: spending two months with Dr. Corey, two with Warlomont, and two with the best German authorities, who have made a scientific study of the whole question. I think we should gain very much by some such method as that.

1885; (*b*) animal lymph subject to the same conditions as humanized lymph; (*c*) the solid and fluid portions of the so-called natural cow-pox."

[4] Figures in Wood's Reference Hand-book, vol. vii, Art., Vaccination.

[5] "I have vaccinated close upon 50,000 children, and have never seen a case of insusceptibility." Evidence before Royal Commission on Vaccination, vol. ii, p. 142, 1889.

I would go further than anything that has been said here upon one point. It has been stated that the buying and selling of vaccine lymph at low prices has a bad effect; but I believe it would be still better if it were to be given away freely to physicians. The State should furnish it, and should bear the whole expense and furnish it free; not outside of the State limits, but to persons within the State of Massachusetts, I mean to boards of health, to cities and towns, and to all public institutions in the State and to all physicians in the State, and do away utterly and entirely with the sale of vaccine lymph by middle-men, apothecaries and travelling agents, and have it issued directly from the vaccine institution to the persons who are to use it, free of charge. I would not go so far as to say it should not be sold; but I think it should be made so free that no financial hindrance should prevent the vaccination of children.

Dr. Broughton: I must confess that when we started to investigate this subject of vaccination I was not prepared to find so extensive a field for study. There is certainly more in it than we have been wont to believe. I am of the opinion that the profession as a whole has not paid due attention to many phases of it. The theme is so trite that even our medical schools have not always emphasized it sufficiently. My first thought, therefore, as a result of our limited study, is a feeling of criticism of the general attitude of physicians upon the whole subject. There is a vagueness of view and a certain looseness of expression among many that is unfortunate. For instance, we have some who are prominent in the profession, eminent for their ability and learning in other departments of medicine, who have been heard to say, perhaps in a casual way, that they do not believe in the necessity of re-vaccination. Doubtless such a remark may be made carelessly and without deep conviction behind it, but emanating from prominent men the remark is quoted, and perhaps exaggerated, and a certain amount of harm is done. My own feeling is that during the present epidemic of small-pox the anti-vaccination sentiment has in this community gained not a little ground.

My own interest was first aroused by individual observation. In our practice at Jamaica Plain we seemed to meet with a large number of severe arms. Upon inquiry, many of the profession were of the opinion that severe cases were unusually prevalent in the city and vicinity. We began to question why this was. I am going to speak plainly because we have not the slightest personal feeling and intend no injustice to any. As we inquired further, it seemed as if almost all the severe cases of vaccine were in those vaccinated by the city, and we found that the source of the virus was from the New England Vaccine Company. That led us to desire to look into the matter, and the Norfolk District appointed us a committee to investigate the subject. Dr. Gilbert has covered the ground, and I will only emphasize one or two points. It was admitted without the slightest hesitation by Dr. Cutler of the New England Company, that the lymph supplied by him was of a much more active character than any other virus in the market. He claimed that this was desirable. The poor were coming into the headquarters to be vaccinated, and they wanted something that would *take* every time. He criticised, however, the technique of vaccination as ordinarily done by physicians. He claimed that they frequently made too large abrasions, and the result was a very large vesicle with a slough and a good deal of constitutional disturbance. We asked him why his vaccine lymph was more active than that from other sources, and I do not know that he could fully explain it. We queried whether it could be explained by the fact that the cows were four years of age, whereas in the other institutions the cows were younger; and, secondly, whether his method of vaccinating the cow — by the production of such large vesicles — does not produce a lymph that contains a greater variety of germs, and perhaps germs of a more active virulence. Adopting the plan suggested by Dr. Cutler, Dr. Perry vaccinated a baby with the New England virus making only a very minute abrasion and the result was a most beautiful and perfect vesicle, hardly larger than the end of a lead pencil, and it would seem as if possibly there was some basis for Dr. Cutler's statement that the severe arms are the result of improper methods of technique. I would say, in conclusion, that loose habits of vaccinating should be corrected. I have known of one or two cases where vaccinations have been made upon the inside of the thigh, a most inappropriate place. Many, we fear, make no effort to vaccinate upon a clean surface, and are not scrupulously careful as to the condition of the instrument used. The after-care of the abrasion and vesicle has also been largely neglected. The profession is more or less responsible for the incorrect and erratic views afloat in the community. Regular physicians should be more careful what they think, what they say and what they do in this whole subject. Severe "takes" and unpleasant complications can be largely prevented I believe by proper care, and thus popular prejudice will be allayed. The State makes vaccination compulsory. It would seem, therefore, that upon her should devolve the responsibility of providing a standard and uniform kind of virus.

My feeling is that a committee should present a bill to the legislature. This, if properly framed and supported, can ultimately produce some effect. If the State can control the production of virus many of the evils will be remedied.

Dr. Martin: I am most heartily in favor of Dr. Abbott's suggestion of establishing a State vaccine institution similar to those in Europe. As far as I know I am the only member of this Society engaged in the production of vaccine virus.

In Europe this idea of using full-grown animals is not heard of. When my father brought the virus from France to this country, the system was to propagate it upon young heifers not over six months old. That system we adhered to for some time. The calves have to be fed on milk and yolks of eggs to keep them along. We found by increasing the age to eight or ten months they are old enough to eat hay and meal and they keep strong and recover quickly and well from the vaccination as a general rule.

In regard to the use of antiseptics. A good deal has been said about asepsis and antiseptics in relation to this matter. Cleanliness and neatness are as desirable in this, as any other specialty of medicine, but I do not think the fact should be lost sight of that this whole system of vaccination is an artificial production of disease and not the restraining, killing off of disease entirely, that is to say, any substance really antiseptic in its nature will destroy the effect of the vaccine virus. The use of perfect cleanliness at the time of vaccinating or taking points should be insisted on.

Absolute cleanliness while the vesicles are maturing is practically almost out of the question, that is to say, there is in any stable a certain amount of dust and *débris* of straw, etc., which make a sort of coating over the vesicle; but when the points come to be taken, that objection is practically removed because the animal is put upon the table and thoroughly washed, the part vaccinated is thoroughly washed with warm water, then the crust is removed and under that there is usually a little whitish sort of material, soft, pulpy, not offensive pus, no odor to it, — that is removed with a cloth and the vesicle thoroughly washed with a sponge to make it perfectly clean, and that I am always very particular about. If there was any dirt of any sort about the vesicle visible to the naked eye it would be shown on the point at once.

DR. ABBOTT: I should like to allude to one point. Dr. Martin is right with regard to the age of animals. I do not think any animals are used on the other side more than nine or ten months old. The average is probably about three months, and even younger than that. By the terms of the German law, calves of five weeks old and upward are preferred. The weight is more often given than the age. One point in regard to vaccine farms in this country. I have an advertisement here in which the origin of the lymph used is stated to be the "only authentic case of spontaneous cow-pox in America."

I think we have got beyond the idea of infective diseases, like cow-pox and small-pox, being spontaneous. The fact that we cannot find a definite cause for a case of disease cannot be regarded as a proof that a cause does not exist. The cases of cow-pox occurring accidentally or incidentally in this country are not one, but many. I have visited and seen twenty-five or thirty in the cow, and eight or ten in one herd. The latter were in Lexington, in 1873. It was determined to be genuine by the appearances of the eruption, and by the fact that in some of the cases the animals were vaccinated afterwards and would not take. I have seen just such cases as Jenner described among dairymen who milk the cows, with disease upon their thumbs and fingers exactly such as are figured in the old plates. The advertising of vaccine lymph from *spontaneous* cow-pox is a practice not only unworthy of an intelligent profession, but contrary to all observations as to the natural history of infectious diseases. The cases to which I have referred occurred always during epidemics of small-pox and at no other time. A portion of them occurred in the great epidemic of 1872–73, and the others in the milder epidemic of 1880–81.

DR. A. P. CHADBOURNE presented an account of

GASTRIC AND RESPIRATORY SYMPTOMS FROM INHALATION OF THE DUST OF CURLED HAIR.[6]

DR. ABBOTT: There are in this paper some points which may explain similar symptoms that occurred in a factory at Hyde Park. I have visited this factory once or twice. There is a report of anthrax having occurred among those workers twenty years ago.[7] Cases then occurred occasionally of genuine anthrax coming from the curled hair from Russia, that had been shorn from animals that died from that disease. They were almost the only cases of anthrax that we have had, except a very few in towns where tanning of hides is conducted. There were some unexplained symptoms among those people, and also in a smaller epidemic eight or nine years ago. The people were sick much longer than with anthrax, with respiratory, and also with digestive symptoms. The respiratory symptoms may have been produced by just such causes as Dr. Chadbourne has noted. There was opportunity in that factory for great improvement, and it brings up a question which I wish might be made the subject of legislation, that is, compelling all people who own factories where dusty operations are carried on to a large extent, to ventilate them on the best principles.

DR. CHADBOURNE: I would say in connection with anthrax that since the cases of this disease, mentioned by Dr. Abbott, the hair is "disinfected," but how thoroughly this is done I do not know. The horsehair used is chiefly from the West, Mexico, South America and Tartary. The pigs' hair comes from about here. This patient told me that almost all of the men working in the factory for a considerable time suffered from the same trouble that he had, the stomach being decidedly more troublesome than the lungs; and this is the point I wish to emphasize, that in this patient symptoms of a chronic interstitial fibroid change were not apparent, but that there are other symptoms that may and perhaps do occur oftener than we think of or attribute to this cause.

◆

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

MEETING March 10, 1894, the President, DR. CHARLES M. GREEN, in the chair.

DR. A. WORCESTER read a paper entitled,

WHAT MIGHT BE DONE BY THE OBSTETRICAL SOCIETY TO ADVANCE THE TRAINING OF NURSES.[1]

DR. E. H. BRIGHAM said that a large field was opened for obstetric nurses, as only the very well-to-do can afford to pay the present prices. He believed that as time goes on the number of obstetric nurses will so increase that prices will have to come down.

DR. F. H. BROWN thought that the suggestion of post-graduate courses was an extremely good one. Nurses come out of many hospitals as specialists, and need lectures on other branches.

DR. EDWARD REYNOLDS thought that specialism among nurses made the best nurses. He would suggest one method of solving the problem of expense by employing the best obstetric nurses for the first two or three weeks of the lying-in period, and then having superior nursery-maids for the next four or six weeks, who had been trained at some children's institution.

DR. J. G. BLAKE suggested that nurses might be trained in the out-patient department of the Lying-in Hospital who would be willing to go out as obstetric nurses for a moderate fee.

DR. J. STEDMAN said there was a great call for nurses at ten or twelve dollars a week.

DR. CLARENCE J. BLAKE then spoke on the subject of graduate instruction for nurses, giving a sketch of the Graduate Nurses' Association.

A committee of three, consisting of Dr. Davenport (Chairman), Dr. Edward Reynolds and Dr. Washburn, were then appointed by the chair to consider the advisability of the Society examining obstetrical nurses for registration, as proposed by Dr. Worcester.

---

[6] See page 439 of the Journal.

[7] Second Report of State Board of Health, 1871.

[1] See page 436 of the Journal.

THE BOSTON
Medical and Surgical Journal.

THURSDAY, MAY 3, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 WASHINGTON STREET, BOSTON, MASS.

UNEMPLOYED MEDICAL MEN.

We hardly design to take the onward march to Washington of Coxey's army of tramps as a topic on which to "point a moral or adorn a tale." Nor is it a part of our present purpose to forecast the outcome of this enterprise (whether serious or foolish) or to speculate on the causes or remedies. Alienists may regard the whole movement as a "craze"; others will look upon it as the legitimate result of certain socialistic theories of political economy which of late years have been widely enunciated. On this point we do not intend to expatiate. We shall only touch upon a certain aspect of the subject which most concerns and interests medical men.

One of the causes of the unrest and discontent which pervades society is that multitudes have been educated to regard manual labor as degrading, and to shirk hard labor generally. There is a preponderance of half-educated men in communities, unwilling to engage in or unfit for humble callings, but with enough smattering of letters to make them effective nuisances to society; from this class come too many of our political agitators, and, we are sorry to say, some of our Congressmen. In Germany the state of things is so bad as to justify Mr. Dawson's gloomy picture: "Twenty-two seats of learning are yearly turning out studied men in thousands, and the unfortunate 'studied men' are lucky if at the age of thirty-five they are earning the wages of English bank clerks. The paternal State finds money for universities and looks to the qualifications for the professions and the civil service; but that paternal State cannot provide its carefully examined would-be-lawyers and doctors and civil servants and teachers with briefs and patients and posts and pupils; and, as a consequence, the educated unemployed increase mightily in numbers year by year. Still more formidable are the 'breakages,' the horde of superficially book-learned young fellows of the middle and lower middle ranks, whom stupidly ambitious fathers have sent to universities (the State aiding) to fail in examinations when they ought to be selling groceries or hoeing potatoes."[1]

The evil complained of exists equally in this country, and it is not too much to affirm, with a writer in the journal from which we have quoted, "that college classes are too large, and that engineers, architects, chemists, lawyers, doctors and druggists, qualified and semi-qualified, exist in far too great proportion to the rest of the community."

In its application to the medical profession, this statement is justified by reference to every city and village in New England. The latest statistics, in fact, give a constituency of only about four hundred and fifty inhabitants to each physician. In some communities the ratio is even less than this. Nor is the prospect much more inviting in the West, if we may trust a correspondent of the *Medical Record:* "As a result of our rapid railroad building, new villages are being located every few days, and it is not the rarest of sights to see one or two physicians hovering like shadows around a town which for the time being exists only on paper. These 'too previous' aspirants frequently board at country houses, daily visiting the patch of waving prairie grass, the site of the prospective metropolis, and waiting sometimes for weeks before buildings are erected in which offices can be had." This same writer gives a gloomy picture of the sharp competition with quacks in Kansas and neighboring States, and other drawbacks, and of the meagre incomes which even sober, industrious, reputable physicians receive, and draws the obvious conclusion that in the far West, as everywhere, the profession is greatly overcrowded.

The thousands of graduates who this present spring season will go forth from the very numerous medical schools of this country cannot but augment the great army of the unemployed. The recent graduate, unless he has gone into medicine for the love of the science and art of healing, and wisely, perhaps, decides to stick to the hospitals for a few years, or for life, must (unless Fortune favors him above his competitors) wait long and patiently before he can obtain practice. To many, such long waiting (involving, it may be, the sacrifice of the best years of their manhood) is very irksome; and this is especially the case when the physician is poor and dependent on his practice for his support.

We have no more to say at this time than to advise all young men and women contemplating the study of medicine to weigh well the chances of success in this profession, and ask themselves whether they are prepared to wait, it may be years, for success? If money-making is the object, they would probably do better to repudiate a calling so little lucrative.

Again, unless the student is prepared to take more than the old-fashioned, two-years' winter's course, we would say emphatically, Don't enter medicine. An instructive illustration on this point is furnished by Dr. John H. Rauch in his last "Report on Medical

---

[1] Popular Science Monthly, May, 1894.

Education and Medical Colleges in the United States and in Canada." He says: "During the past nine years I have followed up with exceptional interest and care the careers of 789 out of 1,000 physicians who studied four years and attended at least three terms before graduating. These are, with few exceptions, the successful and prominent members of the profession in the different communities in which they reside. They are well equipped by general education, by an ample period of professional study, by didactic and clinical instruction, and by hospital practice. They are successful, as a rule, because they have fitted themselves to command success."

◆

THE POISONOUS PROPERTIES OF ABSINTHE AND ITS CONGENERS.

THE use of absinthe and kindred bitters, the class of appetizers called by the French *apéritif*, we are glad to believe is still small in our country, and it is to be hoped the habits of the people may not suffer any change in this respect. We have undoubtedly enough bad habits of our own without importing those of other countries. At the same time, it is well to be forewarned, and we cannot admit the great stream of foreign immigration which has been pouring in upon us without the accompaniment, in a certain measure, of the manners and customs.

Absinthe, as a drink, has long had a bad name. Its evil effects upon those addicted to its constant use have often been painted in lurid colors, which have sometimes been supposed to be exaggerated. Few, however, probably know precisely what the ingredients of absinthe and its congeners are, nor what are precisely their physiological effects. Charles Mayet has lately made a clear statement in *Le Temps*, of Paris, in regard to the composition and the physiological effects of the component parts of absinthe, liqueur, bitters, and vermouth, which, in view of their great consumption in some quarters, is not without a vital interest. His article is based upon the generally accepted investigations of MM. Cadéac and Meunier.[1]

The liqueur sold under the name of absinthe contains not only the essence of the plant from which it is derived, but divers other essences varying in kind and quantity.

Dr. Lunier presents a formula of three extracts of absinthe obtained by distillation, which are generally employed in commerce and known as *fine*, *half-fine* and *ordinary*. These portions are for five and a quarter gallons of absinthe.

	Ordinary	Half-fine	Fine
Leaves and flowers of the great absinthe	600	600	600
Leaves of little absinthe	..	200	125
Balm-mint (melisse)	125	125	200
Flowers of hyssop	100	100	225
Angelica-root	..	25	..
Green anise	400	800	1,000
Badiane	..	400	225
Fennel	..	250	450
Coriander	..	225	225
Alcohol (85%)	11,750	12,000	16,300
Water	9,500	8,000	4,000

(Quantities given in grammes.)

An infusion is made of these plants and seeds during twenty-four hours in a portion of the alcohol; it is then distilled with the water, and to the product is added the remainder of the alcohol and water. To obtain the green color indigo is often used, and is heightened with burnt sugar and saffron. A little alum is added to hold the color in suspension.

In the formula given there are three plants of the group which produce epilepsy, namely, absinthe, hyssop and fennel, and a plant of the stupefying group, the angelica.

The guinea-pigs utilized by Cadéac and Albin Meunier in studying the action of the vapor of the essence of hyssop, were victims of the incense of this poetic and biblical plant. In one instance it was administered solely by the respiratory organs. A guinea-pig placed under an observation bell glass, staggers, exhibits spasmodic convulsions, passes into extreme opisthotonos, and dies at the end of an hour and a half from having simply breathed the perfume of a few drops of the essence of hyssop. Another experiment consisted in injecting into the veins of a dog a few drops of the essence of hyssop, which resulted in a violent attack of epilepsy. Absinthe produced the same effect.

Four grammes of the essence of hyssop given upon an empty stomach suffices to kill a dog weighing sixteen pounds in thirteen hours. Six grammes will kill a dog of thirty-two pounds three hours after ingestion. One gramme will kill an animal weighing one hundred and fifty grammes. A man cannot absorb two grammes of this essence of hyssop without danger of falling in an attack of epilepsy. One gramme will cause numbness, ocular troubles and trembling. The essence of hyssop is then, like absinthe, a formidable poison.

The fennel, which Charlemagne commanded to be cultivated, and which the Russians, the Armenians and the Tartars consume as a salad as we do the onion and the water-cress, also figures in the series of plants which enter into the composition of absinthe. Cadéac and Meunier, who have experimented with the essence of this plant upon divers animals, remark that the epileptogenic properties of the essence of fennel are unquestionable. Its activity is inferior to that of hyssop and absinthe, but it is far from innocuous.

Angelica-root, which is put in the category of the excito-stupefacients, is recognized as having the property of stimulating the mental faculties and the muscular energy. Its salutary effects, however, are transient: those that are dangerous soon become preponderant. The prolonged fatigue, the somnolence, the unconscious enfeeblement of all the faculties, are finally the certain inheritance of all who misuse it.

From these investigations M. Mayet concludes that we are amply justified in placing the liqueur of absinthe, compounded of these divers essences, among the poisonous drinks that are particularly dangerous.

Passing to the bitters, the formula used the most in France is for five and a quarter gallons of bitters, namely, Dr. Decaisne's formula:

---

[1] Experimental Researches in Essences, Paris, 1892.

Anise 80 grammes, orange peel 80 gr., calamint 80 gr., juniper berries 80 gr., sage 80 gr., great absinthe 60 gr., angelica 40 gr., mint 40 gr., lavender flowers 40 gr., clove 20 gr., alcohol (80 per cent.) 650 gr., sugar 600 gr., water 650 gr.

In this list, the absinthe and the angelica already known make their appearance.

For an analysis of the sage, the mint, and the lavender the previous authorities are again referred to. They tell us that the sage is a poisonous and epileptogenic factor. If a guinea-pig is put into an atmosphere saturated with the vapors of this essence, the experiment is attended by all the successive symptomatic phases observed after the injection of small but strong quantities of this essential oil into the venous circulation of a dog: a lively excitation, sudden starts, shakings, muscular rigidity, drunkenness, a fall, and then epileptic convulsions. This is fresh evidence that the essences produce by their perfume absolutely the same effects as when taken into the stomach. The poisonous character of the sage, however, varies with the place of its origin. Some specimens are but slightly poisonous. Considerable doses of such do not cause in man more serious troubles than affection of the sight, the subjective sensations of heat and cold, of nausea, of dizziness and tingling, but associated in the bitters with epileptogenics and other poisons, there is much more to fear. There is strong reason to think, however, that the more poisonous essences of sage are more commonly employed in the fabrication of bitters; such were procured by Messrs. Cadéac and Meunier in a warehouse at Leipzig, which given in a dose of five centigrammes caused a violent attack of epilepsy in a dog weighing sixteen to eighteen pounds, which was soon followed by death.

A small quantity of calamint, for example, thirteen grammes to twenty-six gallons, will be found grateful to our organic functions. The ingestion of a small quantity of this essence renders our faculties alert and active, and gives to the lower animals a sprightly and intelligent air. They seem perfectly satisfied with conscious strength and mastery; they move about with pleasure, and promenade with a proud and conquering gait; but if the dose is strong, drunkenness and epilepsy follow. It will be well to remember that in the formula for distillation there are eighty grammes of calamint to five and a quarter gallons, or nearly four grammes to a quart.

The effect of mint is in dispute. Its essence is slightly poisonous. An excitant for some, it is antispasmodic and tranquilizing for others. Soothed by a feeble dose, a large one will excite. Twenty grammes introduced into the stomach of a dog will cause death by asphyxia, with convulsions.

With regard to lavender, an equally integrant part of the bitter, Cadéac and Meunier declare it to be unquestionably stupefying. It is a powerful poison: two and a half grammes of the essence of lavender injected into the veins of a dog weighing thirty-eight pounds will kill him in four or five minutes.

Having thus obtained positive information in regard to absinthe and the bitters, we are told what is contained in vermouth, and arquebusade water *(eau d' arquebuse)*. Vermouth (a German word signifying absinthe) is less a liqueur than a white wine, alcoholized and aromatized with divers plants. The formula for that commonly consumed in France, is as follows:

For twenty-six gallons of vermouth (100 litres): white wine 95 litres, alcohol (85 per cent.) 5 litres, great absinthe 125 grammes, gentian 60 gr., angelica-root 60 gr., thistle 125 gr., calamint 125 gr., alder 125 gr., little centaury 125 gr., germander 125 gr., 15 nutmegs and 6 fresh oranges cut in slices.

In this formula we still find the absinthe epileptogenic and toxic; the angelica, in the first instance excitant, and then somniferous and depressing; and the calamint an excito-stupefacient.

In regard to vulnerary, or arquebusade water, it is the most complete expression of a type of liqueur which is aromatic and poisonous. The formula for the essence for 100 litres (26 gallons) of alcohol (60%), is:

Essences of absinthe 7 grammes, of angelica 25 gr., of basil 1½ gr., of calamint 14 gr., of fennel 50 gr., of hyssop 13½ gr., of marjoram 16 gr., of balm-mint 3½ gr., of mint 12 gr., of rosemary 34 gr., of rue 6 gr., of savory 27 gr., of sage 48 gr., of wild thyme 12 gr., of thyme 12 gr., of hypericum 1 gr., of lavender 97 grammes.

All these essences are noxious; all, in certain doses, with diverse manifestations, poison and kill.

"Here, in their brutality" says M. Mayet, "are the proportions of the powerful poisons established by experience for these essences, which figure in French cordials, aperitives, and in the greater part of liqueurs. In drinking this liqueur — the type of all those spoken of — the mother as well as the young girl is preparing to become the parent of candidates for epilepsy. As regards the man, after drinking there is a momentary increase of strength, a transitory excitation which will be very quickly followed by an intolerant, impulsive and disputatious disposition, and which, if exaggerated by abuse of the liqueur makes him a violent, stubborn, quarrelsome and bad citizen."

◆

MEDICAL NOTES.

Small-Pox in Chicago. — The total number of cases of small-pox in Chicago during the month of April was five hundred and eight. There is an average of about twenty new cases daily. The public schools have been ordered closed for a week upon the recommendation of the Board of Health.

An Epidemic of Typhus Fever in Prague. — Since the middle of January a considerable epidemic of typhus fever has prevailed in Prague which is only just beginning to subside. The causes lay in the filthiness of the houses, the accumulation of excreta in the canals, the insufficient sanitation of the streets, and, particularly, the abominable character of the water-supply.

The Cholera at Lisbon. — Dr. Montaldo, the chief medical director of the Spanish Government, who was sent to Lisbon to inquire into the character of the disease now raging there, which Portuguese medical officials designated as "cholerine," reports that the disease is true Asiatic cholera. On the 25th of April there were eighty-four new cases of the disease, since when the daily number of new cases has fallen to about sixty. At present there are about four hundred patients under treatment. The Spanish Government has established additional sanitary stations along the Portuguese frontier and has ordered an inspection of the condition of Spanish towns.

AWARD OF THE WATSON MEDAL. — Dr. S. C. Chandler, of Boston, has been awarded the Watson Medal of the National Academy of Sciences at Washington for his work in astronomy. This medal has been awarded but four times in the last twelve years, the last being in 1892 to the distinguished German astronomer, Auwers.

SURGICAL INSTRUMENTS ARE DUTIABLE. — The Treasury Department has ruled, through its Board of General Appraisers, that instruments used by physicians or surgeons for the purpose of carrying on their profession are mechanical instruments, mere tools, and cannot be classed as scientific instruments on the free list, but must be assessed for customs dues.

A PRIZE OFFERED TO NEW YORK PHYSICIANS. — The Medical Society of the State of New York offers a prize of one hundred dollars for the best original essay on any medical or surgical subject. Competitors must reside in the State of New York and be members of a County Medical Society. Essays are to be sent to the Chairman prior to January 1, 1895.

THE MINNESOTA INSANITY LAW UNCONSTITUTIONAL. — The law of the State of Minnesota regarding the commitment of insane persons to asylum care, which was passed in 1893 has been declared by the court to be unconstitutional. This decision is likely to cause considerable trouble as about five hundred persons have been committed under its provisions, and the next session of the legislature does not meet until January, 1895, till when no relief can be had.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, May 2, 1894, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 34, scarlet fever 49, measles 7, typhoid fever 7, small-pox 6 (no deaths). There are now 10 cases of small-pox in the hospital.

CAMBRIDGE SCHOOL CHILDREN'S FEET. — The School Board of Cambridge, Mass., has granted Dr. G. W. Fitz of the Harvard University gymnasium permission to take measurements of the feet of school children in all the public schools of the city upon obtaining consent of the child or its parents. So far there has been practically no objection on the part of the children examined.

A BEQUEST TO THE WATERBURY HOSPITAL. — The will of the late Charles Scott, of Washington, D. C., bequeaths the sum of five thousand dollars to the Waterbury, Conn., Hospital.

ELECTION OF OFFICERS OF THE SUFFOLK DISTRICT MEDICAL SOCIETY. — The following officers were chosen for the coming year at the annual meeting of the Suffolk District Medical Society, April 28th: President, A. L. Mason; Vice-President, John G. Blake; Secretary, Herbert L. Smith; Treasurer, Edward M. Buckingham; Librarian, B. J. Jeffries; Commissioner of Trials, C. W. Swan; Member of the Nominating Committee of the Massachusetts Medical Society, W. L. Richardson; Committee of Supervision, F. Minot, W. Ingalls; Committee on Social Meetings, H. Williams, G. A. Leland, E. Reynolds, P. Thorndike; Censors, F. H. Davenport, H. F. Vickery, F. B. Harrington, R. W. Lovett, E. O. Otis.

NEW YORK.

COLLEGE OF PHARMACY COMMENCEMENT. — The sixty-fifth annual commencement of the College of Pharmacy of the City of New York was held at Carnegie Music Hall on April 25th. The degree of Ph.G. was conferred on a class of 128 graduates by the President, Samuel W. Fairchild, and an address was delivered by the Rev. John W. Brown, rector of St. Thomas's Church.

A NEW HOSPITAL FOR CONSUMPTIVES. — The organization of a new hospital and dispensary for consumptives has just been perfected. At a meeting held for the purpose on April 26th at the house of the President of the Board of Managers, Mrs. Richard Irvin, Dr. A. L. Loomis made an address, in which he spoke of the inadequacy of the treatment of tuberculosis at the general hospitals, and of the desirability of institutions providing the most approved means of treatment. In speaking of the proposed undertaking, he said: "Where a change of air is necessary, the dispensary ought to be able to send them to a sanitarium near the mountains. Boston has such an institution, and it has had the best of results. The lives of many shop-girls and clerks who cannot receive proper treatment as things exist now might be saved by such an institution." A house has been secured on West 38th Street for the commencement of the work, and it will be opened early in May. It will be supplied with the pneumatic cabinet and other appliances for treatment, and Dr. Charles E. Quimby, who has been associated with Dr. Loomis for a number of years, will be the attending physician. There will be a board of lady managers and an advisory medical board, consisting of Drs. A. L. Loomis, Charles McBurney, Henry F. Walker, William M. Polk and A. A. Smith.

◆

Miscellany.

THE TREATMENT OF SEA-SICKNESS.

DR. CHARTERIS of Glasgow reported in 1893[1] that favorable results had been obtained from the use of chlorobrom in sea-sickness. He now states,[2] as his conclusion from a study of three hundred cases, that if suitably administered it has a decided prophylactic value for both long and short voyages.

---

[1] Lancet, February 15, 1893.
[2] Ibid., April 21, 1894.

"To ensure success in this treatment, it is essential that the *primæ viæ* should be freely moved for two successive nights before embarkation, and that for the first two or three days of the voyage the traveller should eat 'spare and dry,' avoiding above all things soup, sweets and pastry. A full dose of chlorobrom (one tablespoonful and a half for a male and one tablespoonful for a female) must be taken for the first three nights of the voyage. After this period a further use of the solution will probably be found to be unnecessary and all restrictions of diet may be removed. Idiosyncrasis of the patient may prevent in very rough weather absolute freedom from sea-sickness, but on the evidence produced there seems to be every probability that in the majority of cases immunity may be obtained.

"In *short* voyages, when the steamer leaves, perhaps at 10 P. M., the passenger should immediately retire to rest, and take one of the doses mentioned. In a *shorter* passage across the Channel a teaspoonful should be taken before going on board. By following these directions immunity from sea-sickness is obtained in the great majority of cases, but if they be not followed it is to be remembered that chlorobrom has no effect in arresting an outburst of vomiting. If it is given in a teaspoonful dose every ten minutes until a tablespoonful and a half or a tablespoonful have been taken, it will almost invariably check retching and depression."

◆

OBITUARY. — THEODORE METCALF.

Mr. Metcalf was born in Dedham, Mass., in the year 1812, and was a son of Judge Theron Metcalf, who lived to be over ninety years old. In 1826, he began an apprenticeship at Hartford, Conn., where he remained for ten years, the last three as partner.

Leaving there in 1837, he established the apothecary store at No. 39 Tremont Street, Boston, which has, with the exception of the years between 1845–1855 (most of which were spent abroad), been continually under his personal supervision. Combining with his inflexible integrity and steadfast devotion to his adopted calling, an intimate knowledge of drugs, both crude and prepared, he was influential in elevating the position of the pharmacist from the rank of a tradesman to that of a professional man.

The natural result of his persistent and consistent endeavors was the establishment of an immense business, to which he was attentive to the close of his long career. Mr. Metcalf's first associate in business was Mr. Jos. Burnett; one of more recent years was Mr. Thomas Doliber. He had the intuitive perception of character which enabled him to surround himself with the best executive ability, and some years ago associated with himself a number of his leading employees, those in charge of the different departments, and incorporated the Theodore Metcalf Company, of which he was Treasurer at the time of his death.

Mr. Metcalf has been very active also in affairs outside of his business, and of a very charitable disposition, and always ready to assist personally and financially all objects of a worthy and charitable nature; and many young men will testify as to the great assistance and encouragement given by him which enabled them to successfully prosecute their aims in life.

Mr. Metcalf was for more than thirty years the treasurer of the Channing Home, the first president of the Boston Druggists' Association, one of the founders of the American Pharmaceutical Association, one of the promoters of the Massachusetts College of Pharmacy, trustee of the City and St. Elizabeth's Hospitals, and one of the trustees and first president of the Catholic Union.

METEOROLOGICAL RECORD,

For the week ending April 21st, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..15	30.04	44	50	39	50	57	54	N.	S.E.	17	3	F.	F.	
M..16	30.11	46	51	40	57	49	53	N.E.	S.E.	10	4	C.	O.	
T..17	30.21	46	52	41	67	80	74	S.E.	S.E.	4	3	F.	C.	
W .18	30.30	51	40	46	54	49	52	S.E.	S.W.	6	12	C.	F.	
T ..19	30.12	52	61	44	66	85	76	S W.	S.W.	20	14	O.	O.	
F..20	29.99	60	69	52	82	88	85	S.W.	S.	5	9	O.	O.	
S..21	29.88	60	66	54	83	94	88	S.	S.W.	18	12	O.	O.	0.03
☞	30.11		56	45			69							

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, April 21, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diphtheria and croup.	Scarlet fever.	Measles.
New York	1,891,306	847	382	20.16	18.36	9.36	2.28	3.36
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,115,562	423	123	8.74	13.57	.23	4.14	.92
Brooklyn	978,394	361	136	15.68	22.40	7.84	1.40	2.24
St. Louis	560,000	—	—	—	—	—	—	—
Boston	487,397	231	74	15.05	20.21	5.59	5.16	—
Baltimore	500,000	—	—	—	—	—	—	—
Washington	308,431	109	27	9.20	11.04	1.84	.92	.92
Cincinnati	305,000	120	33	9.96	16.60	4.15	—	—
Cleveland	290,000	77	28	13.00	23.40	5.20	1.30	1.30
Pittsburg	263,709	—	—	—	—	—	—	—
Milwaukee	250,000	65	31	9.24	24.64	—	—	3.08
Nashville	87,754	29	6	—	24.15	—	—	—
Charleston	65,165	—	—	—	—	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	96,217	37	14	5.40	18.90	—	—	—
Fall River	87,411	—	—	—	—	—	—	—
Lowell	87,191	29	14	10.35	24.15	—	—	—
Cambridge	77,100	18	4	27.77	—	11.11	16.66	—
Lynn	62,656	11	5	—	—	—	—	—
Springfield	48,684	—	—	—	—	—	—	—
Lawrence	48,355	12	3	—	16.66	—	—	—
New Bedford	45,886	21	6	—	28.56	—	—	—
Holyoke	41,278	—	—	—	—	—	—	—
Salem	32,233	11	3	9.09	—	—	9.09	—
Brockton	32,140	6	0	—	33.33	—	—	—
Haverhill	31,396	26	7	3.85	30.80	—	—	—
Chelsea	30,264	9	1	—	11.11	—	—	—
Malden	29,394	7	1	—	—	—	—	—
Newton	27,556	5	1	—	—	—	—	—
Fitchburg	27,146	10	4	—	—	—	—	—
Taunton	26,972	11	3	—	—	—	—	—
Gloucester	26,688	8	1	25.00	—	—	—	—
Waltham	22,058	5	1	—	40.00	—	—	—
Quincy	19,642	—	—	—	—	—	—	—
Pittsfield	18,802	3	0	—	33.33	—	—	—
Everett	16,585	5	3	—	20.00	—	—	—
Northampton	16,331	3	1	—	—	—	—	—
Newburyport	14,073	4	0	—	25.00	—	—	—
Amesbury	10,920	4	0	—	25.00	—	—	—

Deaths reported 2,541: under five years of age 926, principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 358, acute lung diseases 459, consumption 282, diphtheria and croup 151, scarlet fever 48, measles 46, whooping-cough 27, typhoid fever 27, diarrhœal diseases 25, small-pox 11, erysipelas 9, cerebro-spinal meningitis 8, malarial fever 6.

From whooping-cough New York 12, Boston 5, Washington 3, Philadelphia, Brooklyn, Cincinnati, Cleveland, Milwaukee and Lowell 1 each. From typhoid fever New York and Philadelphia 7 each, Cincinnati 4, Boston, Washington and Milwaukee 2 each, Brooklyn, Cleveland and Haverhill 1 each. From diarrhœal diseases New York 9, Brooklyn, Cincinnati, Lowell and Gloucester 2 each, Philadelphia, Boston, Washington Cleveland, Milwaukee, Worcester, Somerville and Salem 1 each. From small-pox Brooklyn 7, New York 3, Boston 1. From erysipelas

New York 4, Philadelphia and Brooklyn 2 each, Boston 1. From cerebro-spinal meningitis New York 4, Gloucester 2, Cleveland and Worcester 1 each.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 21, 1894, TO APRIL 27, 1894.

MAJOR VALERY HAVARD, surgeon, is relieved from duty at Fort D. A. Russell, Wyoming, and ordered to David's Island, N. Y., for duty at that depot, relieving **MAJOR JOSEPH R. GIBSON**, surgeon.

MAJOR GIBSON, on being relieved by **MAJOR HAVARD**, is ordered to Fort Snelling, Minnesota, for duty at that station, relieving **MAJOR CHARLES K. WINNE**, surgeon.

MAJOR CHARLES K. WINNE, on being relieved by **MAJOR GIBSON**, is ordered to duty at Fort McHenry, Maryland, relieving **CAPTAIN CHARLES B. EWING**, assistant surgeon.

CAPTAIN EWING, on being relieved by **MAJOR WINNE**, will report for duty at Jefferson Barracks, Mo.

CAPTAIN WILLIAM L. KNEEDLER, assistant surgeon, will, in addition to his present duties as post surgeon, Fort Mason, California, perform that of attending surgeon, San Francisco, Cal., until further orders.

Leave of absence for one month, to take effect on or about April 24, 1894, is granted **CAPTAIN JAMES D. GLENNAN**, assistant surgeon.

CAPTAIN NATHAN S. JARVIS, assistant surgeon, will be relieved from duty at David's Island, N. Y., upon the arrival of **CAPTAIN SAMUEL Q. ROBINSON**, assistant surgeon, and will report in person to the commanding officer, Willett's Point, New York, for duty, relieving **CAPTAIN WILLIAM P. KENDALL**, assistant surgeon.

CAPTAIN KENDALL, upon being so relieved, will report in person for duty at Fort Columbus, New York.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIVE WEEKS ENDING APRIL 21, 1894.

MURRAY, R. D., surgeon. To inspect quarantine stations of Florida. April 17, 1894.

BAILHACHE, P. H., surgeon. To proceed to New London, Conn., as inspector. April 18, 1894.

MEAD, F. W., surgeon. To report to chairman, Committee on District of Columbia, U. S. Senate, for special duty. April 7, 1894.

CARMICHAEL, D. A., passed assistant surgeon. To report to medical officer in command at San Francisco, Cal., for temporary duty. April 11, 1894. To proceed to Port Townsend, Washington, and inspect Marine-Hospital Service and Quarantine Service. April 21, 1894.

BROOKS, S. D., passed assistant surgeon. To proceed to Chicago, Ill., for temporary duty. April 3, 1894.

BRATTON, W. D., passed assistant surgeon. To report at Bureau. April 16, 1894. To proceed to Reedy Island Quarantine and await orders. April 20, 1894.

VAUGHAN, G. T., passed assistant surgeon. Detailed as chairman, Board for physical examination of candidates, Revenue Marine Service. March 19, 1894.

COBB, J. O., passed assistant surgeon. To proceed to Seattle and Tacoma, Wash., as inspector. April 12, 1894.

WERTENBAKER, C. P., passed assistant surgeon. Granted leave of absence for two months. April 3, 1894.

BROWN, B. W., assistant surgeon. Granted leave of absence for six days. April 7, 1894.

DECKER, C. E., assistant surgeon. Placed on "waiting orders." April 1, 1894.

STRAYER, EDGAR, assistant surgeon. To proceed to Vineyard Haven, Mass., for temporary duty. April 4, 1894.

OAKLEY, J. H., assistant surgeon. To proceed to San Francisco Quarantine Station for temporary duty. April 11, 1894.

PROCHAZKA, Emil, assistant surgeon. To proceed to Cleveland, Ohio, for temporary duty. April 2, 1894.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.— The next meeting will be held at 19 Boylston Place on Monday, May 7th, at 8 o'clock.

Regular Reader: Dr. W. B. Hills, "Chronic Arsenical Poisoning — Analysis of Urine in 300 Cases." Discussion opened by Dr. E. S. Wood.

An important matter of business will come up for discussion.

J. G. MUMFORD, M.D., *Secretary.*

NORFOLK DISTRICT MEDICAL SOCIETY. — The annual meeting will be held at the Norfolk House, Eliot Square, Roxbury, Tuesday, May 8th, at 12.30 P. M.

The Board of Censors will meet at the same place at 12.45 P. M.

The examinalion of candidates will take place one week later, on Tuesday, May 15th, at 7 P. M., at the office of the Secretary, 130 Warren St., Roxbury. The written examination will begin at 7 P. M., the oral at 8 P. M. After the dinner the "Annual Address" will be given by W. S. Everett, M.D.

The Secretary particularly requests that all who expect to attend the annual meeting to notify him, that he may be able to make suitable provision for the dinner.

JAMES C. D. PIGEON, M.D., *Secretary.*

APPOINTMENTS.

DR. JOHN L. MORSE has been appointed physician to out-patients to the Boston City Hospital.

DR. W. P. DERBY has been appointed surgeon to out-patients to the Free Hospital for Women.

DR. JAMES M. JACKSON has been appointed assistant pathologist to the Free Hospital for Women.

DRS. JOHN L. AMES and **CARROLL E. EDSON** have been appointed visiting physicians to the children at St. Mary's Infant Asylum and Maternity Hospital.

RECENT DEATHS.

THEODORE METCALF, a well-known Boston druggist, died in Brookline, Mass., April 26th, aged eighty-two years.

JOHN H. PATTERSON, M.D., M.M.S.S., died in Harwich, Mass., April 29th, of scarlet fever, contracted while attending a family where three children were ill with the disease. He graduated from Dartmouth College in 1886 and from the Dartmouth Medical School in 1889.

ALBERT DAY, M.D., M.M.S.S., died in Melrose Highlands, Mass., April 26, 1894, aged seventy-two years. He lost his father when only a lad and was obliged to go to work, studying at night to obtain his education. He early became an earnest advocate of the cause of temperance in the use of alcohol. In 1856 he was a member of the State House of Representatives and worked hard for the establishment of an asylum for the care and cure of inebriates. On the organization of the Washingtonian Home he was made its superintendent. He entered the Harvard Medical School to make himself more fitted for his work, and graduated in 1866. In 1868 he took charge of the asylum at Binghampton, N. Y., and afterwards established a private asylum. In 1875 he returned to the Washingtonian Home where he remained till a year ago.

ARTHUR HILL HASSALL, M.D., died in San Remo, April 10th, aged seventy-seven years. He was educated at Dublin under the care of his uncle, Sir James Murray, and became a most careful and enthusiastic student with the microscope. His early years in practice in London were largely devoted to the study of histology at St. George's Hospital. In 1852 he published a book on "The Microscopic Anatomy of the Human Body." It contained some four hundred illustrations of his own drawing and was the first complete book on this subject in the English language. He next turned his attention to food adulterations and published in 1857 an exhaustive treatise on "Adulterations in Food and Medicine." In 1866 his health was so affected by the beginning of his fatal illness, consumption, that he was obliged to move his residence to the Isle of Wight. So soon as he had rallied from the hæmoptysis he took up his work in such a new line as was suited to his strength and organized that model system of hospital control of phthisis — known as the separate or Ventnor system. He remained the consulting physician to this National Hospital for Consumptives at Ventnor until his death. In 1877 his health required him to live still farther south and he went to San Remo. Here he retired from active practice, but spent much time in the study of climatic conditions, and in extending his microscopic investigations. He published an autobiography last year entitled "The Narrative of a Busy Life."

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the New England Cremation Society. No. II, 1893. Boston. 1894.

Twenty-first Annual Report of the City Physician of the City of Fitchburg, Mass. 1893.

Early Operations in Head Injuries. By Wm. B. Van Lennep, A.M., M.D. Reprint. 1894.

Three Illustrative Cases of Abdominal Section. By Aug. Schachner, M.D., Ph.G. Reprint. 1894.

Sixteenth Annual Report of the Board of Health of the City of Lowell for the Year 1893. Lowell, Mass., 1894.

Die Behandlung der Leukæmie Kritische Studie. Von Dr. H. Vehsemeyer, Arzt in Berlin. Berlin: S. Karger. 1894.

Original Articles.

VARIOLA.[1]

BY S. G. WEBBER, M.D.

Dr. Robert R. Leo distinguishes between variola and varioloid: "In variola vera will be included all those cases in which the more or less thickly standing pustules show complete development, confluence and other sequelæ resulting therefrom, and in which, shortly after the critical defervesence of the eruptive fever, a new fever of greater or less severity (the suppurative fever) begins. In varioloid, on the other hand, will be included all cases in which the pustules, more or less scattered, do not attain the highest development, but begin their retrocession earlier, and in which after the rapid defervescence of the fever to an unusually low temperature, this gradually returns with slight accidental exacerbation or slight morning remissions and evening exacerbations to the normal height and there remains."[2]

The first four patients who entered the hospital were from the same house; all had been exposed to the disease by taking care of a friend who had died. None had ever been vaccinated.

Case I. John S., age twenty-two, blacksmith, was admitted in the afternoon of October 26, 1869. He was taken sick on the 23d. Backache was the chief symptom complained of. On entrance his face was red and swollen, eyes red. No eruption. Tongue coated. Pulse 102.

October 27th. He passed a restless night; passed blood from his bowels several times during the night. There was considerable dyspnœa at times, again the respiration was quiet. The whole surface of the body was livid. Occasionally he started up and stood up to assist himself or to get relief, and then fell back on the bed. Pulse imperceptible. Mind seemingly not affected; he answered and asked questions intelligently. He had severe pain during the night, and received two doses of morphia. Stimulants were given, but at quarter to nine he died. No eruption could be seen on face, arms or front of body.

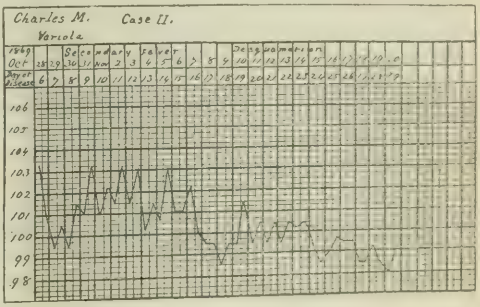
This case is remarkable from its rapid course and sudden termination and the absence of the eruption. It would have been impossible to determine the nature of the disease if the case had been solitary; but he entered with the three others who all passed through the regular stages of the disease.

This patient was not a very robust man and had lived rather freely, but on entrance he did not seem to be much worse than the others, only complaining more of headache and backache. He seemed in no special danger.

The next case is one of mild discrete variola, and is a good example of the normal course of the disease except in the slight irregularity caused by his companion's death.

Case II. Charles M., entered at the same time with the previous case. He had marked initial symptoms commencing at the same time. When first seen in the afternoon of October 26th, his pulse was 114. The next day a few pimples were seen in the morning, and his pulse was 96; in the evening it was 102, and the eruption was as nearly as possible in the same condition as in the morning. The death of his companion seemed to have made a strong impression upon him, and for about twelve hours there was no advance in the appearance of the eruption as compared with the progress of another patient who came in at the same time with the disease in the same stage.

Subsequently the course of the disease was regular. He was moderately salivated; his face was swollen; the eruption was thick in places, but nowhere confluent. On November 8th he was allowed solid food, his tongue being clean, and he desiring it.



Curve I gives a very fair idea of the normal course of the temperature in mild cases. The temperature was first taken on the sixth day of the disease. It descended not quite to normal; on the eighth day the secondary fever commenced; on the thirteenth day there was a remission which coincided with the commencement of desiccation. On the eighteenth and nineteenth days was an elevation corresponding with the period of desquamation. There was a temporary rise on the thirty-first day, undoubtedly due to headache and pain in the bowels following exposure at an open window with insufficient clothing.

The next case was one of the severest which recovered.

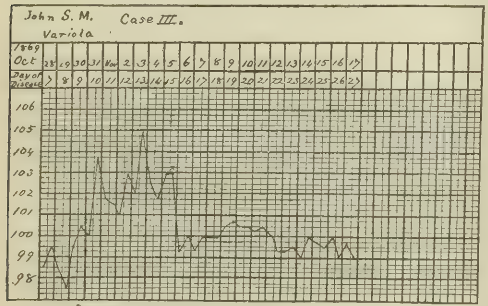
Case III. John S. M., age twenty-seven, brother to Charles M., plasterer, not vaccinated, entered at the same time with the two previous patients. He first felt sick October 22d, with the usual symptoms. On entrance the tongue was moist, slightly furred; there were pimples and perhaps vesicles on the face, pustules on the hands. The eruption was not then confluent, but very thick. There were a few pustules on the palate. Pulse 100.

He passed a restless night. The next day the eruption was thicker on his face; the pulse had fallen to 78. He was less unfavorably affected by the death of the first case than either of the other two who entered at the same time. His eyes troubled him and his throat was sore; his face swelled so as to close his eyes. On the eighth day of the disease the secondary fever began. On the tenth day it is recorded that he had been slightly delirious at night, and began then to be so in the daytime On the eleventh day his tongue was dry and slightly dark-colored; pulse 102. The symptoms became more serious; the typhoidal condition of the tongue increased, and it could not be protruded beyond the teeth. Subsultus tendinum appeared; chills were frequent; the countenance became dusky. The eruption had become confluent over nearly the whole of the face, but was less abundant on the limbs. On the thirteenth day the pulse was 96, and the delirium continued during the day, though he knew me. He then became noisy and talkative; his hands trembled very much. During the night of the fifteenth day he had a spasm, cried out, kicked, bent his head back by jerks and drew himself down to the foot of the bed; he then fell asleep. The next night he had only one spasm, and that not so severe as on the previous night. He slept more and was less delirious.

---

[1] The cases on which these observations are founded were under my care in the winter of 1869-70 at the Boston Small pox Hospital. They formed the basis of a paper which was read before the Medical Observation Society, but has never been published. Much of that paper is here reproduced.

[2] Bericht uber das Auftreten der Pocken im Jacobs Hospital zu Leipzig und beobachtungen uber die kleinen Pocken Epidemie, Daselbst im Jahre 1864. Von Dr. Robert Richard Leo. Archiv der Heilkunde, Heft 6, 1864.



* Received one quart rum in 24 hours

While he was the sickest he had nearly a quart of rum in the twenty-four hours; this was reduced as soon as he showed signs of improvement. The eruption gradually dried up, and on the nineteenth day his face was clearing up.

Case IV. A. B. P., age twenty-three, said he had been vaccinated but it did not "take" well. He did not enter till after the initial fever had subsided. The temperature rose until the twelfth day, when it reached 105.4°. On the fourteenth day a pint of rum was given during the night, and the temperature fell to 101°. Afterwards the influence of a previous malarial poisoning may have shown itself in the high elevation of the temperature every second day.

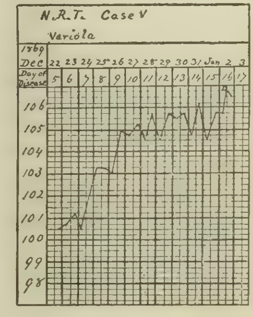
Case V. N. R. T., bookkeeper, assisted in the care of his brother, who had small-pox. On the 4th of December his brother was attacked, and on the 11th he was vaccinated. On the 18th he felt the first symptom of the disease, seven days after the vaccination and fourteen days after his brother was taken sick.

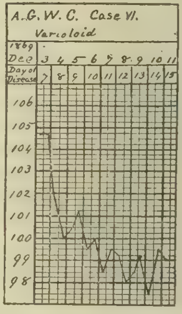
On his entrance to the hospital the vaccine scabs were large, dried up, surrounded with an areola about three sixteenths of an inch wide. The initial fever seems to have been moderate, the eruption first appeared three days after the commencement of the disease. On entrance there was a scattered eruption of vesicles on the forehead, face and arms. One pustule was on the conjunctiva.

The disease pursued a regular course until the thirteenth day when the pustules changed their character and formed large blisters partly filled with thin, pale-colored serum. He became delirious, the tongue was dry, there was a typhoidal condition, he passed urine in bed, respiration became labored and irregular; on the sixteenth day he died, having convulsions just before death. After his death I learned that he had a succession of severe chills on the thirteenth day. After death the skin became very yellow. He died from pyæmia due to absorption of the pus from the pustules.

The vaccination was performed from five to seven days after the exposure. Though there was an interval of seven days between the vaccination and the commencement of the disease the course of the latter was not modified; he had variola vera. When first seen the vaccine disease appeared nearly normal; if any difference, there was a dryer scab than would have been expected and perhaps more areola.

The next case, of varioloid, shows the contrast between that and variola in the course of the temperature. The case is also of interest on account of the exactness with which the period of incubation is defined.





Case VI. A. G. W. C., age twenty-two, entered December 3d. He said that he had been vaccinated, and shows two small scars on the left arm, which would generally be considered as of doubtful efficacy. The day before Thanksgiving, November 17th, he stood up in the cars by the side of a man covered with the scabs of small-pox, some of which were dropping off. November 27th he felt a little feverish and on going to bed he took a warm bath. At night, November 29th, he had one or two spots and the next morning more. On entering he had pustules scattered over his face, limbs and body, they were fully developed, some were umbilicated. The temperature on entrance and that evening was high, perhaps on account of his wandering about and getting somewhat excited about finding the hospital.

There was no secondary fever, the temperature steadily falling from the time he entered the hospital.

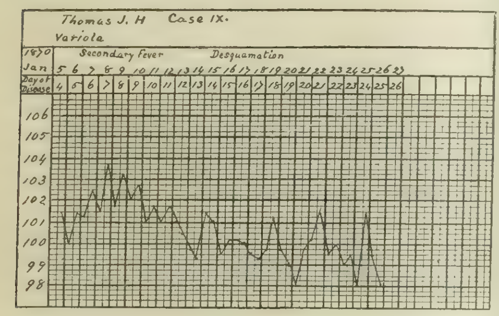
The period of incubation in this case was only ten days. The eruption appeared two days after the beginning of the disease.

The next case is one of hæmorrhagic small-pox.

Case VII. Bridget G., age twenty-three, servant, not vaccinated, entered February 8th, was first seen on the 9th. She was taken sick on the 2d, about 11 P. M. The next day she felt better and went to work; at noon she took to her bed with headache, backache, chills and fever. The eruption came out on the fourth. She said she vomited all the time until something was given her which checked it. Her sister said the vomitus was dark.

When seen her mouth was covered with dried blood and sordes, the gums were swollen, tongue dry, gums bled easily. After entrance she vomited about three quarts of a black liquid and passed the same at stool. The face, neck and arms were thickly, and body and legs sparsely, covered with eruption. The catamenia were present, or there was hæmorrhage from the vagina. Pulse was 90, very weak. Aromatic sulphu ric acid checked the vomiting and she passed only a little more blood by stool.

February 11th she continued about the same without vomiting but restless until quarter-past eight in the morning when she bled from the mouth and the urine was bloody. About an hour later she died. About two hours before death the eruption began to turn purple and about half an hour before death this became still more marked.



Case VIII. John T., age thirty-three, laborer, vaccinated, had a rather high fever with a thick eruption, face much congested and swollen. He presented every appearance to lead one to think that he would have the fully-developed disease; but on the ninth day the pustules on the hands were reduced to small red spots with a small crust in the centre; the temperature was low, pulse 66. An alveolar abscess sent the temperature up for two or three days.

Case IX. Thomas J. H., age twenty-three, was singular only in having symmetrical groups of nearly or quite confluent pustules on the front of the upper part of each thigh, over each instep, and on the median line over the trachea. Each group was situated in a space almost entirely free from other pustules. The course of the temperature was normal, showing, however, rather exaggerated morning and evening remissions and exacerbations during the secondary fever. Exacerbations on the evenings of the eighteenth, twenty-first and twenty-fourth days are not explained, unless he had small abscesses which he concealed, or unless it be due to the character of the eruption which marked this case as belonging to the corymbose variety.

Dr. Mason in "Reynold's System of Medicine," describes variola corymbosa as rather rare, and a very fatal variety, giving a mortality of 44 per cent. among the unvaccinated, and of 32 per cent. among the vaccinated.

This patient said that he had been vaccinated, but I could find no scars. This was the only case in which the eruption was thus grouped. On the twenty-seventh day he was discharged.

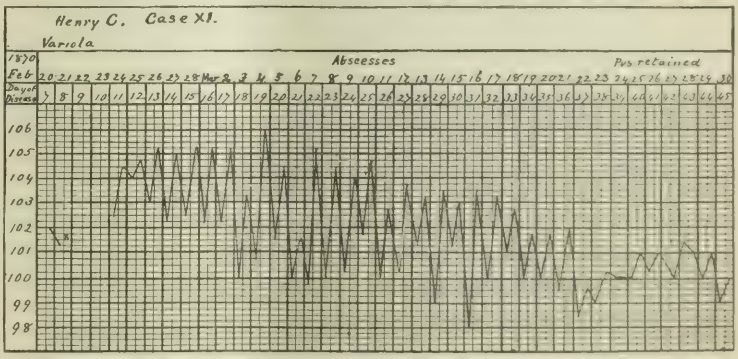
Case X. L. S., age twenty-five, not vaccinated, was confined with her first child (illegitimate) about two weeks before this sickness. The eruption appeared not quite two days after the first symptoms. She flowed considerably, and had a cough which increased the flow. On the eighth day the eruption became hæmorrhagic, and she died the next day.

Case XI. Henry C., age thirty-two, had not been vaccinated. He had led rather a dissipated life, and had been in the habit of taking liquor. On February 14th he had pain in back, headache, pretty severe chills, vomited. The eruption came out on the 18th. He entered the hospital on the 19th. He became delirious, so that for three days the temperature was not taken. He became so violent that it was necessary to secure him in bed.

February 24th he had become calm, and during the next week he seemed the same as other patients, except that he had delirium, with trembling, saw large dogs at the foot of his bed, thought he was to be led out to be shot, etc. His temperature was high, his pulse low.

March 1st a few blisters appeared on his legs, which seemed to be formed by the loosening of the cuticle between several pustules. He continued to do well, and took food well until the night between the third and fourth of March. He was again delirious, the temperature rose, and the delirium became of a low, muttering character, with constant picking at the bed-clothes and fingers. It was learned that the attendant had given him articles of food which had not been ordered; more care was taken as to diet, and in two days he was over the delirium.

He had severe abscesses, and a large amount of pus collected in the calf and instep, which was evacuated, and fifty days after admission he was discharged well.



x Temperature not taken on account of delirium

Delirium tremens was, in this case, an unfavorable condition. It is not specially mentioned by authors, though it is said that the intemperate are very likely to die. The increase of delirium on the fourth of March was due to the error in diet, but at the time it seemed as though the patient was doomed to die. Probably the inflammation in the leg was also an element in causing the delirium.

The next case gives a very characteristic temperature curve, and the patient was very sick; the prospect for a few days was not favorable, but he recovered finally.

(To be continued.)

DIGESTIVE PARESIS.[1]

BY E. N. WHITTIER, M.D.

I offer the term as a composite of the group of functional disorders, of which diminished peristalsis, lessened secretion and delayed digestion are important and representative members. Impaired power is a constant factor in each of these processes.

The muscular tissues of the digestive tube fail to exert their normal influence in the propulsion of ingesta from causes so complex as to elude the careful study of the physiologist in his efforts to determine the underlying, controlling and controllable condition.

We are told that the nervous mechanism of stomachic peristalsis is very obscure: that the quantity of the contents of the stomach is a prime factor in provoking peristalsis; that in the intestine quantity soon ceases to be causative; and that intestinal peristalsis may occur wholly independently of the central nervous system.

It is for the general practitioner not to reason why, but to recognize clearly and to accept as conclusive the doctrine of the important part played in the melancholy drama of digestive disorders by diminution of peristaltic power.

In our study of the deviations from normal digestion induced by changes in the character or in the quantity of the digestive fluids, we find but little to aid or comfort us in the "Theory of Secretion" as set forth by the physiologist; for the stomachic and intestinal secretions—gastric, hepatic, pancreatic and succus-entericus — are paraded as maintaining a struggle mutually destructive — a kind of eternal internal and intestinal vendetta. We are told that pepsin in an acid solution destroys the active constituents of the saliva and of the pancreatic juice, and in its turn is antagonized or destroyed by the bile and the other alkaline juices of the intestines.

Both diminished peristalsis and lessened secretion of digestive fluids, sustain an important causal relation to delayed digestion; it is pre-eminently a result, in the production of which these processes are prime factors, and it is during this delay, induced by impairment of the power needful for the proper performance of digestion, that the major portion of those changes take place in the ingesta, which give rise to the phenomena calling for remedy at our hands.

Delayed digestion is a symptom-complex, into which neurosal disorders, functional and organic, depraved blood states, circulatory derangements of the heart and abdominal viscera enter, and in turn are made worse. Action and re-action in this condition are well-nigh equal; the baneful influence of this process extend to all parts of the body, whose various members conspire to return with interest the unwelcome debt of discomfort.

No condition is more pitiable than that of the chronic dyspeptic. No disorder has a larger following than functional dyspepsia. No class of cases is more vexatious alike to the patient and the physician. The victims of this malady, in ceaseless tramp, vex the corridors of our dispensaries and hospitals, or in melancholy round complete the circuit of our offices.

The general practitioner finds the information gained from careful study of the literature of this subject, inadequate to the task of successful treatment of these disorders. Good knowledge of what is known of the physiology of digestion and of the functional causes of departures from normal results, is insufficient; it must be complemented by sound judgment and ripe experience, and by a personal influence powerful to control the psychical disturbances which sway the patient from hope to despair, and alternate courage with fear; but, control once induced, it secures the most important contribution to the patient's welfare that can be made, for by no other method can the physician accomplish more satisfactorily the desired object of placing the patient in a position where

> "Good digestion wait on appetite,
> And health on both."

Prof. Edward H. Clarke, whose portrait-bust adorns this hall, was one of the leading therapists of his day. He combined in largest degree close accurate observation and sound reasoning, essential prerequisites to high attainments in this branch of our art.

No man ever listened to the glowing words with which he clothed his argument on the personal influence of the physician, an argument in which he placed highest and first in the list of remedial agents, the personality of the practitioner, without being convinced of the truth of the words (in which sound logic was combined with sincerity) wherein he presented the therapeutic questions involved in the treatment of the class of disorders of which my subject is a prominent type.

I am not an advocate of the schedule diet system. No man may start the digestive train for a through trip on the main line, with good expectation of making all the connections, and reaching the terminal station free from delays, derangements and derailments. The pneumatic-block system on the intestinal track works harm and not protection. Dietetic rules, formulas and carefully prepared combinations are scheduled for our guidance, and in general they may be said to be right; in many essential particulars it must be conceded that they are too frequently wrong. The situation has not been materially changed since Lucretius (95 B. C.) wrote:

> "Quod ali cibus est
> Aliis fuat acre venenum,"

paraphrased later by Beaumont and Fletcher,

> "What's one man's poison, Signor,
> Is another's meat or drink."

There are but few conditions in which the patient is more dependent for a good result upon the experience and judgment of the physician; for example, when to employ and when to discard milk; when to diminish or when to abolish starches; when proteids should predominate or be omitted altogether, with the wide range of modifications, combinations and interchanges. One thing I have learned full well, that it is fruitless to oppose the well-grounded convictions of chronic dyspeptics, the result of their experience in following a dietary based upon text-book schedules formulated from processes which are physiological and normal; we must look to other sources for the rules which shall govern our efforts to secure control over functional digestive derangements of the stomach, but more particularly of the intestinal canal.

Changes in the ingesta, effected by digestive secretions, have been carefully reported, in the earlier instance of Alexis St. Martin, by Surgeon Beaumont, U. S. A., and in the more recent (1891) tabulations of MacFayden, Nenckle and Sieber, whose case of an ileo-cæcal fistula in a woman afforded the unique opportunity of determining changes wrought by the combined effects of all the digestive fluids. The deductions of these observers have been ably supplemented by painstaking experiments carried out in physiological laboratories.

---

[1] Read before the Boston Society for Medical Improvement, February 26, 1894.

But it must be conceded that these conclusions based upon normal conditions and normal results, sustain unimportant relations, so far as treatment goes, to the abnormal processes which characterize digestive disorders as a class.

A practice which obtains too often, and perpetuates an error which is pernicious, is that of treating these disorders as if the fault was primarily in the digestive apparatus, and independent of the general condition of the patient. Until such views cease to exert their baneful influence, digestive-paretic states must take their chance in common with other frequently misunderstood self-limited disorders, and the lack of success by treatment will continue to be an abiding reproach.

The physician should endeavor not only to attract the patient away from the easily acquired habit of introspection and self-condemnation, and from the "enjoyment of poor health," but he should also and at the same time strive to energize other functions than the digestive. Superficial thought, unformed judgment, or insufficient experience prompts some to overlook the primary and fundamental cause, and to concentrate time and treatment on this only, one of the many symptoms of a depraved general condition.

With your permission, Mr. President, I will depart from the further consideration of this branch of my topic for the purpose of considering the causes and the conditions which have brought into so great prominence the modern method of treating functional digestive trouble. We may not readily discover the explanation for this centring of treatment. The opinion, that it is possible to secure and to maintain internal antisepsis, is strongest in commercial circles; it is a bad day for samples, and for the hoarder thereof when some new synthetical compound or novel coal-tar product is not obtruded during our office-hours. The effort to determine a method by which fermentations in the digestive tube shall be limited, occupies a prominent place in bacterio-physiological work, but as yet no man has succeeded in doing for the physician and internal antisepsis, anything in any degree corresponding to the glorious work accomplished for the surgeon and external antisepsis.

I can find no good evidence of any material advance towards medical antisepsis during the past five years, neither in the literature of the subject nor in the opinion of bacteriologists whom it has been my privilege to consult; and I cannot obtain much promise for the immediate future.

Our distinguished associate, Dr. McCollom, assures me, that although the fulminating power of the bacillus coli communis, when discharged into the peritoneal cavity, notably in cases of perforating appendicitis, has been demonstrated by the results of laboratory work, but little knowledge has been gained of the bacteriology of the digestive anomalies classified as functional.

In spite of the disappointment arising from lack of success in bacteriological efforts to give us controlling knowledge of bacterial processes during digestive disturbances we cannot fail to notice the claims to recent advances in applied therapeutics.

The empiricism of the mercurialist of earlier days has given place to accurate knowledge of the antiseptic properties of the mild chloride, leading some of its votaries to assign it as prominent a position, as an internal remedy, as that occupied by the stronger chloride in surgical practice externally.

The advocates of quinine as an antithermic, have changed their views since the experiments of Eberth demonstrated so conclusively its power to check the growth of the bacillus typhosus, and his deductions are in keeping with those of Bouchard, to the effect that quinine as an antiseptic holds a higher position than quinine as an antithermic, that reduction of temperature is the result of the arrest of the bacillary development in the intestinal canal and the result of the destruction of toxines in the blood.

We may not reasonably expect any considerable return to the heroic and discomforting doses of quinine in the treatment of diseases of the intestinal canal, not because of any inherent defect in the action of the drug, nor because of any unsoundness in the conclusions formulated, as cited, but because of the lessened inconvenience and the greater precision which now obtains in antiseptic medication by the exhibition of the modern synthetical compounds and notably by the derivatives of the coal-tar series.

Professor Henry describes the difference between antiseptic medicine and antiseptic surgery, as of degree rather than of kind: that surgical antisepsis is so precise that it may almost be counted among the exact sciences; that while antisepsis in surgery is a preventive of the absorption of toxines from a pathological surface, it is subject to limitations in medical practice, because in many instances the processes contended with are in no essential degree departures from physiological; that disinfection within the body is not a simple, but a complex process, in which the agents employed may produce their effect but only after having run the gauntlet of the stomachic and intestinal secretions, exposed to the contingencies of destructive changes immediate and direct, and to the modifications incident to absorption and excretion, in the hope of correcting errors, whose local causative conditions have not yet with sufficient accuracy been defined, a form of a sub-way motor process, "running wild" in the dark, on an unfamiliar track.

Modern medical appliances have given us free access to the stomach and large intestine. Kussmaul and his ardent followers have demonstrated the efficiency of the means employed for the control of fermentative changes in acute and chronic gastric disorders; the ease with which the colon may be flushed, and the comparative safety with which its contents may be rendered relatively aseptic are too well understood to call for remark.

We have, therefore, left for our consideration those measures and those remedies which address themselves to checking the development of micro-organisms in the inaccessible portions of the digestive tube.

Fermentative and putrefactive bacteria cannot be isolated from the contents of the small intestine: even in disorders of function, they abound in numbers and in degree of activity exceeding computation; this, too, in spite of the hitherto accepted "antiseptic property of the bile," which Nenckle has demonstrated to have little or nothing of such influence. Bacteriology has proven beyond all doubt the part played by micro-organisms in the origin, development and course of infectious diseases. But until recently it has been successfully maintained that the arduous labors of the bacteriologist were without practical results, that disinfection within the body could not be secured, that the disease-producing germs could not be killed, that their growth could not be hindered, that the power of various pathogenic micro-organisms to produce toxines could not be overcome and that once produced the various toxic products could neither be antagonized nor destroyed; but we have great reason for concluding that the situation has been changed, and that the hope expressed by the earlier observers (that some plan of treatment would be devised whereby fermentation and putrefactive changes in the contents of the small intestine would be arrested) has been in considerable degree realized.

The subject of internal antisepsis or disinfection within the living body has, as one of its most prominent chapters, intestinal antisepsis. The literature on this particular topic is voluminous, comprehensive and of large practical value, and the conclusions formulated by the more recent authorities are of deep significance.

The therapeutic problem, to administer such remedies as will supplement the defect in the results of nature's antiseptic efforts, is rapidly progressing towards solution. It still ranks as the foremost therapeutical question of our time, ably set forth as such by Professor Henry in his paper read before the Association of American Physicians in 1891.

Therapeutic intervention is needed in all the cases which correspond in origin and in effect with that of the subject I have the honor to present for your consideration and discussion, and those remedies that promote intestinal antisepsis, with the least danger to the individual, are deservedly assigned prominent positions in the pharmaceutical preparations of the day.

But it is not so much an admission of inefficiency in the modern remedies to induce internal antisepsis, as it is evidence of the more careful study of the many contributing causes of intestinal putridity, that more rigid dietetic rules are now insisted upon; nor do we confess essential defects in the power of the remedies employed to promote intestinal antisepsis, when we insist upon more rigid observance of the rules favoring elimination of the toxines formed within the body, but because the important part played by the skin, the respiratory surfaces and notably the kidneys is now more highly appreciated.

To Selmi, who in 1872 isolated from the products of putrefaction the poisonous alkaloids to which he gave the name of ptomaines, and to Semmola, who but little later instituted a method of treatment designed to destroy the toxic substances developed during the progess of diseases of the intestinal canal, should be given the honor of having been the first to deal intelligently with the great principles of intestinal antisepsis. The aid of chemistry has been invoked in the preparation of remedies which evade the solvent properties of the salivary and the gastric secretions, and remain unchanged until they reach the intestinal fluids, where they discharge themselves of their duty, only as they are split up into their soluble component parts. It is this peculiarity which confers upon the intestinal antiseptics the powers claimed for them by the manufacturers and their gentlemanly representatives. Take, for instance, salol; it is this property of cohesion, until the remedy has found its way into the small intestine, of disintegration as soon as it meets the intestinal fluids, which confers upon it its high reputation as an intestinal antiseptic. Napthalin, hydro-napthol and A and B napthols belong to the same class, and in combination with salicylate of bismuth have gained prominence; but in spite of the somewhat encouraging contributions to our knowledge of the therapeutics of the napthol groups, objections to all the members of this series exist to a considerable extent, and are entitled to careful consideration, for these objections are based upon difficulties of administration, of stomachic disturbances following the exhibition of this class of remedies, upon the apprehension that changes in the color of the urine to dark brown and green, as well as painful micturition, are evidences of irritation of the urinary organs, possibly harmful, and because there is ground for fearing that we are not yet sufficiently well informed as to the varying and inconstant degree of toxicity residing in napthalin, hydro-naphthol and the napthols A and B.

Enumeration of new combinations might be definitely and unprofitably prolonged. The latest remedies, to the description of whose virtues pamphlets are devoted, are not of necessity the best. The recent eruption of five of the napthol-phenol-bismuth series in one circular may be accepted as evidence of effort on the part of dealers to satisfy a demand as yet unsatisfied for a safe, reliable and efficacious intestinal antiseptic.

The most recent plans proposed for the local treatment of disorders of the digestive tube, include methods by which there shall be secured for the patient the largest possible freedom from the influence of the micro-organisms and their products, and these plans will be found to be based upon rules which are the outgrowth of bacteriological research and attainments in other directions than that of the subject under consideration; and still further, bacteriological logistics may be relied upon for the correctness of the conclusion that at no distant day concrete examples will be shown demonstrating our control over the major portion of the acute and chronic disorders of the intestinal canal.

Prominent among these plans will be found:

(1) Measures to favor elimination, notably of the toxines.

(2) Dietetic rules by which the opportunities for putrefactive changes in the digestive tube shall be lessened.

(3) Antiseptic medications, or the use of the more recent internal antiseptics, by which better and more than formerly the contents of the small intestine shall be, so far as profitable, sterilized.

While I may claim, with reference to this branch of my subject, that the limitations of bacteriological therapeutics are so pronounced that, in spite of greatly increased etiological knowledge, our power of successfully treating intestinal digestive disorders has not been materially advanced, and that we may, at least, render the verdict "not proven," I am inclined to yield somewhat these pessimistic views, and for the sake of argument, side with the optimist, who considers it providential that such views cannot and do not prevail, and do not control treatment; for he believes that disinfection within the living body has entered upon a career, comprehensive, progressive and well-nigh limitless; he cares but little whether the power to disinfect is exercised directly upon the micro-organisms, upon their toxic products, or because it imparts to the cells of the body an increased power of resistance to toxines. All this is immaterial, for in his opinion the demonstration is complete, that immunity to a degree hitherto unexpected, and even now with difficulty realized, has already been induced. To him, earnest workers in the physiological and bacteriological laboratories of this and of other countries, present in their carefully-drawn conclusions, arguments of great weight and power, competent to convince the most sceptical, to the effect that preventive medicine has entered upon a new era, a reign of control over disease, wider, deeper and more beneficent in its influence for good, abounding in larger promise of blessing for the sick and suffering than at any period in the history of mankind.

◆

COMPOUND FRACTURES.[1]

A STUDY OF THREE HUNDRED CASES.

BY J. G. MUMFORD, M.D.

IN reading the articles on compound fractures published during the past five years I have been impressed by the fact that the writers have striven to demonstrate the advantages of certain methods of treatment, and that their short and favorable lists have furnished no proper data for the general consideration of such formidable injuries. To cite a single instance: Mr. Treves, in the *Annals of Surgery* for February, 1893, gives a list of 61 cases, with one death. As this article fails to define the character of the fractures, further than to state that they are of the leg, and aims only at lauding a particular method of treatment, but little can be concluded from it. Other authors deal with the subject in connection only with their treatment of some special fracture or group of fractures, so that the practitioner or student must be often in the dark as to the general characteristics of these lesions.

A year ago I published a paper classifying and analyzing fractures of the skull. In the present essay, therefore, I shall omit the consideration of head injuries, excepting only fractures of the maxillary bones.

It is difficult in an article of this kind to properly limit one's self. A serious railway crush of both femora or of the pelvis, should be ruled out as essentially fatal. A similar crush of one arm or leg should be ruled out when it calls unquestionably for amputation. I shall not consider fractures in the feet and hands, as they are too complicated in their nature, do not in these days seriously endanger life, and nearly always heal up soundly, or call for immediate amputation.

There is a variety of fractures of which I have attempted to treat as conservatively as possible, but which is often hard to classify. Thus, twenty years ago a badly comminuted and lacerated leg would have been amputated. It would not then have come under the head of the injuries I am dealing with. Ten years ago a similar leg would have been amputated by some surgeons and saved by others. To-day we should all save it. To-day, therefore, it is a compound fracture in the sense in which I use the term. But there are fractures seen to-day as to which the question, to amputate or not to amputate, rises. If we amputate, we do not count this case in our list as a compound fracture. If we save the limb by a miracle, we consider the case a clever piece of conservative surgery.

In making up this list, therefore, I have not been able to take into account differences or errors in judgment, and have had to divide this class into cases essentially hopeless and those presumably hopeful. It is under the head of those presumably hopeful that we come subsequently upon our cases of secondary amputation. I shall deal with fractures of the long bones of the extremities, the jaws, the scapula, and the patella, omitting all such cases as are, in the light of to-day, essentially fatal or which call obviously for immediate amputation.

The mortality from compound fractures is high; that of certain bones very high. The general mortality is higher than that from typhoid, pneumonia and certain other acute infectious diseases. The public, certainly, and many physicians, I think, underestimate the gravity of these lesions.

To get at a fair, and, at the same time, a favorable estimate on the subject I have analyzed 300 consecutive cases taken from the Massachusetts General Hospital records for the past eight years.

Out of a total of 300, 270 recovered and 30 died, a mortality of 10 per cent. There were but 9 women and 291 men. One woman died. The following table gives the relative frequency of the fractures:

	Cases.	*Died.*	*Mortality.*
Tibia and fibula (both)	111	10	9.009%
Tibia	53	7	13.2
Humerus	33	1	3.33
Femur	25	7	28
Radius and ulna (both)	20	2	10
Inferior maxilla	14	0	0
Patella	9	0	0
Humerus, radius and ulna (elbow joint)	8	1	12.5
Radius	8	1	12.5
Fibula	7	1	14.28
Olecranon (distinguished from ulna)	4	0	0
Ulna	3	0	0
Humerus and ulna (both)	2	0	0
Femur and tibia	1	0	0
Scapula	1	0	0
Superior maxilla	1	0	0
Totals	300	30	10%

From this list it will be seen that 37 per cent. of all the fractures are those of the tibia and fibula together; 17.6 per cent. are of the tibia alone, and 2.33 per cent. of the fibula alone. Practically, fractures of the leg constitute 57 per cent. of all the compound fractures in this list. The forearm comes next with 11.6 per cent., the humerus with 11 per cent., and the femur with 8.33 per cent., the lower jaw with 4.66 per cent., and the patella with three per cent. The other fractures — those of the scapula, upper jaw and unusual joint complications — are so rare that they may be classed as surgical curiosities, and together make up less than 5 per cent. of all the compound fractures. I have purposely omitted from the list fractures of the nose, as they were seen only in the out-patient department and could not be properly followed up.

Since these cases are taken as they occur in routine practice and are not selected for purposes of treatment demonstration, as they are seen by a number of different surgeons, but follow a regular routine of treatment, I will sketch out briefly the method of the management, when uncomplicated.

With rare exceptions ether is given in all cases of compound fracture.

In the reduction of fractures of the leg no unusual plan is followed. Some years ago division of the tendo-Achillis was thought to be of advantage when there was great over-riding of fragments, but experience showed this manœuvre to be of questionable advantage. The usual shaving, scrubbing, syringing and general disinfecting of the limb have been thoroughly carried out for many years. Chlorinated soda, sulphonaphthol and bichloride are the favorite washes used. The leg is then put upon a Cabot splint and dressed. This splint is a simple wire frame, made from a single piece and bent so as to fit the ankle and knee. The wound is dressed, simple wooden side-splints are put on to prevent lateral bowing, and the apparatus is bandaged above and below the site of the fracture. An unenclosed area is left open for the renewal of the dressings.

---

[1] Read before the Boston Society for Medical Improvement, February 26, 1894.

The only variation in this style of treatment for many years has been in the first dressing of the compound opening. Up to 1891 it was the almost invariable custom to establish the freest kind of drainage. If necessary, to enlarge the wound; usually to make counter-openings, as dependent as possible. Stitches were rarely taken, and a primary union was seldom expected. Within the past three years drainage has become much more infrequent, for reasons which I shall subsequently discuss; and stitching, with primary union, has been common. Plaster as a first dressing has been rare. After the wound has become simple, however, the limb has been put up in a plaster splint and the patient given crutches. The method of treatment by these posterior wire- and side-splints has long been deservedly popular with those accustomed to their use. The splints are light, simple, easily kept clean, readily applied, quickly changed, and provide most conveniently for secondary dressings without disturbing the limb.

Fractures of the thigh are put up in an extension apparatus of some kind — the long Dessault or the Bucks — with a posterior and long outside splint, conveniently arranged for proper dressing of the wound.

The patella fracture is put on a posterior splint, with coaptation splints to control the quadriceps femoris.

Fractures of the upper extremities are put up in a variety of apparatus, consisting usually of shoulder cap, coaptation splints, internal angular at the elbow, and anterior and posterior splints for the forearm.

It is not my object in such a paper as this to discuss the relative merits of the various apparatus devised for these injures. So long as the fragments of a bone are securely immobilized, with due regard to the patient's comfort, it is of small moment what the style of apparatus may be. I am most decidedly of opinion, however, that proper provision should always be made for subsequent dressings and care of the wound *in situ*.

Fifty per cent. of these 300 fractures were due to crushes, and a large majority of these crushes were sustained in railway accidents. I have previously called attention to the extremely serious nature of these accidents. A description of the results of such crushes and of the pathological conditions ensuing is given by Dr. Alexander Ogston, of Aberdeen, in the *Medical Chronicle* for November, 1888. The bones in these cases are nearly always comminuted, the soft parts are severely lacerated, and there is frequently a resulting bone necrosis. Of these 151 cases of crush, 102 were comminuted and lacerated, with a resulting necrosis in 26. Twenty-one of the total 30 deaths followed crushes; so that we may say that the mortality after crushed fractures is 13.9 per cent. I do not, of course, include those cases which are essentially fatal.

Fractures from horse-kicks I have put in a special class. This may be fanciful, but I find that in these cases comminution is very common, primary union rare and long suppuration frequent. There were 24 of these cases, with a mortality of 4.16 per cent. Of other fractures, from blows there were 27, with a mortality of 7.4 per cent.

Next to crushing accidents the most common cause of a compound fracture is a fall. Of these there were 100, with a mortality of 6 per cent. It would appear from a study of the tables that fractures from this cause are the least severe of all, and the prognosis good. The violence is indirect, comminution uncommon and laceration slight. Here we may stitch with a good prospect of primary union, and usually without drainage.

Four cases of bone necrosis and 13 of comminutions are divided between the classes of blows and falls.

In the whole list, though, I found bone necrosis recorded less often than I should have expected. It occurred 30 times, a proportion of 1 in 10. One of these died of prolonged suppuration, after two operations for the removal of sequestra. Twenty-one cases in all required these secondary operations. The longest in healing after the primary accident was twenty-four months, the shortest was three months.

In a carefully treated hospital case *ununited fracture* is a great rarity. The reason probably is that the rigid hospital discipline, the admirable dietary and good hygienic surroundings, favor proper and rapid union. Many cases of non-union which I have seen in private practice were directly traceable to the negligence of the patient himself.

In my hospital list there are records of but seven ununited fractures: Four of the humerus, two of the radius and ulna, and one of the femur, all were eventually wired, and recovery ensued.

Fractures with joint complications were found to be quite common in the list, but the mortality during the past three years has been surprisingly low, and useful joints have frequently resulted.

Joint.	*Totals.*	*Excised.*	*Ankyloid.*	*Died.*	*Motion.*
Knee	13	0	9	1	3
Shoulder . . .	1	1	0	0	1
Ankle	9	1	5	1	3
Elbow	26	7	6	0	20
Wrist	1	(gangrene, amp. 3d day)		1	0
Totals . .	50	9	20	3	27

The total number of joints involved is seen to be 50, with 3 deaths, a mortality in joint fractures of 6 per cent., a lower mortality than the total average of 10 per cent. The fact that prompt and thorough excisions were done in nearly all desperate elbow fractures, which include a majority of all the joint fractures, accounts partially for this low mortality. In the elbow fractures which are amenable to more conservative treatment it is gratifying to see how, in recent years, a recovery of function has followed thorough antiseptic treatment without excision. There were 19 elbow fractures not excised, 13 of these cases recovered with good movable joints. Several of the 6 ankylosed cases were directed to return for subsequent resection, but their records I have been unable to trace. Most of them probably preferred to remain as they were, with the elbow at a right angle.

That 9 out of 13 knee-joint fractures remained ankylosed must be considered a good result relatively. Three recovered with motion, and but one died. It is a fair presumption that more of the cases would have recovered with motion, had they persisted in the use of passive movements — a manœuvre so difficult to properly carry out with hospital patients.

Of the 7 elbow resections it should be said that 3 were primary and 4 were secondary, or after the third day, when it became evident that a useful joint could not be saved. They all recovered well, the average length of convalescence being six weeks.

The one ankle-joint excision was secondary, in a middle-aged alcoholic subject, after two months of suppuration. He recovered with a fairly useful false joint.

There was one primary excision of the head of the humerus, with a satisfactory joint resulting.

Aside from the joint excisions the humerus was resected twice, and the bones of the forearm once. A total of 12 resections with excellent results in all.

Primary wiring of bone was done 27 times. Twenty of the cases got good union, and 7 had necrosis. It is noticeable that these 7 cases of necrosis were treated by the open method, that is, the wound was left unsutured and the wires extruding.

One of the cases of compound ankle-joint was complicated by laceration of tendons. The tendon of the extensor proprius pollicis was sutured, and good union followed. The man recovered with a movable joint.

As was said at the beginning of this paper, those cases of compound fracture are excluded which are essentially fatal. The question immediately rises, What cases are these? I admit at once that such a question cannot be accurately answered, but that the decision must be left to the individual surgeon. A vast number of very serious injuries are in these days survived, in a manner which would have astonished our fathers, so that we have come to regard hopefully the most grave and extensive lesions. Prosperous looking cases do occasionally die, however. I have found in this list six causes of death. They are: sepsis, shock, delirium tremens, fat embolism, gangrene (as distinguished from the ordinary suppurative processes), and nephritis.

Sepsis does not appear to have decreased materially within the past eight years. There were 20 cases with 10 deaths; a total mortality from sepsis of 3.33 per cent. In 1885 there were 4 cases; in 1886, 2 cases; in 1887, 2 cases; in 1888, 2 cases; in 1889, 3 cases; in 1890, 3 cases; in 1891, 1 case; in 1892, 1 case; in 1893, 2 cases. Secondary amputation was done in 3 of these with 1 fatal result; 7 died of septicæmia, and 3 of pyæmia. There were 3 cases of erysipelas, all of which recovered.

Of course, all of these septic cases received the most thorough antiseptic treatment; the favorite local application being baths or constant irrigation with bichloride or sulpho-naphthol.

The age of the patient in sepsis seems to have had no bearing on the result. Those who died ranged from nineteen years to sixty-five years. There were among them 3 fractured femora, 6 fractures of the leg and 1 of the radius.

The nature of shock and collapse is still so uncertain that it is difficult to distinguish them always from other conditions, notably embolism. Those cases which entered the hospital and died within twelve hours I have included in the list of essentially fatal cases. There were 15 cases besides these which fell into a condition of shock subsequently, the effect of operation, ether or secondary hæmorrhage; 8 such cases survived and 7 died.

There were not many recorded cases of delirium tremens: 9 in all, and 6 of these died. The deaths were obviously due to delirium tremens. It happened that none of the injuries were especially severe. The injuries of the three survivors were as bad as any, but the men averaged much younger. It is recorded of one that he was cured of drinking, and a year after his discharge was a total abstainer. Contrasted with him was an individual who gave his name as Yale College. He was a negro. His injuries were comparatively trivial; but he died on the tenth day, after a week of delirium.

There are 3 recorded cases of fat embolism, with death and autopsy. All of them were due to extensive crushing of the leg.

One man died of an acute, presumably septic, nephritis, which certainly was not present when he entered the hospital; and three died of gangrene for which secondary amputations had been done fruitlessly.

	Recov'd.	*Died.*	*Mortality of Total Fracts.*	*Totals.*
Sepsis	10	10	3.33%	20
Shock	8	7	2.33	15
Delirium tremens . .	3	6	2	9
Fat embolism . . .	0	3	1	3
Gangrene	7	3	1	10
Nephritis	11	1	33	12

Deaths 30 (10%).

Some of the cases of gangrene were most unexpected. One boy with a simple crack through the tibia, no apparent complications and excellent circulation in the foot on entrance, developed gangrene, and died three days after an amputation.

Secondary amputations were not common, however. There were but 20 in all: 7 of the humerus, 5 of the forearm and 8 of the leg.

One young man with a compound elbow eloped on the first day. He returned for amputation on the seventh day. Extensive gangrene had set in.

Of all fractures of the humerus, 21 per cent. required secondary amputation, of forearms 16 per cent., and of legs 7 per cent.

Though the figures would show that acute general sepsis is about as common now as it has been at any time within the past eight years the records prove, without question, that the general results obtained in the treatment of compound fractures are vastly better than they were eight years ago, and that within the past three years, especially, there has been most marked improvement. Local suppuration is much less common. Five years ago a certain amount of suppuration was expected; but since January, 1891, there are but 15 recorded cases. In the five previous years there were 89. In the suppurating cases recorded the mortality takes a decided jump upwards, as we should expect; 34 per cent. died.

There were a few remarkably good results as far back as 1885, when a case of fractured leg was recorded well in two months. Last year a comminuted leg was simple in one day and sound in two months, without exciting especial comment. In the same year a compound forearm became sound in six weeks.

A study of the modes of treatment employed in the last decade and in this, convinces me that the improvement in results is not due to any radical change in method. Indeed, the methods are the same so far as the sterilizing of the wound and its dressing are concerned.

Why is it then that to day we can so frequently dispense with drainage, especially with the former numerous counter-openings? In the old days that omission would have been thought madness, and when tried led almost invariably to extensive suppuration. As it is, the older charts show regularly a temperature elevated for ten days or a fortnight. Stitching the wound up tight was seldom practised five years ago. It is frequently done to-day, with a resulting primary union. Very often now, after the first dressing, the wound is left sealed for two or three weeks, when the dressing is removed and the fracture found simple. The result is that to-day a permanent plaster splint is put on within a month of the accident, and that a great many of these cases give no more trouble than do simple fractures.

The reason for this gratifying advance lies in the fact, I believe, that the environments of our surgery are clean. It has taken many years to accomplish this in an old hospital like the Massachusetts General; but the results in all branches of surgery seem to bear out the statement. Patients used to be carried into an accident-room which must have been septic, and in spite of the most scrupulous care in the management of the wound it very often became contaminated. To-day I believe that the accident-room is as clean as the abdominal ward.

In this list it will be seen that the average time of healing is rather less than stated in the standard books. Excluding such complications as humerus, radius and ulna (elbow-joint), humerus and ulna (elbow), and femur and tibia (knee), the order of the bones, arranged according to their rate of healing, is as follows:

	Longest.	*Shortest.*	*Average.*
Superior maxilla	1 mo.	1 mo.	1 mo.
Scapula (body)	2	2	2
Inferior maxilla	6	1	2.4
Ulna	4	2	2.5
Radius	12	1.5	3
Radius and ulna	12	1.5	3.5
Humerus	8	2	3.5
Olecranon	8	3	4.7
Tibia	24	2	4.7
Fibula	12	2	4.8
Tibia and fibula	28	2	5.6
Patella	12	4	6.6
Femur	24	3	8

Some of these averages, such as upper jaw and scapula are of little value, as they are taken from too few recorded cases. The number of these cases is significant, however, as indicating their rarity.

All the fractures of the lower jaw did well. Even with extensive comminutions there were but few necroses. Methods of treatment were diverse; but it is worthy of note that by far the best results were obtained from the use of inter-dental splints, furnished and fitted by the Dental School.

Of course, it is almost impossible to keep these fractures aseptic, and sinuses often persist until the bone is sound.

There were but 3 fractures of the ulna alone, all of which united well without any complications. The infrequency of fracture of this bone, alone, excluding fractures of the olecranon, is due to its deep position. Its fracture is almost always accompanied by fracture of the radius.

Compound fracture of the radius alone is not very common. There were 12 out of the total 300. The radius is usually fractured by falls on the wrist, and this is an unusual seat of compound fracture unless from a crush or blow. If compound, the wrist-joint is liable to be opened. In one of the cases this resulted in death.

Both bones of the forearm are frequently the seat of compound fracture, and non-union is not uncommon. Out of 20 cases, 10 per cent. died. In treating fractures in the forearm it is not very easy to obtain immobilization except with plaster splints. As in fractures of the leg, however, primary union of the soft parts is more common than it was, and the bony unions are more rapid than they once were, the resulting callous less and good rotation more certain.

Perhaps the most difficult to treat of the ordinary compound fractures are those of the humerus. It is almost impossible to immobilize this bone in any apparatus which will admit of easy access to the wound for dressings. The practice of fastening the arm to the side and fixing the shoulder- and elbow-joints is the most practicable and common, but necessitates some movement of the arm for dressings.

From the surgeon's point of view an extension apparatus, similar to that used in thigh fractures, with the patient in bed and the arm extended at right angles is very satisfactory, but it is almost impossible to get patients to submit to such confinement.

Owing to these difficulties we find a majority of our cases of ununited fracture to be of the humerus. Secondary amputation of this bone is likewise most common. Out of 33 fractures of the humerus four resulted in non-union, as against 3 non-unions in 267 of all other fractures. Secondary amputation was done in 7 cases of the remaining 29, which leaves us but 22 cases in which good early union took place. Hence it appears that our prognosis in all these humerus cases should be very guarded. It is positively good in but 66.6 per cent., according to these statistics.

Fractures of the olecranon are interesting mainly on account of its relation to the elbow-joint, and its inefficient blood-supply. When compound, its treatment is subordinated to the question of saving the joint. It unites more slowly than the humerus, but has a lower mortality.

There is little to add to what has been already said in regard to compound fractures of the leg, except in regard to the rate of healing. As would be expected, fractures of both bones heal more slowly than those of one. The difference in rate being one month. The tibia, when fractured alone, is sound in about four and one-half months, both bones in about five and one-half months.

There is an average and fairly definite relation between the time a fracture becomes simple and the time it may be pronounced healed. If the fracture does absolutely well and there is no necrosis this relation is as one to five. If a leg is simple in one month the bones will be sound in five months. This is true, too, of the very short cases. Two cases which were simple in ten days were sound in two months. If there is necrosis and long suppuration, the ratio may be as four to five, or the bone may become sound before the wound is simple, and the figures be reversed.

It seems that certain fractures of the leg are especially liable to suppuration. All the compound Pott's fractures suppurated; and as this is the common fracture of the fibula, it will be seen that this bone when fractured alone heals more slowly than the tibia alone.

None of the patellar fractures died. Most of these were wired. Three recovered with good motion in the knee and in six there was resulting anchylosis.

As would be expected, by far the highest mortality was in fractures of the femur: 28 per cent. of the 25 cases. The great difficulty in rendering lacerations of the thigh aseptic, and the shock in these injuries, were the causes of death. Some of the cases, however, recovered with remarkable rapidity. The shortest convalescence was that of a young man of twenty-four, who walked safely after three months. Eight months, however, was the average length of convalescence.

In collecting data for these conclusions my difficulties have been very great. Fortunately many of the ultimate results appeared in the hospital records, and a great number of the patients answered my notes of inquiry. The results, as regards deformity, were especially gratifying to note. The worst deformities were from crushes and horse-kicks; but after the lapse of years they have frequently become less noticeable, and very rarely have the functions of limbs been impaired after permanent bony union.

It seems fair to briefly conclude from this hasty review of so extensive a subject that, though the mortality is relatively high, still we have made within recent years a decided advance in our treatment of this class of cases; and that our success is not so much due to any special variety of apparatus or method of treatment, as to our perfection of technique in working on the broad lines of aseptic surgery.

Clinical Department.

SATURATED SOLUTION OF POTASSIUM PERMANGANATE IN THE TREATMENT OF CHRONIC ULCER.

BY P. R. WAUGHOP, M.D.,
Interne at Boston City Hospital.

Last summer, in the surgical out-patient department of the Boston City Hospital there were a number of very obstinate cases of chronic ulcer. Poultices of corrosive sublimate (1-1000), creoline (1-1000) and of Labarraque's solution were faithfully employed; as also strapping and the tin-plate method; but without success. Iodoform, aristol and calomel powders were also unavailing.

Permission was then obtained to try the saturated solution of potassium permanganate on these cases. The results were extremely gratifying. One typical case is herewith submitted in full and a summary given of twenty-four others — ulcers, abscesses, old sinuses, etc.

Case VIII. Ulcer just above left internal malleolus. Size of a quarter-dollar and one-quarter of an inch deep, the bottom being covered with a greenish slough.

This ulcer had been present for four years, with very little variation. It had been treated at various times with poultices of corrosive sublimate (1-1000), the last time once every two days for three weeks. The poultices served merely to stop the sloughing without showing a tendency to heal.

Permanganate Treatment.—The slough was swabbed out, and the ulcer flooded for ten minutes with the permanganate solution (severe smarting being produced the first two minutes). It was next sponged dry and loosely packed with narrow strips of gauze soaked in the fluid. A heavy permanganate poultice (gauze three inches square, dripping-wet with the solution) was then applied, covered in with oiled paper, and bandaged as lightly as possible with cheese-cloth. This method was repeated every day for a week. On the eighth day the granulations were flush with the surface. Two days of subsequent treatment with eucalyptus vaseline was followed by the formation of a pellicle over the granulations. (Patient disappeared.)

Case I. Gangrenous ulcer of leg. Size of dollar, and three-quarters of an inch deep. Corrosive three weeks, without effect. Permanganate heals in ten days.

Case III. Old ulcer of leg. Superficial, two inches by one and one-half inches. Corrosive creoline, flaxseed, and boric acid ointment five weeks, without effect. Permanganate applied every other day, heals in ten days, that is, five applications were made.

Case X. Ulcer of leg, two years' duration. Three inches in diameter by one-quarter of an inch deep. Bread-and-milk poultice two months, without effect. Permanganate, in three weeks, reduces ulcer to one-half the size. (Patient disappears.)

Case XI. Ulcer of leg, twelve years'd uration. Size of quarter-dollar, one-half inch deep. Corrosive four months, without effect. Permanganate heals in six weeks. (Patient came only twice a week, and was on his feet constantly, doing heavy work.)

Case XII. Ulcer of leg. Three inches by one and one-quarter of an inch deep. Corrosive one week, without effect. Permanganate every other day for three weeks reduces to a superficial ulcer the size of a dime. (Patient disappears.)

Case XIII. Ulcer of leg. Size of dollar, and three-quarters of an inch deep. Very foul. Tar ointment six weeks, without effect. Permanganate heals in fourteen days.

Case XV. Ulcer of leg. Two inches in diameter and one-eighth of an inch deep. Corrosive two months, without effect. Permanganate heals in seventeen days.

Case XX. Ulcer of leg. One inch in diameter by half an inch deep. Linseed poultices, carbolized ointment five days. Action too sluggish. Hastened to a cure by permanganate in eleven days.

Case XXIV. Ulcer of leg. Size of a half-dollar; one-quarter of an inch deep. Permanganate produces severe dermatitis. Heals slowly under iodoform ointment in nine weeks.

Case XXVI. Ulcer of leg. Size of dollar, three-eighths of an inch deep. Corrosive two weeks, without effect. Permanganate, used every other day, heals in fifteen days.

Case XXVII. Ulcer of leg. Tuberculous? Two and one-half by one and one-half by one and one-quarter inches. Corrosive seventeen days, without effect. Permanganate, at irregular intervals, heals in a month.

Case XXXI. Ulcer of leg. Three by two by one and one-half inches. Corrosive two months, without effect. Permanganate heals in two months. (Patient came only twice a week and was constantly doing heavy work.)

Case XXXIII. Ulcer of leg. Two and one-half inches in diameter and three-fourths of an inch deep. Permanganate in fifteen days reduces to about one-half the original size. Then twenty days of flaxseed poultice. Ulcer remains stationary, and sloughs a few times. Then healed by permanganate in seventeen days.

Case IV. Abscess of arm. Size of quarter-dollar, and one-quarter of an inch deep. Packed one week with iodoform gauze. Remains sluggish. Packed with permanganate gauze, (that is, strips of gauze wet with permanganate). Well in five days.

CASE XIV. Abscess of forearm. One-quarter of an inch in diameter by three-quarters of an inch deep. Packed with corrosive three days, without effect. Permanganate gauze cures in one week (five applications).

CASE XVI. Abscess of abdominal wall. One and one-half inches in diameter, superficial. Iodoform ointment six weeks, without effect. Permanganate gauze heals in fourteen days.

CASE XIX. Abscess of arm. Size of dime, superficial, very foul. Aristol ointment two weeks, without effect. Permanganate gauze heals in one week.

CASE XVII. Old suppurating sinuses along course of palmar tendons. Hydrogen peroxide and iodoform gauze ten weeks, without effect. Permanganate gauze (used every other day) heals in five weeks.

CASE XVIII. Suppurating gland of neck. Packed with iodoform gauze two weeks, without effect. Permanganate gauze heals in two weeks.

CASE XXIX. Cellulitis of thigh. Corrosive and iodoform gauze sixteen days, without effect. Permanganate heals in twenty-six days.

CASE V. Crushed fingers, sloughing. Iodoform gauze and creoline for one week. Too sluggish; little progress. Permanganate heals in ten days.

CASE XXII. Sloughing lacerated wound of hand — gunpowder. Iodoform gauze six weeks. Improvement steady, but too slow. Laceration reduced in ten days by permanganate, from size of dollar to complete disappearance.

CASE XXV. Crushed foot, sloughing. Eucalyptus vaseline three weeks, and black wash two weeks, without effect. Permanganate heals in sixteen days.

CASE XXI. Sloughing chancroids. Aristol ointment for twelve days, without effect. Permanganate heals in six days.

The above are fair examples. Several hundreds of these non-syphilitic cases were treated in this manner during July, August and September, 1893.

The main disadvantage is the pain, which may be very sharp from one to five minutes after application (sometimes twenty minutes, in the case of anal fistula). It then ceases altogether. Rarely, also, a dermatitis is produced.

If the granulations became over-stimulated, weak myrrh wash, lead and opium wash, or some one of the antiseptic powders, or bland ointments was substituted for permanganate until the indications ceased. Moreover, permanganate was usually supplanted by one of these dressings so soon as the ulcer was filled even with the surface, in the normal process of healing.

The patients mentioned above as "disappearing" were those who considered themselves cured, and felt too busy to make their final appearance at the hospital. The corrosive used in the above tests was always 1 to 1,000.

Very good results were obtained in a few cases of anal fistula which were slow to granulate after operation.

Saturated solution of oxalic acid was found to be the best reagent for removing the stain from the hands.

AN International Congress of Sea Bathing and Marine Hydro-therapeutics will be held at Boulogne-sur-Mer from July 25th to 29th.

Medical Progress.

RECENT PROGRESS IN ANATOMY.

BY THOMAS DWIGHT, M.D.

METHODS OF TEACHING ANATOMY.

THERE has been a good deal of writing on this ever fresh, though well-worn controversy, in the English medical papers towards the close of 1893. The central figure in the discussion is Professor Macalister, perhaps the leading anatomist of Great Britain. He wrote a paper[1] in which among other things he discussed the relation of the study of frozen sections to dissection. Without depreciating the latter he taught that the former should be used for supplementary study. Dissection he defines as the art of removing the connective-tissue from around parts so that they can be properly seen. This must, of course, disturb the relative position of parts. "The most skilful anatomist, when he opens the body cavities, must displace the viscera in relation to the landmarks, and cannot avoid doing this to such an extent that, like the fallen Humpty Dumpty, all the members of the Anatomical Society of Great Britain and Ireland cannot put them back as they were before. . . . Dissection is the only way of learning structure and details; sectional study is the only way of learning relations."

This teaching did not please the old-fashioned anatomists who must of late have been chagrined at seeing the rise of new methods. Mr. Thomas Cooke[2] says, "The conception put forth by Professor Macalister is not new. It is substantially the same — popular errors are long-lived — with which I was familiar as a student in Paris that to the surgeon, the body (to use the metaphor of the day) should be, so to speak, like glass-transparent." He then goes on to prove, what every one will admit, that this is not necessary for tying arteries which are reached by following certain successive guides. In regard to the statement that the study of frozen sections is the only way of learning relations, he says that it is only some twenty years since these were heard of, and asks "Were anatomical relations but imperfectly understood by Callender, Furgusson, Wood — to name only British surgeons who are no longer with us?" No one seems to have replied to this challenge, but trusting to three thousand intervening miles of ocean, we venture to say that we do not believe one of those surgeons knew the position of the stomach, the shape of the liver, of the spleen or of the pancreas; we may add that Wood taught the true relation of the arch of the aorta which he had learned by the sectional method somewhat crudely applied.[3] Symington in an address extols frozen sections, Cunningham uses them freely. We are sure that they have come to stay in Great Britain and Ireland, despite the old-fashioned exponents of what Goodsir called "scalpel and forceps" anatomy. We trust that this will never be superseded but only supplemented by modern methods.

Another point about which the discussion has raged is the value of embryology and morphology in the anatomical course. Macalister holds that anatomy taught from a morphological standpoint is more interesting, more intelligible, not less practical. Mr. Cooke[4] retorts in effect, not without justice, "Yes, because you know these things; but they would not be worth much if taught by one who had crammed them."

---

[1] British Medical Journal, October 21, 1893. There seems to have been a previous pamphlet by Mr. Thomas Cooke, which we have not had the advantage of seeing.

[2] The Lancet, November 4, 1893.

[3] Journal of Anatomy and Physiology, vol. iii, 1868.

This is one of the questions which, it seems to us, can never be catagorically answered, because the proper solution depends on the knowledge and the good sense of the teacher. He will make his lectures both more valuable and more interesting by giving glimpses of something beyond, thus explaining facts like the difference of the right and left recurrent laryngeal nerves, which at first sight seem unaccountable freaks; but his tact must not let him wander too far.

THE INFLUENCE OF FUNCTION ON THE SHAPE OF BONES.[5]

Dr. R. Havelock Charles, Professor of Anatomy at Lahore, has written two papers of peculiar interest on the bones of the lower extremity of the natives of the Panjab. At the beginning of the second paper the author gives a summary of the first, which we will quote in his own words, almost in full: "It was shown that the articular surface of the head of the femur was relatively and absolutely greater than in the European, and that it was prolonged so as to adapt itself to the modified *facies lunata* of the cotyloid cavity. That the upper surface of the internal condyle of the femur is partly articular. That the upper surface of the internal tuberosity of the tibia slopes considerably down and in, being never flat. That the external tuberosity has its condyloid articular surface convex from before backwards, and that the articular area is well prolonged down posteriorly. That a facet or facets were to be found on the anterior surface of the lower extremity of the tibia for articulation with similar surfaces on the neck of the astragalus during extreme flexion, or during extension or extreme adduction of the ankle-joint in the squatting and sartorial postures. That on the neck of the astragalus were one or two facets — one external, one internal — the latter continuous with the pyriform malleolar articular surface."

The application of these facts is in brief that the orientals do not sit in chairs, but habitually either squat or sit crossed-legged, for which positions these modifications offer distinct advantages. Now characteristics similar to these are found in the oldest prehistoric bones, and have been advanced as evidence that the knee could not be fully straightened, nor the upright position maintained. They show nothing of the kind, for the native of the Panjab can stand as straight as any, though he can squat as civilized races cannot.

Professor Charles argues that while orientals have retained the sitting postures of their ancestors, Europeans have not, and consequently have lost through disuse the bone peculiarities pertaining thereto. The oriental, on the contrary, inherits as young bones proclaim, "variations in structure acquired by his ancestors, and transmitted, with accumulations due to continuity of like habits, as useful heritages." Hence he concludes the transmission of acquired characteristics is possible.

This very important line of argument that certain peculiarities of ancient bones depend upon function and posture, has been already pursued by Mr. Arthur Thomson and by Manouvrier.

A DIGITO-DORSAL MOVEMENT PECULIAR TO MAN.

While reading this paper by Monsieur Eugène Mouton[6] we have repeatedly asked ourselves whether it was meant as a joke, or as a satire, or as a serious communication. We have finally accepted the last alternative, though not without some misgivings. The movement in question is made as follows: put the forearm behind the back with the palm outward; then flex the wrist as much as possible and turn the palm in. Then extend the wrist and stretch the fingers out as high up the back as possible, that is to the fourth dorsal vertebra. Thus man can touch with his fingers all parts of his body, which according to our author no other animal can do. This is indeed self-evident till we come to the monkeys and apes. The author found that he was able forcibly to put the arms of the monkeys callithrix and rhoesus into the required position, but that they did not execute it naturally. This could not be done to the orang nor the gibbon. The very length of the arm made the movement impossible. For the same reason it would seem to be impossible for the chimpanzee and gorilla, though the test could not be made. To our mind the most interesting point in the paper is the additional evidence that some of the lower monkeys more closely approach man's bodily structure than do the so-called anthropoids.

THE RELATIONS OF THE HEART AND LUNGS TO THE ANTERIOR CHEST WALL, AS DETERMINED BY COMPOSITE PHOTOGRAPHY.[7]

Dr. I. S. Haynes has written a very interesting paper on this subject, which we do not mean to undervalue when we say that the method is the best part of it; for we cannot accept conclusions based on the analysis of only three series of observations. The method is in brief as follows: By way of stating positions not easily referred to cartilages he draws an imaginary median line downward from the supra-sternal notch and at definite points on it draws lines at right angles to it of known length. Thus in one subject he describes the position of the apex as two and one-quarter inches to the left of the median line at its seven-inch point. The heart is usually injected from a carotid with a thin plaster mixture which should distend it moderately. The nipples are located according to the method just given, then cut through the middle and their positions marked. All soft parts down to the intercostals are taken away and the surface of bones and cartilages cleaned. "Now place a narrow tape-measure . . . from the supra-sternal notch, along the middle line to below the ensiform appendix. Upon each cartilage and rib indicate the distance in inches, measured transversely from the mid-sternal line, by narrow slips of paper as long as the cartilage or rib is wide and placed vertically upon the same to the number of four or five on either side of the middle line." These are to help in determining the position of the various ribs and cartilages. The camera is set vertically over the subject. A tube for inflation is put into the trachea. Two photographs are then taken, on Plates A 1 and 2, in expiration. The lungs are next inflated, and two views (B 1 and 2) are taken in inspiration. The air having been allowed to escape, the sternum is removed from the level of the lower edge of the first cartilage to that of the upper edge of the seventh. The cartilages and ribs are taken with it for a distance of four or five inches from the median line. The pleuræ are not opened. The lungs are again inflated to the same degree as before, and Plate B 1 is again exposed. The pleuræ are then removed, and Plate B 2 is again exposed. After the escape of the air, A 1 is exposed showing the state in expiration with pleuræ gone and pericardium remaining. The front of the latter is then removed, and A 2 exposed. We are not told whether the author then proceeds to combine the corresponding plates of different subjects, but from the illustrations we infer that this is not done.

---

[4] Lancet, November 25, 1893.

[5] Journal of Anatomy and Physiology, vol. xxxviii, October, 1893, and April, 1894.

[6] L'Anthropologie, 1893, tome iv, No. 4.

[7] New York Medical Journal, 1893, vol. ii. (Vol. 58.)

As we have implied we think that a far larger series is needed before the results can be quoted. We will merely say now that Dr. Haynes finds the apex much nearer the median line than it is generally given. We would venture to suggest that in future observations it would be well to entirely ignore the nipples as landmarks, owing to the uncertainty of their position even in males.

REPRODUCTION OF THE UPPER AIR-PASSAGES BY PLATING CASTS, OBTAINED BY THE CORROSIVE METHOD.[8]

Dr. B. Alexander Randall strongly advocates this proceeding. The recommendation is by no means new to us, but it has great merits which make it desirable to discuss it. As Dr. Randall points out, a cast locks up a good deal of expensive fusible metal. Further, being of the nature of a negative in which cavities are represented by solids, it requires a certain amount of mental turning inside out, which is often confusing. This would be obviated by an electrotype plating, which has the further advantage of being fit to cut into slices, thus giving new and instructive views. A final point, which Dr. Randall does not mention, is that even in a few years fusible metal casts of such weight as those of the upper air-passages tend to become distorted. This is a very serious drawback. In our opinion metal casts should always be electrotyped when their nature admits of it.

THE RELATION OF THE HEPATIC ARTERY TO THE PORTAL VEIN.[9]

Dr. Retterer, finding discrepancies in the accounts of this point of anatomy, has studied it for himself. He finds that the hepatic artery must be divided into two parts. At the beginning of its course before it is in relation with the portal vein, it is in a posterior (more dorsal) plane. After reaching the vein it turns round it, lying anterior to it in the remainder of their course to the liver.

THE PTERYGO-SPINOUS LIGAMENT (OF CIVININI).[10]

This ligament, which is occasionally represented by bone, is of surgical importance in the operation of resecting the third division of the fifth pair of nerves, and we believe has already been referred to in these "Reports." In its simplest state it is a fibrous band passing from the external pterygoid plate to the spine of the sphenoid, and consequently a little external to the foramen ovale. The committee of collective investigation in Great Britain and Ireland have received 218 answers as to the ligament, and 104 as to its relation to nerves. The ligament is wanting, or merely represented by membrane, in about 20 per cent. of the cases. It is a fibrous band in about 65 per cent. It is partly ossified in about 10 per cent., and completely so in about 3 per cent. The relation of the nerves does not appear to have been reported with many details by most of the observers. The inferior maxillary nerve, which the editors assume to include merely the inferior dental and lingual nerves, passed outside of the band in 92 instances, and below it in 12. The ascending branches naturally are in no immediate relation to it.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JOHN T. BOWEN, M.D. SECRETARY.

Regular Meeting, Monday, February 26, 1894, the President, Dr. C. F. Folsom, in the chair.

Dr. J. H. Wright, by invitation, showed

CULTURES OF THE GONOCOCCUS FROM VARIOUS ORGANS.

Dr. W. T. Councilman showed a

SPECIMEN OF INTESTINAL OBSTRUCTION.

This specimen is interesting from the extraordinary manner in which the strangulation was produced. The symptoms came on suddenly, and the patient died sixteen hours afterward. The entire small intestine lies on this plate. At the lower portion of the plate there is a large mass of intestine, which is intensely congested and hæmorrhagic. The lumen was filled with almost pure blood. Thus the strangulated portion comprises about one-half of the small intestine. A portion of the mesentery attached to the strangulated intestine is also intensely congested, thickened and hæmorrhagic. A distinct band of constriction separates this portion of intestine from the other. Around this, what appeared to be a loop of intestine was wrapped. At first it was difficult to understand the condition. It seemed as though the strangulation was due to the mass of intestine having passed through a loop in the mesentery immediately beneath the intestine. On emptying the gut and examining the constricting band more closely, it was found to be the diverticulum of Mæckel which had become wrapped around the mesentery, with the end passed under, making a complete tie. I here reproduce the condition. Although intestinal strangulation due to Mæckel's diverticulum is not at all uncommon, it does not usually take place in this way. The end of the diverticulum may become attached to the peritoneum in various places, and through the loop so formed the intestine may pass. It is difficult to see just how the condition I show here could have arisen. The end of the diverticulum which had passed under the loop was greatly swollen, and this acted as a regular button, and could not return.

Dr. E. N. Whittier read a paper on

DIGESTIVE PARESIS.[1]

Dr. E. G. Cutler: I have nothing to add to what the reader has said. I can simply reiterate what he has so very well expressed, that I have been frequently disappointed in following out the carefully laid down rules and methods of treatment which have been proposed for the cure of diseases of the stomach and of the intestinal tract. I have tried to use drugs according to the methods of those people who have written on the subject of intestinal antisepsis, and have been quite disappointed at times in the results which I have obtained. I have been led at times to suppose it was some error of mine in the exhibition of these remedies. It is a pretty difficult subject, and I should say of the different cases which I have had under treatment, each one was a case in a category of its own; there were no cases which could be grouped except in a very coarse way. It is an interesting subject, and apparently the success which most of us obtain in the treatment of these diseases is not very great. I see quite a number of patients who have been through the hands of others, and I see others treating quite a number of cases that have been through my hands, so that I think we are all considerably disappointed in the use of many of these remedies which the doctor has spoken of. It seems as if something might be got from the laboratory study of excreta. Comparatively little is known of the fæces. I have had occasion recently to see that in having some examinations made at the different laboratories. The chemists do not seem to be able to furnish us very much that is of practical use here. The same thing is true to a less extent of the bacteriologists. There appears to be a good deal of work yet to be done.

---

[8] The Journal of the American Medical Association, vol xxi, 1893.

[9] Journal de l'Anatomie et de la Physiologie, 1893.

[10] Journal of Anatomy and Physiology, October, 1893, vol. xxviii.

[1] See page 460 of the Journal.

Dr. H. F. Vickery: The paper brought a remark of Ewald's to my mind; at least, he is quoted as having said that after the most careful study of the mechanical and chemical conditions of digestion, there is beyond it all a certain organic influence which escapes him and makes the problem almost too difficult to set down in definite language with a definite answer. The late Dr. Flint somewhere has said that he never knew anybody who followed an exact dietary who was not a dyspeptic. The influence of the mental state upon a person in these conditions is certainly very great; the same person, everything else the same except good fortune or bad fortune, one time will be comfortable in his digestion, another time not. Some of the greatest sufferers from the functional kind of dyspepsia look so very well that they again suggest that there is an organic or nervous element very strong in the causation of the disease, and which we have got to play upon in the cure of it. I share the doubts that have been forced upon others by their efforts to use antiseptics. If I understand the physiologists, the bacteria are necessary for the digestion of meat, so that if we made the intestine perfectly free from bacteria we might be worse off than we are now. I think that washing out the stomach in certain cases acts as an aseptic process, lessening fermentation not merely by emptying out a load of material, but by getting rid of a lot of germs which poison whatever food is taken.

Dr. J. G. Mumford read a paper entitled,

COMPOUND FRACTURES.[2]

Dr. A. T. Cabot: I think we are all very much indebted to Dr. Mumford for his very careful presentation of the subject, and the enormous amount of work he has done in bringing it into shape to give such exact results. In comparing the cases he has worked over with cases at large, I think we must remember that most of these hospital patients are dirty people who have been injured at a time when the limb was nŏt prepared for a compound injury, and consequently, a good many of these injuries reach the hospital with bacteria already planted in the culture media supplied. I should think, as I was able to gather from his statistics, that the number of cases of suppuration about corresponded with what one would expect from sepsis occurring before the patients reached the hospital.

There is no question that a considerable amount of dirt may be introduced into a wound, and, under favorable conditions, the micro-organisms so introduced may be afterwards made inert and destroyed by the action of the tissues. I think that this power of the tissues to destroy the bacteria introduced is one reason why wounds that are closed up tightly do so much better than those that are treated by putting in extensive drainage, as in the previous plan of treatment. In old times, a leg coming in with fractured tibia, and with tissues extensively lacerated, was laid freely open and riddled with drainage-tubes in every direction. The result was that large openings were made, through which micro-organisms could enter, and the irritation of the tubes led to the formation of fluids, in which any organisms so entering, or which had been introduced at the time of the injury, could grow and propagate.

I think that in the treatment of these cases there is no question that the careful irrigation, washing out of the grosser material, dirt, etc., that has been introduced is extremely important. It is not probable, however, that washing out ever entirely removes all the micro-organisms that have been introduced, and it is probable that their final destruction is wrought by the tissues themselves in the way I have indicated. It seems to me that these cases, particularly those compound fractures in which joints are implicated, really show the most triumphant results from aseptic and antiseptic surgery that we now see. A little impurity introduced into the comparatively non-vascular cavity of a joint has much less chance of being properly removed by the action of the tissues than has an equal amount of septic material when introduced into the peritoneal cavity. In old times, we used to regard an abdominal operation as the acme of aseptic or antiseptic achievement. I think, however, that these joint cases are much more striking, and are better tests of the thoroughness of the asepsis. In view of that fact, it seems to me that a joint that has suffered a compound fracture, and in which mobility has been preserved by aseptic treatment, is really one of the greatest triumphs of aseptic surgery. I confess that I was surprised at Dr. Mumford's statement of the number of such movable joints obtained. I had not supposed we were doing as good work as that. When we consider the mechanics of the elbow-joint, and think that a moderate amount of inflammation would fasten those intricate joint surfaces together so that they would not afterwards move on each other, I think these results are remarkable.

Lastly, in regard to the methods of putting up these fractures. Of course, the main principles which are to be observed are these: thorough cleanliness, asepsis as far as can be obtained, and immobility. It does not very much matter in what way the immobility is obtained, provided it is complete, or approximately so. In the case where we operate and make aseptically a compound fracture, as by section of a bone, we are perfectly sure from the start that we have not introduced organisms, at least, have taken every precaution against it, and we can use fixation with plaster, expecting not to remove that dressing until union of the bone has been pretty thoroughly established. In these cases, however, where the patients are brought in with a dirty leg or dirty arm with a compound fracture in it, and where there is a very strong chance of suppuration, it seems to me that we expose our patient to some risk by closing in that wound, after making it aseptic as possible, by enclosing it in a stiff dressing. In cutting off a plaster bandage, there is a certain amount of motion, churning up of the fracture; and in putting on the next plaster that is to take the place of the one taken off, there is a certain amount more of churning up, and to avoid that, I think fixation splints have their advantage over the plaster. They enable you to watch the limb more carefully during that period during which there is fear that suppuration may establish itself.

---

[2] See page 463 of the Journal.

DR. R. W. LOVETT: The only part of compound fractures that I am competent to discuss is the later history, which I see as an out-patient surgeon; and Dr. Mumford's paper makes plain what I had not realized so fully before, how long had been the immobilization of these patients before they were competent to come as out-patients and see about having the plaster removed. There are some points I have been interested in observing, and one is especially with regard to fractures of the leg in cases where the joint has not been involved. After weeks and months of immobilization the joint is almost always stiff, and it has been perfectly well demonstrated by experimental work, especially by Dr. Phelps, of New York, that prolonged immobilization of the healthy joint did not result in anchylosis except in the case of very old persons or persons markedly rheumatic; that seems to be perfectly well borne out by the cases one sees coming to the out-patient department, and motion slowly comes back in these joints that have been fixed so long by the use of hot water and massage. If the foot has not been put in a proper position at the time of the injury, and is not fixed in the position of a perfect right angle, the strain on the tendo-Achillis is felt at once on beginning to walk, and I am sure that the period of disability is very much prolonged by the slightest droping of the toe. Another point that comes up, is with regard to the swelling and the disturbance of the circulation in these legs that have been so long immobilized. Some years ago I went to Dr. Warren and got the literature there was with regard to it, and found it was a subject on which there had been very little formulated and about which very little was known. Dr. Edward Reynolds and I got some dogs and went to the Medical School for the purpose of doing some experimental work on the subject. The legs of the dogs were broken, but we found it impossible to reproduce the swelling. We immobilized them for long periods, but we could not get reproduction of the swelling. The disturbance of circulation, the coldness and blueness that follow removal of the plaster in some of these compound fractures of the leg and the tremendous swelling and infiltration that follows in some cases is a pretty serious problem. In some of the cases it has not seemed to yield to anything; in other cases it was benefited by massage or hot water and in the majority of cases it wears off slowly. I think the causation of the swelling is a matter about which practically nothing is known. In some cases which have been fixed for months there is comparatively little of it, but it forms a most troublesome and obstinate complication that is to be dealt with in the later stages of these long continued fractures.

Then another point is with regard to the breaking down of the arch that follows the long immobilization of the leg. I fancy it is due to the same set of phenomena that cause the swelling and disturbance of the circulation, but after months of fixation in the plaster bandage and after the stiffness of the ankle has been disposed of, there begins to be felt in a large number of cases, a pain which indicates that the arch of the foot has given way, and one can notice in looking at the foot that it is somewhat pronated and that the weight does not come down through the foot but inside of it. In these cases relief is almost always given by the application of a felt pad to support the arch of the foot, a couple of layers of felt are cut so as to fit into the hollow of the foot and support the arch and are applied outside of the stockings. This seems to be so much the case that in my last service at the out-patient department all cases of fracture, simple and compound, when the splint was removed, were dressed at first with a bandage and felt pad under the foot to support the arch. The results were satisfactory as far as they went. It seemed as if the people regained the power of walking with less discomfort and disability than when they were left to walk directly on the foot. The impressions of these feet carried out this idea that the arch was broken down. A permanent flat-foot had resulted in a certain number of cases of fractures done in previous years where they came to apply for relief from flat-foot.

DR. J. E. GOLDTHWAIT: I fear that what I have to say will be rather out of place in this discussion, as Dr. Mumford has carefully avoided the subject of the direct fixation of the fragments; nevertheless, as the specimens have been prepared and as they have to do with the treatment of compound fractures, it seems to me that I am justified in presenting them. I wish to say, at first, that the suggestions which I have to make, are simply the result of some experimental work, and that as yet they are simply experimental and theoretical, not having been used upon any patient. I would also say, that I do not advocate this line of treatment for every case of compound fracture, but only for those very severe fractures with laceration of the soft parts, in which the immobilization of the fragments in the correct position is so difficult. The class of cases for which the various forms of wire suture have been devised, and also for which Langenbeck, Volkmann and others have devised and used the different osseous splints.

A year ago Dr. Senn, in his address before the American Surgical Association, described a method in which he used ferrules of bone for this purpose, they being slipped on over the ends of the broken bone. The difficulties with this method were the making and fitting the ferrule, and that later on it was necessary to remove this ferrule by a second operation.

With the hope of finding some absorbable substance, that at the same time could be easily and quickly applied, I have been experimenting for some time, and of the various materials used decalcified bone has proved to be the best; and in pieces two or three inches long and one-eighth of an inch square is quite firm enough for the purpose. Several of these pieces can be used, being applied as coaptation splints and these held in place by silkworm-gut ligatures. Another way which accomplishes the same result, is to use a segment of the shaft of a bone about two inches long split longitudinally. This makes a trough into which, after it is decalcified, the fragments of the bone rest, while along the upper surface one of the small decalcified splints, before described, is applied, and the whole held in place by the silkworm-gut ligatures.

All of the material used is absorbable, so that a secondary operation for its removal would not be necessary; the splints do not require much fitting; and they can be prepared and kept for use the same as ligatures, and other surgical supplies.

Dr. Cabot: In regard to the method of fixation of the ends, which was not discussed in the paper but which I think is important, the difficulty has always seemed to me with those complicated methods proposed by Senn and others that they necessitate too extensive an injury of the soft parts. I have always tried to keep the soft parts not separated from the bone, and it seems to me any method which requires for its proper performance a separation of the soft parts from those ends which are going to unite, is in that degree faulty. I am interested in what Dr. Goldthwait has said about using silkworm-gut for tying around these splints. Lately, since I have used the silkworm-gut more and more, I have firmly convinced myself that it is quite strong enough for the ordinary suturing of bone, and I question whether a few silkworm-gut sutures between the fractured ends of the bones, would not accomplish as much fixation as is ordinarily necessary and with a less introduction of foreign material than in any of the more complicated methods.

Dr. Goldthwait: From what little experience I have had, I should quite agree with Dr. Cabot in his hesitating to strip the bones of the soft parts, and also that in the cases in which wire can be used, I should think the silkworm-gut would be sufficient, but there are a certain number of cases in which, as the result of a severe crush or twist, the soft parts are lacerated and torn from the fragments, making it very difficult to maintain the correct apposition. Also the bone at times is so finely comminuted and the edges so ragged that it is difficult to pass a silver-wire or any suture directly through the bone so as to hold them in place. It was for this small class of cases that I suggested this mode of treatment. In exposing the bone to apply the suture, if it is necessary to free any of the soft parts, by all means do not disturb the periosteum. If you notice in the illustrations passed around, the splints raise the sutures so that the intervening space between the splints is free, and no pressure is brought upon the periosteum in these places so that the circulation is not disturbed.

◆

Recent Literature.

A Laboratory Guide in Urinalysis and Toxicology. By R. A. Witthaus, A.M., M.D., Professor of Chemistry and Physics in the Medical Department, University of the City of New York, etc. Third edition. New York: William Wood & Co. 1893.

This book, which has been prepared solely for laboratory use, contains the work which is followed by the junior students in the Medical Department of the University of New York. It is, we presume, primarily intended as an aid to the author's own classes, and is well adapted for that purpose. We can recommend it as a useful laboratory guide. In this edition a system of qualitative analysis not contained in the earlier editions has been added.

Hernia: Its Palliative and Radical Treatment in Adults, Children and Infants. By Thomas H. Manley, A.M., M.D., Visiting Surgeon to Fordham Hospital; Member of New York Academy of Medicine, American Medical Association, New York State and County Associations, International Medical Congress, Pathological Society, National Association of Railway Surgeons, etc. Philadelphia: The Medical Press Co., Limited.

This book presents the subject of hernia, and tries to accord "to each therapeutic resource its due merit, and to strive to indicate the precise limitations of each." In these days we can hardly glance at a journal, but what a new operation for the radical cure of hernia is brought forward. In this state of unrest, it would be difficult to have any book thoroughly up to date. Dr. Manley has succeeded, however, in incorporating in his book most of the recognized operations. The reader is never left in doubt as to the value of a proposed operation, for the author states clearly his belief in the different measures presented. There is at times obscurity in the author's writing; as for instance, on page 13, the following paragraph occurs:

"The change in the pelvic lines, curves and angles, and the transmutation of tissue; the widening lumina of the emunctory canals, in obedience to the incessant, though intermittent movements of their contents, each and all contribute their share towards effecting a symmetry of perfection and the firm closure of the inguinal femoral and umbilical portals."

The binding is fair, the cuts are indifferent, and the printing is bad.

Marinesanitätsordnung. Band I, *am Lande;* Band II, *Beilagen;* Band III, *am Bord.* Berlin: E. S. Mittler & Sohn. 1893.

These three volumes contain the official sanitary regulations, blank forms and other material relating to the Naval and Marine Service of the German Government.

Volume I contains the regulations to be observed in hospitals, stations and all places on shore.

Volume II contains the blank forms which accompany the regulations published in Volume I. They are eighty-five in number, and contain very minute details relating to the management of the hospitals, supplies, food, medicine, baths, heating, lighting, vaccination, and everything relating to the care of the sick.

Volume III contains, first, the regulations pertaining to the care of the sick at sea; and, second, the health regulations of ships, including the ventilation, food-supply, water-supply, clothing, prevention of infectious diseases, poisons and methods of disinfection.

The Year-Book of Treatment for 1894. A Critical Review for Practitioners of Medicine and Surgery. Philadelphia: Lea Brothers & Co. 1894.

This book has been compiled, on the whole, with excellent judgment, and, being in its tenth year, is already well known. It presents to the profession in a convenient form a brief summary of the ways proposed during the year for treating a great variety of diseases. Practitioners will find it a useful book.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, MAY 10, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 WASHINGTON STREET, BOSTON, MASS.

THE BRANDT METHOD OF PELVIC MASSAGE.

IT is rather extraordinary that the author of a method of treatment so peculiar in its character, and intended for the cure of diseases of the female pelvic organs should be a layman. This fact undoubtedly delayed its professional recognition, but now, largely through German physicians who have studied it with Brandt, its claims have become known to the profession at large. These claims are not that his method is a universal remedy for the diseases of women, but that very many of the chronic pathological conditions which are the result of inflammations of the genital tract, and some of the functional disturbances, especially of menstruation, are favorably influenced by this method of treatment. He also claims that displacements of the uterus are permanently cured by the appropriate manipulations, prolapsus uteri of all degrees being no exception to the rule.

There seems no doubt that Brandt can substantiate these claims, and from the reports which a few other operators have made of their results it seems possible for others to accomplish as much.

In estimating the value, however, of any method of treatment, especially one which is recommended for so large a proportion of what may be called minor gynecological affections, two or three considerations must be borne in mind.

In the first place, it must be easy of application and demand no more than the ordinary skill of the average physician. In the second place, it must be as regards expenditure of time and expense on the part of the patient and in permanency of results a marked advance over other methods. And third, it must be free from all objectionable features.

A somewhat careful study of what has been written on the subject forces us to the belief that the method of pelvic massage under discussion does not fulfil any of these prerequisites.

As regards the first, it is conceded even by its warmest advocates that it is well-nigh impossible to so describe the technique in print that a physician can appropriate and make use of it. Personal instruction and long practice seem to be a necessity, and even then so much delicacy of touch and manipulative skill are required that few could become proficient. These facts alone would prevent its widespread application.

As regards the second point, the length of time required, and the permanency of results, two very important factors in comparing it with other methods, we are forced to the conclusion that even in these respects its claims for recognition cannot be substantiated. We think other forms of treatment would accomplish equally good results in a shorter time. Dr. Matilda Wallin, who for three years was Brandt's pupil and assistant, in a late communication on this subject before the Philadelphia County Medical Society, describes the method in considerable detail, and refers to a case of complete prolapsus uteri, which she saw treated. The patient came to Brandt the 29th of June; on the 9th of September she was well. Who will doubt that with appropriate operative treatment the patient would have got well sooner? Much more would this be true of the numerous minor ailments.

The third point mentioned raises a question which must, it seems to us, suggest itself when this method of treatment is advocated, namely, the effect of this more or less prolonged manipulation of the vagina upon nervous and excitable women. In our opinion it cannot fail to be prejudicial, and in so far nullify any good effect that the massage would otherwise have.

The objections, therefore, which we would feel are valid against the widespread adoption of this method of treatment, are that it is complicated, slower in its action, and not surer in its results than other methods, and has possible objectionable features.

At the same time, we confess that in a modified form and as an adjunct to other modes of treatment, massage is valuable in pelvic disease. It is not the principle, but the elaborate system which seeks too wide a field and attempts too much that we object to. Any method which claims as much as this does must lie within the possibilities of at least all specialists. As it is, its practice will certainly be confined to the favored few who can enjoy special training, and who will make a sub-specialty of it.

◆

TREATMENT OF DIPHTHERIA BY FREQUENT SMALL DOSES OF BINIODIDE OF MERCURY.

PIÉDALLU[1] claims extraordinary success in treating diphtheria by small doses of biniodide of mercury. He has employed this remedy since early in 1891 in very many cases, to the exclusion of the usual local treatment, and without a single death. His formula is as follows:

R. Syrup	1000.00	
Iodide of potassium	50.00	
Biniodide of mercury	0.50	M.

The dose of this syrup for a young child is a teaspoonful every two hours. The dose would be about one-thirtieth of a grain of the biniodide and about three grains of iodide of potassium. This may seem to the uninitiated rather large dosing, but Piédallu affirms that to obtain the really specific local and constitutional effects of these drugs (a share in which certainly belongs to the iodide of potassium), really heroic doses are required. He has given as much as 300 grammes of this syrup in the course of a week to children from four to six years old. At the end of several hours, eliminated by the mucous membranes, that is to say, the signs of iodism appear: coryza, salivation, etc., and the spittle flows from the child's mouth; then the dose is diminished, enough being still given to keep up the effect. The object of the treatment, in the words of the writer, is "to maintain in the mouth and pharynx a permanent antiseptic gargarism." He advises in case the false membranes are loose, to detach them gently with a spoon-handle, then to touch the denuded surface with a swab dipped in bichloride solution, 1 to 1,000; this may be done two or three times a day.

---

[1] Bull. et Mém. de la Soc. de Thérapeutique, April 6, 1894.

Piédallu remarks that it is not until the end of forty-eight hours that this treatment shows its curative effect. The false membranes no longer spread, but begin to fall off in a pultaceous mass. In certain rebellious cases, the amelioration does not show itself until the fourth or fifth day, but the remedy must be continued fearlessly, and in doses proportioned to the gravity of the malady.

This treatment is very well borne by children, and is very exceptionally attended with colic, vomiting, or stomatitis. It is well to conjoin with it a rigorous milk diet to ensure activity of the renal function, but when the child desires to eat, light food may be allowed.

Piédallu urges the profession to try this method which he says has given him uninterrupted success for three years. He claims that the mercury and iodide of potassium in being eliminated by the mucous membranes of the upper respiratory passages, constantly oppose their antiseptic action to the specific bacilli, and thus make their habitat unpropitious. Certainly, this kind of treatment is more easily carried out than the local treatment by spraying, irrigation and swabbing.

It will be remembered that when pilocarpine was first recommended for internal treatment in diphtheria, some such action as that above described was claimed for it, but the result of treatment by pilocarpine and by jaborandi was only failure and disappointment.

At the meeting of the Therapeutical Society, there was some discussion of the above mentioned mode of treatment. One of the speakers (Barbier) said that experiments made in Germany and Switzerland demonstrated the bactericidal value of biniodide of mercury and iodide of potassium. As these drugs are eliminated by the mucous membranes, the formula of M. Piédallu appeared to be rational. M. Crequy thought the doses rather large for children, but Guelpa affirmed that children support mercury better than adults. Others expressed their desire to test the treatment indicated by M. Piédallu, but affirmed their disbelief that any really specific treatment of diphtheria had yet been found.

◆

SCALING THE APPROPRIATION FOR THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE.

The appropriation for the Library of the Surgeon-General's Office at Washington has been cut down in the House of Representatives from $10,000 to $7,000. An effort will be made to have the amount restored to the old figure in the Senate. The petty economies practised by Congress in this and similar matters are as exasperating as are the gross extravagances in other directions where it is supposed votes may be made.

Remonstrances against the action of the House are making themselves heard from many parts of the country. The following resolutions adopted by the Academy of Medicine of Cincinnati express a very general feeling in the Medical Profession:

Whereas, the Library of the Surgeon-General's Office in Washington is of the greatest importance to medical education and to the medical profession throughout the entire country, it is for the public good that it should receive the liberal support of the Government;

Resolved, That the Academy of Medicine desire to enter their earnest protest against the reduction of the appropriation for its annual support from $10,000 to $7,000;

Resolved, That the Academy of Medicine urge most strongly the restoration of the former annual appropriation of $10,000, under which it has become one of the largest and best appointed medical libraries in the world, and without which its continued growth would be seriously crippled.

A similar memorial to the United States Senate is being circulated and receiving representative signatures among the profession in Boston and its neighborhood. With $7,000 it is impossible to procure even all the current literature.

◆

MEDICAL NOTES.

Cremations in France. — There were one thousand and five cremations in France during the first three months of the present year, which is one-third more than a year ago.

Professor Rubner to succeed Hirsch. — Professor Rubner has been chosen to succeed the late Professor August Hirsch in the Chair of the History of Medicine in the University of Berlin.

A Bequest to the Elizabeth Hospital. — The sum of $25,000 has been given to the Elizabeth, New Jersey, Hospital by some one in New York who formerly lived in Elizabeth, on condition that his name shall not be made public.

Billroth's Successor. — Dr. Victor Ritter von Hacker, head of the Second Surgical Clinic at Vienna, has been unanimously recommended by the Professorial College to succeed the late Professor Billroth in the Chair of Surgery in the University of Vienna.

PROFESSOR THOMA. — Dr. Richard Thoma, professor of pathology at the University Jurjew, Dorpat, has moved to Magdeburg to take charge of the general hospital in that city. On his departure from Dorpat he was escorted to the station by his colleagues and a large company of students.

ACQUA DI PERUGIA. — The preparation of that charming old poison known as *Acqua di Perugia* was not so difficult or mysterious as has been supposed. It can easily be made, according to a recent writer, by killing a pig, cutting it up, and salting it down with arsenic. After being cooked the gravy from such a dish is even more fatal a poison than the unserrified metal.

A POPULAR SURGICAL CONSULTANT. — Professor von Bergmann, of Berlin, was recently called to Nikolajew to amputate the foot of an eighty-two-year-old millionaire. It became rumored in the town that the great surgeon would also see other patients in consultation during his short stay, and the crowd of carriages about the door of his hotel became so great that the police were obliged to keep a squad of men on duty to keep the approach from being blocked.

A FATAL LUNCHEON. — The *Lancet* reports the following almost incredible luncheon eaten by an English lad of fifteen years: thirty oranges, an entire cocoanut, cider, a mince-pie, mineral-water champagne, tea, cake and lemonade. Immediately after this feast the boy died of cerebral apoplexy; and the *Lancet* remarks, "altogether the narrative is a melancholy and humiliating reminder that pleasure, above all things, can only be enjoyed in moderation and is poisonous in excess."

THE FATALITY OF SUCCESS. — The *Calcutta Medical Reporter* relates a curious instance of the fatal effects of "continuous performances" with poisonous drugs. A fakir at a fair was accustomed to attract spectators by eating shavings, glass, soap and such dainty dishes, and at last added matches to his diet. As trade was dull at first, he did himself no harm; but his popularity increasing, he was obliged to give some thirty performances a day, and in the glow of his success he died of phosphorus-poisoning.

ADMISSION REQUIREMENTS TO ILLINOIS MEDICAL COLLEGES. — The Illinois State Board of Health has revised the regulations concerning admission to medical schools in that State by depriving the various faculties of the control of entrance examinations in elementary studies, and requiring in place of such examination, a certificate of graduation from a college, a high school, or a certificate from a second-grade teacher. Entrance examination must indeed have been lax when so generous a change raises the standard.

ONE DIFFICULTY IN THE WAY OF AN INTERNATIONAL MEDICAL LANGUAGE. — In a recent discussion at the New York Academy of Medicine upon the possibility of adopting Greek as an international language for scientific purposes, Dr Roosa said that if we were to have an international language, it could only be by a revolution of teaching methods, and he despaired of such a revolution because the hide-bound notions of college professors were simply beyond any ordinary assault. For a man from New York to talk to men from Cambridge or New Haven as to ways of teaching would be very much as if he should go to the tomb of the Prophet with his boots on.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, May 9, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 36, scarlet fever 38, measles 31, typhoid fever 13. There were no new cases of small-pox, nor any deaths, during the week. There are now 9 cases of small-pox in the hospital. During the week the State Board of Health received reports of the following cases of small-pox: Natick 1, Worcester 2.

AN AGED PAIR OF TWINS. — There are living in Peterboro, N. H., two maiden sisters who claim, with not improbable justice, to be the oldest twins in the country, as they are over eighty-three years old.

HARVARD MEDICAL SCHOOL. — The course of evening lectures to graduates ended with the lecture given on Wednesday, May 2d. A similar course will be announced for the winter of 1894–5.

A MEDICAL MAGAZINE AT YALE. — A new medical journal will be published next month by the students of the Yale Medical School. It is proposed to have contributions from physicians in Connecticut and New York in addition to work of the students.

THE MASSACHUSETTS STATE BOARD OF HEALTH AND THE PREVENTION OF CONSUMPTION. — The Massachusetts State Board of Health has issued an extended circular on the prevention of consumption in which it suggests that much good might be done if local boards of health would issue a simple notice like the following:

> "Consumption is the most destructive disease of New England, the number of persons dying annually from this cause in Massachusetts amounting to nearly six thousand.
>
> "The disease is infectious, and can be communicated from one person to another. The chief danger exists in the expectoration of the sick, and if this expectoration is carefully destroyed little danger need be feared.
>
> "Consumptives should be instructed not to spit upon the floors of rooms, public halls, street and railway cars, and other vehicles, nor in the streets, but into pieces of cloth, or receptacles made for the purpose, containing water, or a saturated solution of carbolic acid (one part of carbolic acid crystals to about fifteen parts of water). Such bits of cloth should be destroyed by fire, before the sputa becomes dry, and other receptacles should be cleansed with scalding water, their contents having been destroyed or otherwise carefully disposed of. Handkerchiefs which may have been used from necessity should be boiled half an hour before washing.
>
> "A healthy person should not sleep in the same room with a consumptive.
>
> "Remember that sputa must never be allowed to become dry."

BOSTON CITY HOSPITAL HOUSE-OFFICERS. — Under the present new regulations of the Boston City Hospital, graduates in medicine of less than three years' standing as well as undergraduates who have completed three full years of study are eligible as candidates for appointment as house-officers.

Norfolk District Medical Society. — At the annual meeting of the Norfolk District Medical Society held May 8th, the following officers were elected for the coming year: President, D. D. Gilbert, Dorchester. Vice-President, Robert T. Edes, Jamaica Plain. Secretary and Librarian, James C. D. Pigeon, Roxbury. Treasurer, Edw. G. Morse, Roxbury. Commissioner of Trials, Benjamin E. Cotting, Roxbury. Nominating Councillor, O. F. Rogers, Dorchester. Censors, B. S. Blanchard, Brookline; D. G. Eldredge, Dorchester; H. M. Cutts, Brookline; E. B. Lane, Dorchester; C. W. Sparhawk, West Roxbury.

Connecticut River Valley Medical Association. — At the Annual Meeting of the Connecticut River Valley Medical Association, held at Bellows Falls, Vt., May 1st, the following officers were elected for the ensuing year: President, Dr. W. L. Havens, Chester, Vt.; Vice-President, Dr. D. Goodenow, Alstead, N. H.; Treasurer, Dr. E. R. Campbell, Bellows Falls, Vt.; Secretary, Dr. J. Sutcliffe Hill, Bellows Falls, Vt. Delegates to American Medical Association, Drs. Holton, Campbell, Ray, Richardson, Pettengill, Havens, Gleason, Dinsmoor, Prouty and Hill. Delegates to State Societies, Dr. Taylor, to Vermont; Dr. Miner, to New Hampshire; Dr. Staples, to Massachusetts; Dr. Page, to Connecticut.

NEW YORK.

Report on the Bacteriological Diagnosis of Diphtheria. — At a meeting of the Board of Health held May 1st, Dr. H. M. Biggs submitted a report on the bacteriological examination of 286 cases reported as membranous croup, made within the past ten months. 229 of these were proved to be true diphtheria by the existence of the Klebs-Lœffler bacillus; or about 80 per cent. Six per cent. of the remaining cases were of doubtful character, and the other 14 per cent. were clearly not true diphtheria. The result of his investigations led Dr. Biggs to recommend that so-called membranous croup should be included by the Board of Health in the list of contagious diseases.

The Death of a Cholera Quarantine Nurse. — On May 1st there died at Bellevue Hospital a woman whose heroic devotion to duty under the most trying circumstances deserves to be held in remembrance. This was Miss Juliet Henshaw, a professional trained nurse, who was the first one to volunteer in response to the call of Health Officer Jenkins for nurses for the cholera patients on Swinburne Island in the summer of 1892. The number of nurses was very small, but she was so indefatigable in her work of caring for the sick that the percentage of mortality was remarkably low. She won the intense admiration of the physicians in charge by her self-sacrifice and skill; and when her health began to suffer from the strain upon her she was urged to give up her position. She insisted, however, upon remaining at the post of duty until the disease disappeared. After the cholera outbreak Dr. Jenkins kept her in his employ, and she remained in the service until the latter part of April, when she became seriously ill. She was then transferred to Bellevue Hospital. During the attack from which she suffered the symptoms strongly resembled those of typhus fever, but the autopsy showed that the cause of death was acute yellow atrophy of the liver.

The "Craig" State Colony for Epileptics.— The Governor has signed the bill introduced into the Legislature by Hamilton Fish, providing for the establishment of a State Colony for Epileptics, which passed the Assembly by a vote of 96 to 4, and the Senate unanimously. The colony is to be known as the Craig Colony, "in honor of the late Oscar Craig, of Rochester, whose efficient and gratuitous public services in behalf of epileptics and other dependent unfortunates the State desires to commemorate." The statute provides for the purchase by the State of the property heretofore owned by the Shakers, situated near Mount Morris, Livingston County. It includes 1,800 acres of land in one of the finest locations of the Genesee Valley, and the soil is well adapted for farming and horticultural purposes. The supply of water is abundant, the property being divided into two parts by the Cashauqua Creek, which flows through the land in a deep gorge, with a fall of one hundred feet, affording a perfect natural barrier for the separation of the sexes. The Shakers have erected upon the property two groups of buildings, valued at $75,000, suited to all the purposes of the contemplated colony, which, with slight alterations, will accommodate at least three hundred patients. Indigent epileptics will be received and cared for by the State, but the colony is expected, when fully established, to be nearly self-supporting. There are now more than six hundred epileptics in the poor-houses and almshouses throughout the State.

Miscellany.

THE EFFECT OF ETHER AND CHLOROFORM ON THE KIDNEYS.[1]

Wunderlich, after the examination of the urine in 125 cases, before and after anæsthesia, draws the following conclusions as to the effect of ether and chloroform narcosis on the kidneys:

(1) An already existing albuminuria is often increased by etherization. No such case in which chloroform was given was observed.

(2) Albuminuria can be caused by narcotization with chloroform and ether, more often with chloroform, the relative frequency with which it occurs after the use of chloroform and ether being 11.5 to 6.9.

(3) As a result of the use of chloroform, casts may appear in the urine. This is less frequent after the use of ether. The relation of frequency is 34.8 to 24.6.

(4) When casts are already present, both anæsthetics have the effect of increasing the number.

---

[1] Beiträge zur Klin. Chirurgie, Bd. xi, Ht. 2, 1894; Annals of Surgery, May, 1894.

INFANTRY FOOTWEAR.

In spite of all the changes in the tactics of modern warfare, the greater use of artillery in mass and at long range, and the more facile means of transportation of troops, one of the most important elements in the success of an army, and perhaps the prime factor in determining its real value, is the marching power of its infantry, whether for long distance or quick strategic movements. In maintaining this superiority, the chief reliance must be placed, not on the strength, courage or rations of the men, but on the condition of their feet; not on the character of their patriotism, but of their boots. Napoleon appreciated this, and hanged a contractor who stuffed the soles of his shoes; and Wellington is said to have enumerated the three most essential articles of a soldier's equipment as, first, a pair of good shoes; second, another pair of good shoes; third, a pair of half-soles.

Lieut. N. P. Phister of the First United States Infantry calls attention to the general neglect of this important matter[1] in our army. During his observations he has marched about two thousand miles, and has "seen about five per cent. of a regiment of three hundred men disabled for hard marching by sore feet, in a march of ninety miles over good roads, going at the rate of about twelve miles a day; and as a contrast, one company of the eight went through without a sore foot in the entire company, simply because the captain had looked carefully to his men's shoes, and had each man prepared with well-broken, well-greased shoes of proper size. It was not required that the men of this company should wear the issued shoes, but no shoe might be worn without the captain's approval."

The five essentials, each of equal importance for infantry footwear, to give increased efficiency in marching power are: (1) Protection from wear; (2) freedom of action for the foot; (3) lightness; (4) flexibility of the shoe; (5) fit. The first requirement is at present about the only one regarded, and that in a manner which is false economy, and is closely related to the other requirements of freedom for the foot and flexibility. Mere thickness of the leather is no criterion of its wearing power if the skin has no pliability or is poorly tanned.

"Cold-tanned oak sole-leather of proper thickness, and well rolled, to make it compact, is pliable and tough, and, while it costs about one-third more, is well worth the difference." As the middle layer of the tanned hide is fibrous, it cannot be dressed, shaved or pressed to a permanently smooth surface, or one which will wear well, and therefore a piece of leather which has been split or skived down to a required thickness has been so treated at the expense of one of its wearing surfaces, and will not retain dressing, rapidly absorbs moisture, hardens and stiffens till it breaks. "Our soldiers have for years worn shoes from leather of this kind, fuzzy and cloth-like in appearance. The soldiers call them boiler-iron shoes, and they deserve the name."

As regards lightness, there is room for much improvement. The cavalry gives careful consideration to the weight of the horse-shoe. The weight given by experts as proper for a full set of shoes for a cavalry horse of medium size is forty-eight ounces. A pair of soldier's shoes, No. 8, of the latest infantry pattern, weighs forty ounces.

Far more care should be given to individual fit of the shoes. A foot is a foot, and a shoe a shoe — is not a reasonable, wise principle for the quartermaster's department to follow, and a shoe well made from the best material and fitted to the foot is a good economy, even if it cost more — $4, instead of $1.89, as at present.

"A cobbler's wagon is a necessity not always provided for. No forge, forge-wagon or battery is more so. Some arrangements for mending the shoes of the soldiers during campaign should always be made. A soldier can and frequently does fight in his shirt-sleeves and bare-headed, nor is his military efficiency impaired by a canvas patch on his trousers; but if his shoes give out or his feet get sore he will not be on hand to fight at all."

---

[1] Journal of the Military Service Institution, May, 1894.

Correspondence.

PROPOSED LEGISLATION FOR THE BETTER PROTECTION OF THE COMMUNITY AGAINST QUACKERY.

NEWBURYPORT, May 5, 1894.

MR. EDITOR: — The bill[1] which has recently passed the Massachusetts Senate and will soon come before the Lower House is meeting with favor wherever the importance is recognized of any legislative interference with quackery in its manifold forms. It is a bill which will not offend the extremist advocate of the *laissez faire* doctrine of governmental function, because it does not oppose the right of individuals to employ Christian scientists, faith-curers, magnetic healers, clairvoyants, etc. (see Section II), if they wish, nor does it prevent the quack from responding to the demands of those who have faith in his methods; it simply takes from the latter — unless he has been in practice at least three years — his right to usurp a name and a title which he has not earned by long and laborious study and suitable experience. This bill recognizes the fact that the degree of M.D. cannot be assumed at will by individuals, but belongs to the graduates of legally chartered medical colleges and universities, having power to confer degrees given them by the Commonwealth, or to such as pass the examination of the Board appointed under this bill. It forbids individuals from advertising themselves as physicians and surgeons, using the letters M.D., or title of doctor ("meaning thereby doctor of medicine"), until they have been duly registered, the qualification of registration being the possession of a diploma from a legally chartered medical school, or in default of this, the passing of an examination before a Board appointed by the governor.

The proposed bill cannot be regarded as a bill to suppress quackery, however it may have been misrepresented by its enemies, who say that it is at least "an entering wedge." The suppression of quackery by legislation is something that has never been accomplished since the world began. Considering the fate of previous attempts in this State to obtain medical legislation, it is not probable that for some time any more stringent bill will pass the Committee-room.

Such legislation should always be regarded as primarily and especially intended for the protection of the people, not for the principal benefit of medical men. The Supreme Courts of several States have declared that laws regulating the practice of medicine and surgery are constitutional and valid, being for the promotion of the safety and well being of the community. This decision not only has been rendered by the Supreme Courts of Minnesota, Illinois and New York when confronted by test cases, but the Supreme Court of the United States has affirmed the right of State Boards of Health and State Governments to make rules for the regulation of the practice of medicine.

---

[1] Boston Medical and Surgcal Journal April 26, 1894, page 26.

It is true that many of our foremost physicians look with indifference if not with positive disfavor upon all such laws; chiefly for the reason that it seems to be impossible to obtain such legislation unless physicians demand it and work to obtain it. There is this hardship, that physicians cannot ask for such legislation for the benefit of the public without seeming to ask for it from a mere selfish motive. It has always, moreover, been the case that in States and countries where stringent laws regulating the practice of medicine have existed, physicians have been obliged to enforce them, often at the cost of much opprobrium and pecuniary sacrifice, or else the laws have been a dead letter on the statute book. This is the reason why many excellent men in the profession are indifferent; they acknowledge that such legislation would be just and may even be demanded, but they do not desire to be placed in the attitude of seeming to make requests for legislative enactments to benefit themselves. "If," they rightly say, "the medical profession cannot stand on its own merits, it has no claim whatever even to ordinary respect." They recognize the fact that one part of their duty is to protect the people from quackery, but they deprecate doing this by methods which will certainly lead to a misinterpretation of motive.

A writer in the *Medical Record*, disgusted with the working of the law in New York, has well emphasized this point of view: "Practically speaking," he says, "the people are not prepared to appreciate our motives, and will never be till they are sufficiently educated to draw the line between quackery and legitimate medicine. [Alas, if we must fold our hands until then, we shall have to wait until their spiritual leaders cease to give certificates endorsing quackery!] When that time comes, there will be no difficulty in having suitable laws passed, and the people will themselves take the proper steps to punish any offenders. [In such a time there will be few quacks to punish, culture soil will be unpropitious.] If we must legislate at all, let it be in the direction of improving ourselves. There is a great deal that may be done in this direction. Our college regulations can be made more stringent, our standard of preliminary requirements raised, our terms of study extended, and, in fact, the whole system of medical education can be elevated. By limiting our efforts to such reforms we can at least prevent quacks and incompetent persons from coming into our ranks, and this will be a benefit and a blessing to society." E. P. H.

◆

THE PRODUCTION OF VACCINE VIRUS.

Roxbury, May 5, 1894.

Mr. Editor: — Permit me to say a few words in regard to the Report under the above heading in last week's Journal. As I supply a large number of the physicians and cities throughout the country with vaccine, the matter is of importance to me. The committee making the report did not come to me, nor visit my vaccine establishment, and the first intimation I had of any such committee was when I heard their report read at the Norfolk District Society. I was brought up from boyhood, by my father, in a most careful training and course of study regarding the whole subject of vaccination, and can fairly claim a very different familiarity with the whole matter than any of the other persons referred to in the report. The "Martin Establishment" referred to, was the old establishment at Brookline, which my brother carried on until his death. The committee obtained their information there from a former employee of my brother, who was not a physician.

Neither my father nor myself would ever countenance anything but the most scrupulous care in every detail in the management of vaccine production, and the reputation our virus has enjoyed uninterruptedly for twenty-five years, shows what that care has been. Moreover, the propagation of vaccine virus by any one but a thoroughly educated regular physician is bound to lead to trouble and disaster — to the patients, at any rate, if not to the producers.

I must ask the profession to in no way confound my establishment with those mentioned in the report.

Very truly yours, Francis C. Martin, M.D.

METEOROLOGICAL RECORD,

For the week ending April 28th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S..22	29.82	52	60	45	96	78	87	E.	S.E.	5	5	O.	C.	.07
M..23	29.92	54	62	47	88	63	76	S.E.	S.W.	5	7	F.	C.	
T..24	29.92	51	56	46	78	89	84	N.E.	N.W.	11	7	F.	R.	.04
W .25	30.10	52	63	41	72	54	63	N.E.	S.W.	12	8	C.	C.	.13
T..26	30.05	59	72	46	41	32	36	W.	W.	8	9	C.	C.	
F..27	29.98	66	79	52	47	58	52	W.	S.W.	12	13	C.	C.	
S..28	29.90	65	75	55	44	60	52	W.	N.	10	9	F.	R.	0.03
☞	29.97		67	47			64							.25

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, April 28, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Measles.
New York	1,891,306	781	309	16.12	17.03	1.82	8.19	1.95
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,115,562	408	122	11.50	13.50	1.75	3.75	1.25
Brooklyn	978,394	416	156	13.08	21.84	.70	4.80	3.36
St. Louis	560,000	—	—	—	—	—	—	—
Boston	487,397	232	69	10.08	20.16	1.26	4.62	—
Baltimore	500,000	—	—	—	—	—	—	—
Washington	308,431	120	39	9.13	14.11	.83	4.98	—
Cincinnati	305,000	108	31	17.48	25.00	2.76	11.96	—
Cleveland	290,000	103	50	8.73	16.49	.97	4.85	.97
Pittsburg	263,709	89	36	11.20	16.80	1.12	2.24	2.24
Milwaukee	250,000	67	31	12.32	20.72	2.98	2.98	1.48
Nashville	87,754	30	12	6.66	6.66	—	—	—
Charleston	65,165	29	14	10.35	6.90	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	96,217	16	4	6.25	6.25	—	6.25	—
Fall River	87,411	—	—	—	—	—	—	—
Lowell	87,191	23	6	13.05	13.05	—	4.35	—
Cambridge	77,100	27	9	22.20	18.50	7.40	—	—
Lynn	62,656	12	2	25.00	8.33	—	—	—
Springfield	48,684	23	6	4.35	13.05	4.35	—	—
Lawrence	48,355	—	—	—	—	—	—	—
New Bedford	45,886	25	12	8.00	16.00	—	—	—
Holyoke	41,278	—	—	—	—	—	—	—
Salem	32,233	12	4	6.25	6.25	—	—	—
Brockton	32,140	7	2	14.28	42.84	—	14.28	—
Haverhill	31,396	10	3	—	20.00	—	—	—
Chelsea	30,264	—	—	—	—	—	—	—
Malden	29,394	6	1	—	16.66	—	—	—
Newton	27,556	11	1	9.09	9.09	—	9.09	—
Fitchburg	27,146	2	0	—	—	—	—	—
Taunton	26,972	7	3	14.28	14.28	—	—	—
Gloucester	26,688	—	—	—	—	—	—	—
Waltham	22,058	3	2	—	33.33	—	—	—
Quincy	19,642	—	—	—	—	—	—	—
Pittsfield	18,802	4	1	—	25.00	—	—	—
Everett	16,585	2	1	—	—	—	—	—
Northampton	16,331	2	0	—	50.00	—	—	—
Newburyport	14,073	5	2	—	—	—	—	—
Amesbury	10,920	5	1	—	20.00	—	—	—

Deaths reported 2,611; under five years of age 937; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 335, acute lung diseases 451, consumption 312, diphtheria and croup 141, diarrhœal diseases 42, measles 38, scarlet fever 33, typhoid fever 23, whooping-cough 22, erysipelas 13, cerebro-spinal meningitis 12, small-pox 9, malarial fever 2.

From scarlet fever New York 10, Brooklyn 8, Philadelphia 6, Boston and Pittsburgh 2 each, Cincinnati, Nashville, Lowell, Cambridge and New Bedford 1 each. From typhoid fever Philadelphia 6, Boston 4, Washington, Cincinnati and Milwaukee 2 each, New York, Brooklyn, Nashville, Lowell, Lynn, New Bedford and Taunton 1 each. From whooping-cough New York 6, Philadelphia and Pittsburgh 3 each, Boston and Cambridge 2 each, Washington, Milwaukee, Charleston and Lynn 1 each. From erysipelas New York 7, Philadelphia 3, Brooklyn, Boston and Milwaukee 1 each. From cerebro-spinal meningitis New York 4, Cleveland and Somerville 2 each, Philadelphia, Washington, Lynn and Salem 1 each. From small-pox New York and Brooklyn 4 each, Boston 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending April 14th, the death-rate was 19.3. Deaths reported 3,877: acute diseases of the respiratory organs (London) 304, whooping-cough 142, measles 87, diphtheria 72, scarlet fever 50, diarrhœa 38, fever 33, small-pox (Birmingham 3, West Ham 2, Portsmouth 1) 6.

The death-rates ranged from 11.6 in Huddersfield to 31.9 in Wolverhampton; Birmingham 21.8, Bradford 17.9, Croydon 12.6, Halifax 17.4, Leeds 16.2, Liverpool 24.7, London 19.3, Manchester 22.8, Nottingham 18.4, Portsmouth 15.6, Sheffield 18.6.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 28, 1894, TO MAY 4, 1894.

Leave of absence for two months, to take effect on or about May 1, 1894, with permission to go beyond sea, is granted **MAJOR CALVIN DEWITT**, surgeon.

CAPTAIN C. N. BERKELEY MACAULEY, assistant surgeon, is relieved from duty at the U. S. Military Academy, West Point, New York, and ordered to duty at Fort Wingate, New Mexico, relieving **MAJOR WASHINGTON MATTHEWS**, surgeon, who, on being thus relieved, will repair to Washington, D. C., and report in person to the surgeon-general for temporary duty in his office.

So much of paragraph 13, S. O. 79, A. G. O., April 3, 1894, as assigns **MAJOR PETER J. A. CLEARY**, surgeon, to duty at Fort Wingate, New Mexico, is revoked.

Leave of absence for two months, on surgeon's certificate of disability, to take effect when his services can be spared, with permission to leave the Department of the Colorado, is granted **CAPTAIN EDWARD EVERTS**, assistant surgeon.

ASSOCIATION OF AMERICAN PHYSICIANS, AND CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

The ninth annual meeting of the Association of American Physicians will be held in connection with the third Congress of American Physicians and Surgeons at Washington, D. C., May 29, 30 and 31, and June 1, 1894.

The Association will hold its meetings in Hall No. 2, Columbian University, corner of Fifteenth and H Streets. The sessions of the Association will be held in the morning, between the hours of ten and one, and those of the Congress will be held in the afternoon, between the hours of two and six.

The following is the programme of the meetings of the Association:

Tuesday. – 1. "President's Address." Reginald H. Fitz, Boston. 2. General Business, Reports, etc. 3. "The Treatment of Certain Symptoms of Croupous Pneumonia, particularly in Adults." Beverly Robinson, New York. 4. "A Treatment of Typhoid Fever." Samuel A. Fisk, Denver. 5. "Six Cases of Traumatic Headache." C. F. Folsom, Boston. 6. "Clinical Report of Two Cases of Raynaud's Disease." Frederick P. Henry, Philadelphia. 7. "Dr. S. C. Martin's Researches on the Bacteria of Vaccine." Harold C. Ernst, Boston.

Wednesday. – 8. "Modification, Temporary and Permanent, of Physiological Characters of Bacteria in Mixed Cultures." Theobald Smith, Washington. 9. "The Effect of Various Metals on the Growth of Pathogenic Bacteria." Meade Bolton, Baltimore. 10. "Note on the Observation of Malarial Organisms in Connection with Typhoid Fever." W. Gilman Thompson, New York. 11. "Experiments in Artificial Melanosis." George Dock, Ann Arbor. 12. "Stomatitis Neurotica." A. Jacobi, New York. 13. "Tetany in America." J. P. Crozer Griffith, Philadelphia.

Thursday. – 14. "Lead Palsy in Children." Wharton Sinkler, Philadelphia. 15. "A Study of the Temperature in Cerebral Apoplexy." Charles L. Dana, New York. 16. "The Mild Character and Diminished Prevalence of Syphilis and the Infrequency of Visceral Syphilis." John H. Muzzer, Philadelphia. 17. "Some Remarks on the Significance of Albumin and Casts, especially in those past Middle Life." Frederick C. Shattuck, Boston. 18. "Experimental Phthisis in the Rabbit with Formation of Cavities: A Demonstration." T. M. Prudden, New York. 19. "A Report of the Ultimate Results Obtained on Experimental Eye Tuberculosis by Tuberculin Treatment and Anti-Tubercular Inoculation." E. L. Trudeau, Saranac Lake.

Friday. – 20. "Some of the Chemical and Bacteriological Characteristics of Milk." Thomas M. Rotch, Boston. 21. "The Chemical Products of the Anærobic Putrefaction of Pancreatic and Hepatic Tissues, and their Effects upon the Tests for Morphia." Victor C. Vaughan, Ann Arbor. 22. "Gastro Enteric Rheumatism." H. M. Lyman, Chicago. 23. "A Case of Osteomalacia." George Dock, Ann Arbor. 24. "A Case of Mitral Stenosis, with great Hypertrophy of the Right Ventricle: Death from Hæmoptysis." A. McPhedran, Toronto. 25. "A Case of Calculous Pyelitis with Invasion by the Bacillus Lactis Ærogenes." J. H. Musser, Philadelphia. 26. Concluding Business.

The following subjects will be considered by the Congress: "Morphology as a Factor in the Study of Disease." "Sewer Gas." "The Distribution and Control of Leprosy in the United States." "Nephritis in its Surgical Aspects." "The Conservative Surgery of the Female Pelvic Organs." "The Surgery of the Accessary Sinuses of the Nose." "The Influence of Infectious Processes on the Nervous System."

On *Wednesday* there will be a Dinner to the guests of the Congress at the Arlington Hotel; and on *Thursday Evening* Dr. Alfred L. Loomis, President of the Congress, will deliver an Address on "The Influence of Animal Experimentation on Medical Science," which will be followed by a Reception.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. – A regular meeting of the Society will be held at the Massachusetts Institute of Technology, Walker Building, corner of Clarendon Street, on Monday evening, May 14th, at quarter past eight o'clock, precisely.

Dr. W. M. Conant will read a paper on "College Athletics." The discussion will be opened by Dr. H. P. Walcott, President Eliot, General Walker, Mayor Bancroft and Dr. W. A. Brooks.

Physicians interested in the subject are cordially invited to be present.

JOHN T. BOWEN, M.D., *Secretary.*

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. – The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, May 16th, at 8 o'clock.

Papers: Dr. H. C. Vickery, "Fatal Vomiting without Discoverable Cause."

Dr. J. Bergen Ogden, "Three Cases of Chronic Bright's Disease of Different Types."

F. C. SHATTUCK, M.D., *Chairman.*
HENRY JACKSON, M.D., *Secretary.*

TWENTY-FIRST NATIONAL CONFERENCE OF CHARITIES AND CORRECTION will be held at Nashville, Tenn., beginning May 23d and closing Monday, May 28th.

The membership of the Conference includes members of State Boards of Charities, delegates from Charity Organization societies, officers of public and private charitable and correctional institutions, official delegates appointed by the Governors of States, and all other persons directly or indirectly connected with charitable work. All persons included under this general description are invited to attend the Conference, and the boards in charge of charitable or correctional institutions, public or private, are invited to send delegates.

The Conference is non-sectarian and non-political, and its aims are purely scientific and philanthropic.

L. C. STORRS, *President*, Lansing, Mich.
A. O. WRIGHT, *Secretary*, Madison, Wis.
JOHN M. GLENN, *Treasurer*, Baltimore, Md.

RECENT DEATHS.

DR. JULES ARNOLD, Professor of Hygiene in the Faculty of Medicine at Lille and one of the Army Medical Inspectors of France, died recently, aged sixty-three years. He was an army surgeon during the Crimean War and in 1862 was professor of military hygiene at Val de Grâce.

BOOKS AND PAMPHLETS RECEIVED.

The Therapeutic Uses of the Salts of Cesium and Rubidium. By Theodore W. Schaefer, M.D., of Kansas City, Mo. Reprint. 1894.

Proceedings of the Inaugural Meeting of the Medical Association of India held at Calcutta on February 21, 1894. Reprint. 1894.

Further Remarks on the Occurrence of a Form of Non-Albuminous Nephritis other than Typical Fibroid Kidney. By D. D. Stewart, M.D. Reprint. 1894.

The Medical Annual and Practitioners' Index; a Work of Reference for Medical Practitioners. Twelfth year. Bristol: John Wright & Co. 1894.

Thirty-third Annual Report of the Cincinnati Hospital to the Mayor of Cincinnati for the Fiscal Year ending December 31, 1893. Frank W. Hendley, M.D., Superintendent. Cincinnati. 1894.

Traitement des Rétrécissements par l'électrolyse linéaire. Par le Dr. J. A. Forb, Ancien Interne des Hôpiteaux, Professeur libre d'anatomie à l'Ecole Pratique de la Faculté de Médecine de Paris. Paris: G. Masson. 1894.

Address.

ANNUAL ADDRESS

Delivered at the Opening of the Twenty-fourth Annual Meeting of the Medical Society of the State of California, April, 1894.[1]

BY C. G. KENYON, M.D., PRESIDENT, SAN FRANCISCO, CAL.

Ladies and Gentlemen, Members of the Medical Society of the State of California: — The Architect of the Universe has, with lavish hand, bestowed his benefits upon our State and upon the various sections of the State that we severally represent. We have a soil which, under the touch of the husbandman and the influence of an unequalled and varied climate, brings forth in abundance the fruits and products alike of the temperate and of the tropical zone. And where, in all the broad domain of our sunny California, do we find a section more richly blest than this Santa Clara Valley, enclosed about with mountain side, bedecked throughout its entire length and breadth with happy homes, and in its centre seated the beautiful Garden City, lovely San José, famed throughout our State for its wealth, its culture, and its learning? Our profession is ably represented in this hall by a large delegation of the resident physicians, who have ever kept abreast with the general onward march of the times, no feature of which is more marked than the great strides taken by our science in the triumphal procession.

Surrounded as I am by so many who have become eminent in our profession, I can hardly flatter myself that many here expect to learn anything new from a president's annual address, and it is more than probable that if any did their expectation would be disappointed. But an annual address is a time-honored custom, and it seems to me that its office is less to impart information than to give public expression to, and, perhaps, to afford opportunity for, more general discussion of ideas, which, no doubt, have often suggested themselves to many individual members. I propose to mention briefly a few matters, which, I think, concern the good and the welfare of our Society, claiming for myself no merit as an original discoverer, and leaving it to this convention to determine for itself to what extent, if any, the suggestions now presented are acceptable to the majority of its members.

It is quite the fashion, in addresses by medical men, for the speaker to lament, in a pessimistic mood, the deplorable lack of higher education and general professional attainments in the profession in our own country, as compared with the standard in other older, and, especially, European countries. To these jeremiads I desire to offer my humble protest. While my voice will always be uplifted in favor of the best type of manhood, and the highest standard of attainments, as pre-necessary qualifications for those who would assume the honorable title of M.D., yet I am pleased to call your attention to the general activity and earnestness displayed by the profession within the influence of this Society, and I venture the assertion that, striking a general average of the profession in California, no body of men can be found under the sun better informed and more capable as a whole than we have here. In proof of this assertion, I refer you to the high standard adopted by our medical schools, the vast amount of medical literature, local and foreign, received and supported by our profession; the prevalent custom among our young men to go abroad to further qualify themselves, in wider fields, for professional work; and the general activity exhibited in our local and State organizations.

That this Society is an important, and may be made to become a more important, factor in maintaining this standard of excellence, is a statement which I need hardly make here. Your presence as members of this organization, many of you coming great distances from your homes to attend this convention, testifies to your appreciation of the fact. This being so, is it not well that we should consider whether by any, and if by any, by what means we may best extend and widen this Society's sphere of acknowledged usefulness? I propose to offer for your consideration some changes in the constitution and by-laws of this Society, with the end in view of increasing our membership, our working capacity, and our power of advancement of the profession within this State.

We are pleased to call this organization "The Medical Society of the State of California," a very high-sounding and comprehensive title. But when we consider the fact that out of 2,700 licensed practitioners of regular medicine in the State our membership consists of some 360 only, it becomes apparent how short we fall of fulfilling the high and important mission which our title, and our objects as declared in our constitution, would indicate.

As I have before intimated, we may assume, without argument, that membership in this Society is beneficial to the members and to the advancement of our science. It becomes, then, our duty to consider the proper and best course to pursue to extend those benefits to the utmost limits. That we have been only partly successful under our present plan of organization, is too patent to require discussion. Having given this matter much thought and consideration, I desire to bring before you some suggestions, which, if they are found worthy of your approval, will, I believe, increase our membership and extend our field of usefulness.

[These suggestions included a recommendation of a reduction of annual dues, the abolition of enforced continuous membership in the local society, and the establishment of a quarterly bulletin, containing such information and contributions as the Committee on Publication might deem most worthy of space.]

Overcrowding in the Profession. — As before stated, in this State we have about 2,700 practitioners of medicine and surgery, graduates of regular medicine and licentiates of its Board of Examiners, without counting several hundred licentiates of homœopathy and eclecticism. This vast number has as a field of labor a State with a population of 1,500,000, which by a simple process of division shows one doctor to every 500 of population. To say that our profession is overcrowded expresses a fact too patent to admit of discussion. As an equal distribution leaves only this small ratio for a clientele, what must be the portion left to some of the profession, when we find leading physicians who enjoy the patronage of thousands? The obvious tendency of this overcrowding, it is to be feared, is to lower the standard of professional conduct among regularly educated and licensed practitioners.

We have also to consider, in addition to this unpleasant picture of a small army of medical men striving for existence in a limited field, a host of quacks of various kinds and degrees, who, like the camp-followers that hung about Sherman's army on its famous "march to the sea," are ever on the alert to pick up choice bits of forage and sustenance that should fall to the lot of the regular soldier, whose mess must suffer to the extent of the irregular depredations. Here we have a somewhat homely, but, I think, pertinent illustration of the situation.

---

[1] The following extracts from Dr. Kenyon's Address are from advance sheets of the Occidental Medical Times.

But it is easier to depict this unfortunate condition of affairs than to recommend measures of adequate relief. The following suggestions, however, seem to me to be appropriate: We should no longer hold out to intending students of medicine alluring pictures of the excellence of this State as a field for practice. Until the time comes, if ever, when there shall be a more reasonable proportion between practitioners and patients, it is bound to be a question of the survival of the fittest, and meanwhile, only moderate encouragement should be given to students, and to those only who, by more than average ability, and by a high degree of preliminary education, give promise that at the end of their course of medical study they will come into the field fully equipped and qualified to engage in what, at best, must be a struggle for existence.

Again, it is well known that medical men cannot go from this to other countries on the American continent or in Europe and assume the practice of medicine until after a strict examination there, and the securing of a certificate in accordance with the laws of the government under which they may choose to settle. We, however, with that excess of liberality found only in this land of refuge for all people, and of the refuse of many, the "Heathen Chinee" not excepted, receive all comers with open arms, welcome them to share our meagre loaf, and our people patronize them to the exclusion, frequently, of those to the manor born, and at least equally qualified by natural ability and education. The halo of mystery and greatness which hovers about a foreign doctor seems to have a peculiar fascination for the American mind, and our imported frater is not always too modest to use this peculiar bent for all the advantage it may bring him.

Hospital Clinics and Free Dispensaries. — The influence of hospitals, dispensaries, college clinics, etc., upon the general practice, has been considerably discussed of late. That the increase of such institutions is having a marked effect upon the field of labor of the general practitioner, especially in metropolitan centres, needs no argument. That the best service in all branches of practice is freely given in the several free dispensaries or clinics in San Francisco, while the excellent hospitals offer to the afflicted at small cost, a haven where capital operations are performed daily by skilled operators under the advantageous surroundings of the most modern methods, and that the tendency of all this is to diminish the field for work for the less favored who constitute the larger portion of the profession, is also an accepted fact.

The young man entering the profession, however well fitted by thorough training, supplemented by hospital experience in the best institutions in the world, finds but a limited scope for his talents, if he be not one of the fortunate few holding positions in public or private institutions that bring to them abundance of material for the exercise of their acquired skill. He must content himself with sitting patiently in his office, waiting for business that is long in coming or that may never come. The claim that suffering humanity alone should be considered in a question like this — that better service can be rendered in hospitals under aseptic conditions — is no doubt to a certain extent just, and the general practitioner, recognizing this and frequently ready to sacrifice his own interests to that of his patient, is often quite ready to recommend a sufferer to the hospital. He even goes there himself, and, with his hands in his pockets, or behind him (as a precaution against the conveyance of germs from his polluted person) watches his more fortunate brother, made clean by aseptic ablutions and bedecked in a clean apron, do his work. Then he goes away filled with a satisfying consciousness of having served his patient well, but with an empty pocketbook and a lack of that practical experience which properly belongs to him. He is little benefited even by observing the operation; it is one that he has probably seen and taken part in many times before.

The practice thus outlined may be best for humanity, but it results in making experts of one class, while the great mass of medical men are dropping into mediocrity and losing the incentive to improve their acquired ability for lack of opportunity to exercise it. In the rapid growth of this dispensary system, our medical men are themselves the most active agents. I speak only of dispensaries under the management of regular practitioners, such as college clinics, dispensaries, etc., under the auspices of colleges or associations, conducted in the name of charity, sweet charity, under whose banner skilled services, medical and surgical, are free as water. Various means of advertising, all strictly legitimate, are resorted to to encourage the afflicted to seek professional aid in these free centres of practice, while around the corner — many corners — are seated in their offices well-skilled medical men waiting in vain for their fair share of business, which, if an equal division could be made, would leave them a clientele of less than 600.

If all who availed themselves of this gratuitous system of service were really entitled to it, there would be less cause for complaint, but it is well known that many who can well afford to employ a general practitioner, now resort to these institutions whose real object is, or should be, to dispense medical and surgical aid to the poor and needy.

It is well, occasionally, to get down from the high plane from which this subject is frequently treated. Medical men are prone to soar to a high level. We speak of our remuneration as an "honorarium," yet after all we are only a class of bread-winners in common with others of our fellow-beings — an honorable class — striving to earn a livelihood by the pursuit of our profession. The practice of medicine is our business; and most of us are, or ought to be, supporting and educating families out of the legitimate financial proceeds of our business. If we could all become suddenly alive to this important fact, and could at once proceed like a band of brothers to a fair and equitable distribution of work and its proceeds, then, indeed, should we see a medical millennium; but this is, of course, a chimera. No medical body, much less an individual, is likely to change the trend of current events. Some good, however, may be attained by directing our attention, for a moment, to these problems, and to their bearing upon the welfare of the medical world.

Fœticide. — Fœticide, infanticide, and methods of preventing pregnancy, are subjects tabooed in polite society, and even in a body of medical men, they generally receive little or no attention. The evil, however, is becoming one of such magnitude, so far reaching in its effects, that I feel it encumbent upon me, as the temporary exponent of this Society, to give free and bold expression to the abhorrence in which all reputable practitioners must hold the various methods of prevention of child-bearing, and the very frequent procurement of abortions, as tending to deteriorate the moral tone of society, debauch public sentiment and shake the foundations of society — the domestic relation, the home. That regular medical men and women, such as constitute my hearers, do not participate in these disreputable practices, is a position I desire in the strongest manner possible to maintain, but that in the popular mind we escape the odium attached to them, is, unfortunately, not susceptible of proof. It is too true that the upright regular practitioner shares with the charlatan or advertising quack whatever popular opprobrium these nefarious secret practices receive. With the great public a "doctor" is a doctor. Reputable medical men and women who indignantly dismiss a patient who applies to them for such a purpose, are frequently met with the remark, "Why, I thought all doctors did it." And so the few cases which are brought to public notice through the death of the unfortunate woman at the hands of some scoundrel man or woman, calling himself or herself "doctor," bring odium on our profession, and usually without remonstrance on our part.

It is high time the regular profession should take a stand and clear its skirts of the opprobrium. It is our duty, both by precept and practice, to establish the fact in the minds of the public that we have no sympathy with criminal business, or with the criminals who practise it. When that point is attained we may reasonably hope for some abatement of the evil. It is a lamentable fact that a large proportion of the male population believes that this nefarious business is practised by almost all medical men, and while that popular impression prevails juries will not convict, even in flagrant cases. It has been demonstrated in recent trials in San Francisco that a man who has openly practised a criminal business for many years, who drags his unfortunate victim from his own infamous den and places her upon a car to die a few hours later in transportation, may go scot free.

The public prints are frequently filled with the nauseating details of some of these cases; many, we know, are hushed up, while the culprits are left unmolested to continue their unlawful practices. One solitary conviction stands out in bold relief, and this, in the present perverted state of public sentiment, seems somewhat of a shock. "Why should not this man have gone free when everybody is doing it?" asks many a good citizen; and, in fact, it is doubtful whether the conviction in that case was as much a mark of the jury's disapprobation of the crime committed on the living body as it was of its horror of the barbarous mutilation of the senseless corpse.

The prevention of these unlawful practices is ultimately a matter for the people and for the courts. The present law seems inadequate, and public sentiment does not seem to be strong enough to devise proper remedies. Does it not behoove us, therefore, to do what we may towards stemming this tide of immorality? The regular profession should take no unequivocal ground, but should, in season and out of season, contend against the continuance of these practices, and strive to educate the people to a higher plane of morality. If we do not do so, the fair escutcheon of our time-honored profession will continue to suffer the opprobrium brought upon it by the practices of a disreputable class with whom we have no connection by sympathy or association.

It should be the duty of the physician not only to frown down these practices, but also to use the greatest care, lest by a word or hint he carelessly direct an applicant for criminal relief to one of these dens of infamy. It will not do to say to an unfortunate suppliant that such and such persons have the reputation of doing these things; we cannot afford to become even indirectly agents, or "steerers," if I may use the term, for these people, simply as an easy method of getting rid of an undesirable patron. No; the proper thing to do is to answer these deluded women in a manner short and sharp, "We have nothing to do with such cases, and do not know of any one who practises criminal business."

The statutes in reference to evidence in cases of criminal abortion should be modified, so that evidence of the only other witness to the crime beside the operator might be available to prove guilt.

Embalming. — The disposition of the bodies of the dead, owing to the growing sentiment in favor of cremation, occupies a prominent place in the minds of the medical profession. For sanitary reasons, the profession is almost a unit in favor of incineration. One objection to this plan for disposing of the dead, however, from a medico-legal point of view, is that by it all evidence of the cause of death disappears, if we may be allowed to use the expression, in smoke.

While speaking on this point, it is pertinent to refer to a custom which is becoming established among undertakers, and which should be stopped. I refer to the injection of the body immediately after death with embalming or preservative fluids, a proceeding in this climate wholly unnecessary. It is a trick that is being too successfully worked by undertakers, for their own profit, on the friends of the deceased. Thoughts of economy, much less of parsimony, seldom enter the minds of the grief-stricken family, and so when the shrewd undertaker, with thoughts of his coming bill, suggests, "Of course you wish the body embalmed?" the answer is rarely in the negative. But I refer to the matter for the more important reason that the corpse, after being subjected to this so-called embalming process, is saturated with mineral poison, obliterating every evidence of crime, if any exists. I recommend that the Committee on Legislation endeavor to have a law passed prohibiting the use of any embalming process until after permission has been granted by a coroner or other proper officer.

The Code of Ethics of the American Medical Association. — The Code of Medical Ethics adopted by the American Medical Association and by the Medical Society of the State of California has been the Magna Charta of the profession throughout the United States for many years, and has seemed ample for the purpose for which it was designed — the regulation of the conduct of members of the profession. However, the development of specialties and the overweening desire of some of the leading medical men in New York City to enlarge the scope of their practice has of late caused a departure from some of our long-established principles, and the adoption of a modified Code in the State of New York.

At a recent meeting of the American Medical Association a committee was appointed to revise the Code, and the matter will undoubtedly be brought up at the meeting to be held this year in San Francisco. I do not propose to attempt to influence the action of members of this Society in this matter, but I urge you all to study the Code thoroughly, and if, after mature reflection, that Code, which has stood the test of time, meets your approbation, I would be glad to see the profession in California loyal to its tenets. The medical profession in the United States has done well under the present Code of Ethics; its history is one upon which we can reflect with pride. Under this Code, ample scope has been allowed for the progressive members to make brilliant records by the introduction of new methods in the practice of medicine and surgery, which have redounded to the credit of the medical world.

Quarantine and Cholera. — At the time of the twenty-third annual meeting of this Society in 1893, Asiatic cholera threatened to invade England and the United States. That we were not visited by the dreaded scourge is due to the enlightened and efficient measures adopted to arrest it; and although infected ships arrived off New York, the barriers proved effectual. The loss of human life, not to speak of the damage to the business interests of the country which an epidemic of Asiatic cholera would have caused, cannot be measured. Such an invasion would have demoralized all traffic, have paralyzed our commerce, and have proved the utter ruin of the great Columbian Exposition. The success attending the measures adopted to avert this disaster is the highest testimony to the efficacy and value of modern sanitary science.

◆

Lecture.

URINARY DIAGNOSIS.[1]

BY EDWARD S. WOOD, M.D.,
Professor of Chemistry, Harvard Medical School.

LECTURE I.

I DO not expect to do full justice to the subject of "Urinary Diagnosis" in the two hours that are allotted to these lectures; but I will endeavor to condense the material in such a way as to include most of the important changes which occur in the urine and which are of diagnostic importance.

In the early history of medicine we learn that the urine was examined for diagnostic purposes, and this examination was of assistance in the diagnosis and prognosis and in deciding as to the treatment of different diseases. It so happens that I have in my possession a work that was published more than three centuries ago, which is devoted entirely to the examination of the urine. In more recent times, after the chemical composition of the urine became better understood, and yet before the microscope was fully developed, certain changes were detected in the chemical composition of the urine, which were considered of so much importance that they received a special name, and these names were generally used as indicating certain diseases. They are still in use to-day. I refer to the terms albuminuria, glycosuria, hæmaturia, oxaluria, and cystinuria; these all have a distinct meaning, and the changes which they represent are of very great importance. Their use is continued at the present time, as it should be, but their meaning is very properly so restricted as to indicate simply a symptom, possibly of many different pathological conditions. A great many of us in the present generation can remember very distinctly the time when the terms albuminuria and Bright's disease of the kidney were considered synonymous. Of course, we all now know that the term albuminuria means simply the presence of albumin in the urine, and that it may occur in a great many diseases. The term is by no means synonymous with Bright's disease, and in the majority of cases of albuminuria there is no organic disease of the kidney. The study of this symptom — albuminuria — I shall defer until later when we consider the character of the urine in the various kidney diseases.

Glycosuria, which used to be considered as synonymous with diabetes mellitus, means simply the presence of grape sugar in the urine. We now know that there are other conditions which are characterized by the presence of grape sugar in the urine. It is of very great importance to be able to distinguish, from the examination of the urine, between cases of diabetes and cases of simple glycosuria. In order to do that, we must take into consideration several other important diagnostic features. One is, as to whether the grape sugar is present in the urine permanently or temporarily. In diabetes, if the patient remains untreated, grape sugar is present in the urine in considerable quantity and for a long time, whereas, in glycosuria due to other causes, the sugar is present in the urine, usually, in small quantity and temporarily. The general character of the urine in diabetes I need only allude to. The daily quantity is large; in extreme cases from six to eight quarts in twenty-four hours. It is of pale color, high specific gravity, and contains a large amount of grape sugar, varying from two or two and one-half to nine or ten per cent. of the total weight of urine, so that a patient suffering from regular diabetes may eliminate two or three pounds of grape sugar in twenty-four hours. But, you will observe in studying the urine in many cases of diabetes, that there are two distinct classes of cases, in both of which the daily quantity of urine and of sugar may be very large, but if the urine passed at different times of day be examined separately, it will be found that in some cases nearly all of the sugar eliminated is contained in the urine passed after eating, while the fasting urine contains but a very small percentage of sugar; whereas, in other cases, there is but little if any difference in the percentage of sugar in the urine secreted at these two different times. Clinically, these two kinds of cases are quite distinct. Those cases in which the fasting urine contains about as large a percentage of sugar as the after-meal urine, generally resist all treatment, pursue a fairly rapid course, and terminate fatally in a comparatively short period of time. Whereas, those cases in which the fasting urine contains but a very small percentage of sugar, the patient may be so much relieved by treatment that the grape sugar may disappear from the urine entirely, although he may have had glycosuria for several years. Cases of temporary glycosuria are of comparatively little consequence from a diagnostic point of view, since the glycosuria is secondary to some disease, the nature of which is generally easily recognized, as in some cases of apoplexy, head injuries, etc. In these cases the quantity of urine is not increased as much as in either of the forms of diabetes.

---

[1] Evening Lecture delivered at the Harvard Medical School, February 21, 1894.

The term hæmaturia, which has been in use for many years, indicates, as its name implies, the presence of blood in the urine. In recent years, however, this term has been subdivided according as the urine contains *all* of the constituents of the blood, both globules and serum, hæmaturia, or only the coloring matter, hæmoglobinuria. The distinction between these two conditions is, that in hæmaturia, which is due to hæmorrhage from some portion of the kidneys or urinary passages, we find upon examination of the urine more or less of the blood pigment, partly decomposed or not, in solution in the urine, and, upon microscopical examination of the sediment, we see a large number of blood corpuscles, so that we have all of the elements of blood present in the urine. In cases of hæmoglobinuria, on the other hand, we find only blood pigment in the urine. The blood pigment is set free from the red corpuscles within the blood-vessels and not in the urinary passages, and it is simply eliminated from the blood by the kidneys. Upon microscopic examination of the urinary sediment, in cases of hæmoglobinuria, we do not see any blood corpuscles in the sediment, and we have, therefore, only the coloring matter of the blood in the urine without the blood corpuscles. Hæmaturia means simply hæmorrhage from the urinary or genito-urinary passages, while hæmoglobinuria means blood pigment in the urine and it is a symptom of a disease of the blood and not of the kidneys or urinary passages.

Oxaluria is a term which signifies the presence of calcic oxalate in the urine and this condition is sometimes of diagnostic importance. It is detected by seeing the calcic oxalate crystals in the sediment upon microscopic examination. This means that oxalic acid has been formed in the economy, or that it has been taken into the economy with some article of food or drink. Its importance depends entirely upon the quantity which appears in the urine and upon its permanency. No doubt all of us have occasionally a temporary oxaluria due to some article of food or drink, which contains oxalic acid. The drug rhubarb, as well as the garden rhubarb, will impart a certain amount of oxalic acid to the economy. If calcic oxalate is found in considerable quantity in the urine, we are pretty sure, also, to find evidence in the sediment, of the local action of the sharp calcic oxalate crystals upon the lining membrane of the renal tubules. They scratch more or less, and cause mechanical irritation of the kidneys, the evidence of which may be detected in the sediment together with a number of the crystals. If the oxaluria is long continued, there is always danger that a mass of the crystals may become aggregated together with fibrin or mucus, and form an oxalate concretion. You all know how serious are the effects produced by the so-called mulberry calculus, which is composed of calcic oxalate; its rough surface produces so much inflammation and hæmorrhage that the mulberry calculus is almost invariably dark brown or black in color owing to the decomposed blood pigment which is present in its structure.

Chyluria is one of the old terms which comes more nearly meaning a disease than most of the other terms applied to certain changes in the composition of the urine. The term chyluria means simply the presence of chyle in the urine. That can only occur in case there is some connection between the lymphatics and the urinary passages, and, we know now, that the disease of the lymphatics is caused by the presence in them of a parasite, the filaria sanguinis hominis. Chylous urine is a milky-looking urine, which contains fat in so finely divided a form that it never separates, if the urine is prevented from decomposing. The fat neither settles as a sediment, nor rises to the surface to form a film. In many cases of chyluria we may have this peculiar appearance present in the urine only at certain times of day, or it may be present for a period of several weeks and then disappear, only to recur again at some later period. This specimen of chylous urine, which I have here, was passed by one of the medical students, a native of Cuba, and when perfectly fresh was hermetically sealed in this test-tube, which has not been turned upside down since the urine was placed in it in 1876. Yet, as you see, the milky appearance is as evident in the upper as in the lower layers of the fluid. The fat is so finely divided that it cannot be detected by examination even with the highest powers of the microscope in the shape of oil globules. This fact enables us to distinguish readily between chylous urine and urine to which milk has been added. Milk is sometimes added to the urine by hysterical patients for the purpose of deception. If the urine contains milk a drop of the milky fluid examined under the microscope is seen to contain the oil globules of the milk. Another means of distinguishing these two conditions, is to shake a little of the milky urine in a test-tube with ether. When chylous urine is shaken with ether the fat is readily dissolved by the ether, and when the ether separates from the urine, it is seen that the latter fluid has lost its milky appearance. Ether will not separate the fat from urine to which milk has been added.

Cystinuria. The diagnosis of cystinuria is made only by recognizing on microscopic examination the peculiar crystals of cystin. These crystals are colorless, hexagonal plates, readily soluble in ammonia and the mineral acids, but insoluble in acetic acid. It contains a very large percentage of sulphur 26 per cent., and is probably due to some faulty metabolism by which the sulphur derived from the albuminoids is eliminated in the form of cystin instead of in the form of taurine of the bile. The recognition of cystin is of importance only as enabling us to distinguish between that form of urinary deposit and others in cases of urinary concretions, in the examination of the urine for diagnostic purposes.

Alkaptonuria. This is another condition of the urine which has received a special name, and I did not intend to mention it all, since I did not consider it of sufficient importance on account of its great rarity. It is so rare that I have never seen a specimen until the present week. This condition of the urine is of greater importance to the life insurance examiner than to the general practitioner, on account of the danger of mistaking a case of alkaptonuria for one of diabetes mellitus. The so-called alkapton, which the urine contains in this condition, may be one of several substances which are powerful reducing agents when in alkaline solution, so that such a urine responds to some of the tests for a diabetic urine, particularly the Heller and Trommer tests, and the test with Fehling's solution. A urine containing alkapton is usually normal in color when passed, but after exposure to the air it becomes dark brown in color like that of a carbolic acid urine.

The quantity in the twenty-four hours is apt to be diminished rather than increased. If rendered alkaline with sodic hydrate and shaken in a test-tube, it absorbs the oxygen from the air in the upper part of the tube, and becomes dark brown in color, rapidly as you see, and at the same time it creates a partial vacuum in the test-tube, so that if the tube be inverted under water, an amount of water equivalent to the volume of oxygen absorbed will be sucked into the test-tube. Some specimens will absorb as much as four-fifths of their volume of oxygen. A urine containing alkapton may be readily distinguished from one containing grape sugar by the following properties: it becomes dark brown in color slowly on exposure to the air and very rapidly if rendered alkaline with sodic or potassic hydrate. It does not react to the fermentation test as does diabetic urine. A person whose urine contains alkapton may enjoy perfectly good health, so that such specimens are only seen in those who present themselves to the life insurance examiner, and those who enter a hospital or consult a physician for some disease entirely unconnected with the condition which causes the alkaptonuria.

In the examination of the urine for diagnostic purposes, of the utmost importance is the quantity of urine that is passed in twenty-four hours. It is absolutely essential in making a differential diagnosis between certain forms of kidney disease, and it is also of very great importance to know exactly the quantity of urine that is passed in many other cases than in organic diseases of the kidney. Let me here say that it is never wise to rely upon the statement of the patient in regard to the quantity of urine passed. You will very frequently be told that he or she is passing no more than usual, whereas, they may be passing from two and one-half to three and one-half quarts in the twenty-four hours. You may be told by the patient that he is passing a much larger quantity than usual, and upon measuring it you will find that he is passing a much smaller amount than normal. In all cases where the examination of the urine is essential in making a diagnosis of kidney or other disease, it is in a vast majority of cases essential that the twenty-four hour quantity should be accurately known. In some cases, it is also necessary to know the relative quantity passed in the day and in the night. Recent observations have shown that in one of the most important forms of Bright's disease, the quantity of urine that is passed in the night time far exceeds that which is passed during the day.

The diagnosis very often depends upon knowing not merely the twenty-four hour quantity of urine, but, also, upon knowing how much work the system has been doing, and how much work the kidneys are capable of doing. But the only estimations which are really necessary, in the vast majority of cases, are the estimation of the quantity of urine and the estimation of the principal organic normal solid, urea, which is the final product of the metabolism of the nitrogenous elements of the body. This estimation of the urea is an exceedingly simple matter. I have found this little apparatus of Dr. Squibb's to be by far the simplest and most satisfactory. A full description of the method of performing the operation is given upon the papers that come with the apparatus, and the whole process requires but a few minutes, so that the quantitative estimation of urea is not nearly as difficult as it used to be. The importance of the estimation of the twenty-four hour quantity of urine is very great; for instance, we have some general diseases which are characterized by a permanent and large increase in the daily quantity of urine. The most common of these are the two forms of diabetes, diabetes mellitus and diabetes insipidus. There is no trouble in making a diagnosis of the former disease, as we have a large quantity of urine with a very high specific gravity due to the presence of grape sugar. But there is difficulty in making a diagnosis of diabetes insipidus, because we have so many other conditions in which the urine has practically the same characteristics, namely, — urine passed in very large quantity in twenty-four hours and of very low specific gravity. In diabetes insipidus where the symptoms resemble very much those of diabetes mellitus, loss of flesh and the wasting of the tissues, the urine is passed in large quantity and of low specific gravity, although if the normal solid matters be estimated, we will find the twenty-four hour quantity increased. The daily amount of urine is from 3,000 to 3,500 c. c. or more, and we will find the urea running up to eighty or ninety, or even one hundred, grammes in twenty-four hours, the normal amount being from 25 to 35 grammes, thus showing a very large increase. The daily quantity of chlorine also reaches from twenty to thirty grammes instead of the normal of nine or ten grammes. Urine of similar general character, large quantity and low specific gravity, we may find in health, and, also, in many nervous affections existing temporarily, but in these cases the twenty-four hour quantity of solid matters will not be increased, but may be diminished.

A small quantity of urine habitually is of less importance from a diagnostic point of view than a large quantity. We are all familiar with most of the existing diseases that are characterized by a small quantity of urine. Some persons in health pass habitually very small quantities of urine, much smaller than they should, so that instead of eliminating 1,500 c. c. (three pints) as they should, the quantity is frequently diminished to 900 or 1,000 c. c. (about two pints) in twenty-four hours, and the specific gravity reaches 1,030 instead of 1,021. This condition, if long continued, may cause irritation of the kidneys. The most common diseases, characterized by an abnormally small quantity of urine, are acute diseases. It is rarely necessary to resort to an examination of the urine in the ordinary febrile cases, but there are some in which the testing of the urine is of a good deal of importance. Those are the acute diseases attended with an exudation, as pneumonia, peritonitis, etc. In these diseases, when the effusion is increasing, the chlorine steadily diminishes from the urine until it may entirely disappear, and it reappears with the beginning of the absorption of the exuded fluid; so that in a pneumonia we can determine the exact time at which the absorption of the exudation from the lung tissue begins more accurately by the reappearance of chlorine in the urine than we can by the physical examination. In peritonitis, in addition to the absence of chlorine, the small quantity and the concentration of the urine, we find an enormous increase of the indoxyl. These peculiarities are naturally of greater importance to the urinary examiner, who does not see the patient, than to the visiting physician who does. Therefore, it is often of value to me in order to enable me to distinguish between one kind of fever and another. From a case in which the quantity of urine is habitually below normal, we can, of course, eliminate at once any disease which is characterized by a constant abnormal increase.

There is one other condition, so far as the quantity is concerned, which I wish to mention briefly, called anuria. That condition is where there is almost no urine passed. Under this head are included those cases in which only three or four ounces are secreted during two or three days, and I have known almost total suppression of urine to last for a longer time, so that only a few ounces may be eliminated in the course of two weeks. We find that condition of almost total suppression of urine in many diseases toward death, in which case, of course, its existence is of really no diagnostic importance. We sometimes see it in cases of acute nephritis, where only a few ounces may be secreted in twenty-four hours. In the last case of severe acute nephritis which I saw, only four ounces of black urine were passed in forty-eight hours.

Where there is an obstruction to the flow of urine through the urinary passages, we may have a condition resembling anuria. This may occur in some surgical cases, as for instance, where there is a tight urethral stricture. There is another condition which is called obstructive suppression, of which I have seen, perhaps, half-a-dozen cases. These are due to the compression of the urinary passages above the urethra so as to permit of only a comparatively small quantity of urine passing into the bladder. A very remarkable case of this kind was reported a few years since by Dr. J. W. Farlow,[2] in which compression of both ureters was caused by a malignant growth of both Fallopian tubes, and in that way the calibre of both ureters was so much constricted as to be at times completely occluded. At one time a period of twelve days elapsed without any urine being secreted. Obstruction of the ureters by calculi is, perhaps, the most common cause of obstructive suppression. As a general rule, the urine of obstructive suppression is characterized by being passed in small quantities, of very pale color, and very low specific gravity, and you may or may not find evidence of kidney disease by the microscopical examination of the sediment.

◆

Original Articles.

THE ACTION OF RATTLESNAKE VENOM UPON THE BACTERICIDAL POWER OF THE BLOOD SERUM.[1]

BY CHARLES B. EWING, M.D.,
Medical Department, United States Army.

An apology would be necessary for introducing a subject of this character, on the present occasion, if it were not that the loss of life from poisonous reptiles has become so great that it calls forth the best effort of not only the military surgeon but of medical men generally, to lessen it.

The mortality in India alone reaches the alarming figure of 20,000 persons annually, hence it was not a strange coincidence that it should have fallen to the lot of the British Medical Service, lead by Dr., now Sir, Joseph Fayrer, to perform the pioneer work in that part of the globe.

While much has been written upon this subject in general; very little has been said or done in the special line to which this paper relates.

At Professor Welch's suggestion we conducted a series of experiments in the pathological laboratory of the Johns Hopkins University during the spring of 1893, having for their purpose the determination of the action of rattlesnake venom upon the bactericidal power of the blood.

Dr. Welch's attention was directed to the investigation of this subject by Dr. Weir Mitchell. Drs. Mitchell and Reichert demonstrated that the poisonous properties of rattlesnake venom depend upon the presence of proteid substances. These investigators were the first to demonstrate the existence of the so-called toxic albumins.

In their monograph on the subject, as well as from previous observations, it was apparent that the animals killed by rattlesnake venom decomposed with great rapidity, indeed with such rapidity, that Dr. Formad, who contributed an appendix upon the pathological anatomy of animals dead of rattlesnake venom, believed that there was evidence of the spontaneous generation of bacteria.

Dr. Formad thought it impossible for the bacteria to make their way into the circulation and multiply so quickly. This seemed so improbable to Professor Welch that he suggested to Dr. Weir Mitchell the importance of having this point worked up. Dr. Mitchell kindly gave us a certain amount of poison. We were, however, fortunate enough to obtain a live rattlesnake of the diamond species, known as the *Crotalus Adamanteus*, from which fresh venom was obtained and used in preference to the dried poison supplied us.

It will not be out of place to recall briefly that the order *Ophidia*, of the sub-class *Reptilia*, is divided into three sub-divisions: (1) the *Ophidii Colubriformes*, or innocuous snakes; (2) the *Ophidii Colubriformes Venenosi* or poisonous colubrine snakes; (3) the *Ophidii Viperformes*, or viperine snakes, poisonous.

To the last sub-division, viperine snakes, belong the *Crotilidæ*, or rattlesnakes, called by Fayrer "pit-viper," being distinguished from the *Viperidæ* or vipers proper, by possessing a pit or depression between the eye and the nostrils in the loreal region; a triangular broad head and thick body of variable length.

The crotalus is distributed widely over the globe, and all are terrestrial except in India, where quite a number of genera are arboreal; these, however, lack all semblance to the horny scales or rings at the tip of the tail, known as the "rattle," except in the species called *Halys*, where the tail terminates in merely a rudimentary horny spine.

It is of interest to note that the Indian crotolidiæ are not so venomous as their American congeners, though Asia has a very deadly species known as the *Calloselasma Rhodostoma*, resident in Java and Siam; while South America is represented by the well-known *Jararacca* or *Craspedocephalus Braziliensis*. Australia and Africa likewise contain ophidians of this class but they are little known.

The crotolidiæ of the United States are represented by ten species and three sub-species, all being equally poisonous, so far as we now know. Of these the *Adamanteus* has three sub-species, one of them, the ***Adamanteus*** proper, found in this country, extending from North Carolina to Florida; a second, the *Atrox*, resident in the Indian Territory and Texas, also throughout that stretch of country extending to Sonora and southern and lower California; and a third called *Scultulatus*, known only to Arizona.

---

[1] From the proceedings of the Washington meeting of military surgeons.

[2] Boston Medical and Surgical Journal, April 4, 1889.

We had in view in the first place to test the question as to whether the blood of animals killed by rattlesnake-poison had lost any of its germicidal power.

We used Dr. Weir Mitchell's noose for securing the snake and with a sterilized saucer thrust into the mouth of the animal, we collected the venom. In this way we had no difficulty in getting from 0.5 to 1 c. c. of nearly clear, slightly straw-colored fluid, quite sufficient for our purposes. This was diluted with an equal quantity of sterilized physiological salt solution, and 0.25 to 0.5 c. c. of this mixture was inoculated subcutaneously under antiseptic precautions, the dose varying according to the time we wished the animal to live. This was usually from one-half to one hour and a half, but in one or two cases, three hours after the injection.

The injections were in all cases given subcutaneously, sometimes beneath the skin of the abdomen and at other times in the groin. The lesions differed somewhat according to the site of injection. When made beneath the skin of the abdomen, there were most extensive peritoneal hæmorrhages, whereas, when the injections were made in the thigh, these lesions were less extensive, although not absent; here the most striking effect noted beside the deeply discolored integument surrounding the point of injection, were the underlying hæmorrhages into the muscles.

The important lesions were these: most extensive hæmorrhage, with disintegration of tissue and actual necrosis of tissue, for a wide distance around the point of inoculation, with ecchymosis in other parts of the body, particularly in the serous membranes. Another point which served our purpose admirably, was that the blood does not coagulate after death or coagulates only feebly and after a long interval. We therefore had no difficulty in collecting a sufficient amount of the fluid blood, and we did so by withdrawing the blood in less than a minute after the animal breathed its last. We exposed the heart at once, and with sterilized instruments made an incision in the right auricle, and with a sterilized pipette we aspirated from the right heart; and then passing the pipette down into the abdominal vena-cava, we secured sometimes as much as seven or eight cubic centimetres of blood. This blood was collected in a sterilized test-tube and put in the refrigerator. After twenty-four hours, the red blood corpuscles had settled; sometimes a small, soft, dark coagulum had formed, and there was a layer of clear serum.

The usual statement is that the blood does not coagulate. It looks as if it did not coagulate, and as though there was merely a sedimentation. But there is in fact an extremely thin clot, which does not retract from the sides of the test-tube. It is an extremely viscid, sticky coagulum, which adheres to the platinum needle inserted into it. We pipetted off after twenty-four hours, the clear serum, usually collecting 0.5 to 1.5 c. c. The organisms which were used to test the germicidal power of the serum, were the bacillus coli communis and the bacillus anthracis. Professor Welch selected the bacillus coli communis because that is an organism which is normally present in the intestine and also one with which he had experimented upon with normal serum. He took the bacillus anthracis because that is a classic organism in regard to the action of serum. The results were uniform and striking. As a rule, we made a control experiment with normal serum; thus we killed a healthy rabbit and withdrew the serum in the same way, collected the same quantity, and inoculated at the same time a parallel control, tubes with the bacteria to be tested. The cultures were twenty-four to forty-eight hour cultures. Our bacillus anthracis was obtained in suspension from the spleen of an animal recently dead of anthrax. We wished to obtain the anthrax bacillus free from spores, and thought it better to take it fresh from the animal. Similar results were obtained also with twenty-four-hour anthrax cultures grown at room temperature. We made a suspension in salt solution of the organisms, and inoculated a known quantity, one to two platinum loops of the suspension, into the serum tube. Then we made roll cultures.

The following tables, drawn up by Professor Welch, represent only a certain number of our experiments, and are much abbreviated for the sake of clearness.

BACILLUS ANTHRACIS.

Normal Serum.

No.	No. bacilli inoculated.	After 24 hours.	After one week.
1 A	485	0	0
1 B	8,512	0	0
1 C	210	0	0
2 A	5,292	0	0
2 B	1,628	0	0

Venom Serum.

No.	No. bacilli inoculated.	After 19 hours.	After 24 hours.
1 A	8,512	Countless.	....
1 B	25	....	3 233
2	68	....	250,000
3	3,292	Countless.	....
4	3,292	Countless.	....
5	3,292	Countless.	....

BACILLUS COLI COMMUNIS.

Normal Serum.

No.	No. bacilli inoculated.	Immediately.	After 24 hours.	After 48 hours.	After one week.
1 A	250,000	256	157	Countless.	Countless.
1 B	175,000	188	50	Countless.	Countless.
2 A	29,161	53	0	0	0
2 B	3,150	18	0	0	0
3	9,990	13	38	625	Countless.
4	84,947	238	0	0	0

Venom Serum.

No.	No. bacilli inoculated.	Immediately.	After 22 hours.
1	800,000	1,077	Countless.
2	3,150	6	26,000
3	16,560	32	Countless.
4	9,990	35	Countless.
5	84,947	284	Countless.
6	84,947	231	Countless.
7	84,947	182	Countless.

With the bacillus coli communis, it will be observed that in the case of normal serum, we inoculated 250,000 bacteria. Immediately afterwards, there were 256 colonies; after twenty-four hours only 157 colonies. In other words, there was not only no development, but an actual diminution in the number of bacteria. If the organisms are not all killed at the end of twenty-four hours, the germicidal power ceases, and those which remain multiply. After forty-eight hours, the colonies were countless. In the second experiment, we inoculated 175,000 bacteria, which represented 188 colonies immediately. After twenty-four hours, there were only 30 colonies, and in forty-eight hours they were countless. Taking a smaller number of bacteria, 29,161, there were immediately 53 colonies; after twenty-four hours none: after forty-eight hours none; after one week none. In other words, in twenty-four hours the normal serum had destroyed 29,000 bacteria.

These experiments were uniform in results, and point to one conclusion, that the blood of rabbits killed in one-half to three hours after subcutaneous inoculation with rattlesnake venom, has lost its germicidal power. This is of considerable interest, for it is an indication of a very profound alteration in the blood. This germicidal power of the blood is one of very great significance, on which many of the modern theories of immunity depend.

It is of special interest to ascertain under what conditions the germicidal properties of the normal blood serum are at their highest, and in what way these properties affect the composition of the blood.

The principal workers in this field have been Von Fodor, Nuttall, Wassermann, Kitasato, Buchner, Ogata, Hankin and others. Von Fodor's work had reference to the composition of the blood, and was intended to show that arterial has a more destructive action on bacteria than venous blood, and also that fresh blood has a more destructive action than that which has been standing for some time. It was also found that the germicidal power of the blood was weakened in an atmosphere of oxygen or carbonic acid gas, but the removal of gasses from the blood had no appreciable effect.

A series of experiments showing the effect of moving and stationary blood upon bacteria by means of small globes containing blood, some of which were kept in constant motion and others quite stationary, resulted in no appreciable difference being observed.

Temperature affected very materially the bactericidal power of the blood, which increased with the rise of temperature from 38° to 40° C., and then gradually diminished with the fall.

Von Fodor is of the opinion that the individual predisposition of an animal to an infectious disease stands in close relationship with the germicidal power of the blood. A second series related to the influence of drugs on the power of blood to destroy germs.

Hydrochloric acid had no effect; tartaric acid and quinine, respectively, produced a marked decrease. A slight increase was produced by common salt and carbonate of ammonium, but a more marked effect by the phosphate of sodium, while the carbonate of potassium and sodium showed a very remarkable increase. From these experiments the deduction was made that the bactericidal power of the organism was raised by any drug which increased the alkalinity of the blood. The third series verified the conclusions regarding the alkalization of the blood. Of eight rabbits inoculated with anthrax all died, whilst of nineteen which had been previously injected with solution of soda only three died. A majority of the sixteen remaining were perfectly free from disease, only a few being fatally affected.

Up to this time, however, the doctrine of phagocytosis as advanced by Metchnikoff held sway, when Nuttall struck the first severe blow to this theory. He, in his most excellent inaugural dissertation at Göttingen in 1890, showed that the destruction of virulent bacteria in the blood of animals by the leucocytes, was not at all essential, but that the serum of blood free from all cellular elements, possessed this power to a degree equal to the blood in its entirety.

Nuttall's work is graphically shown in some twenty-eight tables in his "Beiträge zur Kenntniss der Immunität." He here proves very conclusively, that in the blood bacteria presented marked evidences of degeneration before being taken up by the wandering cells, or leucocytes. It was also seen that the bactericidal power of the blood of different animals varied, and that while in some certain bacteria were promptly killed, in others these were simply restrained for a time or not affected.

Buchner, Lubarsch, Nissen, Stern and Prudden have practically verified these observations. Buchner, particularly, in his experiments upon dogs and rabbits, verified the findings of Nuttall, but went even further and proved that the bactericidal power of the blood of these animals did not *at all depend* upon the cellular elements, but resided in the clear serum which separated from the clot, after the blood had stood a while in a cool place. He also demonstrated that the germicidal action of blood and serum were destroyed by exposure for an hour to 55° C. or by heating to 52° C. for six hours, or to 45.6° C. for twenty hours.

Alternate freezing and thawing did not destroy the bactericidal power of the serum, but it was diminished or completely checked by dialysis with distilled water, or by extreme dilution with the same. He preserved the anti-bacterial action of the serum by making an equal dilution with a six-tenths to seven-tenths per cent. of sodium chloride solution, and was led to believe that the activity of the serum was greater alone, than when the cellular elements of the blood were present, hence he concluded that the active element is a living albumin, having as an essential constituent an alkaline base. This albuminoid substance is thought by Hankin to be identical with his "globulin" isolated from the spleen and lymphatic glands.

According to the views of these experimenters, the germicidal power of the blood resides in the serum alone, and phagocytosis is but a secondary process, the leucocytes taking up the bacteria only after they have been rendered inert by the germicidal power of the serum of the blood and certain other fluids of the body. For our purpose, however, it is not necessary to insist upon the humoral as opposed to the phagocytic doctrine of immunity. All that concerns us is the recognition of the bactericidal power of the blood serum under certain conditions.

The loss of this normal germicidal power helps us to explain the varying rapidity with which post-mortem decomposition sets in. It is well known that persons dead of different diseases decompose with varying degrees of rapidity. We cannot explain this differing rapidity of decomposition simply by variations in temperature, for under the same external conditions one body will be decomposed in comparatively few hours and another may remain undecomposed for several days. We selected the animals killed with rattlesnake venom because it is well known that they decompose with great rapidity. The bodies of human beings killed by snake venom are also said to decompose with great rapidity.

The results of our experiments furnish a satisfactory explanation of this phenomenon. The blood at the time of death and even before death, has lost all, or nearly all, power of resisting the invasion and multiplication of certain bacteria, so that the bacteria of putrefaction which are normally present in the intestine, develop with astonishing rapidity and even before the animal is cold, produce this wonderful rapid decomposition. Our experiments are also suggestive as regards certain secondary and mixed infections. The toxic proteids of snake venom belongs to the same class of poisons as those formed by toxic bacteria, such as the bacillus of tetanus, of diphtheria, etc.

It is easy to suppose that these infectious diseases may cause a diminution of the germicidal power of the blood against secondary invaders, of which common examples are the pyogenic bacteria present often in our mouths and intestinal canals, and which in an individual whose resistance is lowered by a loss of the germicidal power of the blood, may grow and multiply. In other words, we can understand better the causation of many of these secondary infections.

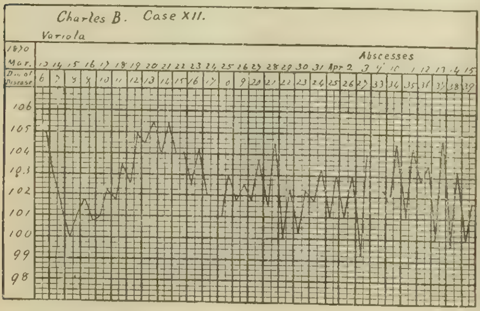
◆

VARIOLA.

BY S. G. WEBBER, M.D.

(Concluded from No. 19, p. 459.)

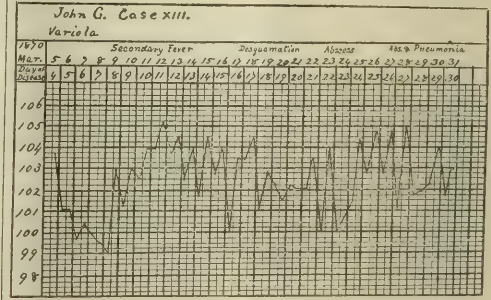
Case XII. Charles B. had had his fingers amputated on account of an injury, and the wound was still suppurating when he was received into the hospital. The eruption was quite thick on his face, arms and legs. While pustular on the face, it was flat and bright red on the arms and legs, surrounded by an areola. It then became confluent on the face, nearly so on the arms and legs, and became purple. The purple color increased in intensity for two or three days; he trembled much and had chills, with a rather bad-looking tongue. He was indifferent to what passed around him, but seemed to be sensible and conscious.



The curve shows that the temperature first fell from the sixth to the eighth day; then the secondary fever began, and the temperature rose to 105.4° on the thirteenth and fourteenth days, then fell and rose again during the desquamation, later rising when abscesses developed, which kept him in the hospital till the early part of May.

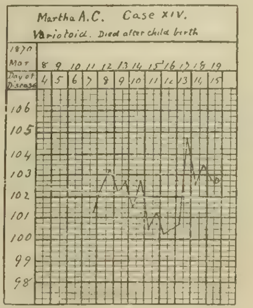
The next case was complicated with pneumonia.

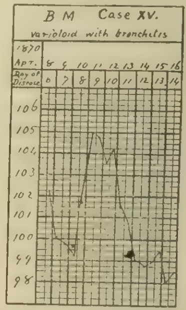
Case XIII. John C., age twenty-seven, said he had been vaccinated. The scars were not found. The eruption was semi-confluent. He did well, and after sixteen days his face was nearly clear. He then had a succession of abscesses; between March 22d and April 17th twenty-three or more were opened, and several opened spontaneously.



March 26th. The sputa was rusty-colored and very tenacious. There were sibilant râles over both backs, but no mucous nor crepitant râles could be heard. At the base of the right back the respiratory sounds were diminished, and there was a diminution of resonance. By April 6th these symptoms had disappeared, and he recovered.

The next case was fatal on account of the complication of pregnancy.





Case XIV. Martha A. C., age thirty-one, said she had been vaccinated ten to fifteen years previously. She noticed the eruption first on her abdomen; the next day she was well covered. The eruption was not well developed, and was accompanied with considerable erythema. She said she had had her catamenia two weeks before. She seemed to be doing well, though the temperature was rather high on the eighth and ninth days for varioloid, yet it was falling, not rising.

The attendant thought she was pregnant when she came in, but she denied it. On the twelfth day labor pains appeared, and then she said she was about

---

[1] The cases on which these observations are founded were under my care in the winter of 1869-70 at the Boston Small-pox Hospital. They formed the basis of a paper which was read before the Medical Observation Society, but has never been published. Much of that paper is here reproduced.

seven months advanced. No advance was made until the fifteenth day. She vomited a dark liquid during the night, and passed blood at stool. The labor caused the temperature to rise.

Her child was born in the forenoon, entirely free from any eruption. The uterus contracted well. The pulse was very feeble, and in the afternoon she died.

Case XV. B. M. This was a case of varioloid. The curve of temperature is given to illustrate the distinction between the rise caused by bronchitis and the secondary fever of variola.

The next two cases were interesting in that the patients had all the symptoms of variola without the eruption.

Case XVI. The attendant at the hospital had the care of the first case October 26, 1869. November 6th, just eleven days after, he was attacked with severe pains in the loins and fever; chills very slight, if any, tongue dry, pulse 90. The next morning he was feverish; pulse 96, eyes congested, temperature 102.6°, evening 102.6°. The third day he was better; pulse 84, temperature 101.6°. The fourth day he was nearly well.

Case XVII. Beginning on the evening of November 7th, and lasting until November 9th, I had an attack of headache, chilliness and feverishness, which obliged me to lie down whenever I had the opportunity. The pulse and temperature were not taken.

In both these cases there was probably the variolous poison acting, but not strong enough to produce the fully-developed disease.

In both these cases there is seen, probably, the effect of the variolous poison in systems nearly protected, and these may be compared to the sore throats noticed during epidemics of scarlet fever.

The treatment in all the cases was chiefly supporting. Stimulants were given freely when it seemed necessary. In each case, that amount was prescribed which at the visit seemed sufficient to have marked effect; but a general order was to give more in case there seemed to be call for it. The sudden fall of temperature after the ingestion of large amounts of rum in several cases would favor the view that it was beneficial. It was also ordered that when the patient's breath had the odor of alcohol the dose should be diminished or omitted. Milk was given freely, a mug being left by the bedside for the patient to drink as he desired. In most cases the patients preferred the milk to water for a drink. The amount of milk thus drank was occasionally very great. One patient drank at the crisis about seven quarts in twenty-four hours; another took nearly five quarts in twelve hours. The most reasonable explanation of this great consumption of milk may be found in the great drain on the system caused by the filling out of the large number of pustules and the consequent exhaustion, which called for the means of repair. Solid food was given only after the tongue had become clean, though eggs, raw or soft-boiled, were allowed before this.

The only local application to the face was the following:

℞ Acid. Carbol. . . . . gr. v
Glycerine . . . .
Aquæ . . . . āā ʒ i

This was applied freely several times a day, so as to keep the pustules and crusts moist. The application was used as soon as the eruption became pustular, or sooner. Whenever this was faithfully used it had the best effect in preventing itching, smarting and burning. In only two or three cases was there any inclination to scratch or rub the face, and only once, when the wash had not been used often enough, was there any complaint of discomfort. In nearly all cases, when asked, the patients said there was no uncomfortable sensation.

The normal course of the temperature has already been noticed in both variola and in varioloid. In eight cases there was well-marked increase of temperature during the period of desquamation. In six cases there was an increase at that time, but there were also abscesses or inflammation which rendered the cause of the increase obscure and gave it a different character. Dr. Leo first attracted attention to this fever of the desquamation stage. Sometimes there is only one day of low temperature between the secondary fever and this, but there is a marked rise as compared with that interval, however short it may be and the few days next succeeding.

There is a difference observable in the rise of the temperature according to the character of the inflammation causing it. In abscesses the variation between evening exacerbation and morning remission is quite great; but in inflammation affecting the lungs the temperature is maintained more steadily at a high figure.

The thermometer then is of value not only as aiding in the diagnosis between variola and varioloid, which could be made from other symptoms; but is also a guide to judging of the condition of the patient, showing early that there is a new morbid process setting in. Sometimes it is the first notice given of the occurrence of suppuration ending in abscess, and if the patient is inclined to conceal such an accident, the rise in temperature would lead to an examination which would reveal the cause. Also the character of the rise would show whether there was a probability that the lung was becoming affected or whether there was merely an abscess forming.

The thermometer is also valuable as a means in forming a prognosis and is invaluable as a means of setting the physician's mind at rest in regard to the welfare of the patient. If the attendant can be trusted the physician may leave his patient longer unvisited with safety, for the thermometer will surely show if there is reason for sending for him. So long as the temperature is low there is safety and no complication is likely to arise except hæmorrhage, which gives unmistakable notice of its presence.

There were received into the hospital 34 patients with variola and varioloid, two with measles and two with other eruptions. Of the 34 patients 21 had variola, 11 had varioloid and in two cases there might be doubt, one entering after desquamation had advanced considerably, which was probably a case of variola.

These cases may be tabulated thus:

Variety.	*No. of Cases.*	*Deaths.*	*Mortality.*
Confluent	7	2	28.5
Semi-confluent	2	0	..
Hæmorrhagic	4	3	75
Corymbose	1	0	..
Discrete	6	1*	16.6
Doubtful	2	1†	50
Varioloid ‡	11	0	—
Total	33	7	21.21

* From pyæmia. † From pregnancy. ‡ Cases xv and xvi are not included in this table.

In five cases the duration of the period of incubation was well marked. In one it was ten days, in one it was eleven days, in two it was twelve days, in one it was probably eleven or twelve days.

In eleven cases the eruption was seen two days after the first feeling of discomfort; in twelve, three days after; in eight, four days after; in one, in less than two days; in two cases the date was not fixed, and in one case there was no eruption.

Of those cases whose duration could be accurately determined varioloid lasted from 13 to 29 days, there being one case continuing each of the following periods 13, 16, 17, 19, 20, 21, 23 and 31 days, and two cases 15 days. The cases of variola which recovered lasted one each during 31, 32, 41, 45, 56 and 60 days two cases each 27, 40 and 42 days. The fatal cases died, one in less than five days, one in 8, 9, 14 and 16 days, and two in 15 days.

Except in the hæmorrhagic variety, which is much more quickly fatal, the date of greatest mortality and danger is between the fourteenth and sixteenth days.

Chills which are mentioned as a prominent symptom at the commencement were absent in many cases, and in most of the others were so slight as not to be mentioned by the patient unless questioned in regard to that point. Later in the disease during the suppuration and still more during desiccation there were frequently severe chills.

In only one case which recovered, was there entire absence of salivation; usually this symptom was well marked.

In three cases there was pulmonary complication; in only one showing decided signs of pneumonia; the other two being probably only bronchitis and pleurisy.

Vomiting at the beginning of the disease occurred in both severe and mild cases, being, however, rather more protracted in severe cases. It did not seem to have much value for prognosis.

In two cases there was a pustule on the conjunctiva and in one case during the occurrence of abscesses in other parts there was a collection of pus under the conjunctiva.

In four cases variola occurred after reported vaccination. In one of these the patient said the vaccination did not take well, in another the scars could not be distinguished with certainty, in two cases the examination was not accurate enough to state positively what was the condition of the scars. The other cases of variola had never been vaccinated. A winter's experience in a small-pox hospital during an epidemic would probably cure one of any prejudice against vaccination. In only two cases of variola was it probable that vaccination may have been well performed, and both of these were mild cases and recovered. Comparing the severity and duration of the disease in the 15 who had been vaccinated and the 19 who had not, or had been only imperfectly protected, there can be no hesitation in regard to a decision in favor of vaccination.

A few reflections occur, as I now look over this paper, in regard to the improved sanitary condition and care of the City as compared with 1870. Then, a patient with the scabs still on his face could ride in a public car without giving rise to any inquiry, scarcely to comment. A patient now would not be sent to the hospital alone, nor would such an one wander about the streets trying to find it, as in case VI. And it would not now be possible for so many to take care of their friends until they died with the disease, if doctors did their duty.

THE TREATMENT OF PULMONARY TUBERCULOSIS BY THE SUBCUTANEOUS USE OF THE CHLORIDE OF GOLD AND SODIUM WITH THE IODIDE OF MANGANESE.

BY WM. S. BOARDMAN, M.D., BOSTON.

WE have read and heard so much about new remedies and modifications of new remedies for the treatment of phthisis, that now to many the subject fails to excite an interest.

The methods of treatment are too numerous to mention. One is almost startled by the list of drugs and methods proposed, in reading Solis-Cohen's article on "Tuberculosis," in "Hare's System of Practical Therapeutics." Yet there must be something beneficial in these remedies, even if there is nothing specific.

The brilliant methods of Koch, dimmed by the noxious elements in his tuberculin and brought to a glow again by the researches of Klebs and Hunter, are undoubtedly more for good than anything hitherto proposed. Although we seem so near the desired result, it has not yet been obtained in the ideal that was first conceived; nevertheless, it behooves us to make the most of what we have, while striving for something better.

From the earliest time, the attempt has always been made to combat the marasmus of phthisis by dietetic and hygienic measures. How slow and uncertain a procedure it has been is only too well known to us all. If in any way we can aid the process of nutrition and maintain or increase the strength of the patient, a great deal will be done towards staying the disease, if not directly tending to a cure.

One mode of treatment that has been tried considerably yet spoken of by comparatively few writers, is the subcutaneous use of a solution in glycerine, of the chloride of gold and sodium with the iodide of manganese. In March, 1891, an article in the *Medical Record*, by Dr. J. B. White, extolled this combination as a treatment for phthisis, and cited a number of cases to show the beneficial results obtained. Another article in September, 1892, by the same author, appeared to supplement and confirm the results of the first paper, being written in a very earnest and pleasing manner. As the combination of the chloride of gold and sodium with the iodide of manganese, is, under ordinary circumstances, likely to result in the formation of a precipitate, the author of the above-mentioned articles was asked to state the method of preparing the solution. Since the process was not given and the injection fluid could only be obtained in New York, it was thought to be of sufficiently scientific interest to the profession to have an analysis of Dr. White's preparation; and Mr. Wm. C. Durkee, Ph.G., kindly consented to undertake the chemical work with this result.

"The proximate chemical examination of the injection fluid is as follows. It has a dark-amber color, with a specific gravity of 1,260, a styptic taste and a syrupy consistency.

"According to Dr. J. Blake White's statement, each drop should contain the equivalent of one-fiftieth of a grain of the chloride of gold and sodium, and one-fiftieth of a grain of the iodide of manganese, that is, each drop should represent one-twenty-fifth of a grain of the combined salts.

"He does not mention the method of obtaining the drop, whether from the bottle or a medicine-dropper;

TREATMENT WITH SUBCUTANEOUS INJECTIONS OF GOLD AND MANGANESE (Dr. Boardman).

No. Sex. Age. Social Condition. Occupation. Family History.	Patient's History. Physical Examination at Beginning of Treatment.	First Treatment. Weight. Sputum.	Last Treatment. Weight. Sputum.	Subcus. Total Amount. Largest Dose.	Physical Examination at the End of Treatment.
I. Female. 20 years. Single. Home-work. Mother phthisical, one brother died of phthisis.	Has not felt well for 6 months. Cough for 3 months. Loss of flesh and strength. Sweats considerably by day. No night sweats. Menses regular. Considerable emaciation. Hectic flush. Right clavicle more prominent than the left. No dulness. Respiration roughened nearly everywhere. A few fine moist râles at the left apex. Medium moist râles at the right apex anterior.	Feb. 6, 1893. 111 pounds. ℥ iss-iii. No tubercle bacilli found. 11 A. M. Pulse 76. Temp. 99°. Resp. 31.	June 13, 1893. 108¼ pounds. (Did weigh 117 lbs. after 34 subcus., May 6th.) ℥ i-iss. Tubercle bacilli fairly numerous. 12.30 P. M. Pulse 68. Temp. 99.3°. Resp. 35.	50 112 drops. 6 drops.	*After 30 Subcus.* Dulness not marked. Roughened respiration at left apex anterior and over left front. Suspicion of a few occasional fine râles at left apex anterior. Harsh bronchial respiration over 2d left interspace. (This was the seat of pain 4 weeks ago.) Slightly roughened respiration at right apex anterior and over upper half of right front. Roughened respiration in each axilla. Slightly roughened respiration at right apex posterior and over upper half of right back. Roughened respiration at left apex posterior and over left back. *After 50 Subcus.* No dulness. Respiration roughened everywhere. A suspicion of fine râles at left apex anterior and over upper left back. (Patient feels better.)
II. Female. 27 years. Single. Parlor-girl. One sister died of phthisis.	Pneumonia 2 years ago; never fully regained her health. Hoarse since last fall. No cough. No expectoration. No hæmoptysis. No sweats. Loss of flesh and strength. Menses regular (1 day, scanty). Variable appetite. Respiration roughened everywhere. Fine moist râles over right and left upper backs. Ulceration at middle of left vocal cord.	Feb. 17. 115 pounds. No sputum. (Former weight 130 pounds.) 11 A. M. Pulse 96. Temp. 98.8°. Resp. 21.	April 26. 111¾ pounds. No sputum. 12 M. Pulse 84. Temp. 99°. Resp. 21.	21 29 drops. 5 drops.	No dulness. Fine moist râles at right apex anterior, under right clavicle and over upper half of right chest anterior. Respiration slightly roughened over lower half of right chest, in right axilla, over left chest and in left axilla. Fine moist râles at left apex posterior, between left scapula and spine, at right apex posterior and between right scapula and spine. Left vocal cord ulcerated nearly its entire length and considerably thickened. (Patient feels better.)
III. Female. 19 years. Single. Paper-box maker. Parents died of phthisis.	Cough for 6 months. Occasional night sweats. Fairly strong. Menses every 3-4 weeks, and scanty. Appetite poor. Relative dulness at left apex anterior and below left clavicle. Bronchial respiration at left apex anterior and over upper half of left front. Few moist râles over upper half left front. Roughened respiration at right apex and over right front. A click heard at right apex anterior. Harsh respiration and medium moist râles in left axilla. Roughened respiration in right axilla. Bronchial respiration at right apex posterior and over upper right back. Roughened respiration over lower right back. Few clicks heard over upper right back. Roughened respiration over left back. Voice sounds near below left clavicle. Vocal fremitus increased at left front.	March 6. 109 pounds. (Has weighed 112½ pounds.) ℥ vi-viii. Tubercle bacilli present. 11.45 A.M. Pulse 84. Temp. 100°. Resp. 22.	May 29. 98 pounds. ℥ iii-iv. Tubercle bacilli present. 12.30 P. M. Pulse 88. Temp. 100°. Resp. 26.	22 48 drops. 6 drops.	Relative dulness at left apex anterior and below left clavicle. Cracked-pot sound under left clavicle. Bronchial respiration at left apex anterior and all over left front. Medium and coarse râles at left apex anterior and all over left front. Clicks heard at right apex anterior and under right clavicle. Roughened respiration over upper half of right front. Medium and fine râles in left axilla. Sibilant râles in right axilla. Respiration rough and harsh at right apex posterior and above right scapula. Clicks heard at right apex posterior and between right scapula and spine. Fine râles at left apex posterior. Fine and medium râles over left back. Voice very near under left clavicle and between right scapula and spine. Vocal fremitus increased at left front. (Patient feels about the same as before treatment.)
IV. Female. 23 years. Single. Seamstress. Family history not obtained.	No cough. No expectoration. No loss of weight. Menses regular. Appetite fair. Loss of strength. No dulness. Sibilant râles over left front. Roughened respiration all over right back. Few fine râles at right apex posterior.	March 6. 100 pounds. No sputum. 12 M. Pulse 80. Temp. 92.2°. Resp. 24.	April 12. 99½ pounds. No sputum. 12.40 P. M. Pulse 92. Temp. 98.6°. Resp. 23.	11 11½ drops. 2 drops.	No relative dulness. Respiration roughened everywhere. Sibilant râles at upper left front. Voice near between right scapula and spine. (Patient feels about the same as before treatment.)
V. Female. 20 years. Single. Tobacco stripper. Father and one brother died of phthisis.	Cough seven months. No night sweats. No hæmoptysis. No loss of weight. Menses regular. Feels fairly strong. No dyspnœa. Appetite fair. Dulness at right apex, anterior and posterior, and below right clavicle. Cracked hot sound over 2d right interspace (near sternum). Bronchial respiration over right front and back, and left back. Roughened respiration over left front. Few medium râles at right apex anterior, over upper right front, in right axilla, and between right scapula and spine. Suspicion of râles between left scapula and spine. Voice very near below right clavicle.	March 11. 119½ pounds. ℥ i. Tubercle bacilli present. 12.45 P. M. Pulse 108. Temp. 100°. Resp. 24.	April 22. 113 pounds. ℥ i. Tubercle bacilli present. 12 M. Pulse 96. Temp. 99°. Resp. 24.	17 23 drops. 4 drops.	Dulness at right apex anterior below right clavicle, at right apex posterior and over upper half of right back. Cracked-pot sound over 2d right interspace. Bronchial respiration over upper half of right and left chest, anterior and posterior. Broncho-vesicular respiration in right axilla. Roughened respiration in left axilla and over lower right and left back. Respiration rather amphoric over 2d right interspace. Medium râles at right apex anterior, over upper right front and in right axilla. Numerous clicks at right apex posterior and over upper right back. Suspicion of fine râles at left apex posterior. Occasional fine râles at left apex anterior. Medium râles below left clavicle. Voice very near at upper right chest, anterior and posterior. (Patient feels better.)
VI. Female. 29 years. Married. (3 children, youngest 3 months old.) Home-work. Family history negative.	Cough 7 months. No hæmoptysis. Occasional sweats. Has lost flesh. Does not feel weak. Menses regular. No dyspnœa. Appetite poor. Hectic flush. Considerable emaciation. Right clavicle more prominent than left. Relative dulness not marked. Broncho-vesicular respiration at left and right apex anterior. Slightly roughened respiration at left apex posterior. Fine moist râles at each apex anterior. Sibilant râles at left apex anterior, in right axilla and over right back. Moist râles between right scapula and spine. Pleuritic stitch and few pleural râles in right anterior axillary line.	March 14. 92 pounds. ℥ iii-iv. Tubercle bacilli present. 1.30 P. M. Pulse 100. Temp. 100°. Resp. 26.	May 25. 88½ pounds. ℥ iss-ii. Tubercle bacilli present. 12.30 P. M. Pulse 76. Temp. 98.4°. Resp. 25.	17 29 drops. 5 drops.	Relative dulness not marked. Respiration slightly roughened below left clavicle, broncho-vesicular at right apex anterior and over upper right front, bronchial at right apex posterior, roughened above right scapula, slightly roughened at left apex posterior and over upper left back. Clicks heard at left apex. Few fine moist râles at left apex anterior. Numerous fine râles at right apex anterior. Fine râles under right clavicle. Suspicion of fine râles at right apex posterior. Fine râles between right scapula and spine. Voice nearer over right upper front and back. Vocal fremitus increased over right upper front and back. (Patient feels better.)
VII. Male. 43 years. Single. Baker. Family history negative.	Cough 3 months. No expectoration. No hæmoptysis. Night sweats for the last two months. Has lost flesh. Appetite poor. Right clavicle more prominent than left. Relative dulness not marked. Broncho-vesicular respiration at right apex and over right front. Rather harsh respiration over right front near sternum. Broncho-vesicular respiration in left axilla. Increased vesicular respiration in right axilla. Roughened respiration in right anterior axillary line. Broncho-vesicular respiration over upper half left back. Sibilant râles at left apex and over left front. Medium and fine râles at left apex anterior and over left front. Medium râles in left axilla. Sibilant râles over upper half left back. Medium and fine râles over upper half left back.	March 20. 115 pounds. No sputum. 2.30 P. M. Pulse 80. Temp. 97.4°. Resp. 24.	June 8. 115 pounds. No sputum. 12.30 P. M. Pulse 88. Temp. 99.8°. Resp. 22.	25 79 drops. 6 drops.	Coughs less than before. No expectoration. Still sweats a little at night. Appetite poor. No relative dulness. Slightly roughened respiration over middle of left front and at lower part of right axilla. Fine moist râles at left apex anterior and under left clavicle. Sibilant râles over left front. Right apex and front chiefly negative. Fine moist râles in left axilla. Signs chiefly negative in right axilla and over right back. (Very fine crepitation at inferior angle of right scapula.) Fine moist râles at left apex posterior. Occasional sibilant râles over left back. (Patient feels better.)
VIII. Male. 34 years. Single. Laborer. Family history negative.	Cough 2 years. Pneumonia in November, 1892. Cough now moderate. Expectoration mostly mucus. No night sweats (formerly had them). Has lost flesh (gaining now). Appetite fair. Relative dulness not especially marked. Roughened respiration over right front and in each axilla. Harsh respiration at right apex posterior. Roughened respiration over right back and over lower half left back. Fine moist râles at left apex anterior and below left clavicle. Occasional fine râles at right apex anterior. *Larynx.* Thickening of interarytenoid fold. Enlarged and immovable right arytenoid. No movement of right vocal cord.	April 17. 166 pounds. (Former weight 195 pounds.) ℥ v-vi. Tubercle bacilli present. 1 P. M. Pulse 76. Temp. 97°. Resp. 24.	June 23. 169 pounds. ℥ ii-iii. Tubercle bacilli present. 11 A. M. Pulse 64. Temp. 96°. Resp. 24.	15 30 drops. 3 drops.	Relative dulness not marked. Broncho-vesicular respiration at left apex anterior. Slightly roughened respiration over left front. Broncho-vesicular respiration at right apex anterior. Roughened respiration over right front and in each axilla. Broncho-vesicular respiration at right apex posterior. Roughened respiration over right back. Slightly roughened respiration at lower left back. Fine moist râles at left apex anterior, under left clavicle and at right apex anterior. Few fine moist râles above left scapula. Larynx about the same as before. (Patient feels better.)
IX. Male. 35 years. Married. Laborer. Family history negative.	Cough 4½ months. Expectoration scanty, muco-purulent. Hæmoptysis 4 years ago. Has lost flesh. Appetite poor. Relative dulness not especially marked. Roughened respiration in right axilla. Broncho-vesicular respiration at left apex posterior, over left back, and at right apex posterior. Roughened respiration over right back. Suspicion of fine râles at left apex anterior. Medium râles at right apex anterior. Suspicion of fine râles at left apex posterior. Sibilant râles over left and right backs. Fine râles at right apex posterior.	April 18. 121½ pounds. (Former weight 146 pounds.) ℥ ii. No tubercle bacilli found. 1.30 P. M. Pulse 76. Temp. 98°. Resp. 34.	June 24. 116¼ pounds. ℥ ii. Small number of tubercle bacilli present. 1 P. M. Pulse 84. Temp. 98.7°. Resp. 30.	21 67 drops. 6 drops.	No relative dulness. Broncho-vesicular respiration at left apex anterior. Slightly roughened respiration over upper half of left front. Broncho-vesicular respiration at right apex anterior. Slightly roughened respiration over right front and in each axilla. Broncho-vesicular respiration at right apex posterior, over upper half of right back, at left apex posterior and above left scapula. Occasional fine râles at right apex anterior. Occasional fine and medium râles at right apex posterior and between right scapula and spine. (Patient feels better.)
					Relative dulness not marked. Broncho-vesicular respiration at left

IX. Male. 35 years. Married. Laborer. Family history negative.	Cough 4½ months. Expectoration scanty, muco-purulent. Hæmoptysis 4 years ago. Has lost flesh. Appetite poor. Relative dulness not especially marked Roughened respiration in right axilla. Broncho-vesicular respiration at left apex posterior, over left back, and at right apex posterior. Roughened respiration over right back. Suspicion of fine râles at left apex anterior. Medium râles at right apex anterior. Suspicion of fine râles at left apex posterior. Sibilant râles over left and right backs. Fine râles at right apex posterior.	April 18. 121¼ pounds. (Former weight 146 pounds.) ℥ ii No tubercle bacilli found. 1.30 P. M. Pulse 76. Temp. 98°. Resp. 34.	June 24. 116¾ pounds. ℥ ii. Small number of tubercle bacilli present. 1 P. M. Pulse 84. Temp. 98.7°. Resp. 30.	21 67 drops. 6 drops.	No relative dulness. Broncho-vesicular respiration at left apex anterior. Slightly roughened respiration over upper half of left front. Broncho-vesicular respiration at right apex anterior. Slightly roughened respiration over right front and in each axilla. Broncho-vesicular respiration at right apex posterior, over upper half of right back, at left apex posterior and above left scapula Occasional fine râles at right apex anterior. Occasional fine and medium râles at right apex posterior and between right scapula and spine. (Patient feels better.)
X. Male. 46 years. Married. Furniture mover. Family history negative.	Cough one year. Expectoration muco-purulent. No hæmoptysis. Dyspnœa on exertion. Night sweats. Has lost flesh. Appetite good. Relative dulness not marked. Bronchial respiration at left apex and over left front, at right apex posterior and over right and left backs. Broncho-vesicular respiration at right apex anterior and over right front, and in each axilla. Fine, moist râles at left apex anterior. Medium, moist râles over left front. Fine and medium râles at right apex anterior, over right front, at right apex posterior, and over right back. Fine râles in left axilla and over upper half left back. Medium râles in right axilla.	April 19. 117¼ pounds. ʒ iss. Tubercle bacilli present. 1 20 P. M. Pulse 88. Temp 99°. Resp. 28.	June 16. 117 pounds. ʒ v. Tubercle bacilli present.	15 45 drops. 4 drops.	Relative dulness not marked. Broncho-vesicular respiration at left apex anterior. Bronchial respiration over upper half of left front. Broncho-vesicular respiration at right apex ant. and over right front and in each axilla. Bronchial respiration at right apex posterior, over right back, at left apex posterior and over left back. Fine moist râles at left apex anterior. Few sibilant râles at left apex anterior. Fine moist râles over upper half of left front. Medium moist râles at right apex anterior, over right front and in right axilla. Fine moist râles in left axilla. Medium moist râles at right apex posterior, over right back and over upper half of left back. (Patient feels "slightly better.")

SUMMARY OF ALL CASES TREATED AND RESULTS.

	Sex	How long Sick	Age	Social Condition			Fam. Hist. of Phthisis	Bacilli in Sputum	No Bacilli in Sputum	Examinations of Sputum not made	Duration of Treatment	Number of Injections	* Result on Examination			Subjective Result		
				S.	M.	Wid							Better	Not Imp	Worse	Better	Not Imp.	Worse
1st Stage, 44 . .	Females, 16	2 mos. to 2 yrs	16 to 40 yrs.	9	6	1	9	5	4	7	1 to 128 days	1 to 50	2	0	3	8	8	0
	Males, 28	2 mos. to 2 yrs.	19 to 58 yrs	19	8	1	9	21	0	7	1 to 72 days	1 to 37	1	9	2	9	18	1
2d Stage, 8 . .	Females, 2	6 to 18 mos.	28 to 35 yrs.	0	2	0	1	2	0	0	10 to 44 days	7 to 5	0	0	0	0	1	1
	Males, 6	6 mos. to 3 yrs	29 to 54 yrs.	3	2	1	4	4	0	2	1 to 33 days	1 to 15	0	1	0	3	3	0
3d Stage, 2 . .	Females, 2	7 mos. to 3 yrs,	20 to 35 yrs.	1	0	1	2	2	0	0	42 to 52 days	4 to 17	0	0	2	1	0	1
20 females, 34 males; total, 54.		Av. 13 mos.	Av. 31½ yrs.	32	18	4	25	34	4	16	Av. 30 days	Av. 9	3	10	7	21	30	3

GROUP I.—PATIENTS TREATED WITH GOLD AND MANGANESE.

	Sex	Largest Dose.	Total Amount Injected.	* Result on Examination			Subjective Result		
				Better	Not Imp.	Worse	Better	Not Imp.	Worse
1st Stage, 32 . .	Females, 16	.24 gr.	½ to 122 gtt.	2	0	4	8	8	0
	Males, 16	.24	1 to 79	1	3	0	6	10	0
2d Stage, 6 . .	Females, 2	.08	4 to 6	..	..	..	0	1	1
	Males, 4	.16	1 to 52	..	..	..	2	2	0
3d Stage, 2 . .	Females, 2	.16	1 to 23	0	0	2	1	0	1
20 females, 20 males; total, 40.				3	3	6	17	21	2

GROUP II. — PATIENTS TREATED WITH HUNTER'S MOD. B.

	Sex	Largest Dose.	Total Amount Injected.	Better	Not Imp.	Worse	Better	Not Imp.	Worse
1st Stage, 12 . .	Females, 0	..	..	..	.	..	..	..	..
	Males, 12	.125 gm.	.005 to 1.855 gm.	0	6	1	3	8	1
2d Stage, 2 . .	Females, 0	..	..	..	..	..	..	.	..
	Males, 2	.075	.025 to .075	0	1	0	1	1	0
3d Stage, 0 . .	 0	..	..	..	..	..	..	..	..
No females, 14 males; total 14.				0	7	1	4	9	1

GROUP III (taken from Group I). — PATIENTS TREATED FIRST WITH GOLD AND MANGANESE, AND LATER WITH HUNTER'S MOD. B.

	Sex	Largest Dose.	Total Amount Injected.	Better	Not Imp.	Worse	Better	Not Imp.	Worse
1st Stage, 9 . .	Females, 4	.100 gm.	.025 to 1.095 gm.	1	1	0	3	1	0
	Males, 5	.020	.005 to .050	0	0	0	0	5	0
2d Stage, 0 . .	Females, 0	..	..	..	..	..	..	..	..
	Males, 0	..	..	..	..	..	..	..	..
3d Stage, . . .	Females, 1	.170	5.430	0	0	1	0	1	0
5 females, 5 males; total, 10.				1	1	1	3	7	0

---

* The result on physical examination could not be ascertained in every case, since some patients stopped their visits unexpectedly, before a final examination could be made.

and although changes in the viscosity of the liquid owing to the temperature, the rapidity with which the drops are formed, and the shape of the material from which the drop falls largely govern the size, it was assumed that a drop from the original five-cubic-centimetre bottle, at about 70° F., and forming at a speed of one in two and a half seconds, would be about the size usually obtained and probably intended by the quoted statement.

"Several careful weighings of ten-drop quantities of the liquid were made and the drops found to average 77 milligrammes each, and supposably contained one-fiftieth of a grain (.0013) of U. S. P. strength of chloride of gold and sodium, and the same quantity of iodide of manganese, or 169 mg. of each in 10 gm. of injection.

"Ten grammes of the fluid were found to contain .01737 gm. of metallic gold, equal to .05352 gm. chloride of gold and sodium U. S. P., or about one-third the amount claimed. The liquid is composed mainly of glycerine, and contains free iodide, iodine in the form of iodate (also as iodide), chlorine, sodium, potassium and manganese.

"As the method of preparing the injection fluid recommended by Dr. White was not made public, the following process has been devised, which yields a solution containing the ingredients he has reported as useful and of the strength he recommends. Take of

[1] Gold and sodium chloride, U. S. P.	1.69 gm.
Manganese sulphate	2.44 gm.
Potassium iodide	4.62 gm.
Diluted alcohol	10.0 c. c.
Glycerine	of each a sufficient quantity.
Distilled water	

"Dissolve the gold and sodium chloride and one gramme of potassium iodide separately, in sufficient glycerine to make each solution weigh 25 gm. using only a very gentle heat, if any; when cold mix the two solutions. Dissolve the manganese sulphate in sufficient distilled water to make 10 c. c., and 3.62 gm. of potassium iodide in sufficient diluted alcohol to make 10 c. c.; mix the two solutions, and allow the containing vessel to stand in powdered ice for several hours, to thoroughly precipitate the potassium sulphate. Then decant 10 c. c. of the clear liquid into 40 gm. of glycerine; evaporate on a water bath until the total weight is reduced to 40 gm., and add glycerine to make 50 gm. Mix this solution with the solution of gold and sodium chloride, and keep in amber glass-stoppered bottles. Each 77 mg. (about one drop) contains the equivalent of $1\frac{3}{10}$ mg. (one-fiftieth of a grain), of gold and sodium chloride and the same quantity of manganese iodide."

The injections were given in the forearm, upper arm and subclavicular region by an ordinary hypodermic syringe.

The solution prepared has been used in the manner advised by Dr. White, the initial dose usually being one drop (equal to one-twenty-fifth of a grain of the combined salts of gold and manganese) diluted with a few drops of a one-per-cent. solution of carbolic acid, and increased only as the constitutional disturbance remained at a minimum or ceased to appear after several doses.

In some patients the reaction appeared within two hours — as headache, backache and general malaise — lasting twenty-four to forty-eight hours; in others it was but little marked and disappeared within one or two hours after an injection.

The pulse has been found to be full and slow with subnormal temperature in some, while in others the pulse was increased in rate with a slight rise in temperature.

The local effect varied, in some the solution caused considerable inflammation, in others the injection was only marked by an induration and slight tenderness about the puncture. It seemed to depend upon the amount of loose connective-tissue present and the individual susceptibility to irritation.

Cough-mixtures, tonics and hygienic measures have also been made use of as opportunity permitted.

One thing was observed quite generally, as noticed by another writer — within two weeks or thereabouts after beginning the injections, the appetite was increased, so much as to cause the remark of the patient to the effect.

The cough and expectoration in some were lessened, in others not appreciably affected. Night-sweats usually ceased. The general appearance and feelings of the patients improved, and they did not hesitate to declare themselves greatly benefited.

On making a physical examination of a patient after a few injections, the former condition of things may be somewhat aggravated. At such a time I have found the signs more marked, especially the auscultatory signs; later the results were variable.

The theory that the preparation of gold is eutrophic, while the manganese is anti-anæmic, seems to be well borne out. That an improvement can be secured in some cases I feel quite confident, but as to complete and permanent recoveries I am not so certain.

The exact way in which these injections affect the pulmonary tissue is more or less a matter of conjecture; nevertheless, the remedy appears to act as a tonic to the waning strength of the patient, also to cause a certain amount of irritation and inflammation around the foci of infection (as sometimes shown by bloody sputum after a large dose), which may eventually result in an encapsuling of the pathological portions, or their replacement by dense fibrous tissue.

However, be it as it may, the subcutaneous use of the chloride of gold and sodium with the iodide of manganese certainly improves the majority of patients subjectively; and if a cure does not result, they are at least in a most promising condition for treatment by modified tuberculin or its allied products. The strongest argument in favor of this treatment is the fact that when properly given no injury can be done, while there is great probability of an improvement if not a cure.

Appended is the full report of ten cases treated by gold and manganese, also the tabulated report of fifty-four cases, — some having been treated with gold and manganese, and some with Hunter's modification B. (kindly furnished by Dr. Trudeau of Saranac Lake, N. Y.).

In regard to the latter method of treatment, I will briefly state, that while not obtaining the results of Dr. Trudeau, I found much in its favor to warrant a further trial.

I have also been using for several months Klebs' Tuberculocidin, and so far with considerable satisfaction.

In connection with this paper, I wish to thank Dr.

---

[1] It is best to prepare this chemical or to use an article which is known to be of full strength, as market samples were found to contain less gold than the labels indicated.

E. M. Greene for his valuable services in the examination of sputum, and Dr. F. C. Cobb for laryngeal work, also Mr. Wm. C. Durkee, Ph.G., for most perfect chemical work, and Dr. E. O. Otis for kindly suggestions.

◆

Medical Progress.

REPORT ON MENTAL DISEASES.

BY HENRY R. STEDMAN, M.D., BOSTON.

MENTAL DISTURBANCE IN EXOPTHALMIC GOITRE AND MYXŒDEMA.

Hirschl[1] considers that exopthalmic goitre is not often complicated with a psychosis. Mania is the ordinary intercurrent psychosis in a simple typical case. If another form comes on in the course of exopthalmic goitre, it is usually a complication of a coexisting or complicating neurasthenia, hysteria or alcoholism rather than of exopthalmic goitre itself. The psychical type of a patient with exopthalmic goitre is often between that of a healthy person and that of maniacal exaltation with signs of degeneration. This is very common, but not constant. It has equal value with the three cardinal symptoms, and can aid the diagnosis in doubtful cases. The explanation of complicating mania and this psychic type is not forced if we regard the disease as due to functional or anatomical disturbances in the medulla. These conditions can then be ascribed to vascular paresis of varying degree in the cortex. By thus localizing the disorder in the medulla we can better explain the less frequent pulse and the anxiety in psychical depressed states.

Clouston's[2] study of the mental symptoms of myxœdema and the effect on them of the thyroid treatment is instinctive in showing that the contrast which marks their physical condition is equally evident in the mental states of these opposite affections of the thyroid. The general course of the mental disease in his cases was, first, slowness of mental action; secondly, emotional depression; next, irritability, morbid suspicion, non-resistiveness to outward causes of disturbance and general loss of control or maniacal outbursts; then, enfeeblement, with some exaltation in some cases; and, lastly, lassitude, hebetude ending in a condition of mental negation just before death. Two pathological facts that have lately come under his observation in regard to the cerebral cortex have impressed him deeply with the possible recuperative capacity of the cortical structure. One was a puerperal case of a few weeks standing — *a curable case by every clinical standard* — who died of maniacal exhaustion, and whose cortical cells were found in a state of marked and advanced degeneration, with spider cells and proliferated nuclei round the vessels and the neuroglia. If such degeneration is really curable, then we need not despair of recovery in many advanced cases of mental disease. The second fact is the actual cure of the prolonged mental enfeeblement of myxœdematous insanity by the thyroid treatment. He is convinced that we need not be hopeless of some day discovering remedies that will cure some of our cases of chronic melancholia, chronic mania and mild dementia, the pathological changes in whose brain cortex he has often seen to be very similar to those found in one of his myxœdematous cases.

THE ALTERATIONS OF THE PERIPHERAL NERVES IN GENERAL PARESIS.

G. Datto[3] reports autopsies of eight cases of paresis in which he carefully examined by several methods (both fresh and after hardening) the peripheral nerves (various cranial nerves and nerves of the brachial and lumbar plexuses). His general results were as follows: The alterations met with were those of parenchymatous neuritis in different degrees. This was constant in all the observations, the variations in the intensity of the pathological process in each, it is suggested, were possibly in relation to the intensity of the clinical symptoms. The cranial nerves were least affected in comparison with the others. The alterations were not systematic in their distribution, sometimes involving the motor, sometimes the sensory nerves; which fact in part explains, the author holds, the varied clinical syndromes of the disease. It also supports the view that we have in paresis a widely disseminated degenerative process affecting the most diverse organs of the nervous system.

Campbell,[4] also, has made a careful study of the neuro-muscular changes in ten cases of general paralysis. He found the vagi extensively and strikingly diseased, more so almost than any of the peripheral nerves, and decidedly more than any cranial nerve. It is impossible to attach too much importance to the remarkable singling out of the vagi for such extreme degeneration in this disease. The changes in the mixed spinal nerves and their peripheral terminations appeared to be a combination of a parenchymatous degeneration and an interstitial or adventitious inflammation. This investigation confirms those of others in regard to the remarkable fact that the more peripheral the site examined in the mixed trunk the more extensive the degeneration will be found to be, and when the motor and sensory branches are reached it is more advanced and pronounced. The degree of degeneration of the spinal nerve roots was always considerable, but never extensive. The changes in the muscles do not, in the main, differ from those described in connection with other neurites. They are probably chiefly secondary effects of the nerve degeneration. It is extremely difficult to frame a distinct pathology for the neuro-muscular changes attendant on general paralysis, as there is so little knowledge of the precise nature of the pathogenic influence or factor which determines it; still, taking these changes in general paralysis separately into consideration and comparing them with those in other varieties of multiple neuritis, we find that there exists a close resemblance from an anatomical standpoint, and there is further one group with which the changes in general paralysis can be pathogenetically compared, namely, the *primary intrinsic toxæmic;* the secondary toxæmic, the purely toxic, the endemic, the rheumatic, and the cachectic or senile, being out of the question. This naturally does not refer to cases of alcoholic or syphilitic origin.

INEBRIATE ASYLUMS IN GERMANY AND SWITZERLAND.

Tilkowski[5] visited and inspected five of these asylums: In Switzerland, Ellixon in Canton Zurich, Nüchbern in Canton Bern, and Pilgerhütte in Canton Basel; in Germany, the Linberg group at Düsseldorf and the colony at Bielefeld. He gives the special rules of them all. The common principles involved are:

---

[1] Jahrbücher für Psychiat., xii, 50.
[2] Journal Mental Sciences, 1894.
[3] El Pisani, xiv, p. 169.
[4] Journal of Nervous and Mental Diseases, April, 1894.
[5] Jahrbüch. für Psych., xii, 1.

(1) All asylums in Switzerland and Germany, as at present constituted, rest on the general principle of voluntary entrance and voluntary exit. Forced detention is excluded. [In one Swiss canton, residents of the canton (St. Gallen) can be committed against their will for a definite time; but here inmates can be expelled for non-payment of dues or violation of the rules.]

(2) Insane, dements and epileptics are excluded from all. In Ellixon a certificate of sanity is required. If an inmate becomes insane, he is sent to an asylum.

(3) Total abstinence is required in all, even by the staff and attendants. Moderate use by drinkers is irritating and leads to a relapse, and small amounts do them harm. The attendants must abstain, for the example, and also because they eat at the same table. An inebriate does better if he sees no liquor, and the normal man can do without it. It is an error to think that sudden withdrawal of drink is dangerous.

(4) The fundamental principle is compulsory labor. Physical out-door work is best, and labor makes the cost of maintenance less.

(5) The food seems very liberal, abundant and strengthening, but not inviting.

(6) No drunkard can have money, visit taverns, or go out without leave of superintendent.

All the German and one Swiss asylum (Pilgerhütte) have a religious superintendence, which may aid in cure. Ellixon and Nüchbern are purely humanitarian. The religious ones take in depraved patients. In Lower Austria medical direction obtains, and forced detention. Hence the inmates need more watching. He concludes that all treatment must conform to medical and psychiatric science. Religious-moral influence is desirable, but chief stress is not to be laid on it. It is bad to mix the drunkard with the depraved. Principles 3 and 6 should be adopted by Austrian asylums also.

THE BOARDING-OUT OF INSANE.

The commissioners in lunacy for Scotland report[6] that during the year 1892 this class of patients has increased by 84, which means an increase of four per cent. and a corresponding diminution in the proportion maintained in establishments. At the same time the relative cost of the two methods has undergone no alteration. During the past six years the proportion of all pauper lunatics boarded out has oscillated between 23% and 24%, and it would almost seem as if this represented the limit of this method of providing accommodation. With regard to the possibility of the presence of insane individuals exercising a hurtful influence on the sane among whom they are placed, an authorative statement is given by one of the deputy-commissioners who has had fifteen years' experience of this method.

"On reviewing," he says, "the private-dwelling system as a whole, my opinion is that there is no harmful influence on the guardians from the presence of the insane in their houses; and this is the verdict of a host of guardians to whom I have spoken on the subject. The care of the insane in private dwellings, according to my experience, has more frequently had an elevating than a harmful effect on the guardians and their surroundings, as it has raised the standard of both personal tidiness and of household order and cleanliness." While as regards the possible hardships attending the removal of patients to out-lying parts he remarks that this is more apparent than real, that the great majority of boarded-out insane are more accessible to relatives than patients in asylums are, and that even in the case of patients belonging to one of the suburbs of Glasgow who are boarded out in Islay, there have been no complaints.

THE IMPORTANCE OF MENSTRUATION IN DETERMINING MENTAL IRRESPONSIBILITY.

Krafft-Ebing[7] reaches the following conclusions on this subject:

(1) It is useful to consider the mental soundness of women during menstruation from a medico-legal point of view.

(2) It is advisable where a woman is held on a criminal charge to ascertain whether the commission of the act coincided with the menstrual period; and by "period" is meant not only the days when there is actual flowing, but those before and after as well.

(3) It is best to advise examination of the mental condition when such coincidence is established. This is indispensable when there is a personal history of neuropathic defect, of mental disturbance at the time of previous menstrual periods, or when the nature of the act reveals any striking features.

(4) When the menstrual process exerts a powerful influence on the mental life of the subject the accused should be given the benefit of extenuating circumstances in the infliction of the penalty, even although there be no proof of menstrual insanity.

(5) When the offence or crime has, in a person whose mind is impaired, occurred during the menstrual period she must be declared irresponsible, for there is every reason to think the act due to emotional impulse.

(6) But individuals who by reason of menstrual insanity would benefit by acquittal on this ground should be considered as dangerous in the extreme and subjected during the times of the menses to close surveillance. It is best to confine them to an asylum for the insane where they will be comfortably cared for and often cured of this menstrual instability of mind.

DELUSIONS OF PERSECUTION.

Neisser[8] reports the case of a man aged forty-three years who had delusions of persecution; he had been poisoned, attempts had been made to kill him, etc. He had been suffering from these delusions for many months, otherwise he was perfectly normal, conversed naturally and occupied his time with work. The case teaches that the claim of many authors that paranoia is characterized by fixed delusions of persecution is not broad enough to serve as a definition for the disease. Paranoia consists essentially in the tendency to evolve delusions of persecution. If a paranoiac could suddenly be robbed of all his delusions, he would still be insane, and in a short time he would have a new set of delusions. In the reported case this was entirely wanting. The existing delusions were probably the sequelæ of some acute disease with delirium, possibly some organic disease of the brain, the result of syphilis.

(To be continued.)

---

[6] Journal of Mental Sciences, January, 1894.

[7] Jahrbuch. f. Psychiat., x, 2, 3.

[8] Allgemein. Zeitsch. fur Psych. vol. xciv, No. 5.

Reports of Societies.

THE NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, held at the New York Academy of Medicine, Tuesday evening, April 3, 1894, Dr. M. Allen Starr, President, in the chair.

A CASE OF AMYOTROPHIC LATERAL SCLEROSIS,

presented by Dr. Charles Henry Brown.

The patient was a boy aged fifteen who two and one-half years ago began to notice first a loss of proper speech, difficulty in whistling and in moving the tongue. These symptoms were rapidly followed by difficulty in deglutition, closing of the eyes, deafness and inability to move the facial muscles. After a few weeks he was unable to use the fingers freely in buttoning and unbuttoning his clothing. At present the patient is extremely emaciated. There is paralysis of the seventh nerve on both sides, and the "taper" mouth. There is trophic degeneration in the muscles of the face and neck. The tongue is very much atrophied. The larynx is distorted. He presents all the symptoms of nuclear implication of the bulb and there is glosso-labio-laryngeal paralysis. There is atrophy of numerous muscles in the upper extremity and of a few in the lower extremity. There are general fine and coarse fibrillary twitchings all over the body; exaggeration of superficial and deep reflexes and slight tonic and spastic action in the movement of many muscles.

A CASE OF PROGRESSIVE MUSCULAR DYSTROPHY,

presented by Dr. Alfred Wiener.

The patient was a male, aged twenty years. He was in good health up to May, 1893, when he began to suffer considerable pain in the region of the liver and spleen. This was most severe on walking. Soon afterwards he began to experience difficulty in going upstairs, and he noticed that he was growing very much thinner. His weakness was at first confined to the muscles around the thigh; from here it spread up along the back and involved the muscles of the neck and shoulders. There was no vesical or rectal trouble. There is no history of alcoholism or syphilis. Family history negative.

The patient's present condition is as follows. No mental symptoms. Voice and speech appear to be normal. He is very much emaciated, especially in the neighborhood of the shoulders, back and thighs. He assumes the position of one with a marked lordosis, and walks with a waddling gait. On lying down it is impossible for him to turn over or lift his head from the pillow. His muscles are soft and flabby to the touch. There are no contractures nor fibrillary twitchings; no vaso-motor or trophic disturbance. The thoracic and abdominal organs appear to be in perfect condition. There is present no pseudo-hypertrophy in any of the lower muscles, nor does the patient give a history of any having existed. The deep reflexes are all much diminished. The nerves are not painful to pressure and there is no special tenderness. The lordosis is due to the paresis of the muscles of the dorsal and lumbar portions of the back.

Dr. Joseph Collins said that the case presented by Dr. Brown was very similar to one under his observation at the present time, excepting that his patient was a man thirty-four years old, in whom the symptoms came on rapidly about six months ago. It is very uncommon to see the disease at such an early age as that of Dr. Brown's patient, but he thought that cases showing the occurrence of the disease at even a more tender age have been recorded. The involvement of the fifth nerve that Dr. Brown's patient seemed to present he had never before heard of. The patient presented by Dr. Wiener seemed to be a typical case of muscular dystrophy, and one whose pathognomonic symptoms were in marked contrast to the case of amyotrophic lateral sclerosis shown by Dr. Brown.

The President said that the contrast between the cases shown by Drs. Brown and Wiener was interesting; one presented the typical features of amyotrophic lateral sclerosis, namely, atrophy, fibrillary twitchings, increased reflexes and bulbar invasion; the other showed a pure dystrophy, without twitching and without marked change of reflexes.

Dr. E. D. Fisher said the cases presented by Drs. Brown and Wiener represent two distinct classes of diseases. The first shows apparently a rare condition in which an inflammation has affected the bulbs and later the anterior horns in the cervical region, with involvement of the lateral columns. In other words, we have amyotrophic lateral sclerosis with bulbar symptoms. The usual and not uncommon order of sequence is that of involvement of the cord, with extension later to the medulla. Dr. Fisher said a patient recently under his observation, aged twenty, presented bulbar symptoms of rather acute onset; death resulted suddenly, probably from some involvement of the respiratory centre in the medulla. The autopsy revealed softening in the region of the glossopharyngeal and pneumogastric nuclei. That case would probably have presented a similar clinical history, if the patient had lived.

Dr. B. Sachs said he agreed with the diagnosis of amyotrophic lateral sclerosis in Dr. Brown's case. Dr. Wiener's case was undoubtedly one of progressive muscular dystrophy.

Dr. William M. Leszynsky called attention to the fact that in Dr. Wiener's case the upper part of the trapezius muscle was atrophied, while the lower part escaped. This partial atrophy, he said, usually occurs in progressive muscular atrophy of spinal origin.

Dr. Sachs said that the partial atrophy of muscles may also occur in spinal dystrophies.

The President said that in three cases of amyotrophic lateral sclerosis coming under his observation, the bulbar symptoms were very prominent.

Dr. Sachs expressed the opinion that the bulbar symptoms in amyotrophic lateral sclerosis were due to a natural extension of the disease upwards. He inquired whether there was any involvement of the eye in these cases.

Dr. Brown said there might be ophthalmoplegia.

Dr. L. C. Gray said he had seen the eye involved in one case.

Dr. Brown, in closing the discussion, said he presented his case as a typical one of amyotrophic lateral sclerosis, but rare in the fact that it had commenced in the bulb and extended downwards. He thought this type of nuclear trophic and motor disorder was somewhat acute in its manifestations, and rapidly ran its course. He considered that his case was in *statu quo*, and would progress no further so far as degeneration of muscles was concerned. The boy presented a typical picture of a glosso-labio-laryngeal paralysis, which is an extremely rare condition in childhood. The fibrillary twitchings and slight spastic actions and increase of the reflexes undoubtedly contribute to the picture of a lateral sclerosis.

The **President** exhibited a diagram showing the areas of anæsthesia in the arms as the result of lesions involving different segments of the cervical and dorsal portions of the cord. This diagram, he said, was the result of a careful study of a large number of cases — either coming under his own observation, or reported by others — in which the spinal cord was involved. The result seems to show that for each segment of the cord there is an area of the skin which becomes anæsthetic when that segment is involved.

A CRITICAL REVIEW OF THE VARIOUS THEORIES OF URÆMIA, BASED UPON ORIGINAL EXPERIMENTAL OBSERVATIONS.

Dr. C. A. Herter read a paper on this subject. He began by stating that few subjects of a medical nature have received more attention at the hand of clinicians and investigators than that of uræmia. Yet at the present time there is an uncertainty as to the nature of the uræmic state that is discouraging both to the student of pathology and the practitioner who seeks to understand the conditions, he is called upon to treat.

He first gave a brief historical sketch of the growth of opinion regarding the nature of uræmia, and then reviewed in detail the various theories that have been advanced. The first one taken up was that known as the mechanical theory of uræmia, which has its chief basis in the clinical and post-mortem studies of Traube, who was impressed with the facts that in many cases of Bright's the blood is impoverished in its corpuscular and proteid elements, the left ventricle is hypertrophied, and the arterial tension is greatly increased. The hydræmia combined with high arterial tension was supposed to account for the cerebral œdema found at autopsy. The uræmic symptoms, Traube referred not to cerebral œdema, but to the anæmia of the brain, resulting from the pressure exerted by this œdema. There are objections to this theory. In the first place, œdema of the brain is present in only a small proportion of cases where there have been unequivocal symptoms of uræmia during life. There have been many cases of kidney disease with no hydræmia, no cardiac hypertrophy and no increase of arterial tension ; yet even when these latter conditions are present, there is usually no œdema of the brain. In the second place, œdema of the brain is found in conditions where Bright's is absent, and there are no symptoms of uræmia. Then again, drugs which produce convulsions may produce cerebral œdema, and it is likely that the œdema of the brain seen in uræmics is often the consequence rather than the cause of the convulsions. A further objection to the mechanical theory is that lowering of the arterial tension, where it is high, does not necessarily relieve the uræmic symptoms. The dyspnœa of Bright's is often thus relieved, but usually not the convulsions. Bleeding frequently stops the latter, but it checks them often also where there is no excess of tension. The effects of bleeding cannot be used as an argument in favor of Traube's theory, because it may be claimed that the bleeding relieves the circulation of poisonous substances.

The carbonate of ammonium theory. This was advanced by Frerichs, and is based upon the following propositions :

(1) It is a well-known property of urea to be readily transformed under favorable circumstances into ammonium carbonate.

(2) Carbonate of ammonium can always be detected by chemical means in the blood of uræmic patients.

(3) The injection of ammonium carbonate into the blood of animals gives rise to the symptomic group of uræmia.

The fate of Frerich's theory hangs on his second proposition, namely, that the blood of uræmics always contains ammonium carbonate. From numerous experiments made by Gobee, Oppler, Zalewsky and others, including the author, the following conclusions may be drawn : (1) That no ammonium carbonate or only a small amount is found in the blood of uræmic persons. (2) That amounts of ammonium carbonate far smaller than the quantity required to kill are readily detected. (3) That urea injected into the blood of dogs is not converted into ammonium carbonate. We may therefore state that Frerich's second proposition is without substantial foundation. It has been stated that the ammoniacal breath occasionally met with in uræmic patients is evidence of ammonia in the blood. It is more likely to be found in uræmics with gastro-intestinal symptoms, and the ammonia probably comes not from the blood, but from the gastro-intestinal tract.

The theory of Trietz differs from that of Frerich's mainly in that it supposes the conversion of urea into ammonium carbonate to take place in the intestine instead of the blood. He holds that it is by the entrance of the ammonium carbonate into the blood that the uræmic state arises, and the objections already made to the proposition of Frerichs, that uræmic blood contains ammonium carbonate, apply here with equal force.

The potassium theory of Felz and Ritter is based upon the idea that the potassium of the blood-serum, which is normally present in very small amount, might accumulate under pathological conditions and cause death, the potassium salt being rapidly fatal in animals when injected into the veins in even inconsiderable quantity. The experimental and chemical evidence of various observers is strongly opposed to this theory and it may be unhesitatingly abandoned.

The theory of Brown-Séquard. According to this writer, the kidney elaborates an internal secretion which is essential to health, and the suppression of which is responsible in a large degree for the phenomena of uræmia, while the accumulation of toxic substances in the blood is thought to have little or no influence in causing uræmic symptoms. The following are the chief facts upon which this hypothesis rests. (1) It is claimed that the injection of kidney extract into the circulation of a nephrectomized dog, causes the temporary disappearance of uræmic symptoms. (2) It is held that the well-authenticated cases of survival of patients with anuria for a week or more without any signs of uræmia, especially in cases of mechanical obstruction of the ureters, is evidence that it is owing to the internal secretion of the kidney that this inhibition of uræmic symptoms takes place. All the facts advanced in support of the first proposition, Dr. Herter said, are equivocal, and those advanced to support the internal secretion theory are equally weak.

The theory of extractives and toxines. The extractive theory of uræmia refers toxæmic symptoms to the accumulation in the blood of the extractives usually found in urine; among these may be mentioned xanthine, uric acid, creatinine, etc. In order to show that a substance plays a part in the production of uræmic symptoms it is necessary to prove that this substance is present in the blood in uræmia, or is present in excessive amount, and that the substance is toxic in the higher mammals. The evidence is not fully satisfactory regarding either of these points. The observations that have been made hardly establish the fact that an accumulation of the extractives is a feature of all or many cases of uræmia. The evidence is even less strong in regard to particular members of the extractive group.

Regarding the view which attributes the uræmic phenomena to the action of toxines, the poisonous basic products of bacterial activity, there is little to be said, for the evidence on which it is built, is scanty and conflicting. None of the toxic ptomaines that have been suspected in this connection have been found in the blood of uræmics.

The urea theory of uræmia. The evidence relating to urea as a factor in uræmia may be grouped in answer to the following queries: (1) Does urea occur in excess in the blood of uræmic patients? (2) Is urea toxic, and if so, to what extent does it explain the symptoms of uræmia? As regards the first question, we have a sufficiently large accumulation of observations made by competent investigators to enable us to reach a definite decision. In the blood of Bright's disease, the quantity of urea is largely increased beyond that found in the normal blood, and its presence is readily detected even by imperfect chemical methods. When we come to the second question, we find that the facts which favor and those which oppose the idea that urea is toxic seem to be about evenly balanced. Dr. Herter then reviewed the observations that have been made bearing on this question, and detailed a number of experiments made by himself which go to prove that pure urea injected into the blood of the dog and monkey in large amount is in the highest degree toxic. The autopsies in these cases disclosed marked congestion of the gastro-intestinal tract. To what extent and under what conditions urea is a factor in uræmia, the author said it was not possible for him to state at the present time. Facts at our command strongly favor the view that the gastro-intestinal symptoms of uræmia are due to urea. There is no doubt that we at present group together under the term uræmia, conditions which are totally distinct as regards pathology. The evidence is very strong, though not quite conclusive, that one group of symptoms depends largely on the accumulation of urea, and perhaps extractives in the blood, while another set of symptoms bears the stamp of an infective process operating in the presence of renal insufficiency. Observations may show that even further subdivisions of cases are necessitated by pathological considerations.

It is upon the following facts that the author based the view that urea plays an important part in causing the gastro-intestinal symptoms of uræmia:

(1) The presence of urea in excess in the blood in such cases.

(2) The property which pure urea possesses of causing such symptoms when injected in the circulation.

(3) The occurrence in Bright's disease of congestion of the gastro-intestinal tract, and the occurrence of a similar congestion in animals which is positively due to the injection of urea into the blood.

(4) The fact that urea is found in the dejecta of patients with gastro-intestinal uræmia.

(5) The absence in many of these cases of any elevation in temperature, or other evidence of acute toxæmia.

(6) The fact that the urine in these cases, even at the time of the crisis, is no more toxic than normal urine, which is in sharp contrast to the very toxic urines found in acute febrile uræmias of cerebral type.

Dr. W. H. Thomson said the subject of uræmia has always been and still remains a very mixed one in his mind. Dr. Herter's paper is certainly a very valuable contribution to the subject. The cases of uræmia to which Dr. Herter principally confined himself — those in which the characteristic symptoms are vomiting and purging — form comparatively a small minority of those that come under our observation. In many cases there are no gastro-intestinal symptoms whatever. Theoretically, Dr. Thomson said, he still felt strongly inclined to the view that toxines play a very important part in the production of the purely nervous symptoms of uræmia. Regarding the experiments performed by Dr. Herter in order to prove the toxic effects of urea, Dr. Thomson inquired whether the injection into the blood of sodium chloride or other similar substances might not give rise to derangements of the system to some degree resembling those produced by the repeated and rapid introduction of increasing quantities of pure urea.

Dr. Sachs expressed the hope that the critics of the future would deal more leniently with Dr. Herter's theory than he had dealt with the theories reviewed in his paper, and that they would expend the same amount of thought and labor to prove their assertions. He did not think that any one should attempt to establish a single theory to explain such a complex of symptoms as we have in uræmia. Very much the same symptoms occur under other conditions, and we are perfectly willing to recognize the different morbid processes giving rise to them.

Dr. Herter then closed the discussion. He stated that in his paper he did not advocate any one theory to explain all the phenomena of uræmia. What he did advocate was that there is a certain class of symptoms, a limited class, namely, the gastro-intestinal symptoms, which are met with in certain cases of uræmia, and which are due, in all probability, to uræ. The proof of this is not absolutely satisfactory, but he did not see how the proofs adduced by his experiments could be interpreted in any other light. In reply to Dr. Thomson's question, Dr. Herter said that large quantities of sodium chloride can be injected into the blood without producing symptoms comparable to those produced by the introduction of urea. As regards the cerebral symptoms of uræmia, he does not know what they are due to, and in his paper, he made no attempt to throw any light on those cases. The autopsies on the animals which were killed by the introduction of urea were performed immediately after death, and the intestinal congestion was very marked.

ELECTION OF OFFICERS.

The following officers were elected for the ensuing year: President, Dr. E. D. Fisher; Vice-President, Dr. C. A. Berter; Second Vice-President, Dr. W. M. Leszynsky; Recording Secretary, Dr. Frederick Peterson; Corresponding Secretary, Dr. Mary Putnam-Jacobi; Treasurer, Dr. G. M. Hammond.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, MAY 17, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 Washington Street, Boston.

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

HEART-FAILURE.

It has again and again been pointed out that the term heart-failure, though unfortunately too often used by physicians in their death returns is vague and indefinite, conveying no information, though possibly convenient to cover ignorance — being applicable to every alteration of the cardiac mechanism, whereby death results. Thus, heart-failure may be due to influences of a nervous kind — shock, inhibition through the pneumogastric, paralysis by narcotics or sedatives. Bouillaud relates an instance of a previously healthy man who died of syncope in a fright. Lancereaux, in a recent treatise, reports several cases of sudden death in previously healthy persons from violent excitation of the pneumogastric. In two of these cases, attacks of indigestion paralyzed the vagus centre.[1] "In both these patients," he says, "death supervened after a hearty meal, from syncope, as was proved by the empty heart-cavities, and the absence of any material disorder or lesion capable of explaining the cause of the death; every thing, moreover, went to show that the syncope was due to an overloaded stomach." To this category he referred the sudden death which often follows a blow on the epigastrium, or even the excessive drinking of cold water (reflex paralysis of heart through vagus excitation). Moreover, the sudden death which sometimes takes place in the course of pleurisy or pulmonary tuberculosis may be due to irritation of the vagi, "especially in those cases where the almost complete emptiness of the heart's cavities indicated death by syncope."[2] This conclusion is in accordance with some decisive experiments of Brown Séquard and Paul Bert. Much more frequent is heart-failure from toxic, inflammatory and degenerative changes in the myocardium, from acute dilatation due to nutritive disturbances or to exhaustion from overwork.

The toxic lesions of the myocardium have been arranged under the heads of: (1) toxic, (2) pyretic myocarditis.[3] Myocarditis toxic is the effect of poisoning by alcohol, phosphorus, arsenic, mercury, lead, etc. This affection manifests itself by a diminution of the muscular power of the heart. The organ, without presenting changes appreciable to palpation and percussion, "gives a feeble impulse and muffled beats." In poisoning by mercury, the heart is "flabby, soft, and friable, of a dirty gray or yellowish color; in poisoning by phosphorus, it is tumefied, mottled with purpuric spots, and is pale yellow or orange yellow." "The muscular fibre in the one case is pigmented and granular; in the other, it is the seat of a transformation which, to the microscope, manifests itself by the presence of granules which are strongly refractive and soluble in ether." Many pathologists, denying the existence of parenchymatous myocarditis would regard these lesions as simple parenchymatous and fatty degeneration.

Pyretic or infectious myocarditis is sufficiently common as a complication of cholera, yellow fever, diphtheria, small-pox, malignant scarlet fever, typhoid fever, etc. The heart-muscle is poisoned by the pyretogenous agent, becomes fatty and flabby, its pulsations are feeble and obscure; the pulse is small, irregular and accelerated; syncopal states are frequent, and are the cause of the sudden death so common at the close of grave fevers. Bourges, who has studied the alterations of the heart-muscle in malignant diphtheria, remarks that it is generally augmented in volume, "dilated, but not hypertrophied," "of a dead-leaf color." "When you dissociate the muscular fibres, you note their great fragility; they are tumefied and granular; may in fact undergo two kinds of degeneration, the granulo-fatty and the vitreous. Bourges also points out the fact that there are also sclerotic changes, so that it may be said that the diphtheria-poison "determines at the same time parenchymatous and interstitial lesions."[4]

Suppurative myocarditis, from septic infarcts in the walls of the heart (a complication of pyæmia and septicæmia); and acute interstitial myocarditis existing independently or following rheumatic pericarditis and endocarditis (also sometimes of syphilitic origin) are potent causes of heart-failure.

G. C. Henderson, in the "Transactions of the Pathological Society," London, 1883, gives an interesting report of a case of gummatous myocarditis followed by death; the interventricular septum and anterior wall were the seat of syphilitic nodules surrounded by sclerous rings which had extensively invaded and destroyed the muscular tissue. Hilton Fagge publishes a series of cases of "fibroid disease of the heart," and Dr. A. L. Loomis[5] would make of "cardiac fibrosis" ("arterio-sclerosis of the heart") one of the most common causes of heart failure. He believes that obstructive changes in the aorta and at the origins of the coronary arteries are most usually associated with fatty degeneration, while fibroid changes are associated with obstruction in the coronary arteries. This distinction appears to us well made.

---

[1] Leçons de Clinique Medicale, 3d series, 1894, p. 225.

[2] Loc. cit., p. 226.

[3] Lancereaux, loc. cit.

[4] Bourges: La diphthérie, Paris, [illegible]

[5] Transact. Climatological Society, [illegible] p. [illegible]

Fatty degeneration of the myocardium, besides being a sequel of toxic and pyretic myocarditis (*vide supra*) follows wasting diseases, chronic anæmia and especially pernicious anæmia, and, notably, stenosis of the coronary arteries by which the nutritive supplies of the heart-muscle are cut off. It is a final stage in compensatory hypertrophy from Bright's disease, and in chronic valvular disease, whether stenosis or insufficiency. The heart-muscle, though the most untiring of all muscles, is perhaps the most prone to fatty degeneration. Certainly, persons affected with chronic valvular disease, with hypertrophy, or with hypertrophy from renal sclerosis, can expect unbroken compensation for only a limited number of years, and sooner or later, from complex causes, the overworked heart-muscle fails and becomes granular and fatty.

Acute dilatation without hypertrophy and without visible degeneration of the myocardium in its connection with heart-failure has been studied by Dr. John Curnow in two recent lectures.[6] Naturally, he says, the symptoms of cardiac failure due to a primitive dilatation of the heart-cavities from insufficient nutrition are precisely the same as those due to a failure in compensatory hypertrophy subsequent to any grave circulatory obstruction. In the early stage, they are pallor, palpitation, headache and dyspnœa on exertion, with often a distressing angina. As the disease advances, there is lividity and œdema, and the pulse is small, irregular and rapid. Dilatation occurs to a limited extent in anæmia and chlorosis, in fatal cases of leukæmia, pernicious anæmia and chronic malaria. A form of cardiac dilatation frequently follows typhus and typhoid fever; the weakened walls of the heart readily give way, and distention occurs under the influence of ordinary tranquil work. Curnow, in the lectures referred to, gives examples of acute dilatation accompanying chronic malaria, beri-beri and scurvy.

The influence of overwork or overstrain in producing acute dilatation and sometimes complete cardiac failure was alluded to in a former number of the JOURNAL.[7]

That sudden death may result by paralysis or rupture from excessive strain and overfilling of the heart-cavities is by no means a very rare experience. Nevertheless, as Dr. A. L. Loomis [8] well remarks, "it is safe to assume that heart-failure is impossible so long as the heart-cavities are of normal size, the heart-muscle of normal integrity, and the cardiac innervation not seriously disturbed, the function of the trophic nerves being normal."

To sum up, when physicians report cases of death as due to "heart-failure," it may be assumed that the "heart-failure" was due either to some overpowering nervous influence or to toxic, inflammatory or degenerative changes in the myocardium; or to suppurative or interstitial myocarditis; or to arterio-sclerosis of the heart; or to fatty degeneration following wasting disease, valvular disease, or stenosis of the coronary arteries; or to acute primitive dilatation from prostrating fevers, chlorosis, leukæmia, pernicious anæmia, chronic malaria, overwork and other depressing influences!

At the meeting of the Climatological Society held at Richfield Springs, N. Y., in 1892, Dr. F. I. Knights, in discussing Dr. Loomis's paper, made the remark that a certificate of death from heart-failure was little different from one of death from want of breath. Entering deaths as due to "heart-disease" is amenable to almost the same objection, but certificates are returned in this manner by reputable physicians every day.

THE RÔLE OF THE NOSE IN ZOLA.[1]

For a long time the study of "artistic anatomy," so called, has been recognized as a necessary and proper training for an artist or sculptor. Latterly, there has arisen what may be styled a study of literary physiology. The analytical and realistic school of writers fill their books with outspread dissections of the human body no less than of its soul, and remove the covers from society as from a watch to "show how the wheels go round."

The latest aspect of this physiological-romance writing is the discovery by a Frenchman that great writers depend largely upon some special sense for remembrance and reproduction of emotions, sensations and experiences. "Zola," says M. L. Bernard in his essay upon "Les odeurs dans les romans de Zola," "has more than any other man lived, suffered and revelled in the sense of smell," and he offers us accordingly a study of the smells in Zola's stories. But first we must begin with the nose of the master.

"In all the portraits of Zola which I have seen it was the nose which struck me first. The forehead is broad and well uncovered, circled with short, trimmed locks; the beard is thick-set, with short, bristling hairs; the glance is cold and piercing, though a little softened by the lenses of his glasses; the lips and mouth are so hidden under the moustache as to lose half their expression; but there is the nose alone in the full light of the mid-face. It is large, fleshy, broad, pierced by two great nostrils, which seem to quiver and inhale the air. Only to see this mighty nose explains all the associating descriptions of odors so well known throughout his books." Being gifted with such an olfactory organ, it is not to be wondered at that "Zola is the creator of a new terminology, of a language of odors, and that he leads his readers to study to analyze and classify them, to seize upon their secret harmonies, their mysterious relations to sentiments and ideas, their silent but irresistible influence upon resolve and conduct." Every page, and often every line, is marked by this masterly peculiarity.

Open any of his books, and examples are at hand. In "L'Assommoir" we find "the soapy odor," "the heavy, stale odor of the wash-house of Rue Neuve made much of; the odor of old dust and sour filth in Lorilleux's room." Each character has a perfume *sui generis* belonging to his age, sex, state of health, godly or vicious habits. So in "Pot-Bouilie," "Bachelard exhales an odor of vulgar debauchery," "Madame Campardon, a fair odor of fresh autumn fruit," and "Nana, an odor of life, of all-powerful woman, which intoxicates one."

---

[6] Lancet, January 6, 13, 1894.

[7] Boston Medical and Surgical Journal, April 26, 1894, p. 421.

[8] Proceedings of the Climatological Association, 1892, p. 72.

[1] Gazette des Hôpitaux, No. 46, 1894.

In other books we find the abbé with his "odor of a priest, of a man made unlike others." "The ruins of a house have an odor of damnation." We must admit we have smelt this odor in houses which were not in ruins or uninhabited.

Finally, in "Ventre de Paris," the swarming population of the Halles carries in every fold of its garments "an odor of spawn, one of those heavy odors which rises from the rushes and shiny lilypads when the eggs burst from the belly of the fish fainting from love in the sun."

Such is the interlinear study of the smells and stinks in Zola's books. Surely the study of literary physiology of special senses is but just begun. We may yet find a cipher which will disclose a system of acoustics in Gibbon, of visual physiology in Cervantes, of tactile sensibility in Thackeray; and since Scott's stag drank itself full, there is every chance that we may find between the lines of Marmion and Ivanhoe a detailed study of the sense of taste.

◆

MEDICAL NOTES.

An Honor to Professor Virchow. — The King of Italy has conferred on Professor Virchow the Grand Cross of the Order of SS. Maurice and Lazarus.

A Statue of Dr. Sims. — A bronze statue of Dr. J. Marion Sims, by Du Bois, of Paris, has been completed, and will be erected in Bryant Park as soon as the pedestal is ready.

Small-Pox at New York Quarantine. — Two cases of small-pox were detained at quarantine in New York Harbor on May 10th, from the steamer *Roland* from Bremen.

A Physician's Generous Bequest to Nurses. — The late Dr. S. J. Moore, of Glasgow, has bequeathed the residue of his estate, after the payment of other legacies, etc., to found a convalescent home for nurses, to be called by his name. The amount of the bequest is likely to be over $200,000.

One Hundred and Five Years Old. — According to the *Journal of the American Medical Association*, Mrs. Hannah Chard, of Glassboro, N. J., was one hundred and five years old on April 20th, having been born at Brandywine in 1789. She is still able to go out, and has one hundred and eighty grandchildren and great-grandchildren.

The American Association of Railway Surgeons, at its annual meeting in Galveston, Texas, seems to have had a very lively experience over the election of its officers. Pandemonium reigned; everybody had the floor and spoke at once; the presiding officer was helpless, and epithets were freely exchanged. No blood was shed. The Texas air was not responsible, for the trouble really dated from the preceding meeting.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, May 16, 1894, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 51, scarlet fever 58, measles 16, typhoid fever 18, small-pox 1. There is one case of small-pox at the Canterbury Street Hospital, and three cases at Gallop's Island; no deaths. During the week the State Board of Health received reports of the following cases of small-pox: Holyoke 1, Worcester 1, Chicopee 1, Randolph 1, Chelsea 1.

Small-Pox in Providence. — A fourth case of small-pox was discovered last week in Providence, which, like the three of a previous week, has not yet been traced to any origin of infection.

Boston City Hospital. — Mr. A. Shuman has been re-elected President of the Board of Trustees of the Boston City Hospital, and Mr. H. H. Sprague has been re-appointed on the Board. The Board has requested of the City Government a special appropriation of $330,000 for various much-needed purposes not provided for by present funds and contracts.

Suffolk District Medical Society. — The Censors' examination of the Suffolk District Medical Society will be held on June 7th, at 2 p. m., at 19 Boylston Place. The Censors of the Suffolk District officiate for the Society at large, and candidates are requested to make personal application to the Secretary three days before the meeting.

Progress of the Medical Registration Bill in the Massachusetts Legislature. — In the House last week the Senate Bill to regulate the practice of medicine was passed to a third reading, a substitute bill, offered by Mr. Hayes of Lowell, to punish persons illegally using the designation "M.D." being rejected.

A Residuary Legacy to the Cambridge Hospital. — The will of Jacob B. Remick, of Cambridge, leaves his estate in trust during the life of certain persons named; but upon their death the entire estate is to be converted into cash, one-third of which is to be given to the Cambridge Hospital. The value of the bequest is about ten thousand dollars. The Avon Home and the Old Ladies' Home of Cambridge receive the other two-thirds.

NEW YORK.

Opening of the New Post Graduate Medical School and Hospital. — On the afternoon of May 8th, a public reception was given at the new Post-Graduate Medical School and Hospital, and in the evening the formal opening exercises of the institution ook place. The Secretary, Dr. Clarence C. Rice, read a report giving the history of the school, and addresses were made by the President, Dr. D. B. St. John Roosa, the Rev. William R. Huntington, D.D., and St. Clair McKelway, Esq., of Brooklyn.

Seizure of Tuberculous Beef. — On the 7th of May the meat inspectors of the Board of Health seized the carcass of a cow affected with tuberculosis, which had been cut into quarters, but not yet hung up for sale, at West Washington Market. It was found that the carcass had been shipped from Goshen, Orange County, by a milk-dealer and stock-raiser by the name of Smith, and Dr. Johnson, the veterinary surgeon to the Health Department, is making an investigation of the case. Pending his report, the Board has ordered that all meat and milk from Smith's farm shall be seized when it reaches the city. Several carcasses of tuberculous beef have lately been discovered in the markets, and it is feared that a whole herd of cattle, and possibly several herds, in Orange County may be infected with the disease.

A Pension Fund for Employés of the Health Department. — The Governor has signed the Lawson Bill, establishing a pension fund for the physicians, nurses, clerks and other employés of the Health Department who have served a term of twenty years, and also for the families of employés dying in the discharge of duty. The fund from which the pensions will be paid is to be made up of the fines and penalties collected for violations of the city health laws, and of the fees paid for searches of the records.

The Killing of the Elephant. — The problem of how best to kill an elephant weighing over five tons has presented itself to the Park Commissioners during the past week. The animal known as "Tip," which was presented to the city some years ago by Forepaugh, the showman, has always been a vicious creature, and it was finally determined that for the safety of the keepers at the Central Park Menagerie and of the general public it would be advisable to destroy him. Poison was selected as the most satisfactory means of accomplishing this object; and Dr. George S. Huntington, of the College of Physicians and Surgeons, was asked to take charge of the killing. Cyanide of potassium was determined upon, and the attempt was first made to give it to the elephant concealed in carrots and apples. He quickly detected the bitter taste, however, and ejected the articles from his mouth. A half a loaf of rye bread with a cavity in it filled with the cyanide he also tossed from him. Finally, the expedient was tried of giving him the poison in capsules mixed with a bran mash, and this proved successful. Death occurred in a comparatively short time, and was evidently quite painless.

PHILADELPHIA.

The University of Pennsylvania will hold its commencements of all its departments during the first week in June.

Jefferson College held its commencement exercises May 9th, and graduated a class of 163. The trustees conferred the degree of LL.D. upon Prof. William Goodell, M.D.

The Medico-Chirurgical College graduated the largest class in its history on the 11th inst., 44 students receiving their medical degrees.

The Wistar Institute of Anatomy and Biology will be opened May 21st with addresses by Professors Pepper, William Osler and Harrison Allen.

New Women Physicians. — Fifty women received the degree of Doctor of Medicine at the commencement of the Women's Medical College of Pennsylvania last week.

◆

Miscellany.

OUT-PATIENT HOSPITAL ABUSE.

A physician sends to the *British Medical Journal* the following note from a patient, a tradesman with a good income, describing a bit of out-patient experience in Liverpool.

> I called at the doctor's residence, and was told that he was at the Eye Infirmary, and would not be home for some hours. As I had not made arrangements to stay overnight, I said I could not wait so long, and was recommended to go and see him at the infirmary. I did so, and found myself in a room with about 150 or 160 other persons, mostly, so far as I could judge, working-class people like myself and in easy circumstances. Looking around I recognized an old friend of mine from Blackburn, and asked him what on earth he was doing there. He said he came up regularly to have his eyes looked after. "Why," I said, "you could afford to pay this man a guinea every time, couldn't you?" "Yes," said he; "but what is the use of being such a fool as to throw away your guineas when this chap will see you for nothing?"

It might not be impossible to repeat the same experience at many hospitals in this country, and as the number increases so will the abuse.

◆

PERMANGANATE OF POTASH IN OPIUM POISONING.

Dr. Walter L. Pyle[1] reports from the Emergency Hospital of Washington, D. C., four cases of opium poisoning in which permanganate of potash was administered. Although the conditions under which the cases were treated and the considerable use of other restoratives make the results of no conclusive value, the report of all such cases is much to be desired.

There was one fatal case, a man fifty-seven years old, who had taken an unknown number of morphine pills, each containing one-eighth of a grain. He was brought to the hospital about five hours after the supposed time of taking the poison. Permanganate of potash was given by mouth and hypodermatically. Two hours later the conjunctival and plantar reflexes returned for a while, but the man died seven hours after entrance.

A man twenty-two years old took three teaspoonfuls of sulphate of morphia; treatment was begun thirty minutes later. He was given strychnine, atropine, caffeine and coffee, and the permanganate of potash, six grains to a pint of water, was given by stomach and subcutaneously. In eight hours he was considered out of danger, and the next day was discharged well.

---

[1] Medical News, May 12, 1894.

The other two patients were women, aged twenty-five and twenty-one years, who took respectively half an ounce and two drachms of laudanum. In each case atropine was used, and the permanganate was given by mouth within a very short time, and a little later subcutaneously. A few hours sufficed to put both women out of danger.

◆

OBITUARY.
ALBERT CUSHMAN STANARD, M.D.

The following resolutions were passed at the last regular meeting of the Harvard Medical Society of New York:

Whereas, Dr. Albert Cushman Stanard, an esteemed member of the Harvard Medical Society of New York, has in the infinite wisdom of God been called thus early to lay aside the duties of life, cut down in the vigor of early manhood, as the paths of usefulness and promises of prosperity were opening wide to him. Therefore, be it

Resolved, That in his untimely death we recognize the loss to the Society of one of its most promising and worthy members, and desire to pay to his memory a tribute of sincere respect;

Resolved, That we extend to his stricken sisters our heartfelt sympathy at the grief which has come upon them;

Resolved, That these resolutions be published in the *Boston Medical and Surgical Journal.*

[Signed.] John B. Walker, M.D.
John H. Huddleston, M.D.
William B. Coley, M.D.

◆

Correspondence.

THE AMERICAN MEDICAL ASSOCIATION.

The following letter has been received through Dr. H. O. Marcy:

Boston, May 2, 1894.

Dear Sir: — I take pleasure in advising you that the Chicago and North-Western Railway Co. have made arrangements for an excursion rate for physicians attending the San Francisco meeting of the American Medical Association. The fare from Boston to San Francisco and return will be $125.

A palace-car will leave Boston at 2 p. m., Monday, May 28th, via Boston & Albany, New York Central & Hudson River, and Lake Shore & Michigan Southern Railroads, connecting at Chicago, where a through palace-car will be provided, leaving Chicago at 10.30 p. m., Tuesday, May 29th, via Chicago & North-Western, Union Pacific and Southern Pacific Railroads.

Diagrams of sleeping-cars will be in this office, No. 5 State Street, Boston, and berths reserved from Boston to Chicago, and similar accommodations assigned, from Chicago to San Francisco. The price of berths, Boston to San Francisco will be $21.

Holders of these excursion tickets, will, on payment of $15 extra, previous to departure from Missouri River (on going trip) be permitted to return via Portland and Union Pacific Railway, or any of the direct Northern routes.

Tickets are valid for return until July 15, 1894. If any extension of time or reduction of rates are made, I will, with pleasure, promptly advise of same.

Remittance may be made to this office to cover cost of tickets and sleeping-car berths. Yours very truly,

J. E. Brittain, *N. E. P. Agent.*

METEOROLOGICAL RECORD,

For the week ending May 5th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S..29	30.28	46	48	43	44	75	60	N.	S.	20	10	C.	C.	
M..30	30.34	56	72	40	40	46	43	N.W.	S.W.	6	15	C.	O.	
T.. 1	30.04	68	80	55	58	46	52	N.E.	S.W.	3	7	F.	C.	
W. 2	29.84	76	88	64	47	52	50	W.	W.	11	12	F.	F.	.02
T.. 3	30.18	56	59	52	64	81	72	N.E.	S.E.	13	5	O.	C.	
F.. 4	30.20	46	49	42	88	98	93	E.	E.	8	7	O.	O.	.05
S.. 5	30.06	56	67	46	82	68	75	S.W.	S.	2	8	C.	C.	.22
☞	30.13	66	49				64							.29

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MAY 5, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Measles.
New York	1,891,306	851	362	18.00	18.12	1.80	7.80	1.92
Chicago	1,438,000	—		—	—	—	—	—
Philadelphia	1,115,562	385	—	11.70	—	1.30	4.94	1.56
Brooklyn	978,394	391	144	15.00	20.00	.75	7.50	2.25
St. Louis	560,000	—	—	—	—	—	—	—
Boston	487,397	191	63	13.25	9.54	1.06	5.83	1.06
Baltimore	500,000	—	—	—	—	—	—	—
Washington	308,431	99	26	12.12	16.16	2.02	2.02	—
Cincinnati	305,000	124	40	11.34	14.58	2.43	4.05	—
Cleveland	290,000	119	53	12.04	19.78	1.72	1.72	2.58
Pittsburg	263,709	—	—	—	—	—	—	—
Milwaukee	250,000	—	—	—	—	—	—	—
Nashville	87,754	32	9	6.26	9.39	—	3.13	—
Charleston	65,165	39	19	20.48	2.56	15.36	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	96,217	29	13	17.25	24.15	3.45	10.35	—
Fall River	87,411	31	16	9.69	35.47	3.23	—	—
Lowell	87,191	42	11	7.14	20.66	2.38	2.38	—
Cambridge	77,100	16	3	18.75	6.25	6.25	—	—
Lynn	62,656	21	—	—	—	—	—	—
Springfield	48,684	18	5	11.11	27.77	—	5.55	—
Lawrence	48,355	—	—	—	—	—	—	—
New Bedford	45,886	19	6	21.04	—	—	—	—
Holyoke	41,278	21	16	33.33	14.28	—	—	4.76
Salem	32,233	9	3	11.11	—	—	11.11	—
Brockton	32,140	—	—	—	—	—	—	—
Haverhill	31,396	4	2	—	—	—	—	—
Chelsea	30,264	18	5	16.66	11.11	—	11.11	—
Malden	29,394	7	1	14.28	28.56	—	14.28	—
Newton	27,556	9	7	11.11	11.11	—	11.11	—
Fitchburg	27,146	5	3	—	20.00	—	—	—
Taunton	26,972	16	5	12.50	12.50	—	—	—
Gloucester	26,688	—	—	—	—	—	—	—
Waltham	22,058	6	1	—	33.33	—	—	—
Quincy	19,642	—	—	—	—	—	—	—
Pittsfield	18,802	6	4	—	—	—	—	—
Everett	16,585	5	5	40.00	—	—	20.00	—
Northampton	16,331	7	1	—	14.28	—	—	—
Newburyport	14,073	4	0	—	—	—	—	—
Amesbury	10,920	3	0	33.33	—	—	—	—

Deaths reported 2,551, under five years of age 836; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 575, acute lung diseases 363, consumption 302, diphtheria and croup 148, diarrhœal diseases 42, measles 37, whooping-cough 35, scarlet fever 33, cerebro-spinal meningitis 29, typhoid fever 25, small-pox, erysipelas and malarial fever 8 each.

From whooping-cough New York 11, Philadelphia and Brooklyn 4 each, Boston, Washington and Cincinnati 3 each, Cleveland and Taunton 2 each, Nashville, Fall River and Cambridge 1 each. From scarlet fever New York 19, Boston 5, Brooklyn 3, Philadelphia and New Bedford 2 each, Cleveland and Holyoke 1 each. From cerebro-spinal meningitis New York 12, Washington, Cleveland and Holyoke 4 each, Brooklyn, Somerville, New Bedford, Chelsea and Pittsfield 1 each. From typhoid fever Philadelphia 6, Brooklyn 5, Cincinnati and Somerville 3 each, New York, Boston, Charleston, Worcester, Lowell, Cambridge, Springfield and New Bedford 1 each. From small-pox New York 4, Brooklyn 3, Holyoke 1. From erysipelas New York 4, Philadelphia 2, Washington and Amesbury 1 each. From malarial fever New York 3, Brooklyn 2, Philadelphia and Charleston 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending April 21st, the death-rate was 18.2. Deaths reported 3,054: acute diseases of the respiratory organs (London) 304, measles 192, whooping-cough 117, diphtheria 79, scarlet fever 60, diarrhœa 31, fever 29, small-pox (London 4, Birmingham 3, West Ham 2, Manchester 1) 10.

The death-rates ranged from 11.9 in Portsmouth to 26.4 in ———; Birmingham 20.2, Bradford 17.9, Croydon 13.0 Derby 15.8, Huddersfield 16.4, Leeds 16.6, Liverpool 14.7, London 18.1, Manchester 19.2, Newcastle-on-Tyne 16.3, Nottingham 16.3, Sheffield 15.3.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442 for the week ending April 28th, the death-rate was 18.3. Deaths reported 3,665: acute diseases of the respiratory organs (London) 255, measles 203, whooping-cough 148, diphtheria 77, scarlet fever 58, diarrhœa 28, fever 26, small-pox (Birmingham 9, London 6, Portsmouth 3) 18.

The death-rates ranged from 11.0 in Portsmouth to 25.9 in Oldham; Birmingham 22.5, Bradford 17.5, Derby 12.7, Leeds 16.2, Liverpool 25.6, London 18.5, Manchester 20.9, Nottingham 18.2, Sheffield 16.3.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 5, 1894, TO MAY 11, 1894.

Captain William G. Spencer, assistant surgeon, will report in person to the president of the Army retiring board at Omaha, Nebraska, at such time as he may designate, for examination by the board.

Leave of absence for two months to take effect on or about July 1, 1894, is granted Major William E. Waters, surgeon, U. S. A.

A board of medical officers to consist of Major Joseph K. Corson, Major Valery Havard and Major Edward B. Moseley, surgeons, is appointed to meet at West Point, New York, June 1, 1894, or as soon thereafter as practicable, for the physical examination of the cadets of the graduating class at the U. S. Military Academy and such other cadets of the Academy and candidates for admission thereto, as may be ordered before it.

Captains George H. Torney and Louis W. Crampton, assistant surgeons, will report in person to Colonel Chas. H. Alden, assistant surgeon-general, president of the examining board appointed to meet at the office of the surgeon-general, U. S. A., on Tuesday, May 8, 1894, at such time as they may be required by the board for examination as to their fitness for promotion.

Leave of absence for twenty days to take effect on being relieved from duty at David's Island, N. Y., is granted Major Jos. R. Gibson, surgeon.

First-Lieut. Benjamin L. Ten Eyck, assistant surgeon, now on temporary duty at Fort Clark, Texas, is assigned to duty at that post.

First-Lieut. William F. Lippitt, Jr., assistant surgeon, is relieved from duty at Camp Eagle Pass, Texas, and ordered to Fort Leavenworth, Kansas, for duty.

Paragraph 2, S. O. No. 86, April 12, 1894, A. G. O., assigning First-Lieut. Harlan E. McVay, assistant surgeon, to station at Angel Island, Cal., is revoked. He will be relieved from duty at Fort Huachuca, Arizona, and will report for duty at the Presidio of San Francisco, Cal., relieving First-Lieut. Charles Willcox, assistant surgeon, who, after being thus relieved, will report for duty at Angel Island, Cal.

First-Lieut. John S. Kulp, assistant surgeon, is relieved from duty at Fort Sheridan, Illinois, and ordered to Fort Spokane, Washington, for duty.

First-Lieut. George M. Wells, assistant surgeon, will proceed to Fort Bowie, Arizona Territory, and report for temporary duty not later than the 15th inst., during the absence on leave of Captain Jefferson D. Poindexter, assistant surgeon.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MAY 12, 1894.

R. A. Marmion, surgeon, will hold himself to relieve Medical Inspector G. A. Bright, on the U. S. S. "Newark."

G. E. H. Harmon, surgeon, to the U. S. S. "Monongahela," June 15, 1894.

W. M. Barnum, assistant surgeon, to the U. S. S. "Monongahela," June 1, 1894.

J. M. Steele, surgeon, from the U. S. S. "St. Louis" and to League Island Yard.

H. G. Beyer, surgeon, from Naval Academy and to the "Bancroft."

Clement Biddle, passed assistant surgeon, from League Island Yard and to Marine Rendezvous, Philadelphia, Pa.

J. F. Leys, assistant surgeon, with one month's leave with permission to go abroad.

SOCIETY NOTICES.

Boston Medical Association.— The annual meeting of the Boston Medical Association will be held Monday afternoon, at 4 o'clock, May 21st, at the Boylston Medical Library, 19 Boylston Place.

This Association, founded in 1806 for the maintenance of a proper fee table, should be known and joined by every member of the Massachusetts Medical Society residing in Boston.

Charles L. Scudder, M.D., *Secretary.*

American Orthopædic Association. – The eighth annual meeting will be held in Washington, D. C., Tuesday, Wednesday, Thursday and Friday, May 29th, 30th, 31st and June 1st, inclusive.

The Sessions will be held in the Preparatory Department, Columbian University, H near 14th Street.

The Annual Dinner will be omitted and instead a Breakfast will be given by the outgoing President at 2 p. m., on Wednesday at the Shorham, to members of the Association. This will give the members an opportunity to attend the dinner of the General Congress on Wednesday evening, to which they are all invited.

The President's Address will be delivered on Wednesday after the Executive Session, on: "Orthopædic Surgery, of the Past and Future, and the Influence of Surgical Bacteriology and Modern Pathology upon the Subject."

There are forty-five papers already announced and the following discussions have been arranged:

First Day.— "Flat-Foot." (*a*) "Its Etiology and Mechanism of its Production." Newton M Schaffer, M.D., New York. (*b*) "Pathology, Prognosis and Mechanical and Surgical Treatment." T. C. Morton, M D., Philadelphia. (*c*) "Gymnastic Treatment." H. Augustus Wilson, M.D. Royal Whitman, M.D., New York; Sidney Roberts, M.D., Philadelphia; J. D. Griffith, M.D., Kansas City; Roswell Park, M.D., and others will take part in the discussion.

Second Day. — "Rachitic Deformities." (*a*) "Etiology, Clinical History and Lesions." A. Jacobi, M.D., New York. (*b*) "Its Various Manifestations, Diagnosis, Differential Diagnosis and Prognosis." Benj. Lee, M.D., Philadelphia. (*c*) "Mechanical and Constitutional Treatment." Samuel Ketch, M.D., New York. (*d*) "Operative Treatment." DeForest Willard, M.D., Philadelphia.

Third Day. — "Paralytic Deformities." (*a*) "Etiology, Clinical History and Pathological Conditions Producing Them." E. H. Bradford, M.D., Boston. (*b*) "Varieties, Diagnosis, Differential Diagnosis and Prognosis." E. G. Brackett, M.D., Boston. (*c*) "Mechanical Treatment." John Ridlon, M.D., Chicago; Joel Goldthwait, M.D., Boston. (*d*) "Operative Treatment, Paralytic and Rachitic Deformities." DeForest Willard, M.D., Philadelphia.

John Ridlon, M.D., *Secretary.*

BOOKS AND PAMPHLETS RECEIVED.

Weekly Abstract of Sanitary Reports issued by the Supervising Surgeon-General, Marine-Hospital Service. Vol. viii. Washington. 1894.

De la Maladie de Basedow et en particulier de sa Pathogénie. Par Frederick Chamberlain, Docteur en Médecine du Yale Medical School, U. S. A.: Docteur en Médecine de la Faculté de Paris. Paris: Henri Jouve. 1894.

The Etiology of Osseous Deformities of the Head, Face, Jaws and Teeth. By Eugene S. Talbot, M.D., D.D.S Third edition, revised and enlarged, with 461 illustrations, 422 of which are original. Chicago: The W. T. Keener Co. 1894.

Primer Congreso Médico-Farmaceutico Regional, Celebrado en Valencia del 26 al 31 de Julio de 1891. Para Commemora-el Año 50 de la fundación del Instituto Médico. Actas Y. Der talles, publicados bájo la dirección del Dr. Faustino Barberá, Secretario general de dicho Congresso, Valencia. 1894.

Essentials of Anatomy, Including the Anatomy of the Viscera, arranged in the form of Questions and Answers, Prepared especially for Students of Medicine. By Charles B. Nancrede, M.D. Fifth edition, with an appendix on the Osteology of the Human Body, the whole based on the last edition of Gray's Anatomy. One hundred and eighty fine illustrations. Philadelphia: W. B. Saunders. 1894.

Lecture.

URINARY DIAGNOSIS.[1]

Lecture II.

BY EDWARD S. WOOD, M.D.,
Professor of Chemistry, Harvard Medical School.

Albuminuria. — This term simply means the presence of albumin in the urine. It is not synonymous with Bright's disease, by which we mean one of the forms of organic disease of the kidneys; but, on the contrary, in the vast majority of the cases in which this symptom is present, it is due to some other pathological condition. The causes of albuminuria are very numerous and may be arranged in three principal classes, as follows:

(1) Organic diseases of the kidneys.

(2) Renal disturbances not due to organic disease.

(3) Diseases of the urinary or genito-urinary passages attended with suppuration or hæmorrhage.

There is another class of cases in which the albuminuria is due to an altered composition of the blood in some diseases of the blood, but we need not consider such cases here since no examination of the urine is necessary in order to make a diagnosis of them.

We will first take up a study of the changes of the urine in the first, and by far the most important of the above classes of cases, namely, the organic diseases of the kidneys, which are sometimes grouped together under the general name Bright's disease. Of these organic diseases there are four which are quite distinct clinically, and the urinary secretion in these different affections has decidedly different characteristics, with the possible exception of the two most chronic forms, the interstitial and the amyloid degeneration of the kidneys, between which the differential diagnosis can generally be easily made by the clinical history and the physical examination of the patient.

In studying these diseases of the kidneys, I shall confine myself almost exclusively to the changes which are found in the urine, particularly those that are of diagnostic importance, and in referring to the different diseases, I shall use chiefly the terms of the English classification with which you are most familiar.

Acute Nephritis. — In this disease, also called acute Bright's disease, and acute parenchymatous nephritis, which consists chiefly of an acute inflammation of the membrane lining the renal tubules, the attack is usually sudden like that of other acute diseases, and is liable to follow exposure to cold, or to result from some infectious disease, such as diphtheria or scarlet fever. The urine suddenly falls in quantity to 400 or 500 c. c. in twenty-four hours, and often much less than this is passed. In the last case of severe acute nephritis, which I saw, the quantity was only 120 c. c. (4 fluid ounces) in forty-eight hours. The color changes to a smoky or deep black, and after settling we can see an abundant dark-brown sediment. The reaction is usually faintly acid. The specific gravity may be either higher or lower than normal. The absolute quantity of normal solids in twenty-four hours is much diminished, and the chlorine is generally totally absent or diminished to an exceedingly slight trace, during the early stage of the disease, while the dropsy is increasing. During this stage, which in cases that are to terminate favorably generally lasts but a few days, the percentage of albumin is large, one-half per cent. or more. The maximum proportion of albumin reported in this disease is one and a half per cent.

The sediment in this early stage is seen upon microscopic examination to contain very numerous abnormal blood globules, by which I mean red corpuscles which have lost their contents by osmosis, and consequently their density, so that they have but little refrangibility, and have become swollen to a spherical form, their diameter being very much less than that of a normal corpuscle. In renal hæmorrhage, when the hæmorrhage is in the cortical portion of the kidneys, the blood corpuscles have almost universally this abnormal appearance. The sediment also contains numerous renal cells which are colored brown with decomposed blood pigment and are more or less granular, and the following variety of renal casts; epithelial, blood, brown-granular, fibrinous, simple granular and a few hyaline casts. By a fibrinous cast I mean the transparent, dense, highly refracting cast, which is colored brown or yellow; it is not composed of fibrin.

This is the condition of the urine during the early stage of acute nephritis while the inflammation is increasing or at its height, and the dropsy is increasing or at a standstill. If death occurs at this time, the kidney is what is called the large red kidney. As soon as the inflammation begins to subside, the character of the urine begins to change. The first change noticeable is the beginning increase in the daily quantity, and with this increase in quantity of urine, we see a corresponding diminution in the percentage of albumin. In acute nephritis, we may consider it the rule that, in the earlier stages of the disease, until the recovery of the kidney is nearly complete, the smaller the quantity of urine the larger the amount of albumin and *vice versa.* Also, with the beginning increase in quantity of urine, we find that the chlorine reappears or increases in amount, and the dropsy begins to diminish. As the quantity of urine increases, the color becomes less and less brown until, when the urine has reached about the normal, the color becomes slightly smoky.

From the beginning increase in the quantity of urine until it has reached about the normal amount, we find also a change in the character of the sediment. The blood globules, brown-granular and fibrinous casts gradually diminish in number; the proportion of hyaline and simple granular casts increases; and the number of brown-granular renal cells diminishes, most of them being free from color. At this time, which may be considered as the very beginning of convalescence, fatty renal cells appear; fatty elements (cells and oil globules) are seen on the casts; and fatty casts begin to be found. These fatty elements in the sediment increase gradually, until, in some cases, they may, for a day or two, form the predominating constituent of the sediment. They then gradually diminish and are found only in small proportion in the sediment of the urine in advanced convalescence.

If the case progresses favorably, without relapse or exacerbation, which is by no means the rule, the urine continues to increase, often very rapidly and with a correspondingly rapid diminution of the dropsy, from about the normal to two or three times the normal quantity, so that it may reach from two and a half to five litres (or quarts) in twenty-four hours. With the increase in the quantity of urine the color becomes pale, the smoky tint gradually disappearing; the specific gravity falls and the quantity of sediment becomes slight. The quantity of normal solids in the twenty-four hours may exceed the normal, since the urine contains not only the urea and other solids which are being formed in the economy at the time, but, in addition, those which were in the dropsical fluid. The albumin diminishes steadily with the increase of urine until it is present only in exceedingly slight traces. With the increase in the quantity of urine above the normal, the brown-granular, fibrinous, blood, fatty and epithelial casts gradually diminish and finally disappear; and we have in the sediment during the last few weeks of convalescence, only a very few blood globules and renal cells and a few hyaline and finely-granular casts, some of which have an occasional blood globule and renal cell attached. When the convalescence is nearly complete, the quantity of urine falls from the high point which it has reached, but without a corresponding increase in the amount of albumin, until it finally, with the complete restoration of the kidneys, reaches the normal, when the albumin and all of the abnormal constituents of the sediment disappear.

---

[1] Evening Lecture delivered at the Harvard Medical School, February 28, 1891.

If an exacerbation occurs, and this is the rule rather than the exception, the quantity of urine suddenly falls to the normal or below, if the exacerbation be a severe one, and the color generally becomes more or less blood-red, the albumin increases again, and in the sediment we see an increase or a reappearance of the blood and epithelial casts. The blood globules, however, are almost invariably more nearly normal in character than in the first stage of the disease, and the blood pigment is not so much decomposed. This accounts for the blood-red color of the urine instead of the brown which we saw in the early stage. In some cases, during the progress of acute nephritis, several exacerbations may occur owing to some exposure to cold, errors in diet, or other causes, and in some cases the convalescence may be prolonged from one and one-half to two years before the kidneys become completely restored to a healthy condition, and the albumin and casts entirely disappear.

Subacute Nephritis, commonly called chronic parenchymatous nephritis, and also chronic tubular nephritis, may result from the acute disease, but it is more often chronic from the beginning, and frequently accompanies chronic wasting diseases, such as phthisis, syphilis, etc. In this disease, we find the so-called large white kidney after death. In this form of Bright's disease, the character of the urine varies according to the activity of the process going on in the kidneys. If the parenchymatous inflammation is active, the general dropsy increases and, on simple inspection, the urine looks like that of a fever urine. The quantity passed in twenty-four hours is much diminished, generally from 400 to 600 c. c., but it may be much less than this. It is very high in color, not brown or bloody, of very high specific gravity, generally 1,026 to 1,030, very acid in reaction, and generally contains an abundant sediment, which is seen to consist chiefly of amorphous urates, as in many fever urines. The normal solids are relatively increased, with the exception of the chlorine, which is much diminished and may be nearly absent, if the dropsy is increasing; but the daily quantity of solids is found upon quantitative estimation to be decidedly less than the normal. In the active stage of this disease the urine contains a larger proportion of albumin than in any other kidney affection; generally the proportion is about one per cent., but it may reach as high as two or even five per cent. The sediment during this stage usually consists chiefly of amorphous urates, which should be removed before examining for the other constituents. This is done by allowing the urate sediment to settle, decanting the supernatant urine and adding to the sediment a considerable volume of lukewarm water, which will dissolve the urates and hold them in solution. The organized constituents will then settle, and may be seen as a rather heavy white deposit, which consists of numerous hyaline, granular and fatty casts, granular and fatty renal cells, and compound granule cells. It is rare to find any blood; and when blood occurs it is due, in my opinion, to a complication with acute nephritis.

Almost invariably, in this affection, owing to care or to appropriate treatment, an amelioration in the severity of the symptoms takes place, dropsy diminishes and the other severer symptoms subside, and it is evident that the process going on in the kidneys is more or less inactive. When this occurs, the urine has an entirely different character. It is passed in larger quantity, but is still less than normal, generally from 1,100 to 1,300 c. c.: it is pale in color, of low specific gravity (1,010 to 1,015) slightly acid in reaction, and contains a considerable quantity of white sediment. The normal solids are diminished both relatively and absolutely. The albumin is less than in the active stage, but is still present in considerable quantity, from one-quarter to one-half per cent. The sediment is found to contain the same constituents as in the active stage, with the exception of the amorphous urates, but in smaller proportion, namely, hyaline, granular and fatty casts, granular and fatty renal cells, and compound granule cells.

In the latter stages of this disease, whether the process be active or not, we find for some months before death, in addition to these constituents, the so-called waxy cast, which is a transparent, dense, highly refracting, colorless cast. The waxy cast resembles the fibrinous cast seen in acute nephritis in every way, except that it is absolutely free from color. During the progress of a case of subacute nephritis we often see these two conditions of the urine alternating with each other a considerable number of times.

Chronic Nephritis (Interstitial). — This is the most insidious of all of the forms of Bright's disease. It has generally existed a long time before the physician is consulted and the urine examined. Some cases have, apparently, been traced to chronic lead-poisoning and malaria as a cause; but in most cases no definite cause can be assigned. After death from this form of kidney disease, we find the red, granular, contracted kidney; and in almost all cases there is also found hypertrophy of the left ventricle of the heart.

The urine is increased in quantity more or less, according to the advancement of the disease until the very latest stage, and is always more or less dilute unless complicated with some acute disease. From the beginning the urine gradually increases until it may reach four or even six litres (quarts) in twenty-four hours. But this increase is very gradual since the duration of the affection may be ten or even twenty years. The reaction is normal, the color at first normal, gradually becomes pale; the specific gravity gradually diminishes until it reaches 1,005 or 1,006; and the amount of sediment is slight, normal or less than normal. The normal solids are diminished relatively and absolutely according to the extent of the disease, except the indoxyl, which may be increased. The albumin varies from the slightest trace up to about one-quarter per cent. The sediment, up to the latest stage, consists only of hyaline, finely-granular, and granular casts. Towards the close of life the urine begins to fall until it is secreted in less than the normal quantity, but the specific gravity and the relative quantity of solids remains the same as when the amount of urine was large, so that the twenty-four hour quantity of solids is very much diminished. We may have only 400 or 500 c. c. of urine with a specific gravity of only 1,004 or 1,005, and in this final stage we may find only a very slight trace of albumin. The sediment at this time generally contains waxy casts in addition to the hyaline and granular casts. In this form of Bright's disease, the quantity of urine secreted at night is apt to far exceed that secreted during the day-time. The quantitative estimation of the urea is of very great value in this disease, since after the very earliest stage the twenty-four hour amount of the urea is diminished below the normal, and continues to diminish with the progress of the disease.

Amyloid Degeneration of the Kidneys. — This condition of the kidneys accompanies many wasting diseases such as suppurative diseases of the bones, phthisis, syphilis, etc., and when it exists in the kidneys, other organs, especially the liver and spleen, are usually found to be affected by it. It is very apt to be complicated with subacute nephritis, since both of these affections may be caused by similar conditions. The urine in amyloid degeneration resembles that of chronic interstitial nephritis, and from the urine alone it is impossible to make a differential diagnosis between these two forms of kidney disease. In amyloid degeneration, however, since the disease is primarily one of the blood-vessels and the secreting structure is only affected later, although the quantity of urine is increased to the same extent as in interstitial, the solids are not diminished in the same proportion, and hence the specific gravity is not as low, as a rule. In this disease, the urine steadily increases until it may reach three or four litres (or quarts), and the specific gravity correspondingly diminishes. The solids are also diminished relatively, but a quantitative estimation of the amount of normal solids in twenty-four hours, shows that they are more nearly normal in quantity than in interstitial nephritis. The albumin is only present in the urine in the very slightest trace at the beginning of the disease, but it gradually and steadily increases as the disease advances, and may reach one-half per cent. or more, especially if, as is usually the case, it be complicated with parenchymatous inflammation. The sediment is composed of hyaline and finely-granular casts, and in some instances of waxy casts also. If there is any parenchymatous inflammation we will find, in addition, fatty cells and casts.

Complications. — All of the above forms of disease of the kidneys are liable to be complicated, either with each other or with one of the hyperæmias, active or passive. Acute nephritis is especially apt to occur during the progress of any of the chronic forms, in which case, the quantity of urine will fall to an extent corresponding to the severity of the acute attack, and we will find the blood elements, globules and casts, in the sediment. Of the other forms of kidney disease, the most important complication, and one of the most common, is the combination of the subacute (or chronic parenchymatous) with the chronic interstitial disease, which complication is called chronic diffuse nephritis. In this disease the interstitial element tends to increase the quantity of urine and the parenchymatous inflammation to diminish it, so that the daily amount of urine will be found to be largely increased if the interstitial disease predominates, and only slightly increased if the parenchymatous disease predominates. In the former case there will be but little albumin, and in the latter a comparatively large quantity. The sediment will naturally contain the hyaline and granular casts of both diseases, and the fatty elements, fatty casts, renal cells and compound granule cells of the subacute disease. The extent to which the kidneys are affected, or the amount of destruction of the kidney tissue, can be approximately estimated by the average daily amount of urea secreted. Subacute nephritis and amyloid degeneration are also very commonly present in the same case, since both conditions may be due to similar causes. The composition of the urine and sediment are practically the same as in chronic diffuse nephritis, and the two cannot be distinguished from each other by the urine alone.

In albuminuria caused by renal disturbances, which are not due to organic kidney disease, morbid growths, tubercular disease or calculi, the renal conditions are usually spoken of as active hyperæmia or irritation of the kidneys, and passive hyperæmia. I have considered these conditions elsewhere,[2] and will only refer very briefly here to the character of the urine. In the active hyperæmia or irritation of the kidneys, the chemical composition of the urine varies, so far as the physical properties and the normal solids are concerned, according to the cause. The urine may be either concentrated or dilute, and the daily quantity of normal solids may be normal or diminished. The albumin is always very small in quantity, usually being present in the very smallest traces except in the very severe cases, catarrhal nephritis, when we may have from one-eighth to one-quarter per cent. for a few days. This quantity of albumin does not persist, however, for more than two or three days unless it develops into an acute nephritis. The character of the sediment is usually that seen during convalescence from acute nephritis, and it is often impossible to distinguish by the urine alone between a convalescence from acute nephritis and an active hyperæmia of the kidneys. With the clinical history in addition, however, there is usually no difficulty in making the differential diagnosis.

In *Passive Hyperæmia*, the physical properties and chemical composition of the urine also vary according to the cause. The albumin is present always in the very smallest traces except in rare cases of passive hyperæmia of pregnancy, when it may reach nearly one-quarter per cent. I have known this quantity of albumin to be present in cases of pregnancy followed by eclampsia, when no chronic disease of the kidneys existed, as was proved by the subsequent history of the cases; and in these cases the comparatively large percentage of albumin persisted for two or three months before confinement. The sediment in passive hyperæmia is composed of pure hyaline and finely-granular casts only, so far as the renal elements are concerned.

---

[2] See Boston Medical and Surgical Journal, May 1[illegible], 18[illegible]

RÉSUMÉ.

To sum up briefly, and looking at the subject from a little different point of view, we see from the above, that an abnormally large quantity of urine is passed in advanced convalescence from acute nephritis, in chronic interstitial nephritis, in amyloid degeneration of the kidney, generally in chronic diffuse nephritis, and in some cases of active hyperæmia of the kidneys. An abnormally small quantity of urine is passed in the early stage of acute nephritis, both active and inactive stages of subacute (or chronic parenchymatous) nephritis, generally in active hyperæmia, and always in passive hyperæmia of the kidneys. Toward death, of course, we find an abnormally small quantity of urine in all forms of kidney trouble.

A large amount of albumin, by which I mean one-half per cent. or more, is found in the urine only in the early stage of acute nephritis, the active stage of subacute (or chronic parenchymatous) nephritis, and, sometimes, in the chronic diseases complicated with these. A moderate amount of albumin, about one-quarter per cent. we find in early convalescence from acute nephritis, in the inactive stage of subacute (or chronic parenchymatous) nephritis, in advanced chronic interstitial disease and in amyloid degeneration of the kidneys, generally in chronic diffuse nephritis, for a few days in severe active hyperæmia (catarrhal nephritis), and in very rare cases of passive hyperæmia of pregnancy. Only very slight traces of albumin are found in advanced convalescence from acute nephritis, in the early stages of chronic interstitial and amyloid disease of the kidney, and, generally, in active and passive hyperæmia of the kidneys.

Blood is found in the sediment, free and adherent to the casts, and often with blood casts, only in acute nephritis and active hyperæmia, or other affections which are complicated with these. Fatty elements, fatty renal cells, fatty casts, or oil globules free and on casts, are found temporarily in acute nephritis, being most abundant in the early stage of convalescence; during the whole progress of a subacute and chronic diffuse nephritis, and in some cases of long-continued active hyperæmia of the kidneys, generally, however, in very small proportion in this last affection. The presence of calculi in the renal tissue, or the existence of cancer or other morbid growths affecting the kidney, produce more or less parenchymatous inflammation in those portions of the renal tissue affected, and we will consequently find on examining the urine and sediment in such cases some evidence of the parenchymatous inflammation. Generally, the urine resembles that of an active hyperæmia of the kidneys, but we may find in the sediment, in addition, crystalline elements, if there is a concretion, varying in character according to the nature of the concretion, or in cases of morbid growths rarely pieces of the growth or cells from it. Tubercular disease of the kidneys causes suppuration, and may be detected by finding the tubercle bacilli in the pus.

AN ARKANSAS METHOD OF TREATING SMALL-POX. — A simple and effective method of stopping the spread of small-pox was tried in a rural district of Arkansas last week. A negro being found ill with small-pox in his cabin, the neighbors set fire to the house and burned it all up — small-pox infection, cabin and negro.

Original Articles.

APPENDICITIS: SOME IMPRESSIONS DERIVED FROM AN EXPERIENCE OF 44 CASES.[1]

BY HOMER GAGE, A.M., M.D., WORCESTER, MASS.,
Surgeon to the Worcester City Hospital, to the Memorial Hospital, and to the House of Providence.

OUR knowledge of the frequency and importance of inflammation of the vermiform appendix and its results dates back in this country to the paper of Fitz, read before the Association of American Physicians in 1886. From a purely pathological study, he demonstrated beyond all dispute, not that appendicitis was a new disease, but that it had always been the unrecognized cause of a great variety of acute abdominal diseases, hitherto classed as inflammation of the bowels, peritonitis, typhlitis and perityphlitis. His conclusions have been since then confirmed and strengthened by a constantly increasing surgical experience. Dr. M. H. Richardson, whose 281 cases lately reported represent one of the largest individual experiences, expresses the opinion that at least 90 per cent. of all cases of acute peritonitis occurring in young adults originate in an inflamed appendix, an estimate which is, I think, not likely to be diminished by further investigation. Dr. Richardson further expresses his firm conviction that "excluding certain zymotic diseases, it is the cause of more deaths than any other acute abdominal lesion." No surgical subject has within recent years attracted so much attention or given rise to so much discussion. Its frequency and importance have been strenuously urged on all sides, and very large and constantly increasing personal experiences have been reported. It is confined to no localities, to no conditions of life. The picture it presents is being recognized by the profession everywhere as an old acquaintance under a new name.

In spite of all the discussion, and the large experience so rapidly acquired, the problems created by the newly discovered pathology are by no means finally solved. No one can lay down any rules by which we can be governed in diagnosis, prognosis or treatment. We must, for a time at any rate, be content to be observers only. He who studies and observes much, finds his opinions changing so often that he is very reluctant to attempt the instruction of others. One opinion alone I find not changed but strengthened from the beginning, that is, as to the gravity and danger that exists in every case, no matter how mild it may appear to be. This one fact I would impress upon you; for the rest, I have preferred to give you briefly some impressions as they have been made upon my mind by the study of these 44 cases, asking you to remember that I regard them as impressions only, which are still subject to change, but from which further study and experience will, I hope, evolve more definite conclusions.

In the 14 cases in which the appendix was removed, a fæcal concretion has been found three times, twice in the appendix itself, once in the bottom of the abscess cavity. I have never found any other foreign body present. In three cases, traumatism was the alleged cause, and in one the attack followed the ingestion of large quantities of grapes. In a very few instances, the attack was preceded by diarrhœa, with acute digestive disturbance; but for the great majority of all cases — I should say at least 75 per cent. — no cause could be assigned. I do not believe that the preponderance of males, in my own series 35 out of 44, can be fairly interpreted to indicate hard labor or exposure to injury as a predisposing cause. My own feeling is that the cause is usually to be found in the accidental retention in the appendix of larger or smaller fæcal masses, and that their effect is determined by the kind and virulence of the bacteria present with them. Another determining factor is probably to be found in the congenital or acquired variations in the length, position and patency of the appendix. These variations are of still more importance from their effects upon the clinical history and symptoms of appendicitis.

---

[1] An address delivered before the Thurber Medical Association at Milford, Mass., February 22, 1894.

The appendix is ordinarily from two to four inches in length, although considerable variations in both directions have been occasionally noted. Its base is fixed near the ileocæcal valve, at the junction of the longitudinal striæ of the colon, and is therefore subject only to such changes in position as affect the cæcum as well. From this point, however, the appendix and its mesentery may lie in almost any direction, extending downward into the pelvis, transversely across the abdomen, with its tips reaching beyond the median line, or upwards on either side of or even behind the ascending colon. Its position, of course, fixes the location of pain and tenderness, which may, therefore, be found almost anywhere within the abdominal cavity. Many cases of appendicitis are thus the more readily mistaken for cases of peritonitis of ideopathic or unknown origin, a diagnosis that occasionally seems to be verified by a fruitless search for the appendix at the time of operation. Allow me to cite one example from my own experience.

E. E., grocer, thirty-five years old, patient of Dr. George F. Woodbury, was seen December 18, 1891. He had a history of a previous attack in August, 1891, since which time he had constantly complained of pain, chiefly epigastric, for which he sought counsel in Boston. Present attack came on suddenly in the night, and on account of absence of local signs, I advised delay, until on the 20th it was clear that a general peritonitis was impending. At the operation, peritoneum was everywhere injected and there were some fibrinous adhesions, but no pus and no appendix could be found. The patient died two days later; and at the autopsy, the appendix was found lying behind the cæcum and extending upwards about four inches, its tip resting on the right kidney. Its end was perforated, and pus could be squeezed out of its entire length, and had already formed a small abscess between the colon and the kidney.

Here was an appendix which had given rise to pain chiefly in the epigastrium, and which from its concealed position had almost escaped detection, and could not have been removed. I believe that the most favorable position for finding the appendix is when adherent to the iliac fascia or along the outer side of the colon. From these places it can almost always be removed, because the general peritoneal cavity can be more easily and more perfectly protected, and because the dissection can be prosecuted with a greater sense of security; one has a better view of the field of operation, and there is less danger of injuring important structures.

Dr. Richardson has lately raised the question as to whether or not the appendix is always perforated, and expresses his "strong conviction that in all severe cases, and, in fact in all cases where there is a localized peritonitis there is a larger or smaller perforation with extravasation." Without wishing in the least degree to question this statement, it seems to me that there must be a few exceptions. I have twice removed appendices in which no perforation could be discovered by the naked eye or by the probe. (Both specimens are shown here.) The first is from a man who had had three previous attacks, and whom I operated upon forty-eight hours after the beginning of the fourth. Upon separating an adherent mass on the inner side of the colon, I succeeded in isolating the appendix, which was very much thickened, its surface red and slightly injected. There was no pus. Immediate improvement followed its removal. The second is from a young man who had been sick five days, complaining chiefly of pain in the right iliac region. The appendix was found non-adherent, somewhat thickened, with a bulbous tip, which was directed forward against the abdominal wall, and corresponded with the point of maximum tenderness. Microscopical examination of its contents showed that it contained a fæcal concretion with a small amount of pus. In both of these cases, the inflammatory process, which always begins from within, in the mucus membrane, had extended outward, involving successively all the coats of the appendix and ultimately would have perforated it, perhaps. Neither perforation nor extravasation had, however, taken place up to the time of my interference. The first was certainly one of the severest and most threatening of my cases, and the second was rather a late operation.

The most important pathological factor is, I think, the limitation of the process by protective adhesions. They may be formed by the adherence of adjacent coils of intestine, by the envelopment of the appendix in a fold of omentum, or by its adherence to the iliac fascia, or along the outer side of the colon, as before mentioned. At any rate, the result is a localized abscess, which may or may not be adherent to the abdominal wall. Should extravasation take place before the formation of adhesions, a general infection follows, and the case cannot be distinguished from what has always been called idiopathic general peritonitis.

The typical case of appendicitis presents a picture so familiar to us all as to require but little attention. A child or young adult suddenly seized with abdominal pain and vomiting, the pain at first general, then more marked in the right iliac region, accompanied by tenderness, and in the course of time by the development of a bunch. This is the type, from which, however, there may be wide variations. The onset is almost always sudden. Chills or chilly sensations may be present, but are just as often wanting, even when suppuration has taken place. Vomiting is often, though not necessarily, an early symptom, and when present usually ceases with the localization of the inflammatory process. Its continuance, especially if changing to simple regurgitation, is always ominous. I have, however, recently had two cases in which, after the removal of the appendix and drainage of the abscess, vomiting of a thin, dark-green fluid persisted for several days, both patients ultimately recovering.

The pain is at first general and then local. It may be very severe, or quite moderate, in cases which at operation present very similar conditions. Its location is, I think, of but little value, because the position of the appendix varies within such wide limits. Absence of localization is important as indicating a more general infection of the peritoneal cavity. Tenderness, like pain, may be general or local, and in any part of the abdomen. With the appendix in its ordinary place, the point of maximum tenderness is, as indicated by McBurney, usually to be found midway between the anterior superior spine and the umbilicus. The exceptions to this are, however, nearly as many as the observances, and I think McBurney's point as a diagnostic sign should be altogether discarded.

Dulness, when present, helps to the localization of the inflammation, but its absence is entirely without significance. Its value in any case is extremely limited. Abdominal distention, especially if general, is, I believe, one of the most dangerous symptoms. Fortunately, it is not an early one, and can generally be anticipated by operation. Its presence not only indicates a more or less general peritoneal infection, but also offers a serious obstacle to the mechanical part of the operation. The effect of its full development I shall refer to again.

Temperature I have come to regard as of but little value in indicating the nature or severity of the attack. I have operated in the face of a normal temperature for two days, and found a foul abscess with double perforation of the appendix, and, on the contrary, with a temperature of 103°, have found no pus, and simply an inflammatory thickening of the appendix. It is certainly a much less reliable guide than the pulse, and I am inclined to agree with Elliot that many of the most serious cases have a normal or nearly normal temperature.

One of the most interesting problems in connection with the clinical history of these cases is their tendency to recur. How great that tendency is cannot yet be accurately stated. Fitz found it in 11 per cent. of 257 cases. Out of the 44 cases which furnish the basis of my paper, 12 gave a definite history of two or more attacks. It is safe to say that in the very large proportion of cases the first attack is the last, but that after one or more recurrences others may be pretty certainly expected; and one thing is, I think, pretty definitely settled, namely, that one can never tell how severe the next attack may prove. A patient who has had one or more recurrences is in constant danger of an attack so severe as to be beyond surgical help from the outset.

One word about the differential diagnosis: it is not always easy to distinguish appendicitis from other acute abdominal affections. When the local symptoms are not clear, internal strangulation, twists and intussusception, with other forms of intestinal obstruction, must be carefully considered, and the operator must, of course, be prepared for any one of them. Dr. Richardson reports two cases of strangulation in omphalo-mesenteric remains which were mistaken for appendicitis. In one case of suspected appendicitis which I saw with Dr. W. E. Paul, then of Southbridge, and which he has lately published in the *Boston Medical and Surgical Journal*, operation was deemed inadvisable because the patient was already moribund. Autopsy revealed a hæmorrhagic pancreatitis as the cause of death. Many of these conditions can be eliminated only by exploratory incision, bearing in mind always that in healthy young adults, especially males, a sudden attack of acute abdominal pain, with attendant symptoms pointing to the development of a local or general peritonitis, means in the great majority of cases an inflamed appendix.

In considering the management of these cases, let me say a word first about medical treatment, especially treatment by salines, so strenuously urged by Dr. Gordon, of Portland. Since the revival of saline treatment of peritonitis by Tait, we have all seen at times in appropriate cases most satisfactory results. The theory of its benefit, as suggested by all of its admirers, as well as by Gordon, lies in its depletive effect, not only upon the general, but also upon the portal circulation; the free watery dejections at the very beginning of the trouble are believed to cause the absorption of exudates before they have a chance to undergo decomposition, and also to subdue inflammation by their local depletion of the blood-vessels. The advantages of this method are obvious if its safety can be demonstrated. The dangers are from the breaking down of protective adhesions by increased peristalsis, and from favoring the extravasation of the intestinal contents through the perforated appendix. The first objection is, perhaps, somewhat theoretical; but the delicacy of the adhesions, and the ease with which they are ruptured during most careful manipulations, are familiar to all who have seen early operations. I have seen one case in which the adhesions which separated a localized abscess in a child were ruptured during sleep, and another in which in a young adult the rupture took place during an effort at stool; in both cases the disappearance of the local swelling was accompanied by collapse, rapidly progressing general peritonitis and death. In the second case, the abdomen was opened ten hours after the accident, a large quantity of pus lying free in the abdominal cavity evacuated, but too late to be of any service. This danger is not only theoretical, but real and very much to be feared. That salines may promote further extravasation of intestinal contents through the perforated appendix is denied by Dr. Gordon, on the ground that at the onset of the attack communication is shut off between the cæcum and appendix by closure of the natural opening. His statement is unsupported by any anatomical demonstration, and is contradicted by the published records of almost all the leading authorities upon this subject. At the recent meeting of the Surgical Section of the Suffolk District for the consideration of this subject, Drs. Richardson, Beach, Cabot and Elliot all testified to finding fæcal matter in peri-appendicular abscesses and in the appendix itself, and at least two of them testified to having seen gas and intestinal contents escape from the perforation at the time of operation. I have myself found fæcal matter in the appendix, and have twice after ligation and removal of the appendix, where there was no possibility of cæcal perforation, had fæcal matter discharged through the drainage-tube on the first two or three days, and not thereafter. I believe it can be accounted for only on the ground of direct communication between the cæcum and appendix. In spite of its advantage, therefore, I believe the indiscriminate administration of salines in appendicitis is attended with the gravest danger. I have once or twice resorted to salines, or, preferably, other laxatives, but only in the most guarded way, and in cases where I felt reasonably sure that perforation had not taken place.

For the mildest cases, and where for any reason temporizing has seemed best, I believe the old-fashioned treatment by rest, opiates and hot applications to be the safest. The so-called simple catarrhal inflammation without perforation will improve as quickly and as surely under this as under the more active methods, the only danger is in concealment of graver symptoms which might demand interference by the opiates, and this has the advantage of being entirely within our control.

It is as impossible with our present knowledge to determine what proportion of cases will recover under such palliative measures as I have just described, as it is to lay down any rules for surgical interference. We do know that while a very considerable proportion of cases recover perfectly and permanently without the necessity of interference, an equally large number, beginning in precisely the same way, quickly develop most dangerous symptoms, which demand at once prompt incision and exploration. Until we discover some way to distinguish at the outset between these two classes, it is natural that those whose experience has been more largely with the severe type should prefer and advocate immediate operation as soon as the diagnosis is established. It is argued that the danger from an operation at such a time is extremely small and that the conditions have not yet been complicated by the presence of large exudations and by strong adhesions, so that they are more easily recognized and more securely dealt with. The argument has much to commend it, and I think there can be no question that the trend even of the most conservative surgical opinion is towards a more rather than a less radical procedure. We are, however, but in the infancy of our knowledge of this subject, and I feel hopeful that we may some time be able to draw at least a sharper line between those cases whose natural tendency is to recovery and those which are destined to progress. There is at best some risk of disseminating an inflammation which nature has attempted to localize, and much danger of weakening the abdominal wall, a very serious consideration, especially to the laboring class. I have not therefore, as yet, been convinced that operation is always to be advised at the very beginning of the attack, and yet in some cases I should propose it unhesitatingly, especially in those where a general peritonitis seemed imminent.

I wish I might be able to give you the exact reasons which govern me in forming such a conclusion, but I cannot. Impressions, even if founded on experience, which cannot be formulated into words, are, I know, most unscientific and unsatisfactory, perhaps, often unsafe guides; but they exist, and I cannot yet at all accurately describe them.

Whenever vomiting continues and is accompanied by any suspicion of increasing distention after the first twenty-four hours, I am sure that interference cannot be proposed too quickly. It generally indicates a greater or less tendency to general peritoneal infection, and its persistence is a symptom of very grave import. The more nearly does it approach a condition of regurgitation, the graver does it become. In these cases, operation must be done in the very beginning, to be of any value. Patients who are regurgitating a dark-greenish fluid, even if not stercoraceous, and whose abdomens are much distended, are the worst possible subjects for operation. I have operated now four times under such conditions, and always with fatal result. Whenever general peritonitis is threatened, operation must be done within the first twenty-four or forty-eight hours, and even then may be too late to avert death. After full development, operation is, I believe, counter-indicated, and the chance of a favorable result lies in the use of salines or other purgatives, with opiates enough to secure quiet. These are the cases in which the rectal tube, turpentine, enemata and other means for the relief of distention are indicated. In all cases of acute appendicitis, with or without localized symptoms, where a general peritoneal infection is feared or its beginning suspected, the time to consider surgical interference is, I believe, at the very outset. It is then that any delay is most dangerous. When fully developed, it is, I believe, almost always too late. The shock of ether, and the increased manipulation made necessary by distention of the intestine is almost always fatal, and if left to nature, such cases may occasionally recover. I have recently twice had that fortunate experience.

When after the first onset the symptoms become definitely localized with the formation of a tumor, and with a definite sense of local resistance and tenderness, delay may be less dangerous, and the appropriate time for interference is always more difficult to determine. Should the local conditions decidedly improve on the second day, it is, I think, fair to infer that nature will effect a complete restoration, or that she has, at least, succeeded in setting up a temporary barrier to the extension of the inflammation. I believe that there are many cases in which the improvement in physical signs, as well as in constitutional symptoms is so rapid and so decided that interference, if proposed at all, is to be considered only as a safeguard against possible recurrence. In the great majority of these cases of acute appendicitis, where the process is distinctly localized, I believe the most favorable time for interference is as early as the third day. The risk of delay seems to me much greater than the danger of early operation. The second and third days eliminate the mildest cases; the others may assume a far more dangerous aspect with little or no warning. Even as early as this a gangrenous condition of the appendix may be found, around which an abscess has already been formed. This has been the condition in three of my cases.

The first, N. C., male, seventeen years old, was seen in consultation with Dr. J. O. Marble, of Worcester, on the 30th of January, 1893. The attack began with severe abdominal pain and vomiting on the 28th, and I operated sixty-four hours later, that is, on the third day. His pulse was 120, temperature 102°, and his general aspect was exceedingly bad, though he professed to feel better. Upon opening the abdomen, I came at once upon a mass of gangrenous omentum, the meshes of which were infiltrated with pus. Just beneath this was an abscess cavity, containing about four ounces of very foul pus, lying in which was the appendix, perforated about two inches from the cæcum and gangrenous about the perforation. (Specimen shown.)

Again on May 3d, I operated on Mrs. M., twenty-seven years old, a patient of Dr. F. G. Fay, of Worcester, who had been suddenly seized with acute abdominal pain on the evening of the 30th of April; the operation was, therefore, on the third day. The general peritoneal cavity was opened and a mass of adherent coils of intestine found in the cæcal region, not adherent to abdominal wall. On separating the adhe sions, about two ounces of pus was evacuated, and the appendix found perforated and gangrenous. (Specimen shown.)

On October 3d, I operated upon A. W., male, twenty-one years old, who was referred to me by Dr. Leonard White, of Uxbridge. His attack began suddenly on the morning of the 20th. Incision revealed pus just below the cæcum, with a much thickened appendix, so adherent that it was torn across at the point of perforation, and only about one inch was removed. The rest was ligatured and left.

These three cases illustrate the severe conditions which may be found as early as the third day, even when the inflammatory process has been definitely limited by adhesions. I believe all would have been more difficult to manage, and more dangerous to the patient had there been even twenty-four hours longer delay. As it was, all recovered.

The most serious objection to early operation is the danger of breaking down adhesions, and defeating nature's attempt to localize the peritoneal infection. Larger experience and greater familiarity with the conditions to be found must diminish very much the force of this objection. It is also, I think, far outweighed by the greater facility in operating, the greater ability of the patient to withstand shock in the early stages, and by the increased chance of doing a thorough and complete operation. I am one of those who believe that the operation is every way more satisfactory when completed by the removal of the appendix, and that whenever possible this ought to be done. I am sure that when it can be done without too great violence to the adhesions, convalescence is established more quickly, is less liable to interruption and recovery is much more certain to be permanent and complete. I have accomplished it now in 14 cases, with 13 recoveries. The only death was in the first case in which I removed it. I would not, by any means, convey the impression that its removal should always be attempted. In the ordinary late operation, it cannot often be found, and even when found, its removal is usually impossible, so tough and firm are the adhesions in which it is imbedded. It is to be undertaken only in early operations, when the adhesions are light and easily separated, and when the general peritoneal cavity can be fully protected. In cases thus properly selected, the removal of the appendix makes a more finished operation, adding very little if any to the immediate danger, and adding much to the rapidity and permanency of the recovery.

So, also, with regard to the omentum, when it is found wrapped about the appendix or involved in the mass of adhesions, if it is gangrenous, or infiltrated with pus, or engorged with extravasated blood, so that it looks like a piece of liver, I would always ligate and remove it. I have done it for all of these conditions, without in any way complicating the operation, and I think it removes a source of considerable danger.

I have not spoken of the operation between the attacks, because my own experience has been entirely with acute appendicitis. In recurrent cases, I believe most heartily in operating during the interval of quiescence, but I have had no experience of my own. In two operations done during exacerbation, in cases of recurrent or chronic appendicitis, I have, however, seen conditions which I have found nowhere described and which seem to me exceedingly interesting.

This first was in a boy thirteen years old, who in the preceding four months had had several attacks of appendicitis with very short intermissions, and who for a month past had had a small hard tumor, very tender, in the right iliac region. Each attack would begin with pain in the region of the tumor, vomiting, and a temperature rising to 101° or 102°. With rest in bed, counter-irritation and careful attention to diet, each attack would quickly subside, but the bunch had remained. I saw the boy during one of these exacerbations, regarded the case as one of localized abscess, and, as he was a near relative of mine, I asked Dr. M. H. Richardson, of Boston, to perform the operation. He, too, was convinced of the presence of pus, but incision revealed a hard mass of firm, tough adhesions, which were separated so as to expose the cæcum, but no pus and no appendix were found. The cavity was packed with gauze, and healed without suppuration, the boy regained his former health and strength, the bunch entirely disappeared, and there has been no recurrence during fifteen months that have passed. In October last I had an almost precisely similar experience in a Swede twenty-seven years old, who had symptoms off and on for eight weeks, with a well-defined tumor for at least a month. I operated in the midst of an exacerbation, found no pus, and only a hard mass of inflammatory exudation, imbedded in which was the cæcum. So firm were the adhesions that I did not dare attempt their further separation to search for the appendix. The man made a good recovery and has remained well.

These cases illustrate the difficulties that may be met with in what promise to be the simplest operations, and they are especially interesting to me, because I cannot understand the conditions which have caused them, nor the apparently beneficial effect of exposing and disturbing them.

With regard to the results in cases of appendicitis, very little can, I think, be learned from any one individual experience; and until we have some accurate method of classification, we can learn little from the study of compiled statistics. Of my own cases there were 12 not operated upon, 5 of whom died; 4 were in a condition which seemed to me to render operation useless, and the 5th died from internal rupture of the abscess. One of the cases that recovered, died three months later from a recurrent attack. In the 32 operations, there were 25 recoveries and 7 deaths. Of the latter, five were from the continuance of general peritonitis which was present at the time of operation, one was from pyæmia in a late operation upon a large localized abscess, and one was after an operation done for rupture of an abscess into the general peritoneal cavity.

In the 25 cases that have recovered, I have as yet had no rupture through the cicatrix of the wound. I believe, however, that this is only because sufficient time has not yet elapsed; that hernia will come in some at least, I feel perfectly sure. It must come, especially in those cases where drainage has been used. It is less likely to occur in the early operations where drainage can be dispensed with, but even then it cannot be wholly avoided. Some firm support ought always to be worn for years after the operation, and the thought that we are thus permanently weakening the abdominal wall, and imposing upon a man a great inconvenience if not positive danger, ought to make us exceedingly careful to avoid unnecessary interference.

Fæcal fistula is another occasional sequel of operation. I have had one fistula that persisted for seven months after the operation, but has finally closed spontaneously. It was in a case of late operation, where the appendix could not be removed, and the abscess was simply opened and drained. It is a great annoyance to the patient and to the physician, but will almost surely heal of itself, and rarely requires operative interference.

In conclusion, allow me to repeat that we can draw no hard and fast distinction between those cases which will require operation and those which will not. I feel in almost as much doubt as ever each time that the question is presented to me. There are one or two points, however, that increasing experience has impressed more and more strongly upon me, and they are the only definite conclusions which I can present. They are: (1) appendicitis is one of the most important as well as one of the most dangerous of all acute abdominal affections; (2) that some cases are fatal from the very nature of the initial attack; (3) that some have a natural tendency to recover; but (4) finally, that the great majority can be relieved only by surgical interference, and that early operations are in every way less difficult and less dangerous than late ones. In the majority of cases, the presumption is in favor of early operation, and unless distinctly counter-indicated the earlier the better. A surgeon seldom regrets an early operation, but is often disappointed by delay.

◆

PRIMARY NASAL DIPHTHERIA.[1]

BY CHARLES W. TOWNSEND, M.D.

That nasal diphtheria is a severe and often fatal disease, and that it is almost always secondary to diphtheria in the throat, is the generally-received idea both from practice and text-books.

Thus Dillon Brown, in Starr's "Text-Book of Children's Diseases," just published, says: "In the nares diphtheria is very serious, on account of the abundant lymph and blood-supply," etc.

W. Gilman Thompson, in Pepper's "American Text-Book of the Theory and Practice of Medicine," also just published, says: "Cases of nasal diphtheria are apt to end fatally unless vigorously treated."

And J. Lewis Smith says, in Keating's "Cyclopædia of Children's Diseases": "Nasal diphtheria involves great danger, from the fact that it is likely to give rise to systemic infection of a grave type." Lower down he says: "Although commonly diphtheritic inflammation of the nasal surfaces is secondary to that of the fauces, it is sometimes the primary inflammation. It may exist for some days before the fauces become affected, and under such circumstances the diagnosis is frequently not made until the disease is in an advanced stage and profound blood-poisoning has occurred."

That mild primary cases sometimes occur, the mildness of whose symptoms may permit them to go unrecognized, is a point I wish to emphasize, and particularly the fact that these cases are of great danger to the public health.

Dr. A. L. Mason[2] refers to these cases when he says: "Primary nasal diphtheria is probably more common than is supposed, and a not infrequent source of unsuspected danger." Jacobi also alludes to them; and Major[3] reports five cases very similar to those I am about to relate. The latter says of nasal diphtheria: "When of a *primary* nature, it is very likely to be overlooked altogether." It seems probable that some cases formerly supposed to be membranous rhinitis were in reality nasal diphtheria.

During the months of November, December and January of this winter fourteen cases of diphtheria occurred among the patients of the Children's Hospital, all but two of which came under my charge in the isolating wards.

The bacteriological examinations were made for the hospital by Dr. J. H. McCollom at the Harvard Medical School, and, it is unnecessary to say, were of the greatest value.

There were seven cases where the nose was affected; in six cases the disease was limited to the pharynx; and in one case an old tracheotomy wound was attacked, the disease spreading to the bronchi and rapidly proving fatal.

The six pharyngeal cases I will pass over briefly. They illustrate the well-known difficulty and ofttimes the impossibility of making a diagnosis of diphtheria from gross appearances or symptoms. They were all mild cases; all recovered. One of the earlier cases began with coryza, and had a nose-bleed on the day preceding the beginning of the throat affection; and although there is no positive proof of nasal diphtheria from the absence of cultures from the nose in this case, it is extremely probable, in view of the other cases, that this one was originally nasal diphtheria, and as such was overlooked.

Of the seven nasal cases of diphtheria, in five the disease was primarily nasal, being confined to the nares alone in four, in one extending later to the pharynx and larynx, while in the remaining two cases the disease was at first pharyngeal, and later involved the nose. These last two cases represent the secondary nasal forms more commonly seen, partly from the fact that the diagnosis of the trouble in the throat having been made, it is natural to suspect an extension to the nose in case there is a nasal discharge, and to look for membrane there, and partly because secondary nasal diphtheria is usually a very severe disease.

The primary nasal cases are easily overlooked; the diagnosis frequently cannot be made without a bacteriological examination, and they are particularly dangerous as sources of infection from these causes, and from the fact that the bacilli may be retained for a long time on the voluminous mucous membrane of the nose after the patient has apparently recovered, and may even at times elude the search of the bacteriologist, as some of my cases show.

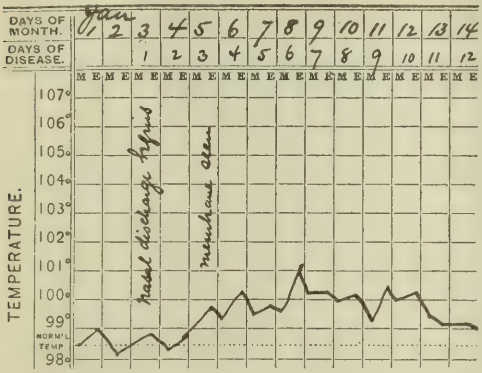
Case I. A boy, four years old, began to have a nasal discharge on January 3d. This increased on the following day, but there was no rise of temperature, and the pulse showed no weakness. The nasal discharge was watery and at times muco-purulent, and was not offensive. On the third day of the coryza careful examination showed some gray membrane in each nostril, and a bacteriological examination demonstrated the Klebs-Löffler bacillus. There were nose-bleeds from time to time. The temperature, as will be seen by the chart, remained between 99° and 100 until the twelfth day of the disease, going once to 101°, the child feeling meanwhile well enough to be up. Examinations by cultures taken from the nose by the platinum wire were made from time to time, and the Klebs-Löffler bacilli were still found on the thirteenth day, or three days after the temperature had dropped. On the fifteenth day, the day following the cessation of nasal discharge, a culture was taken and no bacilli found.

---

[1] Read before the Boston Society for Medical Improvement, March 12, 1894.

[2] Burnett: System of Diseases of the Ear, Nose and Throat, vol. 1, p. 270.

[3] Diphtheria and Scarlet Fever at the Boston City Hospital: Bulletin 4, Harvard Medical School Association.



Case I.

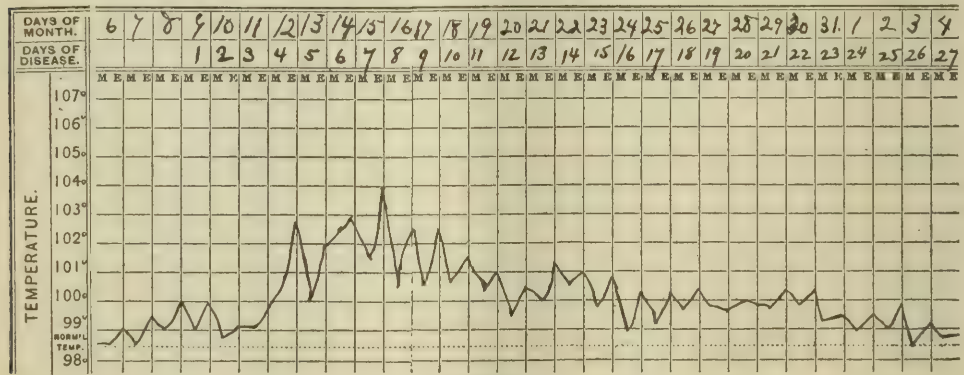
The child was not allowed to go home until six days later, or a week after the cessation of the nasal discharge, but the sequel shows he still retained some of the Klebs-Löffler bacilli in his nose. Shortly after returning home, a servant, who had not been away for over three weeks, came down with diphtheria. That the child's nose was the probable source of infection was proved by the fact that the specific bacilli were discovered there when he presented himself at the clinic four weeks after his discharge from the hospital, and over five weeks since his apparent recovery. At this late date, however, a nasal discharge was present, having started up after leaving the hospital.

Case II. A boy, four years old, was the mildest case of all. He was kept isolated in the main hospital, not coming under my charge; and I am indebted to the courtesy of Dr. Bradford for permission to include it with the others. The child began with coryza and nose-bleed and a temperature of 101.3° A culture was at once taken from his nose, and the Klebs-Löffler bacilli were found. On the following day a little membrane was visible, and there was a watery discharge from the nose. On the third day there was apparently nothing the matter with him but a bad coryza. No more membrane was seen, and the temperature came to normal on the fifth day. On this day the Klebs-Löffler bacilli could not be found. No subsequent cultures were taken, but it is probable that the bacilli would have been found for some time in his nose.

Case III. A girl, seven years old, again illustrates the purely nasal forms. During the first week a thick, glistening, gray membrane was plainly visible in the nose, and the patient suffered from nose-bleed twice. The Klebs-Löffler bacilli were found until the fourteenth day of the disease, on which day the membrane disappeared from sight. As will be seen by the chart, the temperature continued between 99° and 100° for twelve days after the disappearance of the membrane. She was not discharged from the hospital until all signs of nasal disease had disappeared and the last bacteriological examination was negative.

Two or three days after her return home her mother was taken sick with diphtheria, recovered, but died suddenly a week later with, as far as could be learned, suppression of urine.

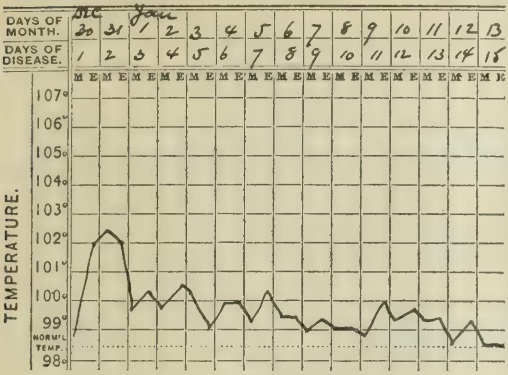
Case IV. Girl, two and a half years old, began with a cold in the nose, and at the same time some white circumscribed pin-head spots appeared on the tonsils, but entirely disappeared within forty-eight hours. The diphtheritic bacilli were found in these apparently follicular spots, as well as in the nose. Membrane then appeared in the nose, and there was some sanguino-purulent discharge for a day or two. After this the discharge was slight and muco-purulent or watery, coming and going like an ordinary coryza. At no time after the first three days could one have made from the gross appearances any other diagnosis than a coryza, as there was no membrane to be seen. Except on one occasion, the Klebs-Löffler bacilli were, however, found at every examination, which was on alternate days, until the twenty-sixth day of the disease, and there was some muco-purulent discharge at intervals until the twenty-third day. The temperature, as will be seen by the chart, started off at first as if in correspondence with the apparent follicular tonsillitis, and then ranged from the third to the



Case III.

fourteenth day between 99° and 100°, remaining normal after the fifteenth day.

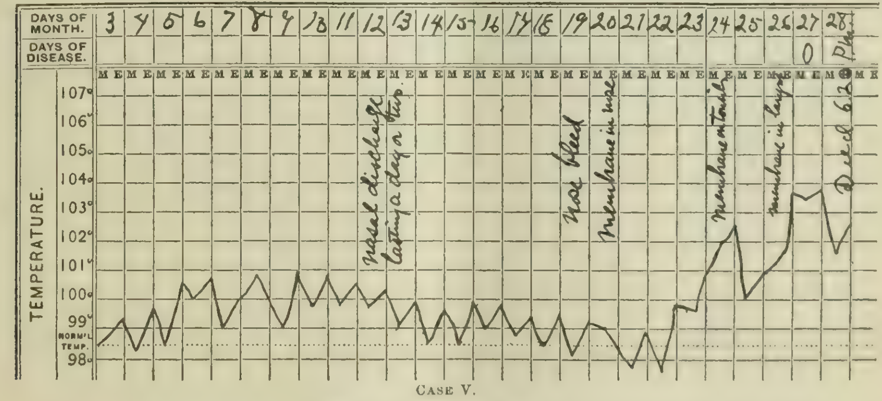
The pulse showed but little evidence of weakness, except of an occasional slight nasal obstruction, the child appeared perfectly well after the first four days, and at home would have been, if the diphtheria were unrecognized, an active spreader of the disease.



Case IV.

For the sceptical, as to the value of the bacteriological method of diagnosis, the following case is of interest, for its later violent course confirmed very fully the early bacteriological diagnosis. This was the only primary nasal case in which there occurred an extension of the membrane from the nose.

Case V. A boy, six years old, said his nose was sore on January 12th. There was a slight discharge at this time, which dried up in a day or two, and nothing was thought of it. Seven days later he had a nose-bleed, and on the following day glistening white membrane was discovered in one nostril, and a nasal discharge began. An examination on this day showed the Klebs-Löffler bacilli. Two days after the membrane appeared it spread to both nostrils, and again two days later both tonsils and the posterior wall of the pharynx were rapidly covered with the membrane. Again, two days later, evidence of laryngeal infection was shown by the croupy cough; and although intubation was performed by Dr. Goldthwait, the patient died on the following day.



Case V.

An examination of his temperature chart is interesting. The child was in the hospital for a stiff knee, and there was no active process going on there to cause an elevation of temperature. It will be seen that for a week before the first temporary nasal discharge occurred the temperature was elevated about 100°. This is certainly suggestive of a beginning of the nasal diphtheria at this time. Another interesting point is the normal and subnormal temperature for three days following the appearance of the membrane in the nose and the discovery of the specific bacilli.

The continued slight elevation of temperature between 99° and 100° seen in several cases when the disease is confined to the nose is interesting. In the following case this continued for a month after the membrane had disappeared from the portion of the nostrils easily visible. With this temperature in bed, the patients seemed to feel perfectly well. If they had been about, they would very likely have shown evidences of debility by feeling tired and irritable. The early history of this case is very suggestive as regards the "follicular tonsillitis."

Case VI. Boy, six years old, had an attack of what appeared to be follicular tonsillitis on October 15th, lasting five days. No bacilli could be found. On November 2d he again complained of sore throat; his tonsils were swollen and covered with white spots. Again no bacilli could be found. A failure to carry the wire to the bottom of the crypts may have accounted for this, and it is possible that these were in reality mild attacks of diphtheria. On November 20th began a third attack, apparently similar to the others, but the Klebs-Löffler bacilli were found. This time the spots coalesced, spread to the uvula, and presented the clinical appearance of diphtheria. A week later the membrane was seen in the nose; but it disappeared from there on December 7th, and from the throat on December 16th. A slight nasal discharge continued at intervals, and the bacilli continued to be found in the nose for a month after the membrane ceased to be visible. The temperature ranged from 100° to 102° for the first three weeks of the disease, and from 99° to 100° during the last three weeks, during which time no membrane was visible.

The child was discharged from the hospital apparently well over a month after membrane had disappeared from sight, and nearly a week after a bacteriological examination failed to find the Klebs-Löffler bacilli. The terrible bacilli were still concealed in his nose, however, and would undoubtedly have been discovered if he had been retained longer in the hospital and more examinations had been made. The lapse of a month since the disappearance of the membrane, his apparently complete recovery, as well as the fact that the last bacteriological culture was negative, served to justify his discharge. He was given an antiseptic bath and a complete change of clothing.

Eight days after his return home to a neighboring town the child's sister developed a violent case of diphtheria, the membrane spreading to the nose, roof of the mouth, pharynx and larynx, and proving fatal on the tenth day. The mother and older sister also contracted diphtheria and recovered. There had been no cases of diphtheria reported in the town for two months before this, and but one since. The parents had not visited the diphtheria wards at the hospital for five weeks before the little girl's sickness.

It would seem as if the boy from whom these cases spread had acquired an immunity from the effects of the disease by the length of time in which he harbored the bacilli. That the virus had not become attenuated by its long stay in this individual was proved by the virulence of its action in the fatal case.

Case VII was of the usual type of secondary nasal diphtheria. The patient was already very sick with surgical sepsis, which obscured the symptoms of diphtheria. The case proved fatal.[4]

All but one of the nasal cases had nose-bleed, slight or severe, at some time in the course of the disease, often when no membrane was visible. Only two of the others had nose-bleed, and in one of them, as I have already remarked, nasal diphtheria is strongly to be suspected. A swelling of the cervical glands in these cases was not noticed.

The source of these cases of diphtheria it is not difficult to trace, as there had been free intercourse between the patients at different times. The habit of picking the nose, so common among children, must furnish an easy method of infection.

By way of summary, the following points seem to me to be of interest:

(1) The fact that primary nasal diphtheria may occur of a very mild type.

(2) The dangerous character of these cases, as they are likely to go unrecognized for the following reasons:

(*a*) The resemblance of these cases to ordinary coryzas, a membrane not being noticed in some cases except by careful scrutiny.

(*b*) The normal or only slightly elevated temperature often present, with but little constitutional disturbance.

(*c*) The intermittent character of the nasal discharge, absent for several days, and then starting up again.

(*d*) The apparent recovery, even with cessation of nasal discharge, while Klebs-Löffler bacilli are still present.

(*e*) The fact that these bacilli have not lost their virulence; or, in other words, the fact that the patient having the bacilli in his nose, although apparently well, may transmit the disease in a fatal form to others.

(*f*) The difficulty of always finding the bacilli in the nose, even when they are present.

(3) The importance of bacteriological examinations in all suspicious cases of nasal discharge.

(4) The importance of prolonged isolation, together with a refusal to consider a case cured until *several* consecutive negative cultures have been obtained.

◆

A CASE OF AMŒBIC DYSENTERY.[1]

BY C. F. WITHINGTON, M.D., ROXBURY, MASS.

The patient, Olaf Nilson, was a native of Norway, aged thirty-four years, unmarried. He gave his occupation as that of a longshoreman, and seems to have done various sorts of work about the wharves in several seaport cities of this country. When more distinctly maritime occupations failed, he had, among other things, tended bar.

For the six months prior to the middle of February he had been in the South, the first half of the time (or a little more) in Pensacola, the rest of it in Mobile. He had also worked for a while in one or both of these cities on previous occasions.

Up to two weeks before entrance to the hospital he avers that his health has always been perfect, except that he had measles in childhood and occasional headaches since. Yet, as he expressed himself, up to the present illness, nobody had ever been stronger and in better health than he. His mother died of dropsy, and a brother of the "falling sickness"; three sisters and two brothers are alive and well.

Coming, then, from Mobile to New York, he was suddenly taken about the time of his arrival with chills, which have recurred since. He thinks he has been feverish, and diarrhœa appeared coincidently with his first chill. At present he says he has about ten movements a day, which is not as many as he had at first. The stools have been dark-brown and bloody. He has lost weight rapidly. Pain is not complained of.

On his entrance to my service at the City Hospital, March 1st, I found him a man of large frame, a good deal emaciated, with a dusky face; temperature, 97.5°; pulse 116, fair quality. Examination of liver, heart and lungs was negative. There was slight abdominal tenderness. The splenic dulness began at the seventh rib, but the margin was not felt. He had the odor characteristic of chronic diarrhœa, and seemed a very sick man. The movements were ten to twelve in the twenty-four hours, and were not involuntary The stools were fluid and smooth, about the consistency of thin cream, of a reddish-brown color, and of not an unusual odor. There was no mucus nor masses of bright red blood; and in these respects the stools did not present the appearance of the common type of dysenteric colitis.

A specimen was therefore sent to Dr. Councilman for examination for *amœba coli*, and its discovery was at once made by him.

The patient was treated at first by a dose of oil, followed by starch and laudanum injections, and as soon as the presence of the amœba was reported the laudanum enemata were replaced by rectal douches of quinine (gr. xvi in a pint of water). They were, however, retained but a short time, and no improvement was observed from their use. The patient failed steadily, and died in the night of March 3d, about seventeen days from the beginning of his illness, if his history of the invasion is correct.

---

[4] Since going off duty on February 1st five cases of diphtheria have occurred at the hospital, four being of the mild nasal type.

[1] Read before the Boston Society for Medical Improvement, March 12, 1894.

The temperature remained generally subnormal, only once reaching 99°; and the respirations gradually quickened toward the end.

◆

Clinical Department.

SCARLATINA WITH PERSISTENT HIGH TEMPERATURE, ASSOCIATED WITH WILD DELIRIUM, FINALLY CONTROLLED BY GUAIACOL.

BY FRANK E. PECKHAM, M.D., PROVIDENCE, R. I.

There were four children in the family, none of them having had scarlet fever, and the manner of infection could not be learned in this case.

The eldest child, age seven years, came home from school one night feeling badly and complaining of nausea. The next day there was vomiting and complete loss of appetite. On the third day, there being no change for the better, I was called in the evening.

The child at that time was lying quietly in bed, and the nausea was not so troublesome. The skin was covered with a mild eruption of scarlet fever. Throat slightly reddened. Parents had not noticed the eruption before, so the time of its appearance is unknown. Treatment: aconite, warm-water sponge-baths, liquid diet.

Fifth Day.— At the morning visit the eruption was well marked all over the body. Child had been very restless and delirious all night. Tonsils enlarged and covered with grayish membrane. Temperature 105°. Treatment: cold-water sponge-baths, phenacetine (grs. iii every three hours), tincture ferri chloride (gtts. v four times daily for local effect), peroxide-of-hydrogen (15 volume) spray for throat and nose.

At the evening visit the temperature was 106°. Child wildly delirious. Facial expression very bad. Treatment: tub-baths now ordered, beginning with warm water, and gradually cooler, until the water was just as cold as it came from the faucet, which in March is pretty cold. The first bath lowered the temperature to 104°. The child enjoyed this and subsequent baths very much. The eruption became more and more marked, until the whole surface of the skin seemed to be raised above its usual level in one reddened, scarlet mass. The temperature rose again soon, and the parents had a hard night of it keeping the patient in bed. Chloral was given in five-grain doses up to fifteen grains. The subsequent baths through the night made no impression on the temperature. It would be 105° immediately after removal from the tub.

The temperature was always taken in the axilla, being, of course, much higher in the mouth or rectum.

Sixth Day. — At the morning visit the temperature was 105.5°. Lips parched. Eyes sunken. Child looked badly. The throat was clean, but red, swollen and angry-looking. The child in her delirium was constantly tossing around, and had to be held all the time.

Baths were continued. Phenacetine increased to six grains every three hours. Chloral used per rectum through the day, but when evening came I found the temperature 106°, and child looking like death. It seemed impossible for her to live until morning.

At this visit I rubbed twenty-five drops of guaiacol into the skin over the abdomen, and in two hours the temperature had dropped to 104°. In the night fifteen drops more were rubbed in, and at the morning visit on the

Seventh day, the temperature was 103.8°. Child had been delirious all night, but not quite so wild — a very slight improvement, which let in a small ray of hope. During the day fifteen drops of guaiacol were to be rubbed in. Phenacetine omitted. The tub-baths were continued. The evening temperature was 103.8°.

Eighth Day. — Patient not yet rational, but more tractable. Throat looking a great deal better.

Ninth Day. — The evening temperature was 101°; and the child had had a little refreshing sleep and looked a great deal brighter. Guaiacol now discontinued.

Tenth Day. — Temperature up to 103°, due undoubtedly to the discontinuing of the guaiacol; but the patient is really rational, and can talk reasonably for the first time. Scales appeared to-day.

From this time the temperature gradually fell, until on the fifteenth day it reached 99°.

The tonsils now became troublesome. First an abscess developed in the left tonsil, with the swelling externally. This was opened by an external incision on the twenty-sixth day of the disease. Then an abscess formed in the right tonsil, which was opened on the inside on the forty-third day. After this there was no further trouble; and my last visit was on the forty-seventh day, when scaling had ceased. Patient was out-of-doors in the eighth week.

I report this case to show that guaiacol may be of great use in the acute febrile diseases. It has been tried in typhoid fever, and found to be rather dangerous on account of depressing the temperature too far and causing collapse.

In this case there was a very high temperature; and it seemed to me that the delirium was wholly due to that, and as soon as the temperature began to yield the delirium began to subside.

The fact that the temperature rose immediately after stopping the guaiacol would seem to prove that it was really due to the drug, and not a coincidence.

Another interesting point was that the cold tub-baths had so little influence upon the temperature. These baths were enjoyed immensely by the little patient, who would quiet down and paddle in the water even when the delirium was at its height.

The three children in the family who were not affected were sent away, and did not return until the house had been fumigated; and up to the present time they have been perfectly healthy.

◆

Medical Progress.

REPORT ON MENTAL DISEASES.

BY HENRY R. STEDMAN, M.D., BOSTON.

(Concluded from No. 20, p. 495.)

CASE OF ANTIPYRINOMANIA.

Cappelletti[9] reports the case of an hysterical girl of twenty-three, weak and nervous. Headache for two years, treated by antipyrin in small doses. Drug became necessary to her. The pain became incessant, and the drug lost its effect. The dose was increased to eight grammes a day. She grew worse; lost her appetite; had poor sleep; and the pain grew worse, with tinnitus. She became excited, irritable and anxious half an hour before the time for dose. Was agitated, walked about, sighed, etc., if not given it. Carried it in her pocket. Diarrhœa and convulsions ensued when attempt was made to stop it wholly. In the asylum the dose was cut down to two grammes, with sulphonal to relieve pain. She then had nausea, vomiting, anorexia, pallor, small pulse, and was much depressed. This lasted three days, and was not relieved by food and stimulants. She then became slightly excited, restless, loquacious and irritable. Given bromide of potash up to six grammes, and valerianate of quinine, but had bad symptoms set in whenever antipyrin was cut down, with weak pulse, mental depression and hallucinations, etc. Then inert powders were given, the antipyrin was wholly stopped, and caffeine and bromide of potash substituted; finally these were cut down; and she at last recovered. Slow and progressive diminution of symptoms. The symptoms from withdrawal were much like those from withdrawing morphine.

---

[9] Rivista Sperimentale di frenatria, xix, 100.

MENTAL CONFUSION.

Dr. Charpentier,[10] under this title describes a mental state characterized by perturbation in the ideational sphere, consciousness, absence of delusion, and coexistence of inquietude. Often it cannot but be considered as an almost physiological state resultant on passage from slumber to wakefulness in all adynamic states or cerebral congestive conditions. It may appear at the onset of many psychoses as well as among chronic vesanias and epileptics. In all cases, however, the concomitant psychic phenomena (hallucinations, amnesia, stupor, mutism) mark the picture of mental confusion. It may exist alone, and constitute by its duration, a true pathological state. It is a rapid, disordered progress of ideas before consciousness, preserved, but astonished and restless. The ideas are not erroneous but so varied and tumultuous in their course and so numerous that their numbers and disarray confounds the patient, who, incapable of directing his ideas although preserving his consciousness, falls into profound inquietude. Mental confusion has been styled obvilutation, torpor, hebetude, intellectual vertigo and ideational chorea. What renders the case difficult is the fact that the patient renders an exact account of it only when cured. Furthermore, they are apt to analyze the mental state they have experienced, and for the patient merely to describe this mental state does not suffice to reproduce it.

How can, therefore, mental confusion be determined in a patient who does not complain of it? Dr. Charpentier states that answers to simple terse questions (age, birthplace, colors) will indicate presence of attention but may appear incoherent because of rapid ideation. Usually the patients seem stupid. This is often the case with young female dyspeptics. Often mental confusion occurs in the morning after an insomnic night, a slumber too profound and prolonged or consecutive to excess. The patient appears lost; acts without will or without taking account of his acts. Mental confusion among the insane is found chiefly among the acute confusional lunatics or the convalescent; when it exists among these last they cannot be regarded as cured.

Diagnosis is only made after recovery. Mental confusion should be distinguished from temporal mental enfeeblement of intoxications or infections (in these last there is a parallel enfeeblement of consciousness or absence of inquietude); from stupor (mutism, loss of consciousness of surroundings) and from vertigo (loss of consciousness and from involuntary movements). Mental confusion of prolonged or frequently recurrent type has a bad prognosis. It occurs in paretic dementia, chronic persecutional vesanias and precocious dementia. It may be produced by suggestion, intimidation or surprise.

DIFFERENTIAL DIAGNOSIS BETWEEN LITIGIOUSNESS IN THE SANE AND INSANE.

Dr. Ludwig Horne,[11] after a careful review of the literature of the subject arrives at the following conclusions:

(1) An amnesis reveals nothing of importance in sane litigants; in the querulous paranoiacs a hereditary taint, peculiarities in childhood and after-life.

(2) The sane litigant shows no abnormal somnatic symptoms; in the paranoiacs, somatic symptoms are seldom absent.

(3) The motives in sane litigious people are pleasure in law suits, or the desire to obtain a final decision in a particular point of law; in the insane, the motive lies in an hereditary defect — an inability to submit to an unfavorable decision.

(4) Characteristics of litigiousness: (*a*) The sane litigant maps out his course of procedure; the paranoiac believes it impossible to lose his case, and does not plan beforehand. (*b*) The sane litigant will not go beyond a certain point, decided upon in the beginning; the paranoiac does not limit himself. (*c*) The sane litigant can end his trial at will; the paranoiac is drawn into new trials by his disease.

THE FUTURE OF ASYLUM SERVICE.

Under this head A. Campbell Clark,[12] Medical Superintendent of Glascow District Asylum, Bothwell, Scotland, says:

"Where are the defects of the nursing staff and its work? *A.* The defects of our nursing staff are threefold: defects of (*a*) quantity, (*b*) quality, and (*c*) organization. *B.* The defects of nursing work are the natural results of the foregoing, but they are also due to (*a*) large wards, (*b*) lack of personal co-operation of superior officers, (*c*) the same monotonous grind from week to week. The present number of nurses for acute and curable cases is too small, the hours of duty are too long, and they are not officially attached to particular cases. The remedy is, a larger staff, give much longer leave, and you can have a larger per cent. of nurses on duty.

"As regards the question of quality, that we want more style and higher education is a delusion most disastrous for asylums. Placed in the balance against a bright, sunny temper and obliging disposition, mere education would be found wanting. Sunshine in our attendants is dependent upon sunshine in their surroundings. In a word, don't keep them so long in harness at a time, feed them well, groom them well, make them as healthy and happy as the nature of their work will allow.

---

[10] Rev. Internt. de Biblio. Med., January 25, 1893.

[11] Men. Med. Bloet, No. 46, 1893.

[12] American Journal of Insanity, January, 1894.

"Organization: In the first place, the night supervision and nursing of the insane is wofully insufficient. We cannot have short watches as on board ship, but with increased numerical strength, we can assign for night duty a larger staff with a supervisor or chief. Make night service longer and day service shorter, but break the night service in two parts, with one hour's suspension of duty between. In small asylums it would be the duty of the supervisor to relieve the subordinates in turn. In large asylums a relieving officer would be told off for duty. The leave of the day staff should be much more liberal than at present.

"The patients should be detailed in small groups for special written observations; each nurse should have a group. Nurses should exchange groups every three months, so that fresh interest is continually kept up, and the patients come under new influences. Change patients from one ward to another oftener than is done at present. Have medical officers and supervisors more in the wards collaborating with the nurses."

The writer recommends the formation of a mental nursery association, and a provident or pension scheme. If linked together under the patronage of asylum boards of management, they can only be followed by decided success.

GENERAL PARALYSIS AT PUBERTY.

Dr. J. Wiglesworth[13] records two cases occurring in girls at twelve and fourteen years, proving fatal at sixteen and eighteen years, respectively. Both previously intelligent. Both said to have started from a fall; this, however, may have simply been an early symptom. Mental symptoms, those of slowly progressive dementia without grandiose ideas; soon gradual failure of mental power, followed by slow progressive paresis of limbs, until absolutely paralyzed and contractions developed; epileptiform convulsions noted in each. Necropsy showed thickening and opacity of arachnoid, with adhesions of pia mater to cortex (in one case decortication); enormous wasting of convolutions, great atrophy of cortex; whilst in one was an old, thick, organized, subdural membrane. Analysis of these cases and six others published showed the average age at which the disease commenced to be fourteen years, average duration four and one-half years. Five of the eight were girls, a reserve proportion to that shown in adult paralysis; mental symptoms showed preponderance of demented type of general paralysis; signs of puberty did not appear at all or were arrested and tended to disappear; menstruation in females, absent; and arrest of bodily development.

The most prominent probable factors in the production of the disease were heredity and congenital syphilis; traumatism being, perhaps, an additional cause in some cases.

"THE INCREASE OF INSANITY."

Under the head of "The Alleged Increase of Insanity," D. Hack Tuke[14] presents a critical analysis of the statistics of insanity in Great Britain for the last twenty years. He gives the arguments and facts on the affirmative side, as presented by Mr. Corbet (in a forcible article in the *Fortnightly Review*) and others, and follows with his own reasons for denying the alleged increase in insanity. His principal points are thus summarized:

There has undoubtedly been since 1870 a large increase in the number of patients in asylums and workhouses, but proportionately more in the former than in the latter.

There has not been so great, but still a considerable rise, in the *admissions* of patients into asylums during the same periods, after deducting transfers and readmissions.

The advance in the number in detention, although it holds good after allowing for the increase in population, does not prove the increased liability of the community to insanity, seeing the vast accumulation due to a lower death-rate (even since 1870), the chronicity of the disease, and the lamentable tendency to relapse.

The advance in admissions again does not prove increased liability to insanity; as (*a*) the value and comfort of asylums are increasingly appreciated; (*b*) there has been a very large number of patients drafted from workhouses to asylums; and (*c*) there has been an ever-increasing encroachment on the mass of unregistered lunacy which the census shows to exist.

The increase in the number of the insane has taken place among the poorer classes of society.

The increase in the ratio of the insane during the twenty years between 1871 and 1891 has taken place in persons above the age of forty-five, the significance of which lies in the accumulation of chronic cases. On the other hand, there has been a decline during this period in the proportion of cases of mental weakness under twenty-five years of age to the population at the same term of life — a most important circumstance.

The age-distribution of the insane favors, therefore, the conclusion that the increase of insanity is apparent rather than real, being mainly due to accumulation.

That, considerable as has been the increase in the number of the insane, as returned in the censuses of 1871, 1881, 1891, the ratio of increase has been a declining one; for although the rise in the ratio to the population was 7.04 per cent. during the decade of 1871–81, it was only 3.23 per cent. in that of 1881-91.

If these results are, on the whole, reassuring, they are, it must be admitted, nothing to boast of because twenty years of social progress and the advance of medical knowledge ought to have materially lessened the proportion of the insane to the population.

The lesson to carry away from a study of the foregoing statistics is not one of congratulation, but the necessity for making more earnest and definite attempts to diminish the causes of insanity, and to discourage, by every possible means, the extension of the disease by the marriage of individuals of insane stock or who have themselves been deranged in mind, impracticable as I believe it to be to obtain this object by legislation.

F. B. Sanborn,[15] in an article in the same journal, finds, on the other hand, that American insanity is greatly increasing, at least so far as the statistics of the insane in Massachusetts hospitals are an indication. Formerly it was held that the accumulation of the insane greatly in excess of the growth of the population was due partly to better care by which life had been prolonged; partly to better observation, bringing cases to light that were overlooked; finally, to stricter classification of diseases, allowing wider limits to insanity. All these agencies may be allowed up to a certain point; but we long since reached that point in Massachusetts, probably, too, in England and Scotland. Still we find this insane accumulation going on as fast as fifty years ago, and in the face of influences that ought to yield just the contrary result. He believes that this can only be accounted for on the hypothesis that "occurring insanity" (new cases) is also increasing beyond the population ratio. Starting from the premise that the insane die faster than the sane, he shows that they should relatively diminish just as a feeble race relatively decreases among a sturdier race. Even if they did not recover often, the insane should decrease by virtue of a greater death-rate, unless a constantly increasing number of fresh cases neutralizes the effect of speedier death. But if both the surviving insane and their deaths increase in number steadily (as with us they do), must there not be an increasing source of supply, namely, new cases? In Massachusetts we have a reasonably exact registration of the insane, which shows the first admissions *to any hospital*, and also the number resident in all, the recoveries, deaths, and discharges without recovery. During the past fifteen years the population of the State increased from about 1,725,000 in 1879 to 2,500,000 in October, 1893. Thus, while the population only gained 45 per cent. in that time (or less), the strictly first admissions *to any hospital* — not merely the one making the return — increased from 849 to 1,617, or about 100 per cent.; and the deaths in all the hospitals and asylums of the State increased nearly 130 per cent. The resident insane in these establishments have increased about 94 per cent. or nearly doubled; while the unrecovered insane discharged or transferred each year have exceeded the recoveries and deaths put together, and fully account for the many recommitments in the whole period covered by the statistics [the figures are given in a table]. The presence in Massachusetts of the unrecovered insane that makes the steady accumulation of the chronic class possible and indeed inevitable, while the strictly first admissions (nearly 18,000 or 1,200 a year) have prevented the deaths and recoveries from checking in the least the rapid increase of cases new or old.

---

[13] British Medical Journal, March, 1893.

[14] Journal Mental Sciences, April, 1894.

[15] Journal Medical Sciences, April, 1894, p. 214.

◆

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JOHN T. BOWEN, M.D., SECRETARY.

REGULAR Meeting, Monday, March 12, 1894, the President, DR. C. F. FOLSOM, in the chair.

DR. W. F. WHITNEY read a paper on

CIRSOID MYXO-NEUROMA OF THE TONGUE, ILLUSTRATED BY LANTERN SLIDES.

DR. C. W. TOWNSEND read a paper on

MILD FORMS OF NASAL DIPHTHERIA.[1]

DR. A. L. MASON: It seems to me that there are two classes of cases which especially interest us in this connection. The first comprises those with membrane in the throat and all the aspects of diphtheria, but in which the specific bacillus of that disease is not found. It is the part of prudence to treat such cases as if they were diphtheria. To the second class belong the mild cases to which Dr. Townsend refers; and the question arises whether from the discovery of the Klebs-Löffler bacillus, in the absence of all visible signs of diphtheria, we must regard and treat such cases always as diphtheria. Within a fortnight in the general wards at the City Hospital have occurred three cases of that kind in patients convalescing from other diseases, one typhoid, another rheumatic fever and a third pneumonia. They developed sore-throats of the mildest type with reddening of the pharynx and fauces but no membrane, no discharge from the nose. In all three cases the Klebs-Löffler bacillus was found, no appearance whatever otherwise indicating diphtheria. Should we feel obliged in the present state of knowledge to class such cases as diphtheria, and have them isolated at once and treated in the diphtheria wards? I think that we must do so. Whether there is another bacillus morphologically identical in appearance with the Klebs-Löffler bacillus I believe is still an open question. These three cases were transferred, I must say with considerable compunction on my part, to the diphtheria ward, where they were isolated so far as possible. They developed no other symptoms and got well in a few days. If the bacteriological test is decisive we can never feel safe in the treatment of cases of pharyngitis or sore-throat of any kind without it. The temperature in these cases was but slightly raised.

DR. J. H. MCCOLLOM: I have been very much interested in Dr. Townsend's paper, and I think the point he makes of mild cases of the disease is very important, for there can be no doubt that these mild cases are the cause of the prevalence of diphtheria in this community. The various cultures from the Children's Hospital were interesting from the fact that in a large number of cases guinea-pigs were inoculated, and in the majority of instances the pigs died in from twenty-four to forty-eight hours, showing clearly that we were dealing with a virulent form of the Klebs-Löffler bacillus. So far as a bacillus morphologically similar to the Klebs-Löffler found in the mouths of healthy individuals is concerned — the pseudo-diphtheritic bacillus, as it is termed — I am inclined to think that too much stress is laid upon the existence of this organism; for after examining the cultures from 250 throats, I have not found this bacillus. I have in mind the case of a patient who was ill with undoubted diphtheria. The membrane disappeared after four weeks, but a nasal discharge continued from which a culture was made which was found to contain the Klebs-Löffler bacillus. From this a pure culture was made and a guinea-pig inoculated; and the pig died with every indication of death from diphtheria. One week later a second culture was made, and no Klebs-Löffler found. This case had lasted for six or eight weeks, and all this time the individual might have been a source of danger to the community. Fortunately, however, the person was isolated; but in certain localities he would have gone about and spread the disease. Only by means of a bacteriological investigation could the date of his recovery be established. Another case in point is that of what was supposed to be, by the physician in attendance, a case of follicular tonsillitis; but a culture from the throat revealed the presence of the Klebs-Löffler bacillus, the virulence of which was demonstrated by its effect upon a guinea-pig. The patient was isolated, which would not have been the case if a bacteriological examination had not been made. It seems to me that the attempt to throw discredit on bacteriological examinations of the throat by the theory that there is a bacillus morphologically similar to the Klebs-Löffler bacillus found in the throats of healthy individuals, is calculated to do much harm.

---

[1] See page 513 of the Journal.

In two or three of the cases to which allusion has been made by Dr. Townsend it is to be regretted that so few cultures were made, for it seems to me that two negative cultures made from the throat of a patient who has been ill of diphtheria are not sufficient to prove that he has entirely recovered from the disease, and that he is no longer a source of danger to the community. I think there should be at least four negative cultures made at intervals of two or three days, before we are justified in saying that the individual is no longer a source of danger of contagion. While by this means a patient may be isolated longer than seems to be absolutely necessary, yet it is only by these long periods of isolation that we can ever hope to accomplish anything in stamping out diphtheria.

It has been said that sometimes, even in a marked case of diphtheria, the Klebs-Löffler bacillus is not found; but if the culture is carefully made, and particularly if the precaution is taken to pass the needle through the membrane or under it, the chances of a failure to obtain a culture of the bacillus are so slight as to be worthy of very little consideration. Another point to which Dr. Townsend alluded is that of early diagnosis. There have been several instances in which cultures made from the throats of persons exposed to diphtheria have been found to contain the Klebs-Löffler bacillus before the appearance of any local or general symptoms. The importance of this early diagnosis, so far as treatment is concerned, is manifest.

Dr. H. C. Ernst: I do not know that I have anything to add. The work Dr. McCollom has carried on I have watched with great interest. I think some extremely important results are to be obtained from it when completed. The results thus far seem to show that about ten per cent. of the cases submitted to the laboratory for examination are true diphtheria. As to obscuring the diagnosis by the so-called pseudo-diphtheritic bacillus, I am inclined to believe that its occurrence is not sufficiently frequent in clinical work to produce any confusion. I have been very much interested in hearing the cases by Dr. Townsend, and I think this is a question that comes home to all practitioners of medicine. I am very glad to see it brought up.

Dr. W. T. Councilman: I had an opportunity on Saturday of examining anatomically one of the cases of nasal diphtheria. My attention was especially attracted to the nose by the presence of small excoriations on the surface of the skin around the nose, which were covered with a dirty grayish membrane presenting very much the appearance of a diphtheritic membrane. The edges of the nostril were slightly excoriated and had the same membrane on them. In the nasal passages on the mucous membrane there was exactly the same diphtheritic membrane which we find in the pharynx. In the pharynx there was no extensive formation of membrane, although on the tonsils here and there and on the posterior pharyngeal wall there were some very small patches of membrane, but the most of the membrane was on the roof of the pharynx and extending from there into the nasal cavities and especially on each side of the vomer, and it had also extended far up into the upper turbinate bones. The diphtheria bacilli were found in cultures made from the excoriations around the nostrils and also in the membrane of the nose.

Dr. M. Prince: I should like briefly to mention an epidemic of diphtheria which occurred some years ago in some of the homes for children in this city, and which I had an opportunity of investigating. If I remember rightly there were 50 to 60 cases of diphtheria. These cases were divided up by the doctor in charge of the homes into three classes, and each class was in a room by itself. In one room all those that showed no membrane in the throat and that showed simply symptoms of coryza; and in another room all those with membrane, but mild cases; and in the third room the malignant cases. In these days we had no test, of course, as this one of determining whether they were diphtheria; but there was one piece of evidence which showed that these nasal cases were diphtheria, that is, every day some of those children with the nasal discharges came down with membranes in the throat and would be transferred to the room of children with membranes. That experience impressed me then with the frequency of the nasal form, and how difficult it was to distinguish the mild cases. I have been impressed with the numbers of these mild cases that exist in tenement-houses. I would also mention an epidemic of diphtheria started in Nantucket by a case of diphtheria in a physician who was supposed to be well and went to Nantucket and gave rise to an epidemic.

Dr. E. M. Buckingham: In connection with the case of mine that Dr. McCollom reported, I should like to add that while coryza lasted many weeks, yet within a short time of the disappearance of the bacilli there was marked diminution, and the boy soon got well. With reference to nasal diphtherias I should say there are a number of nasal diphtherias that are not very sick, just as there are a number of tonsillar diphtherias not very sick, but I should mark the distinction between those that are sick, and those not very sick, not so much on the line between primary and secondary as upon the line between anterior and posterior nasal diphtheria.[2] I think that any of these cases may at any moment become dangerously ill. The temperature of diphtheria in my experience is pretty generally not very high unless the case is septic.

Dr. Geo. B. Shattuck: It seems to me if the diagnosis of diphtheria is to be settled by the presence of the Klebs-Löffler bacillus without reference to other symptoms at all, and people having this bacillus in the naso-pharynx are to be isolated and treated as if they had diphtheria, it brings up a pretty wide question with reference to the manner of dealing with all those who come in contact with such people. If the mere fact that a person carries the Klebs-Löffler bacilli about the person internally or externally necessitates isolation, we shall hardly know where to stop in our measures directed to this end. It seems to me there is a possibility of going too fast and too far with reference to this bacillus as well as with reference to the bacillus of tuberculosis.

Dr. Townsend: A weak solution of peroxide of hydrogen was used in all the cases.

There was one thing I intended to speak of, and that was a method by which infection takes place. It seems to me it might arise from the common habit among children of picking the nose. If there were any Klebs-Löffler bacilli lying about the wards, the child in picking its nose might inoculate the mucous membrane. I think on that account primary nasal diphtheria must be much more common than is supposed.

---

[2] On the morning after the meeting, I counted twelve children in the City Hospital all playing together with great spirit. All had coryza with Klebs-Löffler bacilli in the nose, and in all these cases coryza, which was the only evidence of disease remaining, was secondary to severe disease in the posterior nares and throat, all trace of which had disappeared. — E. M. B.

Dr. McCollom spoke of passing the needle through the membrane in order to get at the Klebs-Löffler bacilli. That brings up the question of using the swab or needle. It seems to me as if the swab would collect more and stand a better chance of finding the bacilli. But if the bacilli are at the bottom of the membrane, how can you get them on the swab?

DR. C. F. WITHINGTON reported

A CASE OF AMŒBIC DYSENTERY.[3]

DR. W. T. COUNCILMAN: The amœbæ found in this case were very numerous and active. They were first seen on examination of the fæces by my assistant at the City Hospital, Dr. Emerson, who had had no previous experience in looking for them. They appeared to me to be larger than usual, the size varying a great deal. As a rule, they are eight or ten times the diameter of a red corpuscle. We can always recognize in them a very granular interior, which is surrounded by a homogeneous portion. The granular interior is called *endosarc* and the homogenous external portion *ectosarc*. In the endosarc there are always large vacuoles filled with fluid, but I have never found anything analogous to the contractile vesicle of the ordinary fresh water amœba. The movement in some cases is quite active, appearing first as a protrusion of the ectosarc, which is followed by the flowing of the endosarc into the protrusion. The movement sometimes is progressive, and the organism will, in a few moments, move across the field of the microscope.

The amœbæ always contain various foreign substances, and it is very common to find red corpuscles within them. In addition to the red corpuscles, epithelial cells (or fragments of these) are frequently found; but it is rare that leucocytes are enclosed in them. The nucleus cannot be seen in unstained specimens, and it is made evident by a few staining reagents. The dysentery which is produced by the amœbæ is always of a perfectly definite type, and can be distinguished anatomically from any of the other forms.

Anatomically, dysentery can be divided into three varieties; amœbic, diphtheritic, and simple or catarrhal. The latter, probably, represented etiologically different forms not included under the amœbæ and diphtheritic. As far as I have been able to learn from observation and from literature, the great epidemics of dysentery seem to have been always of the diphtheritic form. In this there is necrosis of the mucous membrane extending more or less deeply, combined with fibrinous exudation. It may or may not be combined with ulceration. Ulceration is due to the casting off of the necrotic tissue and fibrin. The ulcers are irregular in form and may be superficial or may extend down into the muscular coat. In the simple and catarrhal dysentery there are two more or less distinct forms. In the first the follicles of the intestines are chiefly affected. These become enlarged, and suppuration may take place within them. They may rupture on the surface, giving rise to small ulcers which extend some distance into the mucous membrane. The most common form, and which is frequently combined with this affection of the follicles, is purulent catarrh of the mucous membrane, combined with more or less erosion of the surface. The ulcers are superficial, in many cases do not extend through the mucous membrane. They are always much broader on the surface than on the bottom.

In the amœbic dysentery we have a type which is anatomically distinct, and may be distinguished at once from either the simple or diphtheritic form. In this type the stress of the disease does not appear to fall on the mucous membrane, but it affects the submucosa, the mucous membrane being involved secondarily. Neither the glands of the intestines or the follicles appear to take any part in the process. A great swelling of the intestines is the most marked feature of the disease. This is due to the infiltration of the submucosa. The swelling not only affects the intestine everywhere, but here and there there are nodular projections. The ulcers begin in the interior of the nodules by the submucous infiltration breaking through to the mucous surface. The ulcers always have deep undermined edges and sometimes long sinuous tracts, communicating with adjacent ulcers here found in the submucosa. Sloughs of the mucous membrane are frequently found in this form of dysentery, and the pathological conditions produced are extremely interesting. There is not so much distinct suppuration of the tissues as simple softening with following ulceration. The main feature appears to be softening of the intercellular connective tissue.

This case was not accompanied by abscess of the liver. The specimens which I show here have been preserved in alcohol, and they do not show the typical lesion as well as they ought when fresh.

◆

Recent Literature.

A Practical Treatise on Diseases of the Hair and Scalp. By GEORGE THOMAS JACKSON, M.D. New, revised and enlarged edition. New York: E. B. Treat. 1894.

Dr. Jackson's book on diseases of the hair and scalp has reached its second edition. We find the book considerably enlarged and amended, and the little that has been added to our knowledge of this subject during the last five years, receives due notice. New illustrations have been added and the valuable bibliography at the end of the book has been brought down to January, 1893. It more than retains its place as a clear exposition of what is known of diseases of the hair and scalp.

A Hand-Book of Ophthalmic Sciences and Practice. By HENRY E. JULER, F.R.C.S., Ophthalmic Surgeon to St. Mary's Hospital. Pp. 549, with illustrations. 2d edition. Philadelphia: Lea Brothers & Co. 1893.

This is a second edition of a work previously reviewed in this column, and is reproduced with some additions and alterations. The colored plates, especially those relative to external diseases of the eye are new, but are not a great improvement over those in the first edition, which were far from good. The text is clearly printed, and headings and sub-headings printed in bold type and italic in a manner that makes the book exceedingly convenient for ready reference. The style of the book is interesting, and it is admirably adapted to the purpose for which it was evidently intended, a reference hand-book in a physician's library.

---

[3] See page 516 of the Journal.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, MAY 24, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

HAFFKINE'S METHOD OF INOCULATION AGAINST CHOLERA.[1]

The preventive inoculation against cholera which Professor Haffkine is putting to so thorough a test in India, has already given sufficient evidence of its being of some value, to make an account of the methods employed of interest.

Two preparations are made of the "vaccine" as the virus or antitoxine is for some curious reason called — one an attenuated form, obtained by successive cultures in nutritive media, and a strong virus obtained by a culture on a solid medium, as agar-agar, after several generations have been passed through guinea-pigs. The vaccines of normal strength are diluted for injection with sterile water, and the emulsion carefully examined.

The skin of the patient is made aseptic over the seat of injection, which is about an inch and a half above the crest of the ilium and three inches posterior to the anterior superior spine. The first injection, which is occasionally the only one required, is always made with the weaker preparation. For the first two hours no effect is noticed, but from the third to the twelfth hour there is a rise of temperature, a feeling of malaise and more or less tenderness over the point of inoculation. During the next twenty-four hours the general symptoms disappear, the painful induration lasting for a few days.

Beyond a *temporary* reddening at the point of inoculation no alteration of the surface of the skin is produced. No disturbance of the digestive functions is, as a rule, produced, and no change in diet or occupation is necessary. In a few persons there is at first chilliness and a slight diarrhœa.

The amount of fever varies, and is taken as an indication of the natural amount of resistance of the patient against cholera, high fever being considered as a proof of strong natural resistance. In this case the second inoculation is sometimes adjudged unnecessary, or is made with a small dose of the strong virus. On the other hand, when the fever produced by the first inoculation is not perceptible, this is taken as a proof of susceptibility to the disease, and a second inoculation is given with an increased dose, five or more days after the first, on the opposite side of the body, the stronger virus being used. The symptoms ensuing are essentially the same as those caused by the first dose, varying only as the dose is larger or smaller. In the cases where the first dose is followed by a fall of temperature, diarrhœa or other mild choleraic symptoms, the second injection is always given with an increased dose, but notwithstanding such larger dose the choleraic symptoms are produced exclusively by the first inoculation, fever being the only symptom after the second inoculation.

RAILWAY SPINES AND SURGEONS.

The seventh annual convention of the National Association of Railway Surgeons, held two weeks ago in Galveston, Tex., was a most entertaining gathering. The meeting was held in Harmony Hall, which was about all the harmony there was.

Nevertheless, Mr. Clark Bell, of New York, chose as the subject of his address "Railway Spine," which he characterized as the Nemesis of the modern railway. Like all proper Nemeses, it had an origin and an aim. As a means of procuring enormous verdicts from railway corporations in accident cases, it has baffled both railway surgeons and counsel, and, vampire-like, sucked more of the blood of corporate bodies and railway companies than all other cases combined. This vampire-like Nemesis has also the property of the philosopher's stone, of turning injuries to golden opportunities for wealth. For the better accomplishment of its purpose, this Nemesis first showed itself as a plant sprouted on English soil after the era of steam, but rapidly growing in its infancy to a tree like a banyan, so that it has been "an incubus, and almost a parasite, upon the modern railway." "Avarice and greed have been the rain and dew which have watered" this Nemesis morn and eve.

He most properly considers that "the time has come when the profession of surgery should define this injury so that courts, counsel and juries may know and locate and apply to it those tests which are insisted upon in regard to all other physical injuries. It should be brought out of the shadow into the sun, out of the darkness into the light, out of the mysterious into the actual — the real." The legal profession is particularly averse to a Nemesis; and consequently both bench and bar are desirous of having an organization (such as that of railway surgeons) "frame a correct definition of the disease, if it exists, and to so describe and characterize it with precision that not only judges and lawyers may know what it is with certainty, but that the average juryman shall be able to do so."

One of the great duties of the near future for railway surgeons is to establish definitions, rules and limitations of special injuries, real and imaginary, and so effectually put a stop to the enormous verdicts which are sapping the reddest life-blood of the Nemesis-ridden modern railway.

---

[1] Indian Medical Gazette, April, 1894.

The afternoon session, which was devoted to the election of officers, had a Nemesis (or something else) to trouble it, for it was a most exciting and spontaneous session, especially spontaneous in the calling of names and the exchange of complimentary criminations. Finally, the new officers were elected, with a general belief that the ballot-box was really never stuffed, and that nobody had really falsified or borne ill-will.

The morning session the next day began at 9 A. M. with divine invocation; but before then the spines of the railway surgeons had recovered their normal steadiness and control, and they all had a hop — that is, the surgeons and their families, not the spines nor the Nemesis. The women were fair, the men were brave. Our Texan authority informs us that "Hundreds of couples danced to the time of rhythmic strains in the parlors of the Beach Hotel. The occasion was recherche. It was perfect."

◆

COMPULSORY VACCINATION.

A DECISION of public interest was rendered by Justice Wm. J. Gaynor, in the Supreme Court of Brooklyn, on May 18th. Since the outbreak of small-pox in that city about three months ago special vaccinators, under the direction of Health Commissioner Emery, have vaccinated over one hundred thousand persons, and in many instances it was against the protest of the individual. The question of compulsory vaccination was not brought before the courts, however, until two expressmen were forcibly quarantined in a stable for refusing to be vaccinated. These men secured a writ of habeas corpus, and it was upon this that the decision of Justice Gaynor was handed down.

In the course of it, he says: "To justify this action the commissioner makes written return to the writ that, as the petitioners are expressmen, and therefore go about and carry goods, they are, in his judgment, 'unusually exposed' to small-pox contagion. Therefore he ordered them to be vaccinated, and they refusing to submit their bodies to vaccination, he ordered quarantine to be placed upon said premises and that said persons be detained therein until they consent to be vaccinated. If the commissioner had the power to imprison an individual for refusing to submit to vaccination, I see no reason why he could not also imprison one for refusing to take some dose. But the legislature conferred no such power upon him, if indeed it has the authority to do so. The law empowers all health boards to require the isolation of all persons and things infected with or exposed to contagious or infectious diseases. There is no claim that the petitioners are infected or have been actually exposed to infection. Even if they were subjects for isolation by reason of infection or exposure thereto, they could only be detained while such conditions existed, and not indefinitely until they yielded their bodies to vaccination. . . . If the legislature desired to make vaccination compulsory it would have so enacted. If, however, it should be made by the legislature a criminal offence to refuse to be vaccinated, it may well be suggested that the accused under such a law would have to be tried, like all other offenders, in a competent court and after the due process of law which is guaranteed every one by the constitution."

The petitioners were discharged.

◆

MEDICAL NOTES.

THE HOSPITAL SUPPLY OF NEW YORK. — New York City has eighty-one hospitals, containing ten thousand eight hundred and seven beds, of which eighty-five hundred are free.

EDITOR OF THE ARCHIVES OF PEDIATRICS. — Dillon Brown, M.D., Adjunct Professor of Pediatrics at the New York Polyclinic, will take the editorial charge of the *Archives of Pediatrics*, beginning with the July issue.

A SUMMER SCHOOL OF NEUROLOGY AND PSYCHIATRY. — A summer course of clinical and laboratory study of nervous and mental diseases is to be given for six weeks, beginning June 4th, at the Illinois Eastern Hospital for the Insane.

PROLONGED LIFE AFTER PERFORATION OF THE HEART. — A man was shot in the chest recently in Erie, Pa., and lived for seventy hours afterwards. A post-mortem examination of the body showed that the bullet had passed through the left ventricle.

THE CZAR'S INTEREST IN THE NEXT INTERNATIONAL MEDICAL CONGRESS. — The Czar of Russia, who has from the first shown great interest in having the next International Medical Congress meet in Russia, has signified his intention of contributing fifty thousand roubles towards the expenses of the meeting.

THE AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION. — At the last meeting of the American Medico-Psychological Association, held in Philadelphia May 17th, the following officers were elected: President, Dr. Edward Cowles; Vice-President, Dr. Richard Dewey; Secretary and Treasurer, Dr. Henry M. Hurd; Auditor, Dr. A. R. Moulton.

STATE BOARD OF MEDICAL EXAMINERS OF NEW JERSEY. — The last meeting of the State Board of Medical Examiners of New Jersey to examine candidates desiring to practise medicine in that State under the present law, will be held June 14th at the capitol at Trenton. The new law, which goes into effect July 4, 1894, requires all candidates to have a competent common-school education, to be graduates in medicine, and to have studied at least four years and to have taken three full courses of lectures before being admitted to an examination.

The Lynching Record. — During the year 1893 there were two hundred persons put to violent death by lynching in the United States, an increase of one over the year 1892. Of this number, thirty were white persons and one hundred and fifty negroes (four of them women). Fifty-four were killed for rape; fifty-seven for murder; the rest for various smaller crimes. During the last twelve years nearly two thousand negroes have been shot, hanged, or burned to death by mobs.

The New Jersey State Hospitals for the Insane. — This is the present position as to the State Hospitals for the Insane in New Jersey, and there is great desire on the part of medical men to have the Governor rightly interpret the law in the appointment of new officials: "An act has been passed, and is now in the hands of the Governor, which makes vacant every position in connection with the State Hospitals for the Insane; and as it provides for a non-partisan Board of Managers, and as this is in accordance with a suggestion made by the Governor in his annual message, it is fair to presume it will become a law."

Meat-Eating, Vegetarianism and Manners. — A good deal has been said recently about the bad temper caused by meat-eating and by implication of the mild gentleness of those who subsist on roots and herbs. The *National Popular Review* is moved to champion the flesh-devouring man and says: The Hindoo professional assassin or murderer is probably as cold-blooded and as ferocious a being as one may imagine. The Chinese are great vegetarians. Rice, beans in the green state, cabbage and large spinach, water-cresses and fruits enter largely into their diet. They are besides very fond of fish, and yet there is nothing more bloodthirsty and bellicose, more wild or more unmanageable than the Chinaman when aroused. On the other hand, the native Californians, like the dweller on the wild pampas of South America, who lived on an exclusive beef diet, were generous, self-composed, and not in the least given to either strife or blood-shed.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, May 23, 1894, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 39, scarlet fever 17, measles 23, typhoid fever 23, small-pox 0. There is one patient with small-pox at the Canterbury Street Hospital, two at Gallop's Island; patients nearly well; no deaths.

Bequests to Hospitals. — The will of the late Nancy Bartlett, of Milford, Mass., bequeaths five hundred dollars each to the Perkins Institution for the Blind and the Children's Hospital of Boston.

A Filter Plant for the Providence Water-Supply. — The city government of Providence, R. I., has taken the preliminary steps towards the construction of a large and complete filtration plant for its public water-works.

Bovine Tuberculosis in Jamaica Plain, Mass. — Several valuable blooded cows belonging to private herds in Jamaica Plain have been found seriously affected with tuberculosis, and have been killed.

A Hospital for Contagious Diseases in Somerville, Mass. — The city of Somerville has fitted up a small building on North Street for patients with contagious diseases. It is a one-story building, containing four rooms.

The Boston City Hospital Examination for House-Officers. — There were thirty-nine candidates for appointment as house-officers at the Boston City Hospital at the examination last week. There were nine vacancies to be filled.

An Emergency Hospital for Everett, Mass. — A meeting was held in Everett last week to consider the establishment of an emergency hospital. The proposed articles of incorporation were referred for final acceptance to a later meeting.

Massachusetts Medical Society. — The annual meeting of the Massachusetts Medical Society will be held on June 12 and 13, 1894. Attention is called to the fact that the Meetings of the Sections at 2 p. m., and the Shattuck Lecture at 8 p. m., on Tuesday the 12th of June, will be at the Harvard Medical School. The Meeting, the Annual Discourse and the Dinner, on Wednesday, June 13th, will be in Mechanic Building.

A Small-Pox Hospital for Chelsea, Mass. — The occurrence of a case of small-pox in Chelsea has led the Board of Health of that city to purchase for a small-pox hospital a building on Bellingham Street, which has been occupied for some time as a tenement-house. It contains thirteen rooms, and is well adapted for its purpose, having formerly served as a small-pox hospital before being used as a dwelling-house. It is about five hundred feet from any other houses.

Barnstable District Medical Society. — The annual meeting of the Barnstable District Medical Society was held at Hyannis, April 18th, and the following officers were elected for the coming year: President, Horatio S. Kelley, Jr., of West Dennis; Vice-President, Edward E. Hawes of Hyannis; Secretary, F. W. Pierce of Marstons Mills; Treasurer, George N. Munsell of Harwich. At the close of the meeting the Society was entertained at dinner by Dr. G. W. Doane.

A Dinner to Dr. E. H. Bradford. — A dinner was given to Dr. E. H. Bradford, at the Union Club, on Tuesday evening, May 22d, by his former colleagues and associates of the Boston City Hospital, to mark their sense of the loss which the hospital and they themselves have sustained by his resignation from the hospital staff, of which he has been a most valued member for fourteen years. The President and Secretary of the Board of Trustees, the Superintendent, several members of the Consulting Board, and almost all the members of the active staff, were present. Dr. D. W. Cheever, the President of the hospital staff, presided very felicitously; and many informal speeches testified to the flattering appreciation in which the guest of the evening is held by his former colleagues. Dr. Bradford was presented with a cup bearing a suitable inscription.

NEW YORK.

STERILIZED MILK FOR THE POOR. — Mr. Nathan Strauss, who has long been identified with philanthropical work in the city, has opened four depots in the tenement-house districts for the sale of sterilized milk for the benefit of the poor. His aim is to diminish the death-rate among children in summer, and the sterilized milk will be sold at a lower-rate than ordinary milk can be procured elsewhere. In addition, powdered barley and oat-meal for the purpose of preparing food for infants will be sold at the lowest possible prices. Last summer Mr. Strauss maintained but a single depot of this kind, and the result seemed to be very satisfactory.

TUBERCULOUS MEAT. — The investigation of the case recently reported in which the four quarters of a tuberculous cow were seized at West Washington Market showed that a number of other cows in the herd at Goshen, Orange County, from which the animal came are affected with tuberculosis. During the year 1893 the quantity of meat condemned in the city of New York amounted to 1,175,287 pounds, against 2,862,144 pounds in 1892, when the quantity was about 90,000 greater than in 1891. For the three years the average was nearly three tons a day. In addition to the various markets, the meat inspectors visit daily all the slaughter-houses in the city. They not only see the killing done, but insist that the places are kept clean, the refuse promptly removed, and every thing done to make the slaughter-houses as free from anything objectionable from a sanitary standpoint as is possible. No one is permitted to slaughter cows except between the hours of 8 A. M. and 5 P. M., in the presence of an inspector. If a cow is found to be affected with tuberculosis the carcass is promptly condemned and sent to the offal dock. Then the case is followed back, if possible, to the farm from which the animal came and all necessary precautions are taken to prevent any more cattle being brought from the place, while the officials of the State Board of Health are notified of the condition of affairs.

THE NEW YORK STATE COLONY FOR EPILEPTICS. — In a recent issue there was a brief notice of the act of the New York Legislature establishing a colony for epileptics in that State. The very great value of such an establishment, and the important advance it marks in State care of these unfortunate persons, makes a more extended notice of interest. A Board of Five Managers is provided for, to serve without salary and to meet at the colony at least once a month. The Governor appointed as the Board of Managers: Dr. Frederick Peterson, of New York; Mrs. C. F. Wadsworth, of Geneseo; George M. Shull, of Mount Morris; Dr. Charles E. Jones, of Albany, and W. H. Cuddeback, of Buffalo. At its organization in Albany on the 3d of May, the Board made Dr. Frederick Peterson, President, and George M. Shull, Secretary. The law requires that all of the buildings put up shall be on the village plan; and an important provision in this bill is that the Managers may accept any bequests of persons interested in the welfare of epileptics, and it is believed that many charitable wealthy people will build cottages upon the splendid sites on the tract, to bear their names and exist as lasting memorials to their desire to serve humanity in this wise. A medical superintendent, steward, matron, pathologist, nurses, school-teachers, teachers of various industries and arts, and so on, are to be appointed as needed; but the colony will not be ready probably to receive patients before the autumn of 1895. It is thought that the colony will ultimately number fifteen hundred to two thousand members. As soon as possible the six hundred epileptics in the various county almshouses will be taken in charge. Later, private patients will be received at prices corresponding to the accommodations asked for. It is sure to become self-supporting in the course of time, and to grow into an industrial and agricultural village that will more than rival the similar and famous colony at Bielefeld, Germany, upon which to a certain extent this is modelled.

Miscellany.

THE OVER-ZEALOUS THERAPEUTICIAN.

IN his address before the International Medical Congress, Professor Stokvis, speaking of the vagaries of modern pharmacy and chemico-therapeutics, said:

"The reason of the present situation — or imbroglio — is obvious. By the side of the chemist stands the busy practitioner, or the overwrought professor. Both are oppressed by the sense of insufficiency of their art; neither has the time to observe, reason and conclude. It is the professor who publishes with railroad haste his observations and impressions, for he is ever haunted by the fear lest another should precede him in the new discovery. He it is who makes others follow, sheeplike, in the wake. He constitutes himself a bustling *impresario*, always on the lookout for a new sensation, agitating himself and the public, and, finding that he has before him a fickle, unquiet, impatient audience, he hastens to deal with new subjects, if not every day, at least every week. During the year 1893, sixty-eight new chemical products have been recommended to me, this figure not being inclusive of entirely new drugs or their active principles. In each case we are told that the new product is of the very first importance, of exceptional therapeutic value, and perfectly harmless. *Fistula dulce canit volucres dum decipit auceps.* The wise man will not be taken in. He will be guided by therapeutic teaching such as that of the immortal Baglivi, the author of the pregnant phrase, 'Ars tota in observationne,' or by the teaching of my honored friend, Professor Semmola, delivered with all

---

[1] Lancet, April 21, 1894.

his *maestria Italianni* from his chair in the University of Naples, a university which has lately set a glorious example to Europe by proclaiming that a drug that is efficacious cannot be harmless. Nearly all new remedies have their period of success, be it but for an hour, and this is due to 'suggestions,' either by medical men or patients: but, with few exceptions, these panaceas are doomed to be laid aside as forgotten and antique curiosities."

◆

CHARLES C. PIKE, M.D.

Resolutions of the Essex South District Medical Society.

Whereas, Dr. Charles C. Pike, an honored and beloved member of the Essex South District Medical Society has, in the infinite wisdom of God, been called from among us in the prime of his manhood; therefore, be it

Resolved, That in his death we recognize the great loss to this Society, to the community in which he lived, as well as a personal bereavement to those of us who knew and loved him so well; and we desire to pay to his memory a tribute of sincere respect, expressing our admiration of his attainments as a physician and of his manliness and purity of character.

Resolved, That we extend to his wife and family our heartfelt sympathy at the great grief which has come upon them.

Resolved, That a copy of the above be presented to the family of the deceased, and also be entered on the records of the Society.

(Signed) C. A. Carlton,
Charles W. Haddock, } *Committee.*
Frank L. Atwood,

◆

Correspondence.

"THE MEDICAL REGISTRATION BILL IN THE MASSACHUSETTS LEGISLATURE."

Boston, May 19, 1894.

Mr. Editor: — The worst of this bill is that it will benefit only the quacks; that is to say, if any of them will *cram* so as to be registered, which may be doubted, generally. Every M.M.S.S. is registered on or before he becomes a member (in *fact*, even though no word is said about it at the time). Formerly, the candidate, after being licensed, had to wait three years and then ask to become a member. Now, he does not wait a moment, but is licensed and admitted at the same moment, on his passing the examination successfully. The Society does all this for him, and nobody can take this right or power from the Society without its consent, and no one can prevent its members from practising medicine and surgery while residing in Massachusetts. The bill can give no further right to you or to me than we now have, even if we ask its agents to register us, which I trust we shall not do.

The bill should be entitled "An act to encourage the practise of quackery by dignifying persons illegally using the designation 'M.D.'!" It will only degrade the regular profession in as far as any of its members permit their names to be registered with these quacks; and, as for the public, it will be worse off than ever in endeavoring to distinguish by title the reputable from disreputable practisers of medicine.

Strange that such a bill should be allowed to pass with so little opposition; the *Boston Advertiser*, only, has indicated some of its many "defects."

The intimation that the medical member of the Senate is the author of the bill is an absurdity not to be encouraged.

Very truly yours,

* *

METEOROLOGICAL RECORD,

For the week ending May 12th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S.. 6	29.82	60	72	48	97	90	94	S.E.	S.W.	10	17	R.	F.	0.44
M.. 7	29.70	68	79	58	87	59	73	S.W.	S.W.	18	11	O.	C.	
T.. 8	29.80	68	76	59	53	33	43	S.W.	W.	3	9	C.	C.	
W.. 9	30.00	64	73	54	45	49	47	N.W.	E.	16	5	C.	F.	
T..10	30.37	54	59	50	45	64	54	N.E.	S.E.	13	14	C.	C.	
F..11	30.36	55	66	44	60	78	69	S.E.	S.W.	9	6	F.	F.	
S..12	30.32	60	70	49	49	55	52	N.W.	S.W.	8	11	C.	C.	
☞	30.05		71	62			62							

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, May 12, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Scarlet fever.
New York . .	1,891,306	790	311	18.33	17.81	1.56	9.23	1.82
Chicago . . .	1,438,000	—	—	—	—	—	—	—
Philadelphia .	1,115,562	399	124	10.75	15.00	.75	5.25	—
Brooklyn . .	978,394	366	153	16.20	16.20	1.08	6.75	1.08
St. Louis . . .	560,000	—	—	—	—	—	—	—
Boston . . .	487,397	179	50	13.44	16.80	.56	10.64	1.12
Baltimore . .	500,000	—	—	—	—	—	—	—
Washington .	308,431	98	38	12.24	13.26	2.04	5.10	1.02
Cincinnati . .	305,000	88	25	7.98	9.12	1.14	3.42	—
Cleveland . .	290,000	101	50	16.83	13.86	.99	2.97	1.98
Pittsburg . .	263,709	—	—	—	—	—	—	—
Milwaukee . .	250,000	—	—	—	—	—	—	—
Nashville . .	87,754	24	9	8.32	8.32	—	—	—
Charleston . .	65,165	39	19	7.68	2.56	7.68	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	96,217	32	12	6.26	21.91	—	6.26	—
Fall River . .	87,411	38	25	13.15	21.04	10.52	—	—
Lowell . . .	87,191	32	10	9.39	21.91	3.13	6.26	—
Cambridge . .	77,100	22	7	13.65	4.55	—	4.55	4.55
Lynn	62,656	19	3	10.52	—	—	—	5.26
Springfield . .	48,684	7	3	28.56	14.28	—	14.28	—
Lawrence . .	48,355	—	—	—	—	—	—	—
New Bedford .	45,886	18	11	11.11	27.75	—	—	11.11
Holyoke . . .	41,278	13	7	30.76	7.69	7.69	15.38	—
Salem	32,233	7	3	—	14.28	—	—	—
Brockton . .	32,140	3	0	—	—	—	—	—
Haverhill . .	31,396	15	2	—	20.00	—	—	—
Chelsea . . .	30,264	12	2	—	16.66	—	—	—
Malden . . .	29,394	8	1	12.50	12.50	—	—	—
Newton . . .	27,556	4	1	—	25.00	—	—	—
Fitchburg . .	27,146	6	4	—	33.33	—	—	—
Taunton . . .	26,972	9	1	—	—	—	—	—
Gloucester . .	26,688	—	—	—	—	—	—	—
Waltham . .	22,058	2	0	—	50.00	—	—	—
Quincy . . .	19,642	—	—	—	—	—	—	—
Pittsfield . .	18,802	4	0	—	—	—	—	—
Everett . . .	16,585	3	0	—	33.33	—	—	—
Northampton .	16,331	5	2	20.00	20.00	—	—	20.00
Newburyport .	14,073	6	0	16.66	16.66	—	—	—
Amesbury . .	10,920	3	2	—	66.66	—	—	—

Deaths reported 2,351: under five years of age 881: principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 351, acute lung diseases 375, consumption 304, diphtheria and croup 153, diarrhœal diseases 33, scarlet fever 32, measles 30, whooping-cough 26, typhoid fever 26, erysipelas 12, malarial fever 10, cerebro-spinal meningitis 7, small-pox 4.

From measles New York 14, Brooklyn 10, Cleveland 4, Philadelphia and Boston 1 each. From whooping-cough New York 6, Brooklyn and Cleveland 5 each, Philadelphia 4, Washington 3, Boston, Nashville and Fall River 1 each. From typhoid fever Philadelphia 11, Brooklyn 5, New York and Cincinnati 3 each, Cambridge, Lynn, Holyoke and Newburyport 1 each. From erysipelas New York 7, Philadelphia and Brooklyn 2 each. From malarial fever New York 5, Brooklyn 4, Nashville 1. From small-pox New York 3, Brooklyn 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending May 5th, the death-rate was 17.2. Deaths reported 3,446: acute diseases of the respiratory organs (London) 237, measles 200, whooping-cough 139, diphtheria 80, scarlet fever 51, fever 38, diarrhœa 29, small-pox (London 6, Wolverhampton, Birmingham and Nottingham 1 each) 9.

The death-rates ranged from 11.0 in Bolton to 31.3 in Wolverhampton; Birmingham 19.9, Brighton 14.9, Croydon 11.2, Huddersfield 13.2, Hull 14.5, Leeds 16.2, Leicester 14.9, Liverpool 21.3, London 17.2, Manchester 18.8, Newcastle-on-Tyne 18.8, Nottingham 18.9, Portsmouth 11.3, Sheffield 15.4, Sunderland 17.2.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 12, 1894, TO MAY 18, 1894.

Leave of absence for four months, on surgeon's certificate of disability, is granted **MAJOR VAN BUREN HUBBARD**, surgeon.

Leave of absence for three months, on account of disability, with permission to leave the Department of Texas, is granted **CAPTAIN ALONZO R. CHAPIN**, assistant surgeon.

MASSACHUSETTS MEDICAL SOCIETY.

ONE HUNDRED AND THIRTEENTH ANNIVERSARY.

The annual meeting will be held at 9 o'clock A. M., Wednesday, June 13, 1894, in the building of the Massachusetts Charitable Mechanic Association, on Huntington Avenue, Boston.

Meetings of Sections will be held at the Harvard Medical School Building, corner of Boylston and Exeter Streets, on the preceding day, Tuesday, June 12th.

TUESDAY, JUNE 12TH.

The laboratories and the anatomical museum of the Harvard Medical School will be open to Fellows of the Society during the day.

At 10 A. M., the Fellows of the Society are invited to visit the Massachusetts General Hospital, on Blossom Street; the Boston City Hospital, on Harrison Avenue; the Children's Hospital, on Huntington Avenue, and the Carney Hospital, South Boston.

Section in Medicine, Harvard Medical School, 2 P. M. – Dr. F. C. Shattuck, of Boston, Chairman; Dr. G. G. Sears, of Boston, Secretary. "The Protective Power of Vaccination." By Dr. J. H. McCollom, of Boston. "The Technique of Vaccination." By Dr. W. N. Swift, of New Bedford. "Radical Differences in Methods of Cultivation of Vaccine Lymph." By Dr. S. W. Abbott, of Wakefield. Discussion by Drs. J. F. A. Adams, of Pittsfield; L. F. Woodward, of Worcester; J. B. Field, of Lowell.

Section in Surgery, Harvard Medical School. – Dr. F. K. Paddock, of Pittsfield, Chairman; Dr. C. L. Scudder, of Boston, Secretary. "The Cure of Carcinoma of the Breast by Operation." By Dr. W. T. Bull, of New York City. Discussion by Drs. D. W. Cheever, J. C. Warren, G. W. Gay, M. H. Richardson, of Boston; T. F. Breck, of Springfield; S. H. Weeks, F. H. Gerrish, of Portland, Me.; J. B. Wheeler, of Burlington, Vt.

Shattuck Lecture, Harvard Medical School, 8 P. M. — "The Range and Significance of Variations in the Human Skeleton." By Thomas Dwight, M.D., of Nahant. The lecture will be illustrated by many specimens.

COUNCILLORS' MEETINGS.

The Annual Meeting, at 11 o'clock A. M., Tuesday, June 12, 1894; Stated Meetings on Wednesday, October 3, 1894, and on Wednesday, February 6, 1895, at the Medical Library, No. 19 Boylston Place, Boston.

EXHIBIT.

In the Exhibit Hall, Mechanic Building, there will be an exhibit of crude drugs and preparations of the United States Pharmacopœia, prepared by the students of the Massachusetts College of Pharmacy, to illustrate the revised edition of 1890.

The State and other Boards of Health will make an exhibit pertaining to Sanitary Science. That of the State Board will be the one shown at the World's Fair.

There will be the usual exhibit of surgical instruments and apparatus, electrical appliances, books, etc.

The Crematory of the Massachusetts Cremation Society, at Forest Hills, will be open to Fellows of the Society for inspection from 2 P. M., to 4 P. M., Tuesday, and can be reached by electric cars or by the Providence R. R. to Forest Hills Station.

WEDNESDAY, JUNE 13TH.

Annual Meeting, Cotillon Hall, 9 A. M. — Business of the Annual Meeting. "Ichthyol in Gynecology." By Dr. Malcolm Storer, of Boston. "Chronic Inflammation of the Seminal Vesicles." By Dr. G. W. Allen, of Boston. "The Frequency of Puerperal Sepsis in Massachusetts, its Diagnosis and Efficient Treatment." By Dr. Edward Reynolds, of Boston. Discussion by Drs. C. M. Green, of Boston; E. H. Stevens, of North Cambridge.

Introduction of delegates.

The Annual Discourse, 12 M. – By R. H. Fitz, M.D., of Boston.

The Annual Dinner, 1 P. M. – At the close of the discourse the annual dinner will be served.

J. C. WHITE, M.D., *President.*
E. J. FORSTER, M.D., *Treasurer*,
51 Massachusetts Avenue, Boston.
F. W. GOSS, M.D., *Recording Secretary*,
217 Warren Street, Roxbury.

SOCIETY NOTICES.

AMERICAN MEDICAL EDITORS' ASSOCIATION. — The annual meeting of this Association will be held at the Palace Hotel, San Francisco, Cal., during the meeting of the American Medical Association.

C. H. HUGHES, M.D., *President.*
GEO. M. GOULD, M.D., *Secretary.*
I. N. LOVE, M.D., *Chairman Com. Arrangements.*

RECENT DEATH.

MAURICE KING HARTNETT, M.D., M.M.S.S,, died in Boston, May 14, 1894, aged seventy years. He graduated from the Harvard Medical School in the class of 1859.

BOOKS AND PAMPHLETS RECEIVED.

The Seventieth Annual Report of the Officers of the Retreat for the Insane at Hartford, Conn., April, 1894.

The Tubercular Diathesis Controlled by Gold and Manganese in Combination. By J. Blake White, M.D. Reprint. 1894.

About Mushrooms; A Guide to the Study of Esculent and Poisonous Fungi. By Julius A. Palmer, Jr. Boston: Lee & Shepard. 1894.

Zur Behandlung der Lungentuberculose mittels Kochscher Injectioner. Von Dr. E. Thorner, Sanitälsrath in Berlin. Berlin: S. Karger. 1894.

Catalogue of the Library of the Royal Medical and Chirurgical Society, Supplement VII, Additions to the Library 1892–3. London: Printed for the Society. 1893.

Emergency and Hygienic Notes for the Militia. By William H. Devine, M.D., Surgeon, Ninth Regiment, Massachusetts Volunteer Militia. Boston: Damrell & Upham. 1894.

The Drainage of Fitchburg, Comprising Remarks on the Subject of Drainage in General and the Disposal of Sewage and other Waste. By Clarence W. Spring, M.D., City Physician, Fitchburg.

Transactions of the New York State Medical Association for the Year 1893. Volume X. Edited for the Association. By E. D. Ferguson, M.D., of Rensselær County. Published by the Association.

China, Imperial Maritime Customs, II Special Series: No. 2, Medical Reports for the Year ended March 31, 1890, 38th and 39th issues. Shanghai: Published by order of the Inspector-General of Customs. 1894.

Medico-Chirurgical Transactions. Published by the Royal Medical and Chirurgical Society of London. Volume the seventy-sixth. (Second series, volume the fifty-eighth.) London: Longmans, Green & Co. 1893.

On the Features which Distinguish Epidemic Roseola (Rose-rush) from Measles and from Scarlet Fever. By Clement Dakes, M.D., B.S., Lond., M.R.C.P., Physician to Rugby School, etc. London: J. & A. Churchill. 1894.

Hydatid Disease. Vol. II. By the late John Davies Thomas, M.D. (Lond.), F.R.C.S. (Eng.). A Collection of Papers on Hydatid Disease. Edited and arranged by Alfred Austin Lendon, M.D. (Lond.) Sidney: L. Bruck. 1894.

On Amblyopia from Di-Nitrobenzol: with Remarks on the Employment of this Substance in the Making of Certain Explosives and its Effects on those engaged in the Manufacture. By Simeon Snell, F.R.C.S., Edin., etc. Reprint. 1894.

An Aid to Materia Medica. By Robert H. M. Dawbarn, M.D., Professor of Operative Surgery and Surgical Anatomy, New York Polyclinic. Third edition, revised and enlarged. By Woolsey Hopkins, M.D. New York: G. P. Putnam's Sons. 1894.

Rapports et Mémoires sur le Sauvage de l'Oveyron l'Idiotié et la Surdi-Mutité, par Itard avec une Appréciation de ces rapports par Delasiauve. Préface par Bourneville, Eloge d'Itard par Bousquet avec portrait du Sauvage. Paris: Publications du Progrès Médical. 1894.

Address.

THE RISE AND FALL OF THE LICENSED PHYSICIAN IN MASSACHUSETTS, 1781–1860.[1]

BY REGINALD H. FITZ, M.D., OF BOSTON.

GENTLEMEN:—IN calling to order the Ninth Annual Meeting of our Association I desire to express the highest appreciation for the honor you have bestowed upon me in appointing me to preside over your proceedings. To conduct the affairs of so aristocratic a democracy has been made a task so easy that the gift of persuasion, or the knowledge of parliamentary law become wholly unnecessary qualifications. The one obligation which has weighed somewhat heavily is the thought of the opening address which is to prepare the way for such communications as you are to make for the advancement of scientific and practical medicine — all the more as my own attention has been particularly directed for the past few months toward a class of practitioners who have no idea of scientific medicine, and whose only thought of the practice of medicine is how much money can be made out of it. It may not be uninteresting to learn what men like yourselves, many years ago, did in order to discourage such persons — what they planned, what they accomplished, and why they failed. I will, therefore, ask your attention to the rise and fall of licensed physicians in Massachusetts, 1781–1860.

In the "Records of the Governor and Company of the Massachusetts Bay in New England" (1854, III, 153), is to be found the first legislation concerning the regulation of medical practice in Massachusetts. On the 3d of May, 1649, the General Court, held at Boston, voted as follows:

> "Forasmuch as the lawe of God (Exod. 20 : 13) allowes no man to touch the life or limme of any pson except in a judicyall way, bee it hereby ordered and decreed, that no pson or psons whatsoeuer that are imployed about the bodyes of men, woemen, and children for preservation of life or health, as phisitians, chirurgians, midwives, or others, shall presume to exercise or putt forth any act contrary to the knowne rules of arte, nor exercise any force, violence, or cruelty vpon or towards the bodyes of any, whether young or old,— no, not in the most difficult and desperate cases — wth out the advice and consent of such as are skilfull in the same arte, if such may be had, or at least of the wisest and gravest then present, and consent of the patient or patients, (if they be mentis compotes,) much-lesse contrary to such advice and consent, vpon such punishment as the nature of the fact may deserve; w^{ch} lawe is not intended to discourage any from a lawfull vse of their skill, but rather to encourage and direct them in the right vse thereof, and to inhibit and restrayne the presumptuous arrogance of such as through præfidence of their oune skill, or any other sinister respects, dare be bould to attempt to exercise any violence vpon or towards the bodies of young or old, to the preiudice or hazard of the life or limme of men, woemen, or children."

Until the years immediately preceding the War of the Revolution there was no more stringent regulation of medical practice than this. But in 1760 the City of New York had found it necessary to regulate the practice of medicine within its limits on account of the abundance of quacks preying upon the community. Five years later the Medical School of the University of Pennsylvania was established, and in the following year the New Jersey Medical Society was founded. In still another year the Medical School of Columbia College began its career; and in 1771 the colony of New Jersey passed its act regulating the practice of medicine, to be followed in 1774 by the abortive attempt in Connecticut.

The years thus ripe in revolutionary ideas and acts produced their fruit in Massachusetts.

Although there were excellent physicians in the larger cities and towns of the Commonwealth, and several of them possessed medical degrees received in Europe, they were few and far between. Most practitioners had served merely a sort of apprenticeship to their seniors. There was no medical school in the State, and but two in the country, and these almost as remote as the leading schools of Europe at the present day. Any one undertook the study of medicine in such manner as he saw fit, and entered his practice with as little preparation as he chose. A considerable number of wholly unqualified practitioners thus were to be found, a source of danger to the community, a disgrace to the name of physician, and a cause of jealousy, contention and distrust, among the members of the profession.[2]

The example set by New Jersey and New York was one which demanded a speedy following, and thirty-one of the leading physicians of Massachusetts, sixteen being from towns outside of Boston, became incorporated as the Massachusetts Medical Society, "that a just discrimination should be made between such as are duly educated, and properly qualified for the duties of their profession, and those who may ignorantly and wickedly administer medicine whereby the health and lives of many valuable individuals may be endangered, or perhaps lost to the community."

That this purpose might be carried out, the President and Fellows of the Society or their appointees from its members were given "full power and authority to examine all candidates for the practice of physic and surgery, who shall offer themselves for examination, respecting their skill in their profession, and if upon such examination, the said candidates shall be found skilled in their profession, and fitted for the practice of it, they shall receive the approbation of the Society in letters testimonial of such examination," etc. They were obliged, under penalty, to hold this examination, although candidates were not obliged to present themselves for approval.

The State thus did not prevent the practice of medicine by any one, but it implied that the letters testimonial of the Society discriminated between the duly educated and properly qualified, and the ignorant and wicked. By the limitation of the maximum membership to seventy, admission to the fellowship became a proof of distinction which the better educated and higher minded physicians were proud to attain. This number, furthermore, gave evidence of the comparatively few physicians in the State at that time, who were considered worthy of this high distinction. Indeed, it repeatedly happened in the early life of the Society that it was impossible to secure the attendance of a sufficient number of Fellows to form a quorum to transact business.

Two years after the incorporation of the Medical Society the Medical School of Harvard College was established; and it was feared that the power of Harvard College to examine medical students and grant degrees in medicine might interfere with the authority of the Society to examine candidates for practice and issue letters testimonial. According to the memorial of Dr. John Warren in 1811, this "would have produced the most unhappy effects, but for the repeal of an exceptionable article in that establishment, and the accommodating conduct of those who, at that time, were the guardians of science and the patrons of the healing art."[3]

---

[1] The President's Address at the Ninth Annual Meeting of the Association of American Physicians held in Washington, May 29, 1894.

[2] Proceedings of the Massachusetts Medical Society, 1831, 19.

But doubts arose with reference to the duties and powers of the Society concerning the examination of candidates and its authority to demand and receive compensation for its services and an act in addition to the act of incorporation was passed in 1789. It was therein made the duty of the Society, "in order more effectually to answer the designs of their institution, from time to time to describe and point out such a medical instruction, or education, as they shall judge requisite for candidates for the practice of physic and surgery, previous to their examination before them . . . and they shall cause the same to be published in three newspapers in three different counties within this Commonwealth."

The Society continued to fail in its object to create a proper standard of medical qualifications. The population of the State rapidly increased, and the number of practitioners likewise. There was no sufficient inducement to lead physicians to apply for the approval of the Society; and in the first twenty years of its existence only some twenty candidates had received the testimonials in approval of their professional skill.[4] In the same period Harvard had conferred its medical degree upon thirty candidates.

Early in the present century Dr. John D. Treadwell, a young, learned, devoted and public-spirited physician of Salem, impressed with the inability of the Society to accomplish its aims, endeavored to improve its usefulness. An extensive correspondence was instituted among the members and with the assistance of Mr. Sewell, afterwards Chief Justice of the State, a bill was drafted, which, somewhat modified, was enacted in 1803.

The Massachusetts Medical Society, as it now exists, was then instituted; and its plan of organization became a model for other State Societies. It was no longer a close corporation with a limited membership, but it was possible for every physician in the State to become a Fellow. It was only necessary that he should have been a student in medicine agreeably to the regulations of the Society, and pass a satisfactory examination before the censors, after which he received a license to become a practitioner of medicine or surgery; "and after three years of approved practice in medicine and surgery, and being of good moral character, and not otherwise," he became a member of the corporation by subscribing to the by-laws.

The medical graduates of Harvard University were made licentiates without passing an examination, since the right to confer degrees had been granted Harvard College long before the Massachusetts Medical Society was incorporated. "The only means of avoiding collision with that ancient and respectable institution was by the compromise which was adopted."[5]

A duly licensed physician in Massachusetts in 1804 was required to give satisfactory evidence of the following qualifications before being admitted to examination for the license: Some acquaintance with Latin and Greek, and with the principles of geometry and natural philosophy; three full years of study under the direction of some respectable physician or physicians whose practice he must have attended. During this time he must have read the most approved authors in anatomy, physiology, chemistry, materia medica, surgery, and the theory and practice of physic. He was examined in physiology, pathology, therapeutics and surgery.

There was still no obligation on the part of any practitioner to present himself for license; and the only privilege enjoyed by the licensed physician, apart from the right to attend the meetings of the Society and the use of its libraries, was exemption from service in the militia.

Notwithstanding the Act of 1803 made it possible for every properly qualified physician to become licensed and a member of the Society, it proved necessary to take further steps to bring them within the fold, and in 1806 a by-law was passed in the following terms:

> "To promote the laudable design of the Legislature, in forming and incorporating this Society, to prevent as far as may be all unqualified persons from practising medicine or surgery, and in order to discourage empiricism and quackery: it shall be deemed disreputable and shall be unlawful, for any fellow of this Society, in the capacity of physician or surgeon to advise or consult with any person, who having been a fellow of the Society, shall be expelled therefrom, or with any person whatever, who shall thereafter commence the practice of medicine or surgery within this Commonwealth, until he shall have been duly examined and approbated by the censors of the Society or by those of some district society," etc.

The object of this by-law was to guard the public against ignorant, designing and unscrupulous pretenders. The Society had provided the means by which physicians could give evidence of having followed a suitable course of study, and it was its duty to inform the public that if it employed unlicensed practitioners it must suffer the consequences.

Notwithstanding these attempts at compelling practitioners to become educated physicians, the standard was evidently too high for all to attain. Many could not comply with the requirements; others did not find a sufficient inducement in the honors and privileges bestowed by the Society. The Thomsonians, then beginning their career, required no education and no license. There was no law to prevent their entering practice; and Chief Justice Parsons[6] had then made his famous decision in the case of the Commonwealth *v.* Thomson, "that if the prisoner acted with an honest intention and expectation of curing the deceased by this treatment, although death, unexpected by him, was the consequence, he was not guilty of manslaughter. . . . There is no law which prohibits any man from prescribing for a sick person with his consent if he honestly intends to cure him by his prescription; and it is not felony, if through his ignorance of the quality of the medicine prescribed or of the nature of the disease or of both, the patient, contrary to his expectation, should die."

The Chief Justice evidently felt that there was likely to be need of some legislation which should prevent the occurrence of such cases, for he closes his decision by saying:[7] "It is to be exceedingly lamented that people are so easily persuaded to put confidence in these itinerant quacks, and to trust their lives to strangers without knowledge or experience. If this astonishing infatuation should continue, and men are found to yield to the impudent pretensions of ignorant empiricism, there seems to be no adequate remedy by a criminal prosecution, without the interference of the legislature, if the quack however weak and presumptuous, should prescribe, with honest intentions and expectations of relieving his patients."

---

[3] Dr. S. A. Green's Centennial Address, Med. Comm. Massachusetts Medical Society, 1875–81, xii, 639, 654.

[4] Dr. James Jackson's Speech at the Annual Dinner, 1856.

[5] Proceedings Massachusetts Medical Society, 1831, 26.

[6] Massachusetts Reports, 1809, vi, 134.

[7] Loc. cit., p. 142.

In 1811 an unsuccessful attempt was made to incorporate a rival society with the same privileges as those enjoyed by the Massachusetts Medical Society, under the title of the Massachusetts College of Physicians. The announced reason was that two Societies were better than one; the real object was thought to be the establishment of a new medical school.

The Massachusetts Medical Society strongly opposed the scheme, on the ground that it was unnecessary and would lead to the rejected candidates of the one society being accepted by the other, whatever might be their qualification, thus producing disagreements and animosities injurious to the profession and to the public.[8]

It is possible that in consequence of the recommendation of Chief Justice Parsons, certainly with the view of discouraging quackery which was rapidly increasing under the influence of Thomson, the legislature in 1818 passed its first "Act regulating the Practice of Physick and Surgery," which was supplemented in 1819 by "an Act in addition to an Act entitled 'an Act regulating the practice of Physick and Surgery.'"

According to the first of these acts, no person entering the practice of physic and surgery within the State could recover by law any debt or fees for his professional services unless he had received a medical degree from some college or university or had been duly licensed by some medical society or college of physicians or by three Fellows of the Massachusetts Medical Society, designated in each county by its councillors, with power to examine candidates and grant licenses. Copies of these licenses were to be deposited with the clerk of the town, district or plantation in which the licentiate resided.

In the Act of 1819, that the physician might recover his debts by law, it was necessary that he should be a licentiate of the Society or a Medical Graduate of Harvard. If the candidate for the license was educated out of the State, the censors might waive a new examination if they were satisfied that he had received an education agreeably to the regulations provided by the Society.

It is stated[9] that this difficult trust was accepted with reluctance,[10] that the law was not sought for by the Society, and that it was doubtful whether its action was not rather injurious than beneficial. Of this law Chief Justice Shaw said:[11]

"It appears to us that the leading and sole purpose of this act was to guard the public against ignorance, negligence and carelessness in the members of one of the most useful professions, and that the means were intended to be adapted to that object. If the power of licensing were given to the Medical Society exclusively, there would be much more plausible ground, at least, to maintain that the power was conferred on a body who would have a temptation to abuse it, so as to promote their private interests; but where the power is conferred equally on the university charged with the great interests both of general and professional education, and which cannot be perceived to have any such interest, that ground of argument seems to be wholly removed, and it seems difficult to perceive how a power which it is important to the community should be placed somewhere could be placed more safely. The courts are all of the opinion that the law in question is not repugnant to the Article of the Bill of Rights, above cited, and that its validity cannot be impeached on the ground that it is a violation of any principle of the constitution."

The licensing of physicians by the Society doubtless aided in restraining a certain number of practitioners from adopting some of the methods of the charlatan; but it did not interfere with the encouragement of the latter by the community. I am indebted to Dr. John Homans, 2nd, for the opportunity of quoting from a letter of Dr. George C. Shattuck to Dr. Homans, written July 26, 1828. It gives evidence of the fondness for quackery in Boston at that time.

> "The city has 60,000 (inhabitants?) and seventy-one regularly bred physicians. About one-half, from either youth or age, have not much to do. The irregular physicians are numerous, at the head of which, in popular influence, we may place Thomson, who has formed his botanical society, who have individually learned his system of practice by hot drops and sweating, etc. The disciples of this system, perhaps, may embrace one-sixth of the population of Boston. The patent medicines are employed in about, I believe, another sixth of the cases."

In 1831 the Society had reached such a degree of success in carrying out the objects of its incorporation that it included in its ranks "nearly every educated practitioner of medicine or surgery in the State."[12]

The line of distinction was so strongly drawn between its members and irregular practitioners "that the profession is no longer made responsible in the minds of men for the consequences of their ignorance and malpractice, nor its harmony disturbed by their misconduct; and they are much less successful than formerly in diverting the confidence of the community from regular physicians to themselves."[13]

At this time, however, there were certain discordant elements within the Society which threatened its prosperity and usefulness. Some of the younger physicians were dissatisfied with the clause in the act of 1803, which demanded a period of three years of probation in practice before admission to full membership in the Society. The legislature was therefore requested to repeal this clause, which it did by a special act in 1831, and approved candidates became at once Fellows of the Society.

A more serious disturbance, which menaced the harmony and influence of the Society at this time, was the appeal to the legislature from the physicians of Berkshire County, in the western part of the State. They desired to be incorporated as an independent body, nominally on account of their distance from the headquarters of the Society, their limited privileges, and their dissatisfaction with the requirements of the censors. It was supposed that this action was largely planned in the interests of the Berkshire Medical Institution, a medical school incorporated in 1823, but without the authority to confer the degree of Doctor of Medicine.[14] It was situated in Pittsfield, and was practically a department of Williams College (not far distant), which had the power to confer degrees, but no medical faculty or medical school. Williams College sanctioned the degree of the candidates educated at the Berkshire Medical Institution. The conditions of this alliance proved important in the courts[15] when the honorary degree of M.D. from Williams College was offered in evidence as a legal qualification. It was decided that it was invalid, since the defendant must have both the education and the degree to be a legally qualified practitioner.

---

[8] Dr. S. A. Green's Centennial Address, p. 651.

[9] Proceedings Massachusetts Medical Society, 1840, p. 68.

[10] Loc. cit., 1831, 10.

[11] Hewitt v. Charier, Jr., 16 Pick., 355.

[12] Proceedings Massachusetts Medical Society, 18[illegible]

[13] Loc. cit., 1831, 19.

In the year following the incorporation of the Berkshire Institution it had petitioned the legislature to be granted the same privileges as belonged to the medical graduates of Harvard University, the most important of which was that of being acknowledged and received by the Massachusetts Medical Society without examination as regular practitioners of medicine and surgery.

At that time this petition was successfully opposed, on the ground that the Berkshire Institution had no independent board of overseers like Harvard College, and therefore was not under the same restrictions and oversight. The petition to form an independent society was also successfully opposed; but in 1837, with the approval of the Society, an act was passed, according to which graduates of the Berkshire Medical Institution were "entitled to all the rights, privileges and immunities granted to the medical graduates of Harvard College."

The rights and privileges of the licentiates of the Massachusetts Medical Society had been somewhat extended by the Anatomical Law of 1834, according to which "the dead bodies of such persons as it may be required to bury at the public expense might be surrendered to any regular physician duly licensed according to the laws of this Commonwealth."

The State had thus definitely committed itself to the regulation of the practice of medicine by the Acts of 1818 and 1819, and had placed the duty of licensing practitioners in the hands of the Massachusetts Medical Society. It conferred but few privileges on the licensed, namely, exemption from militia service and jury duty, the right to obtain and dissect the unclaimed bodies of those to be buried at the public expense, and to collect fees by law.

But unlicensed physicians could take their pay in advance, and were not desirous of the privilege of consulting with the members of the Society. The Thomsonian movement was rapidly spreading throughout the country, appealing to the people by its simplicity and economy, its dogmatic assertions and reports of wonderful cures, its advocacy of vegetable remedies, and its cry of persecution.

The efforts of the Society to include within its ranks all educated practitioners, led in 1836 to the recognition of dentists as practitioners of medicine, since dental surgery was being studied and pursued scientifically by gentlemen of regular medical education.[16]

In the following year a further attempt was made in this direction by requiring that every licentiate or medical graduate of Harvard or Berkshire entitled to admission to the Society must enter within a year after being so entitled or be deemed an irregular practitioner.

This term was applied to all practitioners in the State who were not fellows or licentiates of the Society, or doctors in medicine of Harvard or Berkshire. The above regulation was repealed three years later, since it took away "the freedom originally intended to be allowed to all regular physicians to join the Society or not, as they pleased," and stigmatized "as irregular practitioners gentlemen who have been recognized as competent physicians merely for the exercise of this freedom."[17]

In 1836, the Statutes of the Commonwealth were revised, and the report of the commissioners (1835, Part I, 125) includes all the legislation previously enacted, placing the control of the licensing of physicians in the power of the Society.

But the legislature did not accept the first section, which read as follows:

> "No person who has commenced the practice of physic or surgery, since the year one thousand eight hundred and eighteen, or who shall hereafter commence the practice thereof, shall be entitled to maintain any action for the recovery of any debt or fee accruing for his professional services, unless he shall, previously to rendering these services, have been licensed by the officers of the Massachusetts Medical Society, as hereafter provided, or shall have been graduated a doctor in medicine in Harvard University, or in the Berkshire Medical Institution, by the authority of Williams College."

It also negatived a clause making the neglect to record a license a like disqualification to its non-possession.

The legislature approved this part of the report of the committee with the above exceptions, and it became Chapter 22 of the Revised Statutes entitled "Regulations Concerning the Practice of Physic and Surgery."

According to Dr. J. Mason Warren[18] the first section was omitted in accordance with the wishes of the greater part of the (State Medical) Society, as being in its action adverse to their interests. It served merely to excite sympathy, especially for the Thomsonians, and could not prevent them from receiving fees for services rendered.

The Society continued in its work of licensing physicians without apparent disturbance until 1848. At this time its effect in controlling the conditions of medical practice in the State is thus expressed by Dr. A. L. Peirson, of Salem, in behalf of a committee of which he was chairman:[19]

> "We have steadily elevated our profession, by improving medical education, encouraging the harmony and honorable intercourse of its members, and have protected from the mischief of quackery, by discouraging every show of it among regular practitioners. This simple and efficient plan of the Society has accomplished all that was ever intended by its organization in 1803. . . . It is to be regretted that from natural causes, no way to be attributed to the form of organization, the concentrated action of the Society has not been equally felt in all parts of this extended Commonwealth."

According to Dr. Z. B. Adams,[20] there were at this time 1,237 medical practitioners in Massachusetts, most of whom belonged to the Massachusetts Medical Society.

On the contrary, Dr. J. V. C. Smith presented the minority report of the same committee, in which he states :[21]

---

[14] Proceedings of the Massachusetts Medical Society, 1836, 25.

[15] Wright *v.* Lanckton, 19 Pick., 291.

[16] Proceedings of the Massachusetts Medical Society, 1836, 116.

[17] Proceedings of the Massachusetts Medical Society, 1840, 72.

[18] Transactions of the Medical Society of the State of New York, 1841-1845, 1846, vi, app. 40.

[19] Proceedings of the Massachusetts Medical Society, 1848, 142.

[20] Transactions of the American Medical Association, 1848, i, 366.

> "The Society was once eminently useful in protecting the community from the encroachment of ignorant pretenders, . . . and it must be obvious to all that circumstances have greatly changed, our legislative tables have been completely turned, and will probably ever remain so. A license, or medical degree, is no longer requisite for the practice of medicine in Massachusetts, and no laws of the State, or of the Massachusetts Medical Society, are of any avail in guarding the entrance into the profession, or regulating the conduct of its members. . . . Less than one-half of the regular practitioners of medicine now nominally constitute the Society. In Berkshire, there are one hundred; less than twenty belong to the Society. In Hampden, one hundred and thirty (about) ; and of this number only about twenty or twenty-five are members of the State Society. In some other counties there is doubtless a majority, while in others not one-half of the regular physicians are members. The number of Fellows of the Massachusetts Medical Society is not far from seven hundred, which is not probably one-half of the physicians in the State."

These reports were called forth by a resolution presented by Dr. Childs, of Pittsfield, involving a change in the organization of the Society for the purpose of advancing medical science, promoting harmony and good feeling in the profession, thereby contributing to the best interests of society.

Although the councillors largely favored the views expressed in the majority report, the existence of a considerable degree of dissatisfaction and the necessity of remedying it was apparent in the appointment of a committee to consider the question of altering the by-laws. This committee consisted of Drs. John Ware, A. L. Peirson, W. Lewis, J. Jeffries, J. V. C. Smith, H. H. Childs and John C. Dalton. The report of this committee is especially valuable from the character of the latter and the recognition of the necessity of the Society to increase and consolidate its strength.

They found[22] that many members had often expressed the opinion that the Society as constituted did not accomplish all of the purposes of which it was capable — and failed to secure the favor of the profession in remote parts of the State. Consequently only a limited number of physicians found it for their interest to become members. They were called upon to obey laws which they had no voice in making and to contribute to the expenses of an organization in which they found it difficult to take part. The Society was but little known to those among whom they are thrown, thus has but little influence over them, and it was not necessary to their reputable standing among physicians nor to their success with the community that they should be connected with it.

The committee reported various amendments to the by-laws involving favorable action of the legislature which took place in 1850. By-law V permitted any reputable practitioner of medicine or surgery who had been in practice not less than fifteen years, to be admitted a Fellow, previously to 1852, by the District Society where he resides by a vote of two-thirds of the members present at any stated meeting.

The Society was thus endeavoring to increase its influence in the one direction by licensing as many educated and intelligent physicians as possible, and even without examination in certain instances.

This liberality, however, was to be controlled by what many now see to have been an unwise policy, namely, the treatment of the homœopathists.

In 1846[23] an applicant for membership stated that he had great confidence in the efficacy of medicine "especially when prepared and prescribed agreeably to the directions of Hahneman." The councillors referred the application to the censors, with full powers to settle the matter, and they admitted the applicant to membership.

In the meantime the influence of homœopathy was increasing, and in 1850[24] it was moved "that all homœopathic practitioners are, or should be, denominated irregular practitioners, and, according to the By-Laws of this Society, made and provided, ought to be expelled from membership." This resolve was tabled on motion of Dr. Bigelow.

At the next meeting, Drs. Hayward, O. W. Holmes and J. B. S. Jackson were appointed a committee "to devise some course of action, to be pursued by the Society, in regard to all homœopathists." This committee reported as follows :[25]

> "(1) *Resolved*, That any Fellow of this Society who makes application to resign his Fellowship in consequence of having adopted the principles and practice of homœopathy may be permitted to do so on paying his arrearages; but he shall not be entitled to any of the privileges of Fellowship, nor shall his name be retained in the list of Fellows.
>
> "(2) *Resolved*, That a diploma from a homœopathic institution shall not be received as any evidence of a medical education; nor shall the Censors of the Society regard the attendance on the lectures of such institutions, nor the time passed at them, as qualifications which shall entitle candidates to an examination for a license from this Society."

This report was adopted. Three years later the question of homœopathy was again brought before the Society at the annual meeting.[26] The Essex North District Society there presented the following resolution :

> "Forasmuch as there is no common ground of support or sympathy between homœopathy and allopathy;
>
> "*Resolved*, That if the homœopaths are allowed to retain their regular standing in the Massachusetts Medical Society, and claim fellowship and counsel with allopaths, we, as consistent and conscientious individuals, request to be honorably discharged from our allegiance and connection with the parent society."

Dr. Spofford presented the following resolution :

> "That, while we recognize the right of regular physicians to use medicine in any quantity or doses which they may consider useful to their patients, we consider all use of the name of homœopathy in public papers, on signs or otherwise, as quackish and disreputable, and that all persons who make pretensions to homœopathic practice ought to be excluded from the Society."

These resolutions, together with the whole subject, were referred to the councillors, who appointed the following committee to report upon them : Drs. Bigelow, Metcalf, M. Wyman, Spofford and Alden. Dr. Jacob Bigelow reported in February, 1854, and his report was laid on the table.

In the next year,[27] the censors of the Suffolk District Society rejected a candidate for admission who avowed himself practising upon the principles styled homœopathy, on the ground that he was not "fitted for the practice of medicine." It was voted (February 7, 1855), on motion of Dr. Bowditch, "that the Councillors approve of the course adopted by the Censors of the Massachusetts Medical Society for Suffolk District."

---

[21] Proceedings of the Massachusetts Medical Society, 1848, 150.

[22] Loc. cit., 1848, p. 155.

[23] Proceedings of the Massachusetts Medical Society, 1846, 108

[24] Loc. cit., 1850, 32

[25] Loc. cit., 1850, 51

[26] Loc. cit., 1853, 102

[27] Loc. cit., 1855, 7

In the following June this district society called the attention of the general society to defects in the by-laws concerning the expulsion of members, with reference to a remedy; and this question, together with that concerning the admission of members, was referred to a committee for a report. A few days later the latter reported. Their report was referred to the councillors for adoption. They, in turn, referred the report to a committee, which altered the recommendations; these were adopted by the councillors in February, 1856, and by the Society on May 29, 1856.

These alterations made it possible to expel a member for any breach of the by-laws, for which censure, expulsion or deprivation of privilege was a penalty, and for any conduct unbecoming and unworthy an honorable physician and member of the Society, in addition to causes hitherto deemed sufficient. A carefully arranged method of conducting trials for offences was also provided. The report of the committee of the councillors recommending these alterations stated that they had no definite measures to offer with regard to homœopathy, and submitted the subject to the judgment of the councillors. This part of the report was laid on the table without debate.[28]

June 3, 1856, four days after the adoption of the amended report by the Society, the Homœopathic Medical Society was incorporated by the legislature. It was authorized to examine all candidates for membership, and, if qualified, give them the approbation of the Society. Its members were declared exempt from militia service.

In the following year, the motion that all candidates for the fellowship be examined by the censors was referred to a committee, reported upon favorably, and the legislature passed a special act March 5, 1859, making this method the law.

At this time the revision of the statutes was again under consideration, and the commissioners had made their report to the legislature, in which the existing laws concerning the regulation of the practice of medicine were included. This report was referred to a joint committee, which was subdivided into special committees. The general committee referred the chapter concerning the regulation of medical practice to one of these special committees on May 16, 1859. It instructed this committee, "by special order, to inquire into the expediency of omitting all that part of the chapter relating to the Massachusetts Medical Society and to the regulation of the practice of medicine; and on the 21st of May they reported to the general committee amendments striking out every section, and every line, and every word in that chapter which gave the Massachusetts Medical Society any power to examine or license physicians or surgeons, or to prescribe a course of study and qualifications for physicians or surgeons."[29]

Four days later, the councillors appointed a committee, consisting of Drs. J. Bigelow, A. A. Gould, J. Jeffries, G. C. Shattuck, H. J. Bigelow, H. H. Childs and J. G. Metcalf, and "instructed them to look after the interests of the Society in the legislature," and they were "authorized to take such measures to protect their interests as they may deem expedient."[30]

But, in the words of Mr. Benton, "The general committee adopted these proposed amendments, with the addition of a change of title of the act from 'Regulations concerning the Practice of Physic and Surgery' to 'of the Promotion of Anatomical Science'; and that chapter now stands, with the same title as Chapter 81 of the Public Statutes. All the amendments were adopted by the legislature, and were enacted December 28, 1859. . . . The legislature then deliberately took out of the law of the Commonwealth every provision for the regulation of the practice of medicine or surgery, or for the examination or qualification of physicians or surgeons."

The committee of the Society appointed to look after its interests in the legislature recommended, October 5, 1859, that "no person shall hereafter be admitted a member of the Society who professes to cure diseases by Spiritualism, Homœopathy or Thomsonianism," which was adopted. As evidence of the state of feeling at the time, it may be said that at the meeting at which this resolution was approved, it was voted that the Society disclaim all responsibility for the sentiments contained in the annual address of the day previous. This had been delivered by Oliver Wendell Holmes, and was entitled, "Currents and Counter-Currents of Medical Science."

Thus we see that the Massachusetts Medical Society was organized in 1781 with the express purpose of making a just discrimination between duly educated and properly qualified practitioners and those who ignorantly and wickedly administer medicine. For many years its Fellows acted most judiciously in endeavoring to include within their number every educated and moral practitioner in the State. They accomplished this largely by the force of example, association and united encouragement. The State made them the sole source of licenses to practise. The progress of Thomsonianism left their responsibilities essentially intact. The advent of homœopathy found them weak where they should have been strong, short-sighted where they should have been far-seeing. The leaders were obliged to follow, and the reproval of the censors prevailed against the wisdom of the councillors.

Homœopathic diplomas and homœopathic certificates are now accepted by the Society. Homœopathic physicians have been found fitted to practise by the great public, which decides this question for all. Ten years of increasing intolerance destroyed seventy years of enthusiastic effort, devoted labor, tactful management and wise council in the public interest. The State revoked the control of medical practice, and the people have been the sufferers. The history of Massachusetts in this respect is the history of the country. She was one of the last of the States to lay down the control, and she will be one of the last to resume it.

Thanking you for the patience with which you have listened to an historical narrative which offers but little in the way of moral or example to our own Association, we will proceed to the business of the day.

MRS. HUMPHREY WARD, the novelist, is said to be suffering from writer's cramp.

---

[28] Proceedings Massachusetts Medical Society, 1856, 35.

[29] Argument of J. H. Benton, Jr., before the Committee on Public Health, 1885.

[30] Proceedings Massachusetts Medical Society, 1859, 112.

Original Articles.

METHODS OF TEACHING SURGERY.[1]

BY JOHN S. BILLINGS, M.D., SURGEON UNITED STATES ARMY.

THIS paper has been prepared at the request of the Committee on Programme, to serve as an introduction to a discussion upon the best methods of teaching surgery, and is intended to ask questions rather than to answer them. We have to consider: (1) Who are to be taught? (2) What is to be taught? (3) How it is to be taught.

Those who are to be taught include two classes: (1) The average medical student, who is presumably to become a general practitioner; (2) The men who wish to specially fit themselves for surgical work. There is a third class, namely, those who wish to learn only the least possible amount of surgery which will enable them to get the degree of M.D., but these we need not consider to-day.

The surgical instruction to be given the average student depends on what he is required to know of anatomy and pathology before he begins his surgical studies, upon the amount of time which is allowed for surgical instruction, and upon the nature of the final examination which he must pass to obtain his degree, or license to practice.

In any case it should include the diagnosis, and best method of treatment, of the injuries and surgical diseases which the general practitioner is most often called upon to treat, including recent wounds and their complications, erysipelas, abscess, ulcers, etc.; fractures and dislocations, injuries of blood-vessels, strangulated hernia, urethral stricture, retention of urine and its consequences; obstruction of, or foreign bodies in, the air passages; and also the selection and administration of anæsthetics, the details of aseptic and antiseptic methods, and of methods of performing the most usual amputations and ligations of blood-vessels.

Let us suppose that the instruction is to be given in a three-years' graded course; what other subjects besides those above mentioned ought to be fully treated of by the surgical teacher? Under such circumstances is it worth while to go into the details of cerebral and abdominal surgery, of lithotomy and lithotrity, of excisions of organs or of the jaws and joints, of plastic and orthopædic surgery? Is it not enough to tell the average student what can be done in these directions, and refer him to special courses or to current literature for further information with regard to complicated and difficult operations requiring special instruments and apparatus? Of course, it is to be practically demonstrated that the teacher is the proper person to whom cases of this kind should be sent.

Deferring for a moment the consideration of the needs of the man who wishes to become a surgeon, we come to the question, "How are these subjects to be taught?" There are five principal methods: (1) Didactic systematic lectures; (2) recitations; (3) demonstrations and practical instruction by means of manikins, dummies, cadavers, and operations on animals, in the details of treatment of wounds, bandaging, dressings and operations; (4) theoretical clinical lectures, in which cases and operations are shown in an amphitheatre; (5) practical clinical instruction to small groups of students or ward classes, in which, as far as possible, each student has something to do in the diagnosis or treatment or both.

The modern tendency is to reduce the time given to systematic lectures. In discussing the wisdom of this, we must bear in mind the different organization of the teaching staff in different schools, the increasing number of chairs or lectureships devoted to specialties, and the fact that the precise division of subjects among the instructors in a given school must depend to a considerable extent on local conditions, on the character, tastes and teaching-powers of the different men who make up the faculty, on the amount and character of the facilities for laboratory and clinical teaching present, etc.

In the old-fashioned type of medical school, in which the whole instruction was given by seven or eight men, the professor of surgery taught what was called surgical pathology, or the principles of surgery, gave considerable attention to surgical anatomy, and was the clinical as well as the systematic teacher. There was at least one advantage, namely, that the teaching was consistent and harmonious; the student was not much bewildered with the conflicting views of different professors. The professor of anatomy was in training for the chair of surgery and took very little interest in comparative anatomy or in embryology. There was no professor of pathology; and both the professor of surgery and of medicine lectured on inflammation, congestion, suppuration, etc., each from his own point of view.

At present, in a large and popular medical school, there are from twenty to thirty teachers of various grades; there is a professor of pathology, of surgery, of clinical surgery, of surgical anatomy, of orthopædic surgery, of genito-urinary surgery, etc., and the professor of gynæcology takes a large share of the abdominal surgery.

Now how can the subject of surgery be subdivided among all these teachers in such a way that the whole field shall be covered, without involving useless repetitions, embarrassing contradictions, and the expenditure of an undue amount of time and labor by the student, or of the production of heart-burnings in some of the teachers? This is one of the most difficult problems in the organization of a large medical school which is to be really efficient and popular, and it is one to which no general and universal formula is applicable.

Theoretically, each professor being a thoroughly wise, unselfish, good-tempered man, desiring only the best interests of his pupils and of his school, and there being frequent consultations between them to secure harmony in their teachings, the desired result may be obtained. Practically there are usually two or three strong men in the faculty who settle what shall be done, and the rest find it expedient to submit, although they may not agree. When there are no sufficiently strong men, and all the professors are not perfectly good and unselfish, there may be trouble.

Let us consider details a little. A well organized medical school should have a professor of pathology and pathological anatomy, under whose direction a certain amount of laboratory instruction should be given — comparatively simple for the average student, extended and elaborate for post graduates. The greater part of his teaching for the average undergraduate student must be by lectures, with demonstrations.

Given such a teacher, with the necessary facilities, why should the professor of surgery lecture on surgical pathology or bacteriology to the average undergraduate? The only really good reason I think of is, that he should be thoroughly familiar with the subject, and at times use experimental methods in devising improvements in surgical practice, and that teaching the subject greatly helps him to obtain, classify and retain his knowledge. But his teaching on this subject would be most valuable to a special class of advanced students, or post-graduates — who can devote themselves to it, and give the necessary time to that experimental work on animals which is absolutely essential to secure satisfactory results.

---

[1] Paper read before the American Surgical Association at Washington, Wednesday, May 30, 1894.

At all events, I think we can agree that the relations between the surgeon and the pathologist should be intimate and friendly, while each should be entirely independent of the other, and that the surgeon should go into details of practical application of principles in accordance with the more general teaching of the pathologist.

As regards the teaching of surgical anatomy, and of operations on the cadaver, by a teacher distinct from, and entirely independent of, the professor of anatomy on the one hand and the professor of surgery on the other, I believe that there are widely different opinions as to its expediency. Such an independent chair, or demonstratorship, is usually provided to make a place for some particular man, and its utility must depend upon who this man is.

While no general rule on this point can be laid down, might it not be best that attendance on such an independent course should be purely voluntary on the part of the class, and that it should be largely devoted to the instruction of those who wish to make a specialty of surgery? It appears to me that more use should be made of living animals than is now done, in teaching the results and treatment of wounds, including details of aseptics and antiseptics, and in special courses for advanced students who should be required to perform operations under the guidance of the surgeon.

The next question is as to the part which clinical surgery should play in a course of education leading to a medical degree. The great majority of students prefer clinical teaching and demonstrations to didactic lectures, and will go where this clinical teaching is most brilliant and varied; and, so far as it goes, we must admit that this kind of teaching is generally the most useful to them, because they remember it better. How far is it possible to cover the field of diagnosis and treatment of injuries and surgical diseases by clinical teaching alone to the extent that it is desirable for the average medical student? And how far is it desirable to vary and modify the didactic teaching so as to make it supplementary to the clinical teaching?

Evidently the answers to these questions must depend in part upon the amount and variety of clinical material that is available, and hence must differ for different schools. As a rule, clinical material is not available to cover the entire field for any school, no matter how large its hospital and dispensaries — hence there must be some systematic didactic teaching. Is it best that this should be a complete independent course covering the whole field, merely using for any particular subject such cases as may happen on that day to be available, thus leaving the greater part of the clinical teaching to duplicate that which has been given in the systematic course? This is, upon the whole, the easiest way, and in favor of it is urged that it is desirable that the student should be told the same thing several times to ensure his remembering it. This is the argument which used to be used in favor of the old plan of not having a graded course but compelling the students to listen to the same course of lectures in successive years.

On the other hand, it can be seen that there would be certain advantages in deferring the systematic lectures until towards the end of the course, and then devoting them mainly to subjects which had not been illustrated in previous clinical teaching; but to make this plan a success it would be necessary that the systematic lecturer should either have given all the clinical instruction, or should be perfectly familiar with all that has been given.

A possible modification of this plan would be to let two professors divide the field of work, each taking a certain class of diseases and injuries, giving clinical instruction thereon and supplementing it with systematic teaching as above suggested, and then the two men exchanging fields of work each year. An objection to this is that a considerable part of clinical teaching is given in connection with patients who select their own surgeon, and who will not make such selection with reference to any curriculum. Undoubtedly the more clinical instruction of the right kind that can be given, the better for the students, and for the reputation and prosperity of the school.

But this phrase "clinical instruction of the right kind" brings up a new set of questions. How much does it profit the student to witness, from the rear benches of an amphitheatre, such operations as the ligation of arteries, the extirpation of tumors, lithotomy or nephrectomy? Undoubtedly the student is interested and learns something, and he will go where he can see — if not the operation itself, at least the heads of the persons who are busy about the patient; and it will not do to restrict his privileges much in this respect. At the same time, should not special opportunities be given to the few who are devoting themselves specially to surgery to see as much as possible of difficult and unusual operations? It appears to me that more than two hundred men cannot possibly obtain any special information from surgical clinics in an amphitheatre which they could not obtain equally well in a didactic lecture, and which could not be much better given with illustrations by means of lantern slides, than by using a patient as a means of demonstrating an operation. It is quite possible to show by means of lantern slides, as Dr. Kelly has proved, to several hundred men, every detail of an operation which can be seen by the immediate assistants of the operator.

Now with regard to clinical teaching to comparatively small sections, or ward classes, the members of which are to be brought as much as possible into contact with the patient, and even to assist in the operation of dressing. There is no doubt as to the utility and popularity of this mode of teaching, but in this connection a word may be said with regard to the relations of hospitals and dispensaries to surgical teaching.

While I believe that a hospital is not doing its fullest and best work if it is not increasing and diffusing knowledge, and that patients secure the best and most careful attention and treatment in teaching-hospitals, where the work of the staff is keenly scrutinized, yet it must be admitted that there is sometimes a danger that people will get the idea that in a teaching-hospital the interests of the patients are not as fully consulted as they should be, and will avoid that hospital as much as possible. This danger arises mainly from two things: first, the allowing students to have anything to do with the treatment, and especially with an operation. The patient wants to be operated on by the most skilled man, that is, by the professor; and if he has a suspicion that after he is under the influence of an anæsthetic the professor may hand the knife to a student to make perhaps his first essay, he will avoid that place. All of us would do the same, and therefore in ward-class teaching a patient should never be deceived as to who is to perform the operation, for sooner or later the deception will be discovered and the news will spread.

The second danger to the popularity of a teaching-hospital is that patients are not unfrequently made to wait until their cases can be used for clinical instruction, sometimes for hours, sometimes for days. In most cases the patient knows when he is to be put off for this purpose, and after one experience of the kind he will go to another hospital the next time and advise his friends to do the same.

It is well also that the clinical surgical teacher should remember that his ability to obtain abundant clinical material depends to a very considerable extent upon the manners and on the good-will of some of his assistants, the resident physician, the nurses, etc., who are often the first to see the patient as an applicant, and who have much to do with subsequent treatment.

These assistants, residents, receiving-officers, case-takers and nurses, are not always possessed of the exquisite tact, kindly sympathy, and knowledge of human nature which it is to be presumed are invariably the characteristics of the clinical surgeon; and it is a part of his business to instruct them and perfect their manners as much as possible.

Recitations and quizzes are excellent methods of teaching for the majority of students, but are only well adapted to small classes or sections. At present they are, for the most part, conducted as a private enterprise by persons who may, or may not, be on the teaching staff. The question as to whether this mode of teaching should be made use of in the official course to a considerably greater extent than is now done is an interesting one and is commended for discussion. It appears to me more desirable that it should be applied to the clinical teaching than to the didactic lectures, and one good result of this would be to discourage the reliance on quiz compends, which I think invariably do more harm than good.

With regard to modes of lecturing, every man is, of course, a law unto himself; yet I will venture one or two suggestions. The teaching for a class of students should be definite, selective, and, to a considerable extent, dogmatic; and critical historical discussions should be used very sparingly.

What the student hears and sees during the first half-hour of a lecture is what he will remember best, and will have the best notes of; therefore, when there are several different ways of doing a thing, let the teacher describe first the method which he prefers, taking all the time required to fully demonstrate it and impress it on the student. After that is done the other methods may be referred to and so much history and criticism given as time will permit. If the reasoning is given before the conclusions are stated, the student is apt to get confused, and to characterize the teacher as a "wobbler."

If the lecturer will fix in his mind the half-dozen questions or so that he would ask to test the students' knowledge of the subject upon which he is going to speak, and will then make it his main object to answer those questions clearly, definitely and fully, he can hardly fail to give a good lecture.

In objecting to too much history in didactic or clinical lectures on surgery, I do not wish to be understood as underestimating the importance of giving historical instruction. I think that in every medical school a course of lectures on the history of medicine and surgery, combined with practical instruction in bibliographical methods, should be given; and if this is not done, then I would advise that the professor of surgery devote five or six lectures to the history and literature of his subject, which lectures will probably be most useful and interesting at the beginning of the last year of the student's course.

It was stated at the beginning of this paper that besides the average medical students, the needs of the man who wishes to specially fit himself to be a surgeon should be considered. These relate to post-graduate work mainly, for a broad foundation of medical knowledge is requisite for the man who wishes to become a surgeon. The technique of operative surgery, important as it is, is secondary in importance to skill in diagnosis, and to knowledge of therapeutical methods which do not involve the use of the knife.

The man who intends to be a surgeon should not only make a special study of surgical anatomy, but should do a considerable amount of practical laboratory work in bacteriology, pathological histology and experimental pathology and physiology.

It is quite true that the majority of our leading surgeons could not perhaps, by themselves, make a bacteriological diagnosis, or determine fine distinctions in new growths, and yet they do good work — having these points settled for them by younger men trained in the new methods. But the surgeon of the future should himself be trained in these methods, even though he may employ others to carry them out.

And in this connection I would remind you that bacteriology cannot be profitably studied for two or three days in a week, but that it needs at least three hours a day every day for three months for a man to learn how to begin readily to use its methods. In general, I think that all studies are best concentrated, and that the usual plan of dividing studies into an hour two days a week for this, and an hour three days a week for that, etc., is much more for the convenience of the professors than it is for the true interest of the students.

As for operating technique, much of it can be learned on animals, but much of it requires also work on the cadaver, the repetition over and over again, until, as Billroth said, a man could do it when he was asleep. The most important of all is residence in a hospital, the working as assistant to a surgeon, the seeing and handling cases, and not merely looking at them from a distance. The number of men who are able and willing to carry out such a course of study as that indicated is limited, and the teacher of surgery cannot do very much for them except give them opportunities for seeing his methods and results; but is it not possible to give them better opportunities than can be provided for a large class of undergraduates? Should they not be required to repeatedly perform the many operations which can be advantageously performed on animals before they try these operations on man? It seems to me that in the last year of a four-years' course all students should be tested in this way; but it must be admitted that, with the present curriculum, there is not time to spare for this purpose, especially where the graduating class is a large one.

This leads to two final questions, which, though not directly connected with "the best methods of teaching surgery," have nevertheless, an important bearing on it. The first is: Are there not some subjects which occupy too much space in the undergraduate curriculum of our largest and best medical schools, such for example, as inorganic chemistry, and embryology? Ought not the student to be required to know so much as is required of inorganic chemistry before he begins his medical course? Is it desirable to make embryology and general morphology a part of the curriculum for all medical students, as a basis for the study of anatomy, or is it wiser to place these as elective studies in a post-graduate course, and to insist on more dissecting and a greater knowledge of practical anatomy than is now generally demanded? In this connection your attention is invited to the widely different opinions as to the best methods of anatomical teaching — as represented by Professor Macalister for the morphologists, and Mr. T. Cooke for the old school, which have appeared in the *Lancet* and in the *British Medical Journal* during the past year.

It appears to me that the teaching of anatomy should begin with a few lectures and demonstrations on general morphology, and that the first dissections should be made on cats and dogs until a good technique has been acquired, so that the supply of human cadavers, which is always insufficient, can be fully utilized to the best advantage. I also think that it is unwise to have the final examination in anatomy one or two years before the other final examinations; the anatomy should be kept up throughout.

My last question is: Would it not be good policy for a first-class popular medical school to limit the number of pupils which it will accept to its capacity to give them proper instruction in laboratory work, in practical anatomy, and in clinical medicine and surgery? Of course, each faculty is prepared to assert that its own school now does this, and will disapprove of fixing any limit to the number of its pupils; nevertheless, it appears to me, as an outsider, that there are at least two or three medical schools in this country which would act wisely if they would fix a limit to the number of students which they would receive either in the first or in the third year, or in both, and enforce this limit by competitive examination or by higher fees, or by both. It would bring the best men to them, and would enable them to do thoroughly good work.

A Land Without a Microbe. — The Spitzbergen group of islands, in the Arctic region, is said to be the most sterile place on the earth. Analysis of the air, water and soil of Spitzbergen shows an extraordinary poverty of these regions in bacteria. While the air of the streets of Paris contains on an average 51,000 bacteria, that of the Arctic Sea contains only three per cubic metre. The water of Spitzbergen not only is devoid of any pathogenic micro-organisms whatever, but is also entirely free from all kinds of bacilli.

CRYSTALLINE DEPOSITS IN THE URINE: THEIR CAUSATION AND RELATION TO RENAL DISEASES.[1]

BY EDWARD M. GREENE, A.M., M.D.

The object of this paper is to consider the conditions under which crystalline deposits are formed within the urinary tract, the injurious effects of these crystals on the kidneys, and the treatment. We will limit our inquiry to uric acid and calcic oxalate, which are by far the most frequent and important of the inorganic crystalline substances found in the urine.

Uric Acid. — This is present in normal urine and has also been found in the blood as well as in the liver and spleen, and, to a less extent, in the brain, pancreas and muscles. The amount excreted daily depends greatly upon the diet, varying from half a gramme on a vegetable diet to as high as even two grammes on an animal diet. It occurs only in traces in the urine of herbivora, and may be absent in that of carnivora. On the other hand, in the urine of birds and reptiles it is the chief nitrogenous ingredient. In various diseases the quantity in the urine is increased, and, at times, as in gout, uric acid accumulates in the blood and is deposited in the tissues. It is generally conceded that uric acid is formed in the tissues, and merely excreted by the kidneys. Experimental evidence points to the liver as the place of formation of uric acid, and it is probably formed by the synthesis of ammonia and lactic acid. Ebstein, however, thinks it is chiefly produced in the muscles and bone marrow.

Uric acid may be described as a less oxidized product of proteid metabolism than urea; but there is no evidence to show that the former is a necessary antecedent of the latter. On the contrary, all the facts known go to show that uric acid is produced by a somewhat different process of metabolism from that which results in urea formation. As pointed out by Foster, "We have no evidence to prove that the cause of this divergence lies in an insufficient supply of oxygen to the organism at large. On the contrary, uric acid occurs in the rapidly breathing birds, as well as in the more torpid reptiles." "Urea is the form adapted to a fluid, and uric acid to a more solid excrement."

Uric acid is extremely insoluble in water, one part of uric acid requiring about 15,000 parts of cold water and 18,000 parts of boiling water. It is insoluble in all dilute acids. It dissolves freely in weak solutions of the carbonates of lithia, potash and soda and in common phosphates of soda. The amount of uric acid capable of being held in solution in the blood depends on the degree of its alkalinity.

Calcic Oxalate. — Although widely distributed throughout the vegetable kingdom, oxalic acid occurs only in very slight amount in the animal organism, and then always in combination with calcium. Calcic oxalate is insoluble in water, ammonia and acetic acid. It is readily dissolved by mineral acids, and to a less extent by solutions of sodic phosphate or urate; chloride of sodium, sulphate of sodium, chloride of potassium, and even urea, aid in its solution, though in slight degree. It occurs in urine both in solution and in the form of octahedral crystals and dumb-bells. Neubauer has frequently found tolerable amounts of calcic oxalate in solution in the urine when no trace of it was discovered in the sediment; but he has also frequently tested normal urine for calcic oxalate with a negative result, so that it is doubtful whether this substance is to be reckoned among the normal or abnormal constituents of human urine.

---

[1] Read before the Boston Society for Medical Observation, March 5, 1894.

The calcic oxalate found in urine is derived from two sources: (1) Articles of diet and drugs; (2) As a secondary product of the decomposition of animal, mineral, or vegetable substances.

The first class is composed principally of sorrel, rhubarb, tomatoes, oxalic acid when used medicinally, gentian, saponaria, etc.

The second source is illustrated by the formation of oxalic acid from the oxidation of uric acid, kreatin, leucin, etc., and from the imperfect oxidation of sugar, starch and salts of the vegetable acids, whereby these, instead of being wholly transformed into carbonates, become in part oxalates which contain less oxygen. It is, moreover, probable that oxalates may be formed from carbonates and bi-carbonates when a part of their oxygen is removed from them by a process of reduction. These facts in a measure explain why oxalic acid may be found in the human system under favorable circumstances; thus after taking carbonated drinks, as champagne and seltzer water, in disturbances of respiration where the supply of oxygen is diminished, and after eating sugar in excessive amount, although the special conditions under which this formation takes place are still undiscovered. [Neubauer.]

Oxalic acid, though insoluble in water, is kept in solution in the blood and enabled to pass through the walls of the blood-vessels in the kidney, and thus appear in the urine, through the solvent action of sodium phosphate, and, to a less degree, by that of chloride and sulphate of sodium and even of urea.

It is thus seen that uric acid and calcic oxalate result from defective processes of metabolism, and affect the kidney only by throwing upon it the labor of their excretion and by the formation of crystalline precipitates in the renal tubules and pelvis of the kidney.

It is extremely important to determine the conditions under which these substances crystallize in the urine, and to study the effect of their prolonged action on the kidneys. For this purpose I have tabulated the records of 600 analyses of urine made by me during several years past, in all of which careful microscopical examinations of the sediment were made. No hospital or dispensary examinations are included, as these were not all made with equal thoroughness. In many of these cases the urine was normal, although there usually were symptoms which suggested the advisability of an examination. In very few cases included in these records were there more than one or two specimens from the same patient.

Of the total number of 600 examinations

A crystalline sediment was present	180	times or	30 %
Uric-acid crystals were found	102	"	17
Calcic-oxalate crystals were found	108	"	18
Both calcic-oxalate and uric-acid crystals were found	30	"	5

In all the cases containing these crystalline sediments the reaction was acid in every case and usually strongly so.

Of 72 times in which uric acid alone was found,

Crystals were present in large amount . .	30	times
Albumen was present	45	"
Casts were present	36	"
Blood was present	20	"
Sugar was present	6	"

Of 78 times in which calcic oxalate alone was found,

Crystals were present in large amount . .	53	times
Albumen was present	44	"
Casts were present	38	"
Blood was present	16	"
Sugar was present	0	"

Of the 30 cases in which both calcic oxalate and uric acid were present,

Albumen was found	16	times
Casts were found	15	"
Blood was found	8	"

The specific gravity of 30 specimens containing much uric acid was

Below 1,015 in	6	cases
From 1,015 to 1,019 in	5	"
From 1,020 to 1,024 in	5	"
From 1,025 to 1,029 in	12	"
Above 1,030 in	2	"

Or, in other words, it was below 1,020 in 11 cases, and at or above 1,020 in 19 cases.

Of 53 cases in which calcic oxalate was present in large amounts the specific gravity was

Below 1,020 in	6	cases
From 1,020 to 1,025 in	19	"
Above 1,025 in	28	"

To summarize, then, a crystalline deposit was found in nearly one third of all the examinations which were made. Calcic oxalate and uric acid were found with very nearly equal frequency, each being present in about 18 per cent. of the examinations, although *large* amounts of calcic oxalate were twice as frequent as large amounts of uric acid.

Albumen was present in nearly two-thirds of all the cases containing a crystalline deposit, and was equally frequent with both kinds of crystals. In a little more than half the cases it was present only as a very slight trace; and in the others it very seldom exceeded one-eighth per cent.

The nitric-acid test, and boiling with a drop or two of acetic acid, were the only tests used for albumen; and the latter proved the more delicate. By a "very slight trace" is meant the smallest amount of albumen which caused very slight but distinct cloudiness when boiled.

Casts, usually of the hyaline or finely granular variety, were present in 89 of the 105 cases in which albumen was found, and were also present in four cases in which no albumen was detected. Usually the number of casts is small and they are associated with mucoid threads.

Blood was found in more than a fourth of the cases of uric acid, and in about a fifth of the cases of calcic oxalate. In only four cases was it present in sufficient amount to be suspected by its appearance to the naked eye. In all other cases a few or a moderate number of blood globules were found by the microscope alone.

Sugar was present in one-twelfth of the uric-acid cases, but was never found with calcic oxalate.

Acidity was almost always marked with uric acid, but less so with calcic oxalate.

Specific gravity was above 1,020 in two-thirds of the uric-acid cases, and in nearly nine-tenths of the calcic-oxalate cases.

The diagnosis of chronic parenchymatous or interstitial nephritis could not be made in more than 18 of the 105 cases in which albumen and crystals were present.

We may then fairly infer that the remaining 87 cases illustrate the considerable amount of irritation of the kidneys produced by urine containing crystalline deposits.

In the entire number of 600 examinations, albumen was found 340 times from all causes.

Comparing this number with that of the cases of albuminuria due to crystalline irritation (87), we find that the latter cause accounted for nearly one-fourth of all the cases of albuminuria.

It is well known that both uric acid and calcic oxalate may be precipitated from the urine after it has been voided. All acid urines invariably deposit uric acid sooner or later. In perfect health the acid held in solution, by its combination with alkaline bases, does not deposit its uric acid, even after it has been voided, unless it stands for a considerable time. The precipitation of uric acid is caused by the acid fermentation of the urine, during which the extractive coloring-matter is decomposed with the formation of free lactic and acetic acids. Uric acid thus precipitated twelve to twenty hours after emission has no pathological significance. The crystals which separate in this manner are usually larger than those which are found in the urinary tract, and many of them will be found adhering to fibres of cotton or other foreign substances. The bulk of the uric-acid crystals is also found on the top of the natural sediment or adherent to the sides of the vessel. Crystals of calcic oxalate also may form slowly in the urine after it has been voided owing to the chemical decomposition of the acid sodium phosphate, which is the principal substance holding the calcic oxalate in solution. Such crystals are generally larger than those which are formed within the body. Indeed, the latter are often so minute that they appear hardly larger than bright points even under a powerful microscope. In case of doubt the presence of a slight trace of albumen, and especially of blood globules, would point to the formation of these crystals in the kidney or bladder.

The amount of crystalline uric-acid sediment cannot be taken as an index of the actual amount of uric acid excreted. On the contrary, Roberts frequently found that those days on which a spontaneous deposit occurred, showed less uric acid than those days on which no uric acid was spontaneously deposited. The amount of uric acid actually excreted presents considerable variations in the same individual from day to day.

The quantitative estimation of uric acid is a difficult matter and is of slight importance as uric acid in solution is comparatively harmless. Though urea may be decomposed into uric acid, both by artificial means in the laboratory and within the human body, exact observations have failed to show that there is any inverse correspondence between the excretion of the two substances; usually urea and uric acid increase and decrease together.

The conditions of the urine which cause precipitates of uric acid are stated by Roberts to be as follows: (1) high acidity, (2) poverty in mineral salts, (3) low pigmentation, (4) high percentage of uric acid.

The degree of acidity is probably the most important element.

Clinically the excretion of uric acid is markedly increased in the febrile state, in certain diseases of the liver, in tuberculosis, rickets, scurvy, leukæmia, and after an attack of gout. It is diminished during the paroxysm of gout. I have found a very large amount of uric-acid crystals in the urine of a rather delicate boy six years old, whose father and grandfather both had chronic, gouty joint-inflammations. Such a case illustrates the importance of hereditary influences. In the production of uric acid, especially, habits of luxurious eating and drinking combined with deficient muscular exercise are important factors.

Von Jaksch found uric acid present in the blood in all those disease processes in which oxidation was disturbed, either directly, as in affections of the lungs, such as pneumonia, or indirectly, as in anæmia, in which the oxygen-carriers are deficient.

In view of these practical observations, as to the relation of oxygen to uric-acid production, the theoretical inferences drawn by Foster (quoted above) from the formation of uric acid in birds are found not to apply to man. According to Haig, the amount in the blood rises and falls with the degree of alkalinity, as uric acid is soluble in alkalies, and all circumstances which increase the alkalinity are associated with an increase in the amount of uric acid in the circulation.

The conditions favoring calcic-oxalate formation seem to be somewhat different from those concerned in uric-acid formation. In the latter, we are more likely to find that the system is overloaded with nitrogenous material the oxidation of which is hindered by a deficient supply of oxygen. In other words, the organs concerned in the process of assimilation and oxidation are overcome by the excessive work imposed upon them. The formation of calcic oxalate depends rather upon a disturbance of function in these organs, so that we find that oxaluria is associated with dyspeptic and neuræsthenic conditions in which the vital processes are at a low ebb. This opinion is somewhat strengthened by the result of examinations which I made of urine of fifty different patients, taken at random, at the McLean Asylum. Crystalline deposits were found in 23 cases — nearly one-half of the patients examined. Calcic oxalate was almost twice as frequent as uric acid. Albumen was found with the crystals 13 times; blood was found with the crystals 11 times; casts were found with the crystals 12 times. The specific gravity was over 1,020 in 16 of the 23 cases; and it was over 1,025 in 13, reaching 1,033, 1,040, 1,040 and 1,041 in 4 cases, without the presence of sugar.

Comparing these results with those previously given, we see that a crystalline deposit, especially of calcic oxalate, is much more common in the insane than in other patients. The latter generally took very little exercise, ate as little as possible, and often suffered with melancholia or nervous prostration — in short, were in a poor physical and mental condition.

The question then arises whether "lithuria," and "oxaluria" are themselves diseases, as some hold, or only symptoms of many diseased conditions. Many writers have described an "oxalic-acid diathesis" which is accompanied by all the symptoms met with in dyspepsia, hypochrondriasis and neurasthenia, and corresponds with the condition attributed by some to spermatorrhœa. But all of these symptoms may be present without oxalate of lime; and, on the other hand, a large amount of oxalate of lime may be found apart from any of the above-mentioned symptoms.

We are forced to conclude, therefore, that the term "oxaluria" must be restricted to the narrow definition of the occurrence of a deposit of calcic oxalate in the urine. "Lithuria," likewise, simply implies a deposit of urates or uric acid. In this narrow sense the symptoms produced by deposits of uric acid or of calcic oxalate are simply those of varying degrees of irritation of the kidneys and urinary tract.

A distinction should be made between slight, occasional deposits and large quantities occurring persistently. Almost every one has probably had at some time or another a few crystals in the urine, and these are without particular significance. But where there is frequently a considerable deposit an abnormal state must be recognized, and one which calls for treatment. The most obvious danger is the liability to the formation of calculus.

More insidious and harmful is the condition of long-continued hyperæmia of the kidney, due to irritation, which may end in chronic interstitial nephritis, the so-called "gouty kidney." In his description of the contracted kidney, Strümpell says: "In the pelvis of the kidney, which is often somewhat dilated, there are frequently a number of uric-acid concretions. Striated uric-acid infarctions in the pyramids are a very characteristic mark of the gouty, contracted kidney." He also says that "experience teaches us that there are three chemical substances which may favor the development of contracted kidney: alcohol, lead and uric acid. Chronic alcoholism is often to be regarded as the most probable cause of renal contraction, especially in people who have 'lived well' otherwise, and have become corpulent."

This latter condition is what we have just shown to be the most important factor in uric-acid formation, and it is not impossible that alcohol produces its harmful effect on the kidney partly through its influence in favoring the production of uric acid. Chronic lead-poisoning and gout, Strümpell also says, "often lead to the development of contracted kidney, in which we probably have to do with the noxious action of an abnormal amount of uric acid on the renal parenchyma." "Intense worry and strain of business" are causes assigned by Osler and others. These conditions also we have shown to be productive of calcic oxalate and uric acid by disordering the digestive and metabolic processes generally.

Professors Da Costa and Edward S. Wood, in recent papers, speak of the frequency with which albuminuria is produced by renal irritation caused by urine which is concentrated and contains uric acid or calcic oxalate. It is to this cause also, in many cases, that Professor Wood attributes the so-called albuminuria of adolescence.

The occurrence of albumen in these cases is often intermittent, and I have found that it is much more likely to be present in the early morning urine, as this is more likely to become concentrated and to contain crystals, owing to the necessary abstinence from food and drink during the sleeping hours.

In organic nephritis, on the other hand, albumen is much more abundant after the ingestion of food, the damaged condition of the renal capillaries allowing the albumen thus supplied to go directly into the urine.

This point is illustrated by the case of a young man who came to my office one morning last April to be examined for life-insurance.

He was twenty-three years of age, a clerk in a business office, well developed and apparently in very good health. He said he felt perfectly well in every way, and there was no prejudicial family history. On examining the urine, I was surprised to find one-tenth per cent. of albumen. The urine was highly-colored, specific gravity of 1,022, acid, without sugar, and contained a considerable sediment. The latter, on settling, showed under the microscope much calcic oxalate, a little mucus and a few hyaline casts. A few days later he came in in the afternoon and brought a specimen of urine passed before breakfast, which proved, on analysis, to be the same in every respect as the above, except that there was not quite so much albumen and very little calcic oxalate. The specimen passed in my office the same afternoon was of normal color, specific gravity 1,020. No albumen, sediment slight, and found to contain nothing abnormal.

On June 22d, after he had been taking water and diuretics, a morning specimen showed a specific gravity of 1,010, no albumen, and a slight sediment which contained nothing abnormal. After this he neglected treatment, and I did not see him again until October 14th. On that day the early morning urine was high-colored, specific gravity 1,022, albumen one-tenth per cent., sediment slight, but contained a little calcic oxalate, a little mucus and a few hyaline casts. The afternoon specimen of the same day had a specific gravity of 1,012, contained no albumen, and I was unable to find either calcic oxalate or casts in the urine. He informed me that a few days previously he had been accepted for life insurance by another company, although he had informed them that he had been rejected by me in April for albuminuria. The medical examiner had had him call at his office several days in succession, and had found no albumen. On inquiry, I found that his calls had always been in the afternoon, and he was required, as is customary, to pass his water in the presence of the examiner, who became satisfied that the urine was normal. It would seem advisable in such cases with a high specific gravity for the medical examiner to contrive to secure a reliable specimen of early morning urine. I have seen the patient several times since, and usually find albumen and calcic oxalate in the morning urine. The only cause for this condition that I could discover was a habit of drinking very little water, and a disinclination to take any more exercise than he was obliged to take in walking to and from the office.

(To be continued.)

◆

CASES OF ACUTE PNEUMONIA IN CHILDREN.

BY F. GORDON MORRILL, M.D.

The tables given in this paper include a great majority of the cases of pneumonia which have been treated in the wards of the Children's Hospital, the exceptions being a few of which the records are not sufficiently complete to be useful.

The period of life (second to twelfth years inclusive) during which children are eligible for admission to the hospital must be borne in mind, as it undoubtedly influences the views which experience in this particular institution might lead one to adopt.

By "frank" pneumonia is meant a form of the disease which has been easily diagnosticated from the far more serious broncho-pneumonia, and which (so far as our experience at the Boston Children's Hospital is concerned) differs from it as radically as any two acute diseases affecting the same organs can differ in their history, course and prognosis.

The term "frank" instead of "croupous" or "fibrinous" pneumonia, is employed in order to avoid the confusion which has arisen since the comparatively recent discovery of the fact that there may be considerable quantities of fibrin in cases which are clinically, and (as recently proved) in their bacteriological pathology, broncho-pneumonia. The statement made that both forms and all grades of the disease may coexist in children is not warranted by our present knowledge, and has proved a most unwelcome addition to already existing perplexities.

That a frank pneumonia may terminate by prolonged lysis, that a bronchitis often accompanies it, or that a broncho-pneumonia may involve the whole (?) or nearly the whole of an entire lobe, are facts which when properly weighed do not invalidate the statement in the preceding paragraph.

Cases of prolonged absorption of the products of a frank pneumonia are by no means rare in adult life, and the same thing is occasionally observed during childhood. Cold is assuredly a factor in the causation of frank pneumonia; and a bronchitis giving rise to râles in any or all portions of the lungs may be naturally expected in 15 to 20 per cent of all cases. When a large portion of lung is involved by a broncho-pneumonia the history and predominant symptoms of the case have usually been such as to enable the attending physician to form an early and correct diagnosis.

The very small number of autopsies which have been obtained does not warrant the expression of an opinion concerning the post-mortem appearances of either form of the disease.

Clinically, the children who have been treated in this hospital, have taken their pneumonias almost "straight."

SUMMARY.

Mortality about 1½ per cent. in 72 cases, of which 44 were boys, and 28 were girls.

Average age a little over five years.

Months when admitted: January, 4; February, 6; March, 6; April, 9; May, 7; June, 9; July, 2; August, 4; September, 5; October, 7; November, 3; December, 10. Spring and winter, 42 cases; summer and autumn, 30.

Highest temperature in any case while under observation 106.5° F. Lowest maximum temperature in any case while under observation 101° F. Highest average maximum temperature in 68 cases 104.2° F.

Terminating by crisis (the temperature dropping to normal or below within twenty-four hours) 34. Terminating in "short lysis" (temperature dropping to normal or below in more than twenty-four and less than forty-eight hours) 19. By prolonged lysis 12.

The average critical day in 54 cases was the eighth. In 31 of the cases terminating by crisis it was between the seventh and eighth. The lower lobes have been more frequently involved than any other portions of the lungs. In three cases the location of the disease was central — by which is meant that no signs of solidification could be detected, but the symptoms were sufficiently well marked to make it morally certain that the disease was frank pneumonia. Such cases as terminated in prolonged lysis, showed the physical signs of very slow absorption of inflammatory products with little or no redux crepitation. Pleuritic effusions in connection with frank pneumonia have been rare, and as a rule of small extent. But one case of empyema has been observed.

The disease certainly appears to be very benign so far as concerns the cases here reported, and the treatment has been quite simple: milk diet; brandy, when indicated; digitalis or strophanthus in cases of irregular or very weak pulse; and occasionally phenacetin, in instances when a high temperature has not been well borne. Pretty free stimulation (two or three ounces of brandy per diem) has been used when a sudden fall of temperature was followed by signs of collapse. No cough mixtures of an expectorant character have been employed; but occasionally an opiate has been given to check troublesome night-cough.

The expectoration of rusty sputa has been exceedingly rare, and the main points upon which the differential diagnosis has been made are: sudden onset of the attack (history of cough accompanied by high fever, nausea, convulsions or delirium, and abdominal pain), the quiet type of the dyspnœa and detection of solidification giving rise to coarse (as a rule) crepitant râles, bronchial respiration and exaggerated vocal resonance.

The average age of the children admitted for frank pneumonia, five years ten months, as compared with the age of those entering with broncho-pneumonia (a little over three years) would seem to show pretty conclusively that in New England the latter disease is most prevalent among children who are of an age to easily shed and rapidly proliferate the epithelium of their mucous membranes.

The following table includes the cases of broncho-pneumonia which have been treated in the wards with the exception of five cases, in which the records are very incomplete. The total number of cases (33) when compared with the number of frank pneumonias (72) goes to prove which is the most common type of the disease between the second and twelfth years.

This hospital is a poor field for the observation of broncho pneumonia, which is essentially a disease of very young children and infants, and is apt to break out in epidemic form in institutions where large numbers of them are congregated. This epidemic type is infectious, and is characterized by its sudden onset. It is this form of the disease (particularly in cases where a large extent of lung is involved) which has given rise to conflicting views of both clinicians and pathologists. The children treated in this institution are of an age which usually exempts from this fatal form of broncho-pneumonia, and the non-admission of measles affords further protection. Many of the cases reported here might be more properly called chronic broncho-pneumonia, or phthisis following closely after the acute form of the disease. Cases in which an acute broncho-pneumonia is merely the death mask of a miliary tuberculosis are usually of an explosive type, and prove rapidly fatal. So far as I am aware, we have had but one example of this form of the disease in the hospital, and the diagnosis in this case was made at the autopsy.

A brief summary of the table shows that 14 of the cases were girls and 19 boys: and the average duration of illness from its commencement (as nearly as could be ascertained) in 29 cases has been between 10 and 12 weeks. There are so many types of the disease, varying from that which suddenly overwhelms a child (as in the epidemic and very infectious kind, such as occurs among children who are crowded together) to the long sickness which eventually kills by subacute or perhaps fibroid phthisis, that I think it quite impossible to fix any definite average of duration of cases which custom has sanctioned our calling may kill in a very few days without the aid of tuber- | the amount borne by a child is often relatively much

FRANK PNEUMONIAS.

No.	Age.	Sex.	When admitted.	Highest temp. F.	Critical day.	How terminating.	Part affected.	Result.	Remarks.
1	10	M	June	103.5°	11th	Crisis	Left lower	Well	
2	8	M	Aug.	104	8th	Lysis, 36 hrs.	?	Well	Elevation of temperature for 48 hours on 12th day. Discharged well on 21st day.
3	4	M	Dec.	102	7th	Crisis	Left lower	Well	
4	6	M	Sept.	103.4	5th	Lysis, 48 hrs.	Left lower	Well	
5	9½	F	Feb.	?	?	?	Right lower	Well	Lung partially cleared up on 12th day, but solidified again 48 hours later. Shortly after this the child developed a broncho-pneumonia of both lungs which did not entirely clear up for 8 mos. Final recovery.
6	7	M	Mar.	105	10th	Lysis, 36 hrs.	Whole r. lung	Well	
7	14 m.	F	July	105	8th	Lysis, 48 hrs.	Right upper	Well	Complicated with diarrhœa and whooping-cough.
8	2	M	June	105	6th	Crisis	Both lungs	Well	
9	3	M	Apr.	?	?	Lysis, 3 wks.	Left apex	Well	Lungs 3 wks. in clearing. Chronic discharge from ears.
10	7	M	Apr.	106	5th	Crisis	Whole r. lung	Well	One week after the crisis the left upper lobe became infected, and the temperature registered 104° F. Resolution took place, preceded by crisis, at the end of four days.
11	7½	F	Sept.	104.8	7th	Crisis	Left lower	Well	Very small extent of lung involved.
12	2½	F	Jan.	104	9th	Crisis	Right upper	Well	Child ill with whooping-cough when she contracted pneumonia. Last seen three months after admission and lungs examined. Nothing wrong discovered. Very slight remains of pertussis.
13	6	F	Oct.	104	8th	Crisis	Right lower	Well	
14	2	F	Oct.	105	6th	Lysis, 36 hrs.	Left lower	Well	Very small extent of lung involved.
15	3	F	Dec.	104	5th	Crisis	Central	Well	No solidification detected; a few râles in both sides of chest, rapid respiration and all the usual signs of frank pneumonia, including the theometric indications.
16	5	F	Mar.	105	8th	Lysis, 108 hrs.	Left lower	Well	
17	7	M	Apr.	104.5	5th	Crisis	Right lower	Well	
18	10	M	Apr.	105	7th	Crisis	Left lower	Well	Very slight. Location not discovered until 5th day.
19	2	M	Dec.	105.2	10th	Crisis	Entire r. lung	Well	
20	11	M	Feb.	102.5	14th	Lysis	Right lower	?	Removed by parents during convalescence.
21	10	M	June	105	9th	Lysis, 5 dys.	Right lower	Well	
22	8	M	Oct.	105	5th	Crisis	Right apex	Well	Spinal caries.
23	5	F	Jan.	104	7th	Crisis	Left lower	Well	
24	10	F	Aug.	105	9th	Crisis	Right apex	Well	
25	7½	F	Dec.	106	8th	Lysis, 48 hrs.	Right upper	Well	Temperature after rapidly dropping to 100° F., immediately rose to 104°, from which point it dropped to subnormal after 24 hours.
26	6	M	Nov.	104	?	Lysis, 20 dys.	Right lower	Well	No "critical day."
27	5	M	Nov.	?	?	?	Right lower	Well	Temperature chart missing.
28	2½	M	July	105	?	Crisis	Left lower	Well	No history obtainable.
29	11	F	Dec.	104	9th	Lysis, 48 hrs.	Left lower	Well	
30	2	M	Feb.	104.2	10th	Lysis, 48 hrs.	Right apex	Well	
31	5	M	Mar.	106	8th	Crisis	Right apex	Well	
32	9	F	Apr.	104.5	5th	Crisis	Right lower	Well	
33	2	M	May	104	?	Crisis	Right upper	Well	No history obtainable.
34	2	M	June	104	....	....	Whole r. lung	Died	"Delicate for months." Child very emaciated and suffering from a bad diarrhœa when admitted to the house. Death occurred on the 4th day after entrance.
35	5	M	Dec.	105	?	Crisis	Right apex	Well	A well-marked case of frank pneumonia of the apex complicating typhoid. No definite history obtainable.
36	6	M	June	104	14th	Crisis	Left upper	Well	
37	8	M	Oct.	103.8	8th	Lysis, 4 dys.	Right lower	Well	Pleuritic effusion over affected lung 4 days after resolution. Temperature rose to 102°. Effusion promptly absorbed.
38	8	F	Apr.	104.5	8th	Crisis	Left lower	Well	
39	5	M	Feb.	103	11th	Lysis, 36 hrs.	Left lower	Well	Temperature on the 11th day fell to 99.2° F. A pleuritic effusion over affected lung immediately caused it to rise to 102° F.
40	3	F	Apr.	?	?	?	Left upper	Well	Temperature chart missing. Convulsions during first three days of illness.
41	3	F	Apr.	105	12th	Lysis, 36 hrs.	Right lower	Well	
42	3½	M	Dec.	104	10th	Crisis	Left upper	Well	The pneumonia followed free incision for empyema.
43	4	M	Aug.	103	?	Lysis, 30 dys.	Left lower	Well	Obstinate diarrhœa. A necrosis of inferior maxilla was discovered and operated upon, after which the lung finally cleared up, sixty days after commencement of illness.
44	8	M	Oct.	104.5	4th	Lysis, 3 dys.	Left lower	Well	Said to be third attack.
45	10	F	Dec.	106	8th	Lysis, 48 hrs.	Left upper	Well	Temperature fell suddenly to 99° F. on 3d day. Child in a condition of collapse from which she rallied after free stimulation.
46	5	F	Nov.	106	13th	Lysis, 48 hrs.	Both lower lobes	Well	Reinfection of right lung on the 3d day after entrance. The temperature which had dropped to 102° F., promptly rose to 105° F.
47	8	M	Jan.	104	10th	Lysis, 48 hrs.	Left lower	Well	Second attack in this institution (see case 44) said to be the 4th in all.
48	2½	F	May	106	?	Lysis, 2 dys.	Central	Well	No history obtainable. No solidification of lung detected, but all the rational signs of frank pneumonia.
49	2½	F	Sept.	104	8th	Lysis	Left apex	?	Child removed by parents while temperature was descending and had reached 99° F. Lung almost clear.
50	5	M	Sept.	103	5th	Crisis	Right lower	Well	
51	3	M	Aug.	104.8	7th	Lysis, 48 hrs.	Left apex	Well	
52	8	F	Sept.	106	12th	Crisis	Right lower	Well	Delirium from commencement of illness until 3 days after the temperature had descended to normal. Lung did not entirely clear up until 2 months after crisis. Meanwhile fever of very irregular type and symptoms of some obstinate subacute lung trouble, which gradually disappeared.
53	6	F	Dec.	106.5	11th	Crisis	Left lower	Well	
54	2	F	Dec.	103	7th	Lysis, 48 hrs.	Left lower	Well	Of very slight extent.
55	3½	F	Jan.	106	8th	Lysis, 5 dys.	Right lower	Well	
56	5	F	Mar.	105.5	10th	Crisis	Central	Well	
57	7	M	Mar.	105	12th	Lysis, 48 hrs.	Right upper	Well	A central pneumonia which was not located so far as physical signs are concerned until the 6th day of the disease.
58	9	M	Feb.	105	?	Lysis	Entire left lung	Well	No critical day. Prolonged lysis. The pneumonia complicated by both peri- and endo-carditis. The lung cleared entirely at the expiration of 6 weeks.
59	8	F	Apr.	105	?	Lysis	Left lower	Well	
60	3	M	Mar.	106	19th	Crisis	Left lower	Well	Developed empyema. Operated upon and discharged cured.
61	5	M	May	105	10th	Crisis	Left upper	Well	
62	5	F	Oct.	102.4	?	Crisis	Right upper	Well	
63	7	M	Oct.	104.8	?	Lysis	Right lower	Well	
64	3	F	Feb.	104.8	?	Lysis	Left lower	Well	
65	3½	M	May	104	7th	Crisis	Left lower	Well	
66	2	M	May	101	6th	Crisis	Right lower	Well	
67	12	M	June	104	4th	Crisis	Right lower	Well	
68	11½	M	June	102.5	?	Lysis	Right upper	Well	
69	5½	M	June	104.5	7th	Lysis	Left lower	Well	
70	3	M	June	102	?	Lysis	Both lower lobes	Well	
71	8	F	June	104.5	?	Lysis	Left lower	Well	
72	8½	M	June	105.2	7th	Crisis	Left lower	Well	

BRONCHO-PNEUMONIAS.

No.	Sex.	Age.	Month admitted.	Duration of sickness.	Result.	Remarks.
1	F	2½	Sept.	?	?	Removed by parents; condition improved.
2	F	3	May	20 days	Well	Very mild. Highest temperature 103° F.
3	M	2½	Sept.	10 weeks	Well	Complicated by obstinate diarrhœa.
4	M	2½	March	?	Died	Death from collapsed lung; temperature 95° F.
5	F	2	Jan.	?	?	Death resulted from an accident.
6	M	2	May	10 mos.	Died	Sequel to measles. Probably became tubercular; brain symptoms previous to death.
7	F	1	March	8 weeks	Died	Sequel to measles. Died of phthisis.
8	F	7	Oct.	32 days	Died	
9	M	4	March	105 days	Died	Followed whooping-cough.
10	M	6½	Dec.	120 days	Much improved	Followed whooping-cough and scarlet fever.
11	M	3½	Feb.	120 days	Much imp.	Lungs not entirely healed when discharged.
12	M	3	Oct.	15 days	Died	
13	F	2½	Jan.	30 days	Died	
14	M	2½	May	75 days	Died	
15	F	3	June	4 weeks	Relieved	
16	M	3	March	17 days	Died	Rickets, delayed dentition and convulsions.
17	M	2	Jan.	3 mos.	Died	Obstinate diarrhœa.
18	M	2½	Dec.	19 days	Died	"Lobar" broncho pneumonia. Entire right lower lobe consolidated. Patches elsewhere throughout both lungs.
19	M	3	Jan.	4 mos.	Well	Followed whooping-cough.
20	M	4	Feb.	5 mos.	Died	Died of phthisis.
21	M	8	April	10 weeks	Well	
22	F	3	Jan.	9 weeks	Well	
23	M	4	Feb.	24 days	Well	Contracted scarlet fever in hospital from which he promptly recovered.
24						
25	F	3	Jan.	10 weeks	Well	
26	F	3	Jan.	?	Died	Followed measles. History not obtainable.
27	M	2	April	5 mos.	Well	
28	F	1	Nov.	9 weeks	Well	Contracted measles in hospital during convalescence.
29	F	2	Dec.	11 weeks	Well	
30	F	3	Oct.	16 weeks	Well	
31	M	6	Feb.	10 weeks	Well	Followed whooping-cough.
32	M	2½	March	5 weeks	Died	Complicated by hip-joint disease.
33	F	4½	May	19 days	Well	Complicated by rickets.

twelve hours later. A small proportion of results such | not uncommon, on account, no doubt, of the larger doses then in use. The reports of those who have not

¹ The Practitioner, 1893.

"broncho-pneumonia." A very acute attack may prove to be merely the wind-up of a miliary tuberculosis; it may kill in a very few days without the aid of tubercle, or the child may recover quite speedily. On the other hand, a similar attack may be followed by a slow form of pulmonary phthisis; and the period of death, or possibly recovery, is quite indefinite. A mortality of 45 per cent. as in the cases here given, is perhaps what might be naturally looked for in the type of the disease which they represent.

I have been unable to discover in the records any case of so-called "capillary bronchitis," for the reason that when children have presented the symptoms usually attributed to this disease (as they have in one or two instances) they have been treated for, and recovered or died of, *broncho-pneumonia.*

Medical Progress.

REPORT ON THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D.

THE UNTOWARD EFFECTS OF ANTIPYRIN, ACETANILIDE AND PHENACETIN.

Dr. D. R. Patterson[1] states that circulars were sent out to the South Wales Branch of the British Medical Association asking for information as to the alleged ill effects following the administration of antipyrin, acetanilide and phenacetin, the nature and comparative frequency of their occurrence, and their relative importance. Twenty-five replies were received; and these were from men engaged in active practice, in some instances both hospital and private, and residing in different parts of the district. The writer also discussed the subject with many of the members who sent in reports, and thus learned their views at greater length than could be expressed in a circular reply.

Antipyrin. — It is as an analgesic that this drug is prescribed so largely by practitioners, and all are agreed that it is an invaluable remedy. Large doses depress the nervous system. Of the twenty-five reports, seventeen note positive results, varying from an unpleasant diaphoresis to severe collapse. Most of them may be referred to the action on the nervous system, producing exhaustion and collapse following the fall of temperature; and there may be disturbance of the circulation for the same reason or secondarily from the effect on the blood-corpuscles and the production of methæmoglobinæmia. Other symptoms, such as affections of the skin and pronounced psychical disturbance, are more rare. Depression with collapse has usually been noticed after doses given with a view to reduce fever. Thus, a dose of twenty grains was followed in a male adult in a short time by great collapse and fall of temperature, requiring hypodermic injections of ether and digitalis to tide the patient over the difficulty. The writer cites another case in which ten grains given to a lady convalescent from influenza led to extreme depression and collapse; the patient became deeply cyanosed, unconscious and pulseless, and required free stimulation before she was considered out of danger twelve hours later. A small proportion of results such as these have been observed in children, where regulation of the dose is not so exactly carried out, although the amount borne by a child is often relatively much larger.

Several of the reports call attention to the frequency of depression in pneumonia, and express the opinion that the use of the drug should be very guarded in that disease, one member holding that it is positively harmful even in small amounts. Falk, in his *résumé* of the ill effects of recently introduced antipyretics, mentioned a case of pneumonia where death occurred one hour after the administration of antipyrin, which was regarded as the cause of the fatal result. The stage of collapse is not infrequently ushered in by a feeling of anxiety and great prostration, and the symptoms are sometimes relieved by vomiting. The intensity of depression that may follow even a moderate quantity of antipyrin is illustrated by a case, recorded by the late Paul Guttmann, which was sent into the hospital as one of cholera. The patient, a well-developed man, had the symptoms and appearance of the asphyxial stage of cholera-morbus, except that the bowels were confined. On the chest and abdomen was a dull-red miliary rash. Five days previous to his admission, he had taken for headache a fifteen-grain powder of antipyrin twice a day, in all 150 grains, when he fell into this condition. Under stimulating treatment he recovered rapidly. Minor degrees of depression are represented by unpleasant diaphoresis, which may be so profuse as to prostrate the patient temporarily. Continued use of even small doses leads not infrequently to a condition in which the patient complains of loss of energy, is disinclined to exert himself and becomes depressed mentally, in short, there is established an antipyrin habit. Falk mentions headache, giddiness and other nervous symptoms as occasionally brought on by antipyrin.

One of the members report blurring of the vision along with blueness of the lips and finger-nails. Blueness of the lips and face is one of the commonest untoward effects, and was noticed in various degrees, from that which is just perceptible, to a deep cyanosis associated with profound collapse. It is to be explained by the action on the nervous system, and especially the blood by which methæmoglobinæmia is produced. In extreme doses the red cells are destroyed. The circulation of the altered blood through the medullary centres is responsible for many of the symptoms observed.

Several of the reports note cardiac depression. Cardiac failure in cases of pneumonia was frequent even with doses of ten grains. None of the members have apparently had any experience of the occurrence of hæmorrhages reported by Continental writers. Such an occurrence points to the necessity of great caution in the administration of antipyrin in phthisis and typhoid fever. In the former, the rather profuse perspiration produced by the drug is a serious drawback. Two of the reports mention the appearance of a rash after the use of antipyrin. The writers of these reports did not observe various symptoms observed by others, such as convulsions, rise of temperature instead of the anticipated fall, etc.

As to the frequency with which the ill effects are met, all the members agreed that they were very rare. Shortly after the introduction of the drug they were not uncommon, on account, no doubt, of the larger doses then in use. The reports of those who have not observed any unpleasant after-effects or signs of intoxication show that the doses they were in the habit of giving were, on the whole, smaller. A single dose of ten grains or five grains every three hours is the usual practice of three out of eight who report negative results; others give two ten-grain doses, with an interval of two or three hours between. Two members state that when giving antipyrin as an antipyretic, they always combine it with a stimulant, such as sal volatile, brandy, or tincture of digitalis. In this way large doses, even to the extent of twenty grains every four hours, until 120 grains had been reached, were administered without depression being felt.

---

[1] The Practitioner, 1893.

Acetanilide (*antifebrin*). — Its action in lowering temperature is striking, but the disadvantages attending it have seriously limited its administration. The frequent occurrence of symptoms of intoxication, and the alarming appearance they sometimes assume, led many practitioners to abandon its use very early. Eight members report results after a considerable use of the drug; and among them a few speak of its great value when used with due care. The dose generally given varies between five and ten grains, but some give as low as three grains to an adult. The general experience seems to be that the larger doses are soon followed by symptoms of intoxication. Some practitioners combine the drug with a stimulant — brandy, or digitalis, or caffeine — with excellent results. The consensus of opinion gathered from the reports coincides with that generally expressed, that symptoms of depression and collapse are more readily produced and more marked than with antipyrin; and this may be explained by the fall of temperature being greater and more rapid. One observer, whose extensive use of acetanilide makes his opinion very valuable, states that there is less collapse in children than with antipyrin. In pneumonia, the depressant action on the heart renders it very unsafe. Most of the reports mention cyanosis, and to a greater degree than after antipyrin. Anæmia may be induced by the continued use of the drug, and become a grave condition. The anæmia is due to the action of acetanilide on the red blood-cells; minor forms of it are noticed after a few doses.

Phenacetin. — This drug is more free from ill effects than either of the other two drugs. It is generally given in doses varying from five to ten grains, and it is very useful in neuralgia of the fifth nerve, sick-headache, etc. Its depressant action on the nervous system and heart is manifest only when very large doses are given, small amounts taken frequently being borne without ill effects. It is not, however, absolutely free from unpleasant consequences, as is illustrated by a case of Eisenhart. An adult male was given for pain in connection with a carious tooth three powders, each containing fifteen grains of phenacetin, within three and a half hours; half an hour after the last powder palpitation and oppression of breathing came on; later, the palpitation and oppression increased, dulness of hearing came on, and then nausea and vomiting. With the onset of sickness, all traces of intoxication vanished, and the patient felt well. Skin eruptions, chiefly urticarious, are said to follow the use of phenacetin.

[It is not alone the immediate depression which may follow one or two doses of these drugs against which we should guard, but rather the more insidious depression which may follow their continued use in a long illness like typhoid fever but which may not become apparent until the later stages of the disease. It is a good rule to avoid these drugs in serious illnesses where we need to husband the patient's strength. Acetanilide (antifebrin) is the most likely of the three to have an untoward action. — F. H. W.]

STRONG HYDROGEN PEROXIDE ACID SOLUTIONS LOCALLY IN DIPHTHERIA.

Dr. Francis H. Williams,[2] in an article on diphtheria, outlines in a few words the general treatment of this disease, speaking of the need of special attention to the food of the patient and of the service of alcohol in some cases, and adds that the cases of Behring treated with the blood-serum of immune animals, encourage us to hope that a feasible internal remedy may yet be found. He then goes on to say that at present local remedies are our best means for the treatment of diphtheria, and obviously they are best adapted to those cases that are seen early, before much of the poison has been absorbed, and in which the membrane is accessible. He then briefly touches upon various of the local remedies that have been used, but does not recommend any of them, citing three cases, the diagnosis of which was based on cultures, to show how the membrane may persist under the use of corrosive sublimate. Two of these cases entered the hospital on the third day of the disease and were treated with corrosive sublimate (1 to 10,000) in the one case, and with corrosive sublimate aided by the ordinary solution (7.5 volumes) of hydrogen peroxide in the other. In the first case, the patient was finally discharged on the one-hundredth day of the disease. The corrosive sublimate seemed to have inhibited the growth of the bacilli so that for a time none appeared in the cultures and treatment was therefore stopped; they were, however, apparent later. In the second case, the patient was discharged on the forty-first day of the disease. Both of these patients had weak hearts, and the latter had paralysis. The writer then discusses more in detail the special local treatment which he has found to be most efficient, namely, strong hydrogen peroxide acid solutions, by which he means strength of 25 to 50 volumes (old style 50 to 100); 7.5 volume solutions are weak germicides. He first proved, by experiments made in the laboratory, that the strong acid solutions were efficient germicides against the Klebs-Löffler bacillus; he lays stress upon the important part played by the acid contained in them, and shows that the hydrogen peroxide has the special quality of breaking up and disintegrating certain portions of the diphtheritic membrane without injury to the healthy tissue, thus rendering the bacilli more accessible. In stating his clinical experience, he describes two cases of diphtheria, the diagnosis of which was based on cultures where, although only partial use of the strong hydrogen peroxide solutions was made, good results followed. These two patients entered the hospital on the second day of the disease; in the first case, a final application of the peroxide was made on the fifth day after entrance and the patient left the contagious ward six days later. In the second case, a final application of the peroxide was made on the third day after entrance, on the fourth the throat was clear, and the patient was discharged after being kept under observation ten days longer. In neither case was there cardiac weakness, depression or paralysis.

The writer states that he has found nothing that will remove the membrane due to the diphtheria bacilli so well as the strong solutions of hydrogen peroxide, gives a general rule for using them, describes the instruments with which they should be applied, and then says that any local treatment must be frequently applied to be efficient, as the bacilli reproduce themselves in a very short period. The use of the strong hydrogen peroxide acid solutions reduces the number of applications to a minimum, as the more thoroughly the membrane is disintegrated and removed the less frequent is the necessity for treatment, and the shorter its duration. The usefulness of good local treatment is in direct ratio to the stage of the disease, the accessibility of the membrane, the age and strength of the patient, and the ability of the practitioner to apply it with the least tax on the patient's strength combined with the greatest destruction of the bacilli. The writer emphasizes the importance of early treatment, and says that the strong hydrogen peroxide acid solutions are the most efficient local treatment of which he knows.

---

[2] American Journal of Medical Sciences, November, 1893.

[Further use of these solutions in cases of diphtheria, the diagnosis of which was based on cultures, shows good results, especially in those cases treated early. Over 90 per cent. of those which were treated within the first three days recovered.]

THE OBTAINING AND THE USE OF SERUM FOR THE CURE OF DIPHTHERIA.

Ehrlich, Kassell and Wassermann[3] in a very interesting paper state that the animals principally used to furnish serum in their experiments were goats, which they found especially adapted to the purpose. The manner of rendering them immune is alluded to and the method of testing the power of the antidote described. By an agreement with Behring the best of the serum made by them was used in several hospitals and the whole number of cases treated was 220, all of which were children. The cases were not selected. These injections of serum confirmed earlier observations in proving them to be perfectly harmless. At first, one injection only was used, but experience gained in the treatment of severe cases induced them later to use repeated injections in certain hospitals. Of the 220 cases treated, 168 recovered and 52 died; 67 of the 220 cases had tracheotomy performed; of these 37 recovered. A table given shows that the success of the treatment by serum depends essentially upon how early in the disease treatment is begun.

The writers noticed that the temperature and pulse were influenced only by the stronger injections. An immediate fall in temperature does not customarily follow the injections of serum, and this may be due to the fact that the pure Klebs-Löffler bacillus was only found in the very early stages of the disease in these cases, and even then it was proportionately rare. In the later days of the disease other bacteria were associated with the diphtheria bacilli, and the antidote for the poison of this bacillus does not counteract that of the other organisms. In some cases where the treatment was begun very early, the writers noticed an almost critical lowering of the temperature and of the very high pulse. They close by saying that the fate of the child is decided in the first three days of the disease and therefore the serum should be injected as early as possible; that according to their experience the initial dose in serious cases and in all cases of tracheotomy should be double that of the light cases; that the treatment with serum should be continued according to the course of the fever, to the pulse, and to the local appearances; that the total amount injected should be according to the severity of the case.

THE TREATMENT OF ITCHING.

Dr. Edward Bennet Bronson,[4] describes at some length the means that may be employed to remove this distressing affection, and groups them as follows:

Measures to Remove Local Excitants. — These will include, first of all, such as directly tend to prevent scratching. Irritating contacts of all sorts should be most scrupulously avoided. Attention should be given to the underclothing. Woollen is almost never tolerated. The clothing next the skin should be of the softest material — cotton, linen, or possibly silk. Of further importance is the avoidance of immoderate temperatures, whether of heat or cold, and especially of sudden changes, which are peculiarly apt to excite itching. The local excitants may not only be extra-cutaneous, but also intra-cutaneous. Often they are incidental to the trophic changes of one of the so-called pruriginous diseases, in which case the treatment of the pruritus is included in that of the disease of which the itching is a symptom. When they arise from the toxic materials conveyed to the skin by the blood, the endeavor is to eliminate these materials by depurative remedies, more especially diaphoretics and diuretics. These measures failing or proving insufficient to secure the desired rest, it becomes necessary to have recourse to certain sedatives.

Sedatives.—Used internally, these are apt to be disappointing. The degree of general sedation that is required to affect the nerves of the skin, in so intense a disturbance as pruritus often is, affords a sufficient reason why this method of treatment is usually objectionable. Further than this, the depressing and atonic after-effect on the nervous system tends to exaggerate the general hyperæsthesia, which is already essentially an atonic condition, and thereby increases the tendency to itching. Especially objectionable on this score are most of the narcotic sedatives. The bromides, on the other hand, are often indispensable, and may be required in liberal doses. To avoid the enervating effects of loss of sleep, sulphonal or some other hypnotic is occasionally needed. In connection with this class, two internal remedies, namely, cannabis indica and gelsemium, are worthy of mention. The latter has proved of benefit in some cases, more especially according to the writer's experience in protracted cases of urticaria, but the doses required are so large as to forbid their long continuance. Finally, the antipyretics, phenacetin and antipyrin, have some effect upon pruritus, though less than upon the sensation of pain. The local sedatives used in this disease are generally far more satisfactory in their effects than the remedies just considered, especially where the disease is limited in extent. They are for the most part agents that tend to retard vital action. The fact that many of them are antiseptics probably implies something more than mere accidental coincidence. Typical among the remedies of this class is the group which includes carbolic acid, salicylic acid, salol and thymol, all antiseptics, and all having undoubted virtues as antipruritics. Carbolic acid is, perhaps, all considered, the most reliable and most generally useful antipruritic. It is preferably employed in oils or ointment. The following has been largely employed by the writer:

---

[3] Deutsche Medicinische Wochenschrift, April, 1894.

[4] Medical Record, 1893.

℞ Acid. carbolic . . . . ʒ i–ij
Liq. potass. . . . . ʒ i
Ol. lini. . . . . ℥ j M.
Sig. Shake before using.

Salicylic acid and salol, though less energetic in their effects, act similarly to carbolic acid. They may be used in combination with other drugs, or by themselves in oils or ointments, or sometimes alcohol, and also in superfatted soaps. Thymol is also useful in certain cases, but, on account of its irritating effect, cannot be used when the skin is very sensitive. Corrosive chloride of mercury also has a reputation as an antipruritic. Cocaine has proved disappointing for two reasons: first, because of the difficulty of making its action felt through the intact epidermis; and, second, for the reason that any tissue, when long or frequently subjected to its action, suffered a certain atony and enervation that seems to render it more predisposed after than before to the irritation or irritability the drug was intended to alleviate. These objections by no means preclude its use entirely. It is often resorted to with most satisfactory results in localized forms about the mucous orifices, upon raw or abraded surfaces, and sometimes with appreciable effect even where the epidermis is apparently intact. Hot water, to be effective, should be over 100° F., and the applications should be prolonged for several minutes.

Sensory Stimulants. — Electricity, whether in the form of galvanism or faradism, has sometimes proved of decided benefit. Strychnia, in those cases of pruritus which may be called atonic, is a remedy of value.

Substitutive Irritants. — One of the best palliatives of itching is menthol, together with the peppermint preparations generally. Menthol relieves itching as it relieves pain, not by direct inhibitory action on the molecular movements of the sensory nerves, but chiefly, if not solely, as the writer believes, by substituting an exaggerated temperature sense for the perturbed sense of contact, or for the sensation of pain. It is usually employed in alcoholic solutions (grs. v – x to ℥i), and may be used in ointment. It is also with advantage combined with salol or thymol.

Alteratives of Cutaneous Nutrition. — They include not only absorbent and anti-catarrhal remedies to remove the products and curtail the processes of incidental inflammations which may act as contributory causes of the itching, but such agents as tend to control blood-supply and overcome hyperæmia. In this way act diaphoretics, and possibly diuretics, as well as by their substitutive and eliminative or depurative action. Thus it is probable that jaborandi, which is recommended by so many writers, acts in all three ways. This drug is especially useful when the skin is hot and dry, and where it has become the depot of noxious materials deposited from the blood, as, for example, in the itching of icterus. The local remedies belonging to this class include certain resinous or tarry substances. Such are ichthyol (five to ten per cent.), occasionally tar, resorcin (three per cent.), and benzoic acid or benzoin. Hydrogen peroxide has also proved beneficial.

Motor Depressants. — Among the internal remedies already mentioned, gelsemium and jaborandi belong to this class. Another remedy, more especially recommended in urticaria, is atropia. The good effect of this drug in urticaria, when used in full doses, such as are always required to produce this effect (from one-hundred-and-fiftieth of a grain upward) is probably due to its secondary action; in this action the muscles relax and the vessels are dilated. Hot-water applications take the first place in local remedies belonging to this class. Here, also, may perhaps be included such local sedatives as hydro-cyanic acid, cyanide of potassium, corrium juice, tincture of arnica and chloroform.

Dr. Bronson closes the article by illustrating the therapeutic principles laid down by means of special forms of the affection.

◆

Recent Literature.

Anæsthetics and their Administration. A Manual for Medical and Dental Practitioners and Students. By **Frederick W. Hewitt**, A.M., M.D. (Cantab.). With illustrations. London: Charles Griffin & Co. 1893.

We have before alluded to the many advantages of the system of regularly appointed anæsthetists which prevails in English hospitals. This work of Mr. Hewitt is a proof of those advantages. He has put the careful experience of many years into a book which will stand easily at the head of all works on the therapeutic administration of anæsthetics. The data are well arranged under four parts: Preliminary Considerations; The Administration of the Selected Anæsthetic; The Management and Treatment of the Difficulties, Accidents and Dangers of General Anæsthesia; The Condition of the Patient after Administration.

Mr. Hewitt has given the question of "Chloroform or Ether?" careful consideration, and makes no hesitancy in advocating ether as the surest, safest and best anæsthetic for general use. The whole book is worthy of study by all who have to do with anæsthetics, either as surgical instructors, pupils or general practitioners.

The Johns Hopkins Hospital Reports. Report in Gynecology, II. Baltimore. 1894.

This volume of more than 400 pages is very interesting, not only as giving an idea of the amount of work done in this department in Johns Hopkins Hospital, but also as illustrating its thoroughness and its value from an educational standpoint. The material at hand has been so carefully worked over and utilized that it is full of suggestions for the practitioner. The result is a series of monographs, nineteen in all, most of them by Dr. Kelly, which are of varying importance and interest, but all of them well worth study. They are fully illustrated with figures and plates, which add much to their value.

Of especial interest may be mentioned the articles on operations for the suspension of the retroflexed uterus, urinalysis in gynecology, the importance of employing anæsthesia in the diagnosis of intra-pelvic gynecological conditions, and one hundred cases of ovariotomy performed on women over seventy years of age.

This series of reports would be a valuable addition to any gynecologist's library.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, MAY 31, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 WASHINGTON STREET, BOSTON, MASS.

ARTERIO-SCLEROSIS AND ARTERITIS: MODERN VIEWS AS TO ETIOLOGY.

THE conception of arterio-sclerosis as a general disease of the arteries finding expression in interstitial inflammations of various viscera, originated with Lancereaux in 1871, and, independently, a year later with Gull and Sutton. The latter designated the condition as an "arterio-capillary fibrosis," and they supposed the capillary net-work to be invaded by a "hyaline degeneration"; while Lancereaux more correctly defined the disease as a generalized endarteritis, followed by renal, cardiac, or other endarterites, and subsequent interstitial inflammation.

This notion of a general idiopathic arterial disease with visceral manifestations has since been established as an irrefragable medical doctrine, has been fruitful in practical applications, and it has been shown that there is perhaps no more common disease of the age in which we live than arterio-sclerosis. "Longevity," says Osler (in quoting from a much older authority), "is a vascular question, for a man is only as old as his arteries. To a majority of men death comes primarily or secondarily through this portal."

Arterio-sclerosis and atheroma designate two distinct localizations of a slow morbid process, atheroma being applied to the inflammatory or degenerative changes as met with in the larger vessels. Arterio-sclerosis, according to Gull and Sutton, Mahomed, Huchard, and others, is the parent of atheroma and of all the fatty, fibroid and calcareous changes in both large and small vessels. The primary morbid process is an obliterating endarteriolitis of the vasa-vasorum or nutrient vessels of the artery; dystrophy, local infiltration and degeneration in the media and adventitia follow. "These lesions lead to a weakening of the wall in the affected area, at which spot the proliferative changes commence in the intima, particularly in the subendothelial structures, with gradual thickening and the formation of an atheromatous button or patch. A similar process goes on in the smaller vessels, and it can be seen on section that each patch of endarteritis corresponds to a defect in the media, and often to changes in the adventitia."

According to this view, in this as in other dystrophic diseases where the nobler elements perish from lack of their nutritive supply, the connective-tissue elements proliferate and form an overgrowth which by its presence obstructs function and damages or destroys the surrounding structures; or, if fragile and of low vitality the new growth becomes necrosed and fatty, and may eventually be removed or undergo the calcareous transformation.

The question whether the visceral scleroses (being connective-tissue inflammations) are always primarily diseases of the arterial system, is answered differently. Mahomed, with Gull and Sutton, taught that the nephritis is but a manifestation of a diathesis or poison which affects synchronously the cardio-vascular system. In all cases, "the blood-poison, of whatever nature it may be, produces certain changes in the cardio-vascular system, at first functional and afterwards organic by inducing high arterial tension and subsequently hypertrophy of the heart and thickening of the vessels; and at the same time it affects not only the kidneys but also the other excretory organs which all alike become congested in their efforts to excrete the poison; hence in these organs certain changes occur — interstitial, if the disease be chronic, epithelial, if acute."[1]

There is no doubt that this is a part of the truth, but it is not all the truth, and pathologists have recognized the fact that there is an interstitial nephritis that is primary, and may, at least in its early stages, be independent of general arterial disease — this is the case with the senile kidney and saturnine nephritis, according to Charcot. Certain chronic fibroid pneumonias, according to the same authority, may always remain local; so also a variety of syphilitic hepatic sclerosis, hypertrophic cirrhosis, and (according to Lancereaux) common alcoholic cirrhosis.

As to the nature of the poison, there is not entire agreement among pathologists respecting a disease which, according to Mahomed's estimate, affects to a greater or less extent seventy-five per cent of all persons who pass the age of sixty. Lancereaux, who has written much on arterio-sclerosis, is sure of but one causal agent, which he calls *herpetism*, which he regards as a "vaso-trophic neurosis, always manifesting itself by multiple affections of divers parts and systems such as hæmorrhoids, varices, dry and gouty and rheumatic arthrites, migraines, eczematous diseases, etc." As for alcohol, he denies its causal influence, except so far as it favors development of the peculiar diathesis; that the abuse of this poison causes local fatty lesions of the heart and arteries he as positively affirms.

Gueneau de Mussy also insists on the influence of herpetism in the production of atheroma, and includes gout and rheumatism as being the diathetic maladies *par excellence.* He prefers the term *arthritism*[2] to herpetism. This author, whose contribution to the subject of atheroma will always possess great scientific value, concludes from twenty-five carefully tabulated clinical observations in which the autopsy was conducted with great care, that "the lesions produced in the arteries by alcoholic excesses, are earlier, deeper, more rapid and more pronounced than those produced under the influence of all other causes."[3]

---

[1] Lectures in Lancet, 1879.

[2] De l'Atherome Arteriel: Leçons de Clinique Medicale, t. i.

It has been disputed whether syphilis is ever a cause of generalized arteritis; certainly the arterial lesions which it produces, in the tertiary stage, are frequently limited to arteries with prominent lymphatic sheaths as those of the cerebrum. The same may be said of malarial endarteritis, which always affects the large vessels, especially the aorta, taking the form of gelatinous or indurated patches (Lancereaux).

Over-eating, overwork of the muscles (by increasing the peripheral resistance and raising the blood pressure), and renal disease (by increasing the toxic quality of the blood and thus poisoning the vessels) have been reckoned as causes: and Huchard assigns a considerable rôle to mental emotion (worry and anxiety), which, he thinks, acts by producing spasm of the arterioles and vascular hypertension.

In senile arterio-sclerosis, complex causal factors exist which may be principally classed under the heads of dystrophic and toxic. This is really a diffuse arterio-sclerosis with extreme degeneration of the arterial coats, with nodular, beady indurations in the smaller and calcareous patches in the larger arteries. It is astonishing with what apparent good health many old persons will live, and to an advanced age, who have long had calcareous arteries and granular kidneys.

There is a close relationship between *plethora* and arterio-sclerosis, as Germain Sée has pointed out.[4] Two causes, he says, favors its development: (1) physical causes, namely, intra-vascular obstacles which increase vascular pressure and owe their origin to disregard of hygienic laws, excesses or sedentary life; (2) chemical, autoxic and infectious agents; alcohol, gout, diabetes, syphilis. There are two classes of persons who early develop increased vascular tension: (*a*) those that take much food and little exercise and develop adipose tissue; (*b*) then, sometimes, anæmic individuals who are obliged to lead a sedentary life. Every copious repast determines a certain temporary plethora. If more food is ingested before the previous plethora has been disposed of, there gradually is established a permanent vascular repletion.

After showing how increased adiposity obstructs the abdominal circulation and raises the pressure in the aorta, he points out the fact that a considerable venous distention is also produced, showing itself in superficial varices, hæmorrhoids, predisposition to pulmonary catarrh. The development of sclerosis is always preceded by this stage of increased vascular tension. This abnormal pressure is the principal cause of the general endarteritis.

---

[3] De l'Atherome Arteriel: Leçons de Clinique Médicale, t. i., p. 304.

[4] Arterial Disease; Sajou's Annual, 1890; Medical Bulletin, March 17, 1894.

ANNUAL REPORT OF THE MASSACHUSETTS GENERAL HOSPITAL.

THE eightieth annual report of the Massachusetts General Hospital and McLean Asylum for the year 1893, while not showing any marked changes in this over recent years, describes enlargements and improvements already begun, which will increase the usefulness of the two institutions in the near future. The report opens with a clear and concise summary by a Committee of the Trustees, of the principal items of interest.

The year shows a deficit of over $29,000, the largest in the history of the hospital, a great part of which, however, is owing to necessary repairs and alterations connected with the buildings. There was a falling off in the receipts in the second six months of $6,741, while the increase in disbursements was $8,470. This falling off is mainly due to the temporary closing of Ward B, also to the fact that the year has been one of great and exceptional financial depression.

On December 1st, the new office of examining physician to out-patients was made, the previous arrangements for examination and registration not having proved wholly satisfactory. The usefulness of this office in preventing the mingling of cases of contagious diseases with the out-patients in the waiting-rooms has already been proved.

In the hospital building some considerable and important changes have been made. The old Treadwell Library-room has been adapted to give a much needed addition to the work-room of the enlarged staff of house-officers, while the Treadwell Library itself has been transferred to a new room in the second story. Additional house-officers' rooms, with suitable bathrooms, have been provided. Changes and additions to the amphitheatre building include an addition of one story, containing a new sterilizing-room for the preparation of surgical instruments and dressings. A new dressing-room for the surgeons has also been provided. A gift of $50,000 has made it possible to erect a new isolated ward for contagious diseases; such a ward has been needed since the foundation of the hospital. A card catalogue of all the cases at the hospital from 1871 has been started. An appeal is made for a well-equipped laboratory; and for funds for the general expenses both of the hospital and of the asylum. The percentage of free patients at the hospital is enormous, while the subscriptions for free beds have diminished.

The buildings of the new McLean Asylum at Waverley have progressed steadily during the year. The description of four of them, not included in last year's report, appears in this one. Two interesting reports are printed; one upon the occupation of patients at the asylum, by the Superintendent; the second by a special committee on the case of W. H. King, a patient in the asylum, whose retention has been the source of much litigation.

In the hospital the total number of patients admitted was 3,524, an increase of 200 over the previous year. The number of out-patients was 26,527, with a total attendance of 86,579, about the same number as in 1892.

In the asylum, although the average number of patients, 177, was larger than in previous years, the number of admissions and discharges was less. The coming removal of the asylum from Somerville to Waverley will be an important epoch in its history; the buildings, roads, and other works at Waverley are now so far advanced that they may easily be finished before September 29, 1895, when the estate at Somerville is to be vacated.

◆

MEDICAL NOTES.

The Number of Patients at King's College Hospital. — During the year just closed there were 2,372 patients admitted to King's College Hospital, London, and 24,000 out-patients treated.

Mr. Gladstone Operated upon for Cataract. — Mr. Gladstone was successfully operated upon for cataract by Mr. Nettleship last week, and has been making an excellent recovery.

The Medical Society of the State of Pennsylvania. At the annual meeting held May 21st, Dr. John B. Roberts, of Philadelphia, was elected president for the ensuing year.

Dr. Pepper's Successor as Provost of the University of Pennsylvania. — Mr. Charles C. Harrison has been elected Provost of the University of Pennsylvania, to succeed Dr. Pepper. He has accepted provisionally.

Sad Death of a Brooklyn, N. Y., Physician.— Dr. Charles James, of Brooklyn, died on May 22d from an accidental dose of tincture of aconite. He was twenty-seven years old, and a graduate of the Long Island College Hospital Medical School.

A Successful Splenectomy. — Dr. James Murphy, of Sunderland, England, did a splenectomy upon a woman forty-five years old, on April 25th. The operation was undertaken for abscess and hypertrophy. The wound healed promptly, and at last reports the patient was making a satisfactory progress.

A Leper Hospital for Louisiana. — At the request of the Senators and Representatives from Louisiana, the Secretary of War has given New Orleans and the State of Louisiana the right to use the Government military reservation, at Fort Pike, for a hospital for lepers and patients with contagious diseases.

The Thirteenth International Medical Congress. — Dr. Baccelli has written to Señor San Martin, the delegate of the Spanish Government to the International Medical Congress at Rome, that there is a generally expressed desire that the Thirteenth Congress, the one following that in Russia, should be held in Madrid.

Congress of the French Surgical Society. — The French Surgical Society will hold its annual meeting this year at Lyons, probably in the early part of October. This is the first time the meeting will have been held outside of Paris. The matter was decided by a *plébiscite*, and the result is regarded as a victory for the advocates of decentralization.

Plague at Hong Kong. — A serious epidemic of disease is reported from Hong Kong. Since the middle of April over a thousand deaths have occurred. The disease is said to be similiar to the plague which decimated the population of Hochow ten years ago; but as the cholera is at present reported to be general in Canton, the disease at Hong Kong is not unlikely to be of the same character.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, May 30, 1894, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 37, scarlet fever 65, measles 24, typhoid fever 12. There were no cases nor deaths from smallpox during the week. There are no patients at the Canterbury Street Hospital. The last case of smallpox was discharged from Gallop's Island this morning.

The Massachusetts Medical Registration Bill. — The Medical Registration Bill was passed by the House on Monday May 21st, and now awaits the Governor's signature before becoming a law.

College of Pharmacy Commencement. — The twenty-sixth annual commencement exercises of the Massachusetts College of Pharmacy was held in Association Hall, Boston, May 23d. Seventeen men received degrees.

The Somerville, Mass., Hospital. — The annual report of the Somerville Hospital shows that 325 patients were cared for during the past year, the average number being 14. The total running expenses were $9,482.03, the average cost of each patient being $12.72 per week.

Physical Training at Wellesley College. — The Committee on Health and Physical Training of Wellesley College calls attention to the urgent necessity of improved facilities for both in-door and out-door exercise, and systematic hygiene and physical training for the young women of the college such as are abundantly provided for colleges for young men.

The Connecticut School Vaccination Law Constitutional. — The Superior Court, at Hartford, Conn., has decided, in a suit brought against the New Britain School Board to compel them to admit unvaccinated children to the public schools, that the law giving the school board authority to order all school children vaccinated, and to exclude those not vaccinated from the schools, is constitutional.

The New Catalogue of the Massachusetts Medical Society. — A new and attractive Catalogue of the Officers, Fellows and Licentiates of the Massachusetts Medical Society from 1781 to the close of 1893 has just been prepared by the Treasurer, Dr. E. J. Forster, and issued by the Society. A special effort was made to give full names and to eliminate all initials; and this has been done in nearly every instance, there being but thirty-five Fellows whose full name is not known. The total number of Fellows since the foundation of the Society has been 4,905, of whom 1,927 are living. In addition to these there were 178 Licentiates who never became Fellows of the Society. There have been 145 Honorary Members, of whom 7 are now living. In addition to the statistical tables and lists there is an interesting chapter of historical memoranda.

NEW YORK.

New York County Medical Association and the Code. — At a meeting of the New York County Medical Association held May 21st, a resolution was unanimously adopted to the effect that the Association re-affirms its adherence to the code of ethics of the American Medical Association, and instructs its delegates to the approaching meeting of the latter in San Francisco to unite with other delegates from the State of New York in maintaining the code as it now stands.

The Medical Department of the National Guard of New York. — At this meeting Dr. Joseph D. Bryant, who has been Surgeon-General of the State for the last ten years, read a valuable paper on "The Medical Department of the National Guard: Its Status in Two Decades." In it he spoke of the general inefficiency of this department of the militia up to 1884 and of the radical reforms that have taken place since that date. It is only due to Dr. Bryant, as was clearly brought out in the discussion on his paper by regimental surgeons, that these reforms have been instituted and carried out by the Surgeon-General himself, who has devoted much time and attention to the matter.

Public Health. — The reports of the Bureau of Vital Statistics still continue to show an excellent state of the public health. In the week ending May 26th there were reported 721 deaths, which represents an annual death-rate of but 19.28 per thousand of the estimated population. The mortality from pneumonia has diminished to a considerable extent, but is still larger than that from consumption. During the week the deaths from the former numbered 89 and from the latter, 82. Diphtheria continues by far the most fatal of the zymotic diseases, and caused 56 deaths. The deaths from scarlet fever were 16, from measles, 8, and from cerebro-spinal meningitis, 5. A considerable number of cases of small-pox are still reported every week, and there were four deaths from it during the week named. There is but little typhoid fever in the city, and only three deaths were caused by it.

The Tenth Annual Meeting of the Fifth District Branch. — The tenth annual meeting of the Fifth District Branch of the New York State Medical Association was held in Brooklyn on May 22d. The address of the President, Dr. J. D. Rushmore, of Brooklyn, was on "The Prevention of the Disagreeable and Dangerous Symptoms produced by Ether as a General Anæsthetic." A number of eulogistic addresses were made on the late Dr. Alfred L. Carroll, and biographical sketches were read of other members deceased during the past year. Among the papers read were the following: "The Dietetic Treatment of Consumption," by Dr. T. J. McGillicuddy; "Report of a Case of Chronic Peritonitis with Intestinal Fistula — Celiotomy, Enterorrhaphy, Recovery," by Dr. F. H. Wiggin; "The Treatment of Chronic Oöphoritis by Electricity," by Dr. Edward Sanders. The meeting was closed by a discussion on "Vaccination," which was opened by Drs. F. A. Jewett, S. E. Jelliffe and H. H. Morton, of Brooklyn.

PHILADELPHIA.

Resignation of Dr. Edwards. — Dr. Jos. F. Edwards has resigned from the State Board of Health.

The House-to-House Visitation, which accomplished so much good last summer in improving public health, has again been ordered by the city authorities on general sanitary grounds.

The Establishment of Sections in the College of Physicians. — The establishment of Sections in the College of Physicians has proved very profitable, the meetings being well attended and the discussions valuable. A plan is under consideration whereby the papers and discussions shall appear in their proper position as contributions to the annual volume of Transactions of the College.

Non-Vaccinated Children may Attend the Public Schools. — Owing to a conflict of authority between the City Board of Health and the Board of Education, the latter has withdrawn its prohibition recently issued, against non-vaccinated children attending public schools. In view of the fact that no epidemic is threatened at present, they were not willing to resort to extreme measures.

Jefferson Medical College Appointments. — The Trustees of the Jefferson Medical College discussed the proposed plan of re-organization which included the establishment of the office of Provost, and concluded to postpone further consideration of the subject until next fall. Dr. S. MacCuen Smith was elected Clinical Professor of Otology, and Dr. W. Joseph Hearn, Clinical Professor of Surgery, and Dr. E. P. Davis, Clinical Professor of Obstetrics.

The American Medico-Psychological Association. — This Association held its semi-centennial meeting in Philadelphia at the Continental Hotel May 15th to 19th. Dr. John Curwen of the Pennsylvania State Hospital for the Insane at Warren, presided and delivered a very valuable address. Governor Pattison delivered an Address of Welcome in which he reviewed the progress of the treatment of the insane in this State since 1844. An address, by invitation, was delivered by Dr. Weir Mitchell, who pointed out many flaws in prevalent methods of treating the insane and described an ideal hospital. At the closing session the society elected Dr. Mitchell to honorary membership. Dr. Edward Cowles, of Somerville, Mass., was elected President and Denver selected as the next place of meeting.

Miscellany.

A CLASSIFICATION FOR INFECTIOUS DISEASES.

AT a recent meeting of the New York Academy of Medicine, Dr. W. H. Thomson read a paper on the need of a more accurate nomenclature for infectious and contagious diseases, and offered the following classification :

(1) Infectious diseases are due to the presence of their respective living micro-organisms in the body.

(2) Infectious diseases are divisible into three classes : *a*, communicable, *b*, non-communicable, *c*, septic.

(3) The communicable diseases are those whose origin is from an animal body, examples of which are small-pox, Asiatic cholera and tuberculosis.

(4) The non-communicable infectious diseases are those whose origin is not from an animal body, but from a place or thing, examples of which are ague, yellow fever and miasmatic diseases in general.

(5) The communicable diseases are divisible into two classes, according to the ordinary modes of their communication : *a*, into the contagious, *b*, into the non-contagious communicable diseases. The contagious communicable diseases are those in which simple proximity to the sick is sufficient to communicate the infection ; examples of which are scarlet fever, measles, small-pox, diphtheria, mumps, etc. Isolation of the sick in these cases is, therefore, needful to prevent infection. The non-contagious communicable diseases are those in which the communication is not by simple proximity to the sick, but through intermediate means of communication. Isolation of the sick with them, therefore, is neither needful nor effective in comparison with measures directed against intermediate means of infection ; examples are typhoid fever, Asiatic cholera and tuberculosis.

(6) The septic infectious diseases are those in which infection is introduced through a wound or abrasion ; examples are erysipelas, hydrophobia, tetanus, etc.

◆

THE SYMPTOMATIC TREATMENT OF DISEASE.

IN a recent address before the Harveian Society, Dr. Samuel West said :

"The treatment of symptoms is often spoken of with some contempt — not, I think, by clinical physicians, who are not prepared to discard remedies because they cannot explain their action. It is sufficient for them that experience proves the value of the drugs they use. It is true that we have so far no remedies which will kill disease germs in the body, and therefore directly cure any germ disease ; but the germs produce poisons, and these by their action on the body, in all probability cause the symptoms of the disease. These poisons we may be able to neutralize or destroy, if we cannot kill the germ. What the poisonous substances produced are we do not know, and for antidotes to them we are, and have long been, groping in great darkness, it is true ; yet I think it is not unlikely, when these poisons are isolated and investigated outside the body, that among the old and once-trusted remedies, which empiricism has discovered and fashion discarded, will be found some of the true antidotes we want, and thus the symptomatic treatment of disease, now regarded as so unscientific and irrational, be discovered to rest upon a truly scientific foundation."

Correspondence.

THE MEDICAL REGISTRATION BILL.

BOSTON, May 28, 1894.

MR. EDITOR : — Is the health of the people of this Commonwealth as safe in the hands of ignorant " practisers " of medicine as it is in the care of educated physicians ? If so, then our calling is the only profession or vocation of which such a statement can truthfully be made.

Granted, that the more knowledge the doctor has, the better care he will be able to give the sick and wounded, is it desirable and possible to raise the standard of medical education ? How shall this be done ? The various medical schools, as a rule, are doing what they can in this direction.

Can anything be done to protect the innocent and ignorant sick and wounded from these pretenders, who have never studied in any school, or anywhere else, and who are destitute, not only of knowledge and experience, but of character and good repute ? Is it desirable, that any aid or protection should be extended to the unfortunate victims of disease, when seeking for help in their distress, or shall they be left to the tender mercies of the medical bunco-steerers of the community ?

It is assumed by the writer, that there are not a few sensible people in this State, who think and feel strongly, that some light, as to the qualification of doctors, should be given the people through legislation. This is the object of the medical bill. It is designed to benefit the people and not the doctors. The educated physicians of Massachusetts ask for no protection and no legislation for themselves, or for their business against quackery. They are abundantly able to take care of themselves. But as no class in the community sees the evil results, the needless suffering, both mental and physical, and great waste of money, arising from the unlimited license of quackery, as do the physicians, upon them falls the duty of calling attention to the matter.

The medical bill undertakes in no way to say who shall practise medicine, or what " school " or " system " any one shall practise, or what sort of a physician or doctor or " healer " any one may or may not employ. It simply says, that every one in this State, who puts the title of " Doctor " to his name in public, shall be possessed of a reasonable amount of knowledge of his business. That is all. It is not a great step in the right direction, but it is something.

It is here authoritatively stated that, " the medical member of the senate " is the author of the bill, and that, of all men, he is the one most responsible for its origin, and present *status*. His great regret is, that it could not have been made more complete.

Very truly yours,
GEORGE W. GAY, M.D.

METEOROLOGICAL RECORD,

For the week ending May 19th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps : —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..13	30.05	66	80	52	53	34	44	W.	N.W.	12	22	O.	C.	
M..14	30.08	54	62	46	28	39	34	N.W.	N.W.	12	10	O.	C.	
T..15	29.86	54	65	44	33	40	36	N.W.	N.W.	20	8	C.	C.	
W..16	29.80	60	74	46	34	40	37	N.W.	S.E.	12	10	C.	C.	
T..17	29.84	61	70	52	75	68	72	N.E.	S.W.	9	11	C.	O.	
F..18	29.80	58	66	51	97	91	94	E.	S.E.	5	10	O.	O.	0.01
S..19	29.88	54	58	51	97	100	98	N.E.	N.E.	6	9	O.	R.	0.49
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, May 19, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Scarlet fever.
New York . .	1,891,306	759	316	20.41	14.95	2.47	11.96	1.66
Chicago . . .	1,438,000	—	—	—	—	—	—	—
Philadelphia .	1,115,562	347	114	14.79	14.21	2.32	5.22	.58
Brooklyn . .	978,394	359	121	15.12	15.40	.84	6.16	2.24
St. Louis . . .	560,000	—	—	—	—	—	—	—
Boston . . .	487,397	—	—	—	—	—	—	—
Baltimore . .	500,000	—	—	—	—	—	—	—
Washington .	308,431	92	21	7.63	8.72	4.36	2.18	—
Cincinnati . .	305,000	121	40	11.92	14.94	7.47	1.66	—
Cleveland . .	290,000	123	69	19.44	20.25	2.43	4.15	4.15
Pittsburg . .	263,709	80	33	18.50	13.75	5.00	3.75	3.75
Milwaukee . .	250,000	—	—	—	—	—	—	—
Nashville . .	87,754	33	11	18.18	3.03	15.15	3.03	—
Charleston . .	65,165	43	15	6.99	2.33	4.66	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	96,217	30	13	10.00	23.33	3.33	6.66	—
Fall River . .	87,411	31	19	12.92	16.15	12.92	—	—
Lowell . . .	87,191	22	10	4.55	4.55	—	—	—
Cambridge . .	77,100	34	13	—	—	—	—	—
Lynn	62,656	11	0	—	9.09	—	—	—
Springfield . .	48,684	16	3	—	12.50	—	—	—
Lawrence . .	48,355	—	—	—	—	—	—	—
New Bedford .	45,886	24	13	4.16	16.64	—	—	—
Holyoke . . .	41,278	18	11	22.22	38.88	—	—	11.11
Salem	32,233	14	4	—	7.14	—	—	—
Brockton . .	32,140	8	1	—	37.50	—	—	—
Haverhill . .	31,396	11	1	—	18.18	—	—	—
Chelsea . . .	30,264	7	0	—	14.28	—	—	—
Malden . . .	29,394	8	2	—	37.50	—	—	—
Newton . . .	27,556	5	1	—	40.00	—	—	—
Fitchburg . .	27,146	3	0	—	33.33	—	—	—
Taunton . . .	26,972	7	1	28.56	—	—	14.28	—
Gloucester . .	26,688	—	—	—	—	—	—	—
Waltham . .	22,058	7	2	28.56	—	—	14.28	14.28
Quincy . . .	19,642	—	—	—	—	—	—	—
Pittsfield . .	18,802	4	3	25.00	—	—	—	—
Everett . . .	16,585	1	0	—	—	—	—	—
Northampton .	16,331	4	1	—	25.00	—	—	—
Newburyport .	14,073	5	0	—	—	—	—	—
Amesbury . .	10,920	5	2	—	20.00	—	—	—

Deaths reported 2,254: under five years of age 849; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 348, acute lung diseases 327, consumption 241, diphtheria and croup 152, diarrhœal diseases 63, scarlet fever 35, whooping-cough 25, measles 23, typhoid fever 17, cerebro-spinal meningitis 13, small-pox 7, erysipelas 6.

From whooping-cough Brooklyn 7, New York and Pittsburg 4 each, Philadelphia and Cambridge 3 each, Cincinnati 2, Cleveland and Nashville 1 each. From measles New York 7, Brooklyn and Cleveland 6 each, Philadelphia 4. From typhoid fever Philadelphia 6, New York 3, Brooklyn 2, Washington, Cincinnati, Pittsburg, Lowell, New Bedford and Holyoke 1 each. From cerebro-spinal meningitis New York 6, Cleveland 4, Holyoke, Taunton and Fitchburg 1 each. From small-pox New York 5, Brooklyn 2. From malarial fever New York 6, Brooklyn 1. From erysipelas New York and Brooklyn 3 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending May 12th, the death-rate was 18.2. Deaths reported 3,649: acute diseases of the respiratory organs (London) 272, measles 232, whooping-cough 139, diphtheria 74, scarlet fever 55, diarrhœa 40, fever 31, small-pox (Birmingham 6, London 4, Bradford 2, Manchester and Oldham 1 each) 14.

The death-rates ranged from 9.5 in Derby to 25.2 in Birmingham; Blackburn 17.0, Bradford 15.4, Cardiff 16.1, Halifax 14.6, Leeds 16.5, Leicester 14.6, Liverpool 23.8, London 18.4, Manchester 20.6, Newcastle-on-Tyne 17.3, Norwich 16.3, Nottingham 19.4, Portsmouth 12.6, Sheffield 17.9.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 19, 1894, TO MAY 25, 1894.

Leave of absence for four months, is granted **Major Peter J. A. Cleary**, surgeon.

Captain William G. Spencer, assistant surgeon, having been found by an Army retiring board, incapacitated for active service, will proceed to his home.

Captain Alonzo R. Chapin, assistant surgeon, is relieved from duty at Fort Hancock, Texas, and ordered to new Fort Bliss, Texas, for duty.

First-Lieut. Francis A. Winter, assistant surgeon, is relieved from duty at new Fort Bliss and from temporary duty at old Fort Bliss, Texas, and ordered to Fort Hancock, Texas, for duty at that post.

Captain George McCreery, assistant surgeon, will, upon the abandonment of Fort Sidney, Nebraska, report in person to the commanding officer, Fort D. A. Russell, Wyoming, for duty at that post.

Captain Robert R. Ball, assistant surgeon, is relieved from temporary duty at Fort Monroe, Virginia, and ordered to Fort Adams, Rhode Island, for duty, relieving **Captain William C. Borden**, assistant surgeon.

Captain Borden, on being thus relieved, is ordered to Fort Snelling, Minnesota, for duty at that post, relieving **Captain Charles F. Mason**, assistant surgeon.

Captain Mason, on being thus relieved, will report in person to the Superintendent of the U. S. Military Academy, West Point, N. Y., for duty at that post.

Lieut-Col. Francis L. Town, deputy surgeon-general, is relieved from temporary duty in the office of the medical director, Department of the Missouri, and will report in person to the commanding general, Department of Texas, for duty as medical director of that Department.

CASUALTY.

Colonel Joseph C. Baily, assistant surgeon-general, died May 16, 1894, while en route from El Paso to San Antonio, Texas, in the line of duty.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MAY 26, 1894.

B. R. Ward, assistant surgeon, detached from Bureau of Medicine and Surgery and to the "Vermont."

C. A. Siegfried, surgeon, ordered to the U. S. S. "Cincinnati."

MAINE MEDICAL ASSOCIATION.

The forty-second annual meeting will be held in Common Council Chamber, City Building, Portland, Me., Wednesday, Thursday and Friday, June 13, 14 and 15, 1894.

Wednesday, June 13th.

"Typhoid Fever, with Some New Notions Regarding its Treatment." By E. M. Fuller, M.D., Bath. Discussion by A. K. P. Meserve, M.D., Portland; S. J. Bassford, M.D., Biddeford. "An Interesting Obstetrical Case." By Geo. Goodwin, M.D., Millbridge. President's Address. "Treatment of Hæmorrhoids by Clamp and Cautery." By B. B. Foster, M.D., Portland. Discussion by S. H. Weeks, M.D., Portland. "Puerperal Eclampsia." By H. B. Palmer, M.D., Phillips. Discussion by Alfred Mitchell, M.D., Brunswick. "The Artificial Feeding of Infants." By W. B. Small, M.D., Lewiston. Discussion by B. F. Bradbury, M.D., Norway; Geo. H. Brickett, M.D., Augusta. "The Principles of Antiseptic Surgery." By W. L. Dana, M.D., Portland. "Surgery of the Ovary." By A. Palmer Dudley, M.D., New York. Discussion by Alfred King, M.D., Portland. "A Unique Case of Urinary Calculi." By S. H. Weeks, M.D., Portland. "The Code Question from the Standpoint of a General Practitioner." By D. A. Robinson, M.D., Bangor.

Thursday, June 14th.

"The Surgical Demands of a Country Practice." By W. P. Giddings, M.D., Gardiner. Clinic at the Maine General Hospital at 11.30 o'clock, with special reference to the illustration of Surgical Dressings. Election of officers for the ensuing year. "Symphyseotomy with Report of Case." By J. B. O'Neil, M.D., Portland. Discussion by Stanley P. Warren, M.D., Portland; F. E. Small, M.D., Portland. "The Chemistry of Decomposition." By Prof. F. C. Robinson, M.D., Brunswick. Report of Cases: "Cæsarian Section," "Extra-Uterine Pregnancy." By S. C. Gordon, M.D., Portland. Report of "Cases of Abdominal Section." By Wallace K. Oakes, M.D., Auburn. Business.

Annual Oration. By Henry H. Smith, M.D., Machias, at 8 P. M.

Friday, June 15th.

Reports of delegates to other medical societies. Voluntary papers or reports of cases. Report of the Board of Censors. Unfinished business.

The Business Committee desire that members will come prepared to contribute the results of their experience and observation, by reports of cases, with clinical notes or queries upon diagnosis, treatment, action of remedies, etc.

Dr. John A. Donovan, *President*, Lewiston.
Dr. Chas. D. Smith, *Recording Secretary*, Portland.

RECENT DEATH.

George J. Romanes, Fullerian Professor of Physiology in the Royal Institution of London and Rosebury Lecturer on Natural History in the University of Edinburgh, died in London, May 23d, aged thirty-six years.

Addresses.

SUPRAPUBIC HYSTERECTOMY:

THE ADDRESS OF THE CHAIRMAN OF THE SECTION OF OBSTETRICS AND DISEASES OF WOMEN, OF THE AMERICAN MEDICAL ASSOCIATION, SAN FRANCISCO, JUNE 5, 1894.

BY JOSEPH EASTMAN, M.D., LL.D.,

Formerly Professor of Anatomy and Professor of Gynæcology and Abdominal Surgery, Central College of Physicians and Surgeons, Indianapolis, Ind.

MR. CHAIRMAN, LADIES AND GENTLEMEN: — It seems best on this occasion to turn aside from the usual custom of reporting progress in the department of obstetrics and gynecology, a subject which has been so often and ably presented by my predecessors, and call your attention to the present status of suprapubic hysterectomy as viewed from the standpoint of personal observation and clinical research, with the hope that I may contribute in some small measure to the profitable discussion which I am quite sure will follow the reading of the valuable papers on your programme.

It is not my intention to report a series of operations made for the removal of symmetrically formed pear-shaped tumors, with well-defined broad ligaments; with uterine arteries easily accessible and seen pulsating in their anxiety to be ligated; tumor ligaments and arteries dealt with by some definite method; each operation made in exactly so many minutes, and all the patients making uneventful recoveries. The literature of the subject is already cursed with such productions. Therefore I would rather suggest such means and methods as experience has taught me will furnish the best possible results in dealing with tumors by no means symmetrically formed; with broad ligaments displaced and disorganized by nodular masses interfering with the ligation of arteries and the easy formation of pedicles.

Despite the efforts of some to name a distinct method of operating because a flap is made here, or a ligature placed there, the problems of suprapubic hysterectomy are rapidly nearing their solution. Those engaged in the work are divided into two classes: first, those who have been and are yet satisfied with forming a pedicle and fixing the same in the abdominal wound; second, those who were not satisfied that this method was the best that could be devised, and who have been earnestly endeavoring to reach some method which shall disregard morphology of tumor, of broad ligaments and the location of uterine arteries.

On February 3, 1887, knowing full well that abdominal fixation of the pedicle in suprapubic hysterectomy had at that time given the lowest rate of mortality, I decided not to operate in that way, but planned and executed an operation which in every essential feature was an extirpation of almost the entire cervix. A large cautery passed three times down through the cervix in reality destroyed a large portion of what little cervix I had left. A rubber drainage-tube was inserted for vaginal drainage. In a recent discussion in the *New York Journal of Obstetrics and Gynecology*, the operations by Stimson, Krug, Baer and myself are spoken of as if they were all operations of total ablation of the uterus. If these operations are to be considered, then the operation by Stimson in November, 1888, was antedated by my determination to secure something better than the abdominal fixation of the pedicle on February 3, 1887.

It is not my purpose to occupy time in discussing questions of priority in making an operation, although the operation, including the use of my hysterectomy staff, as I demonstrated it at the International Medical Congress in Berlin, has since been made many times by Krobak, of Vienna, and numerous American operators, with great satisfaction.

I concede the fact that where a given fibroid tumor has no nodular masses in the region where we would form a pedicle or imbedded in the broad ligaments, and where the abdomen is not exceedingly fat, the abdominal fixation has given results, in the hands of expert operators, in a very high degree satisfactory. So far as I have been enabled to read the writings of its warmest advocates, none of them have mentioned the very strongest point in its favor; namely, that in this method we have practically one wound; whereas, in the total or partial extirpation method we have two wounds, the one in the abdomen, the other in the pelvis, the latter extending through connective-tissue, rich in lymphatics, down to the vagina — an incubator for many varieties of bacteria which cannot always be sterilized and maintained aseptic during an operation.

I became well convinced a number of years ago that the use of the clamp of Keith or the serre-neud of Kœberle for controlling hæmorrhage from the neck of the uterus was based upon the idea that the spiral or curling branches given off from the uterine arteries really penetrated the tissues of the uterus, including its cervix. Some seven text-books on anatomy which I have examined state that these branches penetrate the uterus. I have a number of times, with fingers on the broad ligaments and their contained vessels, cut directly through, seizing the spurting vessel and securing it later. I have also peeled off the uterine arteries from the sides of the uterus and then cut off the cervix with little or no hæmorrhage.

These studies were for the purpose of reducing the number of ligatures,[1] long or short, to become incapsulated or slough off, through the vagina, and also to economize the time for their thorough application.

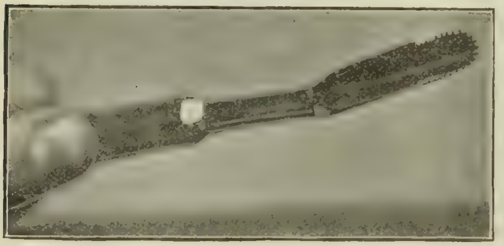
Here is a nodular mass fed and nourished by a capsule — a capsule containing the venous and arterial papillaries. It is well known to every gynecic surgeon that these nodules can be peeled out of the capsule without ligating a single artery. What I have stated regarding the nourishment of this nodule by its network of capillaries and not by the penetration of the arteries, for surgical purposes, holds true with reference to a uterus disorganized by a fibroid tumor or tumors no matter how large or how small; not only of the fibroid uterus, but the normal uterus as well; not only of the uterus but its entire cervix down to the external os.

I here present a specimen (see p. 554); and to my mind it marks a new era in the removal of fibroid tumors by hysterectomy, for the reason that the uterine arteries were not ligated at all. I went down between the uterine arteries and the uterus. The uterine arteries were absolutely left within the pelvis of the woman, not a single ligature being used except those which tied off the ovarian arteries and a small section of the upper portion of the broad ligaments.[2]

---

[1] A ligature to secure the uterine arteries will often secure a certain amount of muscular and connective tissue, and is one of the possible sources of infection of the wound, hence the importance of having as few ligatures constricting tissue in this work as possible

Then in addition to solving the problem as to what to do with the pedicle, by deciding not to have any, we also solve the problem as to what to do with the broad ligaments and especially their contained uterine arteries by simply leaving them in the pelvis of the patient.



In this case I simply controlled the circulation in the ovarian artery by ligating the upper portion of the broad ligaments with a strong ligature, then, cutting the broad ligaments above the ligature, began with this serrated gouge (see cut) to peel down the broad ligaments, keeping the gouge close to the tumor, being especially careful in the interspaces between the nodules not to puncture or tear the uterine artery, or any of its branches. From time to time nicking the edges of the peritoneum with these button-pointed scissors, with the serrated cutting edge, I pushed it forward under the peritoneum anteriorly and posteriorly so as to make anterior and posterior flaps. Then pushing with the serrated gouge, I carefully worked around the tumor until I had reached the uterine cervix, and then proceeded with still greater caution not to cut the cervix nor its capsule, but to push it down, as I now slip my cuff toward my elbow with the fingers of my right hand. The enucleation of the lower portion of the uterus, including its cervix, reminds me of Professor Sayre's admonition when removing the head of the femur for hip-joint disease. He says, "I take this oyster knife and work my way past the trochanters major and minor, then make sure to get beneath the periosteum close to the bone." "Then," he used to say, "d—n the anatomy, stick close to the bone," and proceeded in peeling off the periosteum until he had the entire head of the femur out of the acetabulum.

As I reached this lower part of the cervix, my hysterectomy staff was passed up the vagina. I then removed the entire cervix, cutting a little opening on to the staff, slipping a strip of gauze in the fenestra of the staff. When the staff was withdrawn, this was brought down in the vagina, the upper portion of the gauze being packed into the pocket from which the cervix had been enucleated. The flaps which I had dissected off from the tumor and cervix were brought together by buried suture over the ligatures which had included the ovarian arteries, so that their raw ends also came into the wound. Several rows of buried suture were used, so that all raw edges made by peeling out the cervix were deeply buried so as to prevent leaking into the peritoneal cavity, the gauze being dragged down into the vagina a little each day, facilitating perfect drainage in that direction. This operation is the realization of the ideal. Heretofore, all of us had simply been idealizing the real. In a lecture delivered in July, 1893, I closed with a series of conclusions. From them I quote the third, to wit: "Where the neck of the uterus remains small, abdomen not too fat after the ovaries and tubes have been tied off, the pedicle may be fastened in the lower angle of the wound and give satisfactory results." To this conclusion stated at this time I have this to add: Where such anatomical conditions exist, enucleation of the cervix can be done in less time than the manufacturing of a pedicle, the adjustment of the serre-neud and elastic ligature. Furthermore, abdominal fixation of the pedicle cannot be accomplished, in all cases.

It is to the class of cases where no pedicle can be formed to fix in the abdominal wound that I would invite the best-directed efforts on the part of those who have a heartfelt interest in this class of suffering women.

One's per cent. of recoveries would undoubtedly be much better if, after making a careful examination which discloses a tumor deeply imbedded in the pelvis, we would discourage operative procedure; but in my first 100 hysterectomies I found a number of cases were gangrenous tumors and tumors containing gangrenous nodules, causing slow death in some cases and rapid death in others from septicæmia. Within the last six months I have operated on seven women who had either gangrenous fibroid tumors or fibroid tumors with gangrenous nodules. In five of the cases the nodular masses were deeply imbedded in the pelvis, and two of the cases were operated on within one week. In each case a nodule as large as a cocoanut was completely imbedded in the broad ligaments, having been developed from low down on the side of the uterus, and in both cases the nodular masses were in an advanced state of gangrene, they having caused temperature ranging from 100° to 103°. In two other cases the subserous tumors had become gangrenous from small twisted pedicles. In each case rapid and well-pronounced septicæmia threatened the life of the patient. Surely, the technique of suprapubic hysterectomy is not complete until guided by sound surgical principles. We have methods and means for this class of cases. I am pleased with the rapidity with which we can ligate the upper portion of the broad ligaments, cut the same loose from the tumor, peeling the peritoneal covering off from the tissue, leaving a little subserous tissue beneath it, enucleating nodular masses, and directly find ourselves down on the uterine cervix close to the external os, with only an occasional bleeding from some enlarged arterial twig.

---

[2] Sauter, of Constantine, Germany, three-quarters of a century ago removed the uterus by the vagina without clamp or ligature (See article by Dr. Guido Bell, Indiana Medical Journal, February, 1894). Further, the enucleation of the cervix by the vagina was made by Langbeck in 1813, by Recamier in 1829, and by Malgaigne at a later date (See article by Dr. Robert Rayborn).

The most serious question in my mind in these cases is how to properly drain the cavities from which these nodular masses have been enucleated. In a recent case I packed the cavity in the broad ligament, from which I had enucleated a gangrenous mass as large as a cocoanut, with iodoform gauze, bringing the same out at the side of the pedicle which I had fixed in the abdominal wound. In addition to the gauze, I placed a metallic drainage-tube well down into the pocket. I wished to be absolutely certain that this cavity was thoroughly drained, believing that in other cases where I had trusted to gauze alone for drainage it was not satisfactory. In the first forty-eight hours we pumped out of this drainage-tube fully a pint of black blood, which, coming from the cavity occupied by this gangrenous nodule, gave a considerable odor, notwithstanding the thorough washing of the cavity through the drainage-tube. I believe it would be better in such cases to secure the most thorough vaginal drainage — not only through the opening made by the enucleation of the uterine cervix, the same being packed with gauze surrounding a drainage-tube, but by making a free and direct opening from the bottom of the cavity in the broad ligaments into the vagina. It has been taught that the danger of removing cysts or fibroids from the broad ligaments lies in the disturbance of important plexuses of nerves. My observation leads me to believe that the shock is not materially great in such enucleation, and that the bad results following such operations are due to the use of drainage which does not properly drain. But while I secured the most perfect drainage in the case referred to by bringing the drainage-tube up to the side of the pedicle, I would not advise abdominal fixation of pedicle in cases where nodular masses are enucleated from the broad ligaments and even imbedded in the region of the cervix, where we would form a pedicle, believing that these cases can be treated more successfully by removal of the entire cervix, with free vaginal drainage.

As I suggested at the beginning of the paper, one of the great objections to the total extirpation of the cervix and vaginal drainage is that we make an additional wound and have a possibility of vaginal infection. I concede, further, that it is not always possible to render the vagina surgically aseptic. . . . In a large per cent. of cases, however, a thorough washing of the uterine cavity, packing the same with iodoform gauze and then stitching the external os will prevent any purulent fluid from escaping into the vagina during our handling of the tumor. Then, thoroughly washing and even scrubbing the vagina with a brush and packing the same (including all its cul-de-sacs) with iodoform gauze, will give us a reasonable assurance that this tube has been made aseptic and reduces the dangers of infecting the peritoneal cavity to the minimum.

In a conversation with Dr. Bantock, of London, I expressed the hope that in the near future we would be able to remove fibroid tumors with the same low rate of mortality which follows our work in removing ovarian cysts. He replied: "This can never be done, for the reason that the anatomical conditions are essentially different." Carefully reflecting over this statement, I have become thoroughly convinced that a more thorough study of the essential anatomical conditions which exist in an abdomen containing an ovarian cyst would enable us to bring the rate of mortality of the two operations to something approximating equality.

I have a number of times left the greater portion of the uterine arteries to remain in the pelvis of the patient; but from the results I had, I was thinking that the possibility of infection through the rich chain of lymphatics at the side of the uterus was greater in such cases than where broad ligaments were thoroughly constricted by ligature all the way down to the opening in the vagina. This led me to prefer cutting around the cervix to enucleating it. But carefully reflecting over the statement of Dr. Bantock that the anatomical conditions were essentially different in fibroid tumors from what they are in ovarian cysts, I have become convinced that we often find fault with the technique which we have used in treating the pedicle when the cause of death ought to be explained in some other way. For example, when the parietes of the abdomen are rendered thin by pressure of an ovarian cyst, the blood-supply is reduced so that all the intra-abdominal viscera are more or less anæmic. This condition is in marked contrast with the hypernutrition often present in and about the pelvis which contains a fibroid tumor. I am quite sure that deaths occur in consequence of our almost losing our heads in the determination to make the pedicle and all pertaining thereunto as perfect as possible, and neglecting perfect approximation of the abdominal incision, always as long as the tumor, including its peritoneum. I have many times cut through two inches of fat to reach a fibroid tumor, and unless such a wound be thoroughly closed by three rows of sutures, the internal one being fine silk with stitches not more than one-fourth of an inch apart, and then making absolute serous approximation, there is danger of infecting the peritoneal cavity by the wound leaking into the abdomen. Too often we take extreme precautions to nicely adjust the outer integument when it would be better, if any leakage from the wound is to occur, that it shall pour outward, and not inward. Again, the more vascular condition of the peritoneal cavity and its contained viscera in cases of fibroid tumors, as compared with ovarian cysts, warn us of the greater intolerance of rough manipulations, making it necessary to protect intestines and viscera as much as possible during operation by hot sterilized towels or sponges, by temporarily bringing the wound together over the intestines with a temporary stitch or vulsella, and, above all and over all, by the most thorough irrigation of the peritoneal cavity with water at a temperature of not less than 110°, not only after the work has been completed, but at intervals during the work, so as to undo the harm we do to the vaso-motor nerves distributed to the pelvic and abdominal viscera. Half a-dozen pitchers full of water are none too many; and if we have produced material shock, as evidenced by the pulse, a few pitchers of water poured through the drainage-tube and allowed to pour out again has at times, as I believe (permit me to say, I absolutely know), saved lives that otherwise would have been lost. The operator of to-day who seeks to do away with the "wash out" and the drainage-tube on all occasions, on theoretical grounds, is rolling the wheels of progress backward. The skilful management of a patient during shock is of very great importance indeed. The use of opium to put the disturbed tissues at rest has the genuine ring of surgical wisdom. The use of strychnia to keep up the tone of the nerves distributed to the intestinal tract, and thereby counteracting the tendency to gaseous distention of the bowels, is one of the precious comforts to the anxious abdominal surgeon when his patient is low in shock.

When Ephraim McDowell made his first ovariotomy, the citizens surrounded his house threatening his life because he was about to "butcher a woman." The sheriff of the county interfered. At first they refused to listen to his pleadings for the doctor's life. Finally he struck a compromise, the mob agreeing to let the doctor alone if the woman recovered, the sheriff agreeing not to interfere if the woman died. This was a crucial test of the doctor's heroism. Other heroic surgeons for years did not hesitate to remove ovarian cysts, but allowed women to pass on to their graves if the diagnosis convinced them that it was a fibroid tumor. Still later surgeons removed fibroids if they were pear-shaped and a pedicle could be easily formed, allowing women to pass on to their graves if the examination showed the tumor deeply imbedded in the pelvis by nodular masses. Even the great and noble Dr. Thomas Keith, after battling with fibroid tumors with as good a percentage of recoveries as any one at that date, finally abandoned fibromectomy, resorting to the use of electricity, and only wished that he had back from their graves the patients that had died from his operations for fibroids. Thank God there were others to take up the work when he became discouraged. The old adage that the qualifications of a surgeon were "the head of an Apollo, the eye of an eagle, the heart of a lion and the hand of a woman," is eminently true, especially as regards him who would seek to be successful in removing fibroid tumors. The head to plan and to meet the surprises which spring on us during such work; an eye to see quickly the exact constriction of every ligature and adjustment of every suture; the lion heart to forge forward in this aggressive work when our percentage of recoveries might be better if we would let fibroids alone, especially bad ones; the nimble wit in the end of the fingers, backed by an indomitable will to skilfully and speedily perfect the last suture with the same precision as the first, make a combination of qualifications suggesting that the surgical type of a man is not to be found thirteen times in a dozen.

No operation so thoroughly demands that the trinity of surgery be carried out — thorough preparation of the patient, thorough operating, and skilful after-treatment. As American surgeons we have a right to be proud that no other nation leads us in the originality of methods or successful results in removing fibroid tumors. Almost every State of our Union has operators who would venture to give a woman with a fibroid tumor the chances of life which surgery offers. With a more thorough and perfect understanding of the essential anatomical conditions which make an abdomen containing a fibroid tumor different from one containing an ovarian cyst, with the realization of the ideal method applicable alike to all fibroid tumors regardless of their morphology, a method as successful in the hands of the many skilled operators as the few, may we not hope to say with all sincerity that fibroid tumors can be removed with the same low rate of mortality which has placed ovariotomy among the brilliant triumphs of the century? Then shall the torch lighted by McDowell in the midnight darkness shine forth with resplendent glory in this brilliant noonday of abdominal surgery. The century which in a few years will have rolled on to the eternal past, has placed in the magnificent temple of medicine many pillars of surpassing beauty and grandeur, while its surgical columns have risen high toward Heaven, where as gilded towers, they fain would vie with the God-given sunshine in dispelling the chill and gloom of human agony.

Chirurgia's tower, thy lights resplendent blaze,
Dries woman's tears and lengthens out her days.
McDowell and Sims, of our Columbia's clime,
Began the work moved onward nigh sublime.
To woman then, these blessings shall be given,
Queen of the home and home the type of Heaven.

Abdominal surgery is proud of her past because it is prophetic of her future. Even now in the vital present it shall stand forth unchallenged as the crowning glory of all science and of all art.

ABSTRACT OF PRESIDENT'S ADDRESS

BEFORE THE AMERICAN LARYNGOLOGICAL SOCIETY, AT ITS SIXTEENTH ANNUAL SESSION, WASHINGTON, D. C., MAY 30, 1894.

BY D. BRYSON DELAVAN, M.D., NEW YORK.

IN opening our Sixteenth Annual Congress let me heartily welcome you to what gives every promise of being a most useful and enjoyable meeting. The support which you have given it, both by your presence and the scientific contributions provided, has been spirited and generous; and I am assured that you will still further co-operate with me in carrying it through to a harmonious and successful close. Surely the experiences in sixteen years should give light to illuminate for us the present and enable us to look forward somewhat into the future. In trying to forecast the future it is eminently right that we should indulge in retrospect, particularly for the benefit of many who may have but recently come among us and to whom our early history may be unknown. I shall aim therefore to go back with you to the early history of this Association.

[The President then gave a detailed account of the various factors which led to the formation of the Association. Special honor was paid to the preceding work of Horace Greene, who was the pioneer specialist in this country in diseases of the throat, and whose works now prove that he led the world. He died, however, before this Association came into existence; but he left behind an able and brilliant successor in Elsberg, under whose presidency the Association was formed at Buffalo in June, 1878.]

THE SOCIETY'S AIM.

The labors of Elsberg and his contemporaries in the formation of this Society were a preconceived movement in the direction of a higher and broader education, and were an intelligent and vigorous effort to advance and disseminate the knowledge of our special work. How faithfully this primal aim has been carried out our history attests by its annual meetings, publication of transactions, encouragement of special literature of our department by the bringing forward of youthful aspirants for laryngological fame, and by the practical study of the best methods of instruction in our schools. New York city was the place, the autumn of 1873 the time, and Dr. Clinton Wagner the promoter of the first society ever founded for the exclusive study of laryngology and rhinology.

[Attention was directed by the President to the formation of various special foreign societies and the vast increase in the number of organizations in this country whose attention is entirely devoted to these branches.]

It is a great satisfaction that this strong onward movement should have been headed, and at so great a distance in advance, by this country; and it is surely not unpardonable that we should in the enthusiasm of the time express ourselves as the occasion warrants. But if we are still to be an example to the world, we must still strive for superiority. The place which we have won must be held, not through vain-glory, but through increased diligence on our own part and an ever-broadening receptivity to the ideas of others.

GROWTH OF SPECIAL LITERATURE.

Our Association is intimately related also to another important educational factor. Special journals have now become quite numerous, and our own work receives a generous and constantly growing appreciation in the columns of our general medical journals. The establishment of the bibliography of the earlier laryngology was largely the work of several of our Fellows.

THE ASSOCIATION'S MOTTO.

"Docendo discimus — by teaching we learn."

If we are to reach the higher usefulness, we must ourselves be teachers. The question of education as related to our own department is by far the most opportune by which our attention could possibly be engaged. Therein lies the hope of the future as to our own reputations, and, what is still more, as to the beneficent ends to which we fondly hope our specialty may attain. The problem of instructing undergraduates may be said, in this country at least, to have been squarely met and fairly solved. One of our institutions particularly is of conceded superiority, both as to its plan of instruction, equipment and general discipline. But other schools as well are doing creditable work. All the problems, however, can never be solved by undergraduate institutions, and to meet the new needs there have sprung up the various so-called post-graduate schools. The task of the teacher in this field is more difficult, for the needs of his classes are far more varying than is the case with the undergraduate. His students are men of some experience in general practice, of a wide diversity of preliminary education; and they are frequently hampered by preconceived ideas. They often have much to unlearn before they can grasp fully the salient points as to what the science of laryngology really is; hence the greater difficulties of the teacher's task. But the theory of graduate instruction in this country is an established and triumphant success, and it may well be the province of this Association to discuss how we can best infuse the ferment of sound learning into the unleavened but well-promising mass of students who come to our graduate schools. Three things seem demanded to bring about this desired result: first, a higher and more thorough general medical education on the part of the student; second, more careful selection in the choice of instructors; third, a modification of the best undergraduate methods to satisfy the needs of the older men.

A FINAL WORD.

When this Society was formed laryngology was in the hands of a few men, who, under the stimulating influence of the earliest enthusiasts, formed a veritable aristocracy of learning. Now it is changed. The spirit of socialism has been among us; that noble and generous socialism of science which, having acquired a rich and rare possession, desires to spread it broadcast and with lavish hand to the four quarters of the earth. The old order of things under which our specialty was held in the hands of a few has passed away.

Original Articles.

THE OBSCURE ORIGIN AND INDETERMINATE COURSE OF ACUTE INFECTION, AS ILLUSTRATED BY A CASE OF MALIGNANT ENDOCARDITIS.[1]

BY J. S. GREENE, M.D., OF DORCHESTER, MASS.

In the near past, when the theory of infection now in vogue was first authoritatively set forth in its full and fascinating proportions, it seemed as if there could no longer arise cases of doubtful nature or uncertain origin. The so-called spontaneous development of infectious maladies in man apart from any ruling epidemic was artificially paralleled by Bouchard when he provoked in healthy animals, without wounding, the rapid appearance of microbes in the blood, by the application of depressing causes such as cold, fright, fatigue.[2]

By the action of such commonplace influences the pathogenic bacteria which inhabit our cavities, and which ordinarily remain harmless, are enabled to penetrate into and multiply in the fluids. It is thus that infectious diseases become generalized or aggravated in the system, and set up the phenomena of septic fever.

Some of these phenomena are headache, pain in the back and limbs, secretory disturbances, coma, convulsions, delirium; and perhaps there must be added to this already formidable train, paralyses, both of peripheral nerves and of nerves proceeding from the bulbar centres on the integrity of which the instant life depends.

We are no longer permitted, as in the beatific past, when bacteria were not in sight and ptomaines were not even suspected, to talk of brain fever when the septic process is chiefly determined to the cerebral functions, nor of rheumatic fever when the back and limbs receive the rebound from the shock of poison dealt to the trophic nerve centres. Still traces of what was our state of blissful ignorance remain, and in the light of later knowledge show as black spots on our sunshine. Cases yet arise where a disease ultimately determined to be of infectious origin masks itself behind groups of symptoms capable of being quite otherwise interpreted. The infectious agent, whatever microscopic form it takes, induces a septic fever, which acts with varying intensity and by multiform combinations on the nervous system and on different organs and functions. Soon or late, the integrity of some important organ may be steadily invaded, or an acute inflammatory process may be localized in some tissue; and whether these complications occur or not, the phenomena of septicæmia, pure and simple, may dominate to the end. Again, the infection rather than the localization may have had the minor rôle, proceeding without the ranges of temperature commonly associated with septic processes. Nervous disturbances apparently or manifestly functional may prevail over either thermic or adynamic, to that degree that when the disease finally becomes localized by signs or symptoms ordinarily unmistakable, these signs and symptoms are misinterpreted because disconnected from their customary relationship.

---

[1] Read before the Boston Society for Medical Observation, March 5, 1894.

[2] Theorie de l'infection, verhandlungen des x internationalen congresses, a. t. 49.

Material for cultures is not always attainable during the course of the disease; and when a fatal issue has not been averted, and when the pecuniary or vital wants of survivors combine with the scientific interest of the physician to seek what of verity autopsy may reveal, the early solicitude of the funeral undertaker to preserve the integrity of the mortal remains by the injection of poisonous chemicals will probably have interposed an effectual barrier to the inquiries of the bacteriologist and the microscopist.

A fatal case of disease of infectious origin simulating multiple neuritis, but proven by autopsy to have been acute endocarditis, supplies the clinical material to illustrate the foregoing remarks.

The case was that of a man thirty-four years of age, by occupation a letter-carrier, and thus exposed to the influences of cold and fatigue. His father died of typhoid fever; his mother survives in impaired health, with signs of cardiac trouble. There is no family history of rheumatism. The patient was about five feet four inches in height, spare in flesh, nervous temperament, good habits. At the age of thirteen, after the shock of a fall and exposure to wet, he had a prolonged attack of inflammatory rheumatism with cardiac and pleuritic complications; but recovery, though slow, was complete, and for twenty years thereafter he had no illness requiring medical attention. A less satisfactory state of health dates from about a year ago, when he yielded for part of a week only to an attack of grippal influenza. Following that came annoyances of nasal catarrh and anal fissure, for which troubles he sought relief as a hospital out-patient. These ailments, and a cold pain, as he termed it, above the left hip, accompanied noticeable diminution of strength. Early last November a widowed sister living with him died after a brief illness, leaving two orphan children to his charge. Soon after this event, prodromic symptoms began, and for two months continued to accumulate. These symptoms were lessened appetite; frequent perspirations; pains in shoulders, legs and soles of feet; cold throat; stiff and tired ankles, worse in morning. His urine had been remarked habitually thick.

During the week previous to the final yielding to illness, his nights were marked by sweats, and by cold, restlessly-moving feet; and he remained in bed two days before going again upon his route. In the night of Sunday, January 14th, he aroused the family by a scream of pain, and said it was as if his two feet were cut off. Pain lasted all night, yet he went to work Monday, but ate no dinner. While delivering, pains caught him, first in chest from side to side, passing to back of legs below knees; and he returned home with stooping shoulders and limping gait. Nevertheless, that evening he walked half a mile and back to consult a doctor, and got a tonic. Tuesday, the 16th, he put his last day's work between two restless nights. Wednesday morning, the 17th, at 3 o'clock, he arose and went down stairs, unable to rest from pains in sides and chest, in legs and in feet. That day a physician was summoned. The patient complained of stiff cords around ankles and numbness of soles. Thursday, red streaks were seen on the feet. The hands and arms had become painful, and the abdomen was hard. Friday, the jaws and the back of the neck were involved in the suffering. The history to this point is gathered from patient and his mother.

I first saw him on the evening of Saturday, January 20th, in consultation; and at the joint request of physician and patient, I became associated with the former in the guidance of the case. The patient was lying on his back, with an aspect of helpless unrest, talkative and moaning; his countenance expressive of anxiety. The pulse was 104, fair quality; respiration 26; temperature 101.2°; tongue clean, but dryish; thirst. He complained of shooting pains down the thighs and legs, of burning tenderness of the outer and inner aspects of thighs, and of numbness of the soles just anterior to the heels — all dating from Wednesday; of pains in the arms (especially about the elbows), with numbness of the two outer fingers of each hand — from Thursday; of pain in the lower jaw, below articulation on each side — since Friday; of concurrent pain about the region of the lower ribs on each side, especially the right. On examination, there was no redness nor swelling of joints nor elsewhere. The tenderness elicited by touch was regional, not following the course of large nerves nor in joints; especially noted at the upper portion of the calves and at the anterior surface of the soles, including toes, especially of right foot. Other points or patches of tenderness to touch were over the ramus of the jaw on each side. Moving or flexing the toes caused pain. There was a degree of rigidity of the lower limbs, and of resistance to passive motion, and such motion caused pain; but the pain was vaguely localized, and not in joints. Hands and arms showed less rigidity and little tenderness. He moved the jaw with difficulty, complaining of pain below articulations. It was noted that the apex beat of the heart was in the mammary line in the sixth interspace; but there was no diffused nor heaving impulse, and the heart sounds were clear, unaccompanied by murmur and of normal rhythm, and so remained throughout. The plantar and patellar reflexes were absent. Albumen was absent from the urine, which was heavy with amorphous urates. The patient lived for ten days longer, and died the 30th of January.

During this period of daily observation, there was gradual abatement of numbness, of localized tenderness, and of muscular rigidity; no restoration of tendon reflexes; muscular wasting rapid and extreme.

On the 24th, it was noted that pains had appreciably abated within two days, and none remained in sides of chest. Patient could move limbs more easily, and open jaws more readily. He still shrank from touch at the plantar surface of the toes and adjacent part of the soles, and still kept the limbs rather rigid, especially his hands and arms, with fingers spread apart, moving and flexing like one slowly scratching.

On the 25th, he sat on the edge of the bed a few minutes after passing urine.

On the 26th, there were painful and unsuccessful attempts at micturition, a resort to the catheter, and (later) successful voluntary effort. This day tenderness to touch and numbness were all gone. A few petechial spots were seen on the legs. He still kept a certain rigidity of joints on passive movements, as if fearful of hurt, but could relax and move painlessly. The type of fever became more and more distinctly typhoidal, the tongue more dry and furred; no sordes. Delirium of sufferings and of travel, active at first, became somewhat more quiet. He wandered all over the country and encountered all kinds of trouble; he never knew where he was, but was sure he was not at home, though he got almost there; yet he knew every one about him. He had occasional "wild spells," when he wanted to get up and off, but had little strength to exert. There were moments of quick, labored respiration, but not often; scarcely any cough.

His temperature had no regular oscillations, but ranged oftenest from 100.5° to 101.5°; but the morning of the 23d it reached 103.5°, and the evening of the 24th and the following morning it was 103°. The pulse generally went with the temperature, though not invariably; it varied between 104 and 120, reaching (exceptionally) 130.

The last day I did not see him; but there was choking on attempts to swallow, collapse with cold sweat, and he died with gradual heart-failure.

Dr. Wm. T. Councilman performed an autopsy, Thursday, February 1, 1894: "Anatomical diagnosis, acute endocarditis of aortic and mitral valves. Body of medium size, slightly built, somewhat emaciated. The body had been injected by an undertaker, so that little could be told of the degree of congestion, etc., of internal organs. The peritoneum was smooth, and there were no lesions in any of the abdominal organs. The spleen was large and rather soft. Both lungs slightly adherent. On section, a slight muco-purulent secretion in some of the smaller bronchi. The heart was of ordinary size, the cavity of the pericardium obliterated by adhesive pericarditis. Myocardium pale and easily torn. The valves of the right heart were normal. On the aortic valves, just along the line of closure, there were numerous projecting granulations. The valve about the seat of these vegetations was thickened. Similar vegetations were along the free edge of the mitral valve, and in one place extended over the auricular surface of the valve up to the auricle. The tissue here was thickened, infiltrated, and small ecchymoses were here and there visible. The nerves of the lower extremities were removed for examination. Owing to the injection of the undertaker, bacterial cultures which would probably have thrown much light on the case could not be made. I think there is little doubt from the character of the lesions in the heart that there has been an infection with either the dipplococcus pneumoniæ or the streptococcus."

The result of this autopsy was the revelation of an unsuspected seat and form of localized inflammation. True, the chief signs and symptoms on which a diagnosis of infectious neuritis was founded had gradually abated during the week which followed my introduction to the case. On the other hand, the group of symptoms representing septic infection had kept their unrelenting sway, dominating and supplanting, while no signs were detected nor symptoms intruded to draw attention to a lesion of cardiac valves.

Thus, prior to the autopsy, there still remained the possible alternative that death was wholly due to the effect of the toxines of infection acting on the higher nerve centres. The inference that such was partly the case, that the cardiac lesions were in fact subordinate in determining the manner of death, derives support from the symptom of occasional rapid, labored breathing, and from the paralysis of muscles of deglutition noted some hours before death.

The temptation is here presented to follow to their natural conclusion these observations on the uncertainty attending the origin and course of acute infection, by some reference to like uncertainties in the fatal ending.

This final point can be illustrated by a case of possible multiple neuritis comparable to the foregoing one, but introduced here only in synopsis. It was the case of a young man of remarkably neurotic constitution by inheritance, whose father and two paternal relatives had died suddenly in acute agony — two of them with precordial pain, the third (a girl of sixteen) of toothache, so-called. An autopsy on the father showed no disease of brain, heart nor kidneys. The son had been pushed to the verge of nervous break-down by overwork and use of tobacco; still further depressed in his vitality by two illnesses supposed to be *la grippe* — one marked by semi-stupor, numbness and bad head, the other by vomiting, headache, pain of back and limbs, and rigidity.

He is out for an evening's enjoyment, perhaps gets chilled, has next morning a convulsive seizure, nearly or quite unconscious, some fever and transient albuminuria; five days of disability with spinal and lumbar pains. Another seizure; nine more days of suffering, involving legs as well as back. Another seizure; pains more torturing, and involving arms and somewhat chest, as well as back and legs. After six more days an agonizing pain in head aroused by a trivial cause; a distressful, restless, but not usually painful head throughout; and finally a sudden snap, and death after twenty-two days' illness.

No autopsy was permitted. The outset of the illness was very peculiar, some of the indications during its course equivocal, one period reassuring and thereby misleading — other periods absorbingly distressing, and the termination unexpectedly sudden.

It was undoubtedly a case of acute infection, and its phenomena can perhaps be explained either on the theory of multiple neuritis or through the action of toxines on the nerve centres, without the existence of localized microscopic lesions. What concerns us here is the question how death was induced.

In the *Revue de Médecine* of February 10, 1891, Dr. Havage, of Paris, reports a case of alleged acute infectious neuritis, in the course of which, and following the abatement of fever, there occurred numbness and prickling, and then extensive paralyses involving not only the limbs but the facial muscles and some of those concerned in articulate speech, and finally the right external muscle of the left eye, inducing strabismus and diplopia. Nevertheless, in a month from the onset of the disease recovery from these paralyses was nearly complete, and the entire restoration to health was not delayed to the end of the second month. Those who cannot share the sanguine belief of Dr. Havage that the case was one of multiple neuritis —

a belief that seems scarcely consistent with the general observation of the length of time needed to effect repair and restoration of function in nerve tracts which have been the seat of an inflammatory process — must necessarily regard these formidable paralyses as transitory effects of the toxines of infection.

If, then, such toxines can cause extensive paralyses of peripheral nerves without the aid of inflammation, there is little difficulty in perceiving how they may also, by their depressing, irritating, or paralyzing influence on nerve centres, determine death in various forms, by heart-failure, by asphyxia, and even by pain and shock. Also it is obvious how important must be the influence of family constitution and personal idiosyncrasy in shaping the fatal issue. A single sharp agony sometimes ushers in an attack of localized neuritis; and pain in the head or chest or elsewhere was a notable feature at the critical points in the history of the family to which I have referred. Was there a correlation between these two facts, or did ptomaines alone cause pain enough to kill? What changes do toxines effect in the nerve elements, to induce now lingering, and again sudden, death?

The questions may not be answered; but the asking serves its purpose of illustrating the obscurities still so often attending the termination, as well as the origin and course, of acute infection.

◆

CRYSTALLINE DEPOSITS IN THE URINE: THEIR CAUSATION AND RELATION TO RENAL DISEASES.[1]

BY EDWARD M. GREENE, A.M., M.D.

(Concluded from No. 22, p. 541.)

Cases of oxaluria and uric-acid crystals, associated with more or less dull pain in the lumbar region, are familiar to all, and require no further comment other than to emphasize the importance of a microscopical examination of urine, in order to differentiate them from lumbago, muscular strain or uterine disease. There are rare cases, however, in which there occurs a sudden precipitation in the kidneys of a large amount of crystals, causing agonizing pain fully as severe as that produced by calculus. In these cases it has been supposed that a stone was actually passed, but was not found on account of careless observation. This, I am convinced, is not always the case. I have had an opportunity to study this interesting condition in two cases, which I will relate.

Mr. R. F., a chemist, age thirty-one — pale, of a nervous temperament, rather below medium weight, but of good muscular development, of good habits, family history negative — had previously passed two life-insurance examinations, but recently had been under considerable mental strain from family troubles, and suffered considerably with dyspeptic symptoms. In August, 1891, he had been taken suddenly, for the first time, with severe pain in the abdomen and lumbar region, but recovered after one day's treatment with morphine and cathartics.

The physician who had charge of him at that time did not examine the urine, but thought that the colic was connected with constipation. In the next two months he had similar, but not very severe attacks.

I saw him first on November 19, 1891, three months after the beginning of this trouble. The pain in this attack began while he was at work in his laboratory, and rapidly increased in severity, so that he had barely time to get home and into bed before calling me. I found him groaning apparently in intense agony, and at once gave him one-quarter of a grain of morphine hypodermically, repeating it about an hour later. Pain was most severe in the right lumbar region, extended down the abdomen in the direction of the ureter to the bladder. There was considerable pain also in the left lumbar region, and tenderness on pressure on both sides. The skin was moist and pale, and the pulse about 60. Expression was worn and anxious, and he was constantly nauseated and had severe vomiting. Morphia was continued as necessary, and the pain gradually wore off and disappeared entirely in four days. There was no increased frequency of micturition. The first urine passed after the pain began was of a high, slightly smoky color; acid; specific gravity 1,028; one-tenth per cent. of albumen; sediment considerable in amount, and consisted of considerable altered blood, excess of mucus and leucocytes, and numerous calcic-oxalate crystals. Under the use of alkalies and a large amount of water the calcic oxalate disappeared in a few hours, and the blood and albumen two or three days later.

On November 28th the urine was alkaline; specific gravity 1,025; free from albumen, blood or casts, but there was a slight increase of leucocytes and mucus. December 2d, urine was high-colored, strongly acid, specific gravity 1,027, no albumen, but a considerable sediment consisting of calcic oxalate and mucus shreds. December 5th, there was no albumen, and a few leucocytes only in the sediment. The urine was all saved and examined before being thrown away, and never contained calculi or even gravel large enough to be seen by the naked eye.

December 29th, I was summoned by a carriage to come at once to his place of business, and found him in another severe attack. He had not had time to get home, but was lying on the floor in great pain, vomiting, and almost dazed. I injected morphine subcutaneously, and drove at once with him to the Massachusetts General Hospital, where he arrived almost in a state of collapse, rolling about with the pain, in spite of one-half a grain of morphia given subcutaneously. Pain was located principally in the back, just below the twelfth rib on the right side, from which it would shoot occasionally down to the right testicle in a line corresponding with the ureter. There was less severe pain in the left loin, but both sides were tender on palpation. There was no evidence of floating kidney. Pulse was 50, small and weak, but regular. He was given one-eighth of a grain of morphia every two hours and a poultice applied. The pain became gradually less, and almost disappeared after two days. Unfortunately, the first urine passed was not preserved, and in the hospital history there is no record of the urine, except that on December 31st it is stated that the "urine shows no constant crystalline sediment." On January 9th, an examination of the urine was made by Prof. E. S. Wood, as follows: "Color normal, acid, 1,019, urea and uric acid normal, albumen very slight trace, sediment slight, and showed a few hyaline and finely granular casts, some of large diameter, probably from the straight tubules." During his stay in the hospital no calculus was found, nor any gall-stones in the stools. The pulse ranged from 50 to 60, but during the last four days from 60 to 70, and the temperature from 98° to 99°.

---

[1] Read before the Boston Society for Medical Observation, March 5, 1894.

As there was no evidence of stone in the kidney, he was discharged well January 9th.

I did not know the secret of the patient's mental and physical condition until he asked me to testify in divorce proceedings on July 1, 1893.

It seems that some six months before these attacks began he had married a young woman on only two weeks' acquaintance. She was a public singer, and, according to her own admission, she never once allowed her husband any sexual connection, on the ground that pregnancy would spoil her figure and hurt her voice. She slept with her husband constantly. I testified that this state of affairs had brought on neurasthenia, melancholia and dyspepsia, which predisposed to the formation of calcic oxalate, and that his constant ungratified sexual desire tended to increase the hyperæmia of the kidneys. No contest was made, and the judge granted absolute divorce.

He did not return to his wife after leaving the hospital, and never had another attack. He has also gained ten or fifteen pounds in weight, and now feels perfectly well.

The second case I had a good opportunity to watch, as he was under observation at my own house during two of his attacks. The patient was a young business man, aged twenty-nine, married, of good family and personal history, strong and well-developed, of average weight.

His first attack occurred without any previous warning at 6.30 A. M. on July 3, 1891. This pain, which was severe, was in the left lumbar region, and lasted all day. The treatment was morphia injections.

The second attack was milder, lasting only a few hours, and occurred some six or eight months later. The physician then in charge was said to have been puzzled how to account for the attacks. The third attack occurred under my observation December 3, 1892. The patient had been at work as well as usual during the day, but about the middle of the afternoon began to have a dull pain in the lumbar region. The pain gradually increased in the course of an hour, when the patient came to consult me about it.

Almost as soon as he reached the office the pain became severe, and I gave him one-eighth of a grain of morphia by the mouth. In a few minutes the pain was so severe that I gave him one-quarter of a grain of morphia subcutaneously.

This had no effect, and he was soon shrieking with pain and tossing about in agony. The skin was blanched and covered with perspiration, the pulse was 62. Pain was referred mostly to the right lumbar region over the kidney, and, to a less extent, to the region of the left kidney. The pain did not especially follow the course of the ureter, and there was no desire to micturate.

Both flanks were tender on pressure. Ether was then given and pushed to complete anæsthesia. On removing the ether after a few minutes the patient complained again, and more ether was given. In about half an hour the ether was again removed. The patient was very hilarious and happy in coming out of the ether, and said he had no pain at all.

He soon began to pass urine in large amounts. The first specimen passed after the attack was pale, acid, 1,013, albumen a slight trace (one-fifteenth per cent.), sediment considerable, and consisted of clumps of small calcic-oxalate crystals imbedded in mucous shreds, a little blood, epithelial cells (probably from the pelvis of the kidney), and a few hyaline casts, some of which contained small calcic-oxalate crystals. The urine passed the next forenoon was perfectly normal, except for a few blood-globules.

Specimens examined occasionally for several weeks showed nothing abnormal. The entire amount of urine passed for several days after the attack was saved and examined by me, but no trace of calculus was found. In the previous attacks the patient is positive that he never passed a stone, although he watched for one constantly. There was apparently no exciting cause in this case, such as exposure to cold, over-exertion or over-eating. He never ate rhubarb.

On September 22, 1893, this patient had another similar attack. He suffered severely for nearly two hours before I could get to him and give him ether. The ether was kept up most of the time for four hours, when the pain entirely disappeared. During the next night the pain returned in a mild form for about an hour. The next forenoon he went to business at about ten o'clock, although he "felt as though he had been on a spree." The first urine passed after the pain was high-colored; specific gravity of 1,020; very slight trace of albumen; a considerable sediment, consisting of a large amount of calcic-oxalate crystals, singly and in microscopical concretions; considerable blood; and a moderate number of hyaline casts. No stone was passed, and a day or two later the urine was normal. The only cause I can find for oxaluria in this case is an habitually concentrated urine from drinking too little water. There was no evidence of floating kidney.

The treatment of these two cases during the paroxysms suggests to me the almost uselessness of morphine injections, in addition to their danger, and the remarkable success of ether in relieving the pain entirely and cutting short the attacks. The attacks in which morphine had been used were prolonged and painful.

The secret, it seems to me, is this: opium, according to Lauder Brunton, frequently lessens the quantity of urine; while, according to H. C. Wood and Brunton, ether stimulates the heart at the same time that it dilates the blood-vessels, increases very markedly the blood-pressure, and thus renders the peripheral circulation very vigorous. The abundance of urine and its low specific gravity after ether, in the second case just reported, indicate that by this means a large amount of water is at once poured through the renal tubules. Thus we get instant relief of pain and remove its cause at the same time.

The remarkable thing about these cases is the suddenness with which the crystals are precipitated and their rapid disappearance, together with albumen and blood. I have not been able to find any good account of similar cases. Dr. G. W. Allen read before the Suffolk District Medical Society in April, 1891,[2] a report of three cases of renal colic in which the pain exactly simulated that caused by calculi, but none were found. In his first and third cases no report as to the urine was made, and, in the second case, the urine was said to have been passed in very small amount during the attack, "not enough in all to furnish a specimen for examination, but it looked perfectly normal."

---

[2] Boston Medical and Surgical Journal, June 25, 1891.

During the next two weeks the urine was carefully examined, but nothing found to account for the attack. He was unable to make an exact diagnosis, but raised the question whether the symptoms might not be due simply to renal neuralgia.

Edes, in an article in "Pepper's System of Medicine," recognizes the possibility of the occurrence of renal colic not caused by calculi. He says: "Most physicians have seen cases when the same set of symptoms has not been followed either by the discharge of the stone per urethram or by the evidence of its continued sojourn anywhere in the urinary organs. They may occur in persons of a neuralgic tendency in connection with the uric or oxalic diathesis. If, after careful watching, no stone appears, and, on the other hand, the pain does not continue, and no pus gives evidence of pyelitis, it is highly probable that no stone is, or has been, present. A true neuralgia may undoubtedly exist."

My own opinion is that while neuralgia of the kidney is possible, that it is not a sufficient explanation for the very severe cases of sudden onset, short duration, and sudden termination. The five cases reported by myself and Dr. Allen were all in men, while it is in women that we are most likely to get neuralgia and hysterical pain. These cases I believe to be more commonly due, as Edes hints above, to irritation by crystals. In my cases it was only the first specimen passed that gave the clue to the true condition. The pain in these cases is usually in both kidneys, rather than in one, as is usually the case with calculi. It can be distinguished from the pain due to sudden obstruction of the ureter, as in movable kidney, by the fact that we get no evidence of movable kidney by palpation, by the presence of the crystals and by the occurrence of more or less pain in both kidneys. In gallstones the pain is not exactly in the same position, and we soon get a jaundiced urine. It is a singular fact that in jaundice calcic oxalate is likely to be very largely increased. Fagge quotes Schultzen as having found as much as seven and a half grains of calcic oxalate in twenty-four hours in cases of jaundice. In other conditions which might be confounded with renal colic the onset of pain is not sufficiently sudden.

TREATMENT.

Bearing in mind the etiological factors considered above, the treatment required to prevent these crystalline deposits obviously consists in preventing the formation of uric acid and calcic oxalate in the system, and, secondly, in preventing their precipitation in the kidneys. The first result is to be gained by hygienic and dietetic measures, while the second requires medicinal treatment.

The hygienic measures consist of an out-of-door life, as far as practicable, exercise, and baths. The plethoric, high living, uric-acid victim, with his tissues crowded with waste material, evidently requires all the out-of-door exercise he can stand and warm baths to stimulate the eliminative action of the skin. The other class of debilitated, anæmic, neurasthenic subjects of uric acid calcic oxalate are equally in need of fresh air to st their feeble oxidizing powers, but we must be not to overtax their weak constitutions with xercise and bathing. In the consideration especially necessary that digestion should performed, failure in this respect causing tive metabolism than could possibly arise from a little more or a little less of some particular article of food.

Most persons are able to digest lean meat more easily than starchy, saccharine, or fatty substances. In the three latter classes of foods, if digestion is slow, fermentation is sure to occur and the resulting acids are taken into the blood, thus lessening its alkalinity and solvent power and interfering with all the metabolic processes. In the majority of cases, therefore, a diet containing a considerable proportion of albuminous material, supplemented by succulent vegetables, will be more easily digested than one in which the starchy and saccharine elements predominate. The diet must be carefully suited to each individual case. Stimulants of all kinds must be avoided. In cases of oxaluria we must avoid the ingestion of vegetable substances containing oxalic acid, such as tomatoes, sorrel, rhubarb, onions, turnips, cauliflower, and asparagus. The free use of pure water and of milk is extremely important. As we have already seen the urine containing crystalline deposits is almost always concentrated and highly acid. Water at the same time dilutes the urine and renders it relatively less acid.

Drinking hot water at bedtime acts very beneficially as a diuretic and gives a copious flow of urine in the morning — a point of importance, as Roberts and others have shown that uric acid is largely precipitated in the urine in the early morning hours.

The medicinal treatment to prevent the formation of crystalline deposits of uric acid differs from that required in oxaluria and will be considered separately.

We can, as pointed out by Roberts in his recent Croomian lectures, effectually prevent by medicinal treatment the occurrence of those conditions of the urine under which alone the formation of uric-acid crystals is possible. The immediate determining cause of the precipitation is excessive acidity of the urine and the essential indication of preventive treatment is to diminish the acidity.

Chemically it is impossible for uric acid to be deposited from an alkaline urine and not at all likely in a neutral or feebly acid urine. A study of the normal variation of the urine at different periods of the day and night leads to the inference that the liability to uric-acid gravel rises to a dangerous intensity only during certain limited portions of the twenty-four hours. The character of the urine has been shown by Roberts to be most affected by the digestion of food, by prolonged fasting and by sleep.

A meal, whether composed of ordinary mixed food, or of purely animal, or purely vegetable substances, produces two constant effects. It lowers the acidity of the urine and increases its volume. Conversely, prolonged fasting raises the acidity and diminishes the flow of urine. During the hours of sleep which are also hours of fasting, the acidity of the urine reaches its highest point and the flow of urine reaches its lowest point. The proportion of uric acid in the urine is highest during the time of sleep, but the hourly excretion is highest during the hours following a meal.

Obviously, therefore, the period when there is most risk of precipitation in the kidneys is during the time of sleep, and especially in the early morning, during the two or three hours before breakfast. In sleep, also, the horizontal position and the bodily repose make the urinary stream more sluggish and predispose to crystalline precipitation. On the other hand, during the day and the waking hours the recurrence of the meals keeps the urine at a low degree of acidity, or even renders it for a time neutral or alkaline, while the renal stream is comparatively full and rapid, and its descent from the kidneys is favored by the force of gravity. It is, therefore, only during the critical period of the latter part of the night that medicinal treatment is required. In the milder cases a single full dose of one of the alkalies taken at bedtime suffices to prevent the formation of uric-acid concretions. For this purpose the citrate of potash is, perhaps, the best preparation to employ. The dose for an adult is from forty to sixty grains, dissolved in a few ounces of water. In severer cases a second but smaller dose should be taken during the night.

Haig has shown also that salicylate of soda has a decided influence in increasing the excretion of uric acid. Phosphate of soda is at the same time a good alkalizing and laxative agent. It is also, as we have seen above, the principal natural solvent of uric acid in the urine. Roberts also points out that salines exercise a protective influence against the precipitation of uric acid. People who take very large quantities of common salt with their food experience a practical immunity from stone. On the other hand, it is very frequent among the children of the poor who are fed very largely on farinaceous articles and among the natives of India who feed on rice. Acids and iron interfere with the solubility of uric acid and with its elimination.

A fact of great practical importance mentioned by Haig and quoted by Osler, is that "lithia, although a beautiful solvent of uric acid in a test-tube, yet when given by mouth never reaches the uric acid at all because it at once forms an insoluble compound with the phosphate of soda in the blood, thus removing from that fluid one of the natural solvents of uric acid and diminishing its power of holding uric acid in solution." Lithia waters, then, have been found useful because the beneficial effect of the water itself exceeds the harmful effect of the lithia contained in it. This is directly opposed to the prevalent idea of the value of the lithia compounds in the uric-acid diathesis.

For a plethoric habit the free use of alkaline mineral waters, such as Carlsbad and Vichy, is important.

In the treatment of oxaluria much less is accomplished by chemical agents. The usual tonics suitable for cases of debility are often required. Dilute mineral acids, especially nitro-muriatic acid, are considered by many as almost specifics. Their beneficial action is probably accounted for by their power to correct digestive disturbances. Phosphate and chloride of sodium have a distinct solvent action on oxalate of lime. It has also seemed to me, in a few cases, that sodium salicylate has caused the crystals to disappear.

The treatment of calculus in the kidney will not be considered here, as the so-called "solvent" remedies have been found entirely unreliable, and the final resort must be to surgical methods.

Lord Roseberry on Landscape Advertising. — Lord Roseberry, amid the cares of office, has yet been moved to ask: "What is to become of our English landscape if it is to be simply a sanitary or advertising appliance? Think of the feelings of the illustrious Turner, if he returned to life, to see the luggers and the coasting ships which he made so glorious in his paintings converted into a simple vehicle for the advertisement of a quack medicine."

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

J. G. MUMFORD, M.D., SECRETARY.

Regular Meeting, Monday, March 5, 1894, Dr. J. Foster Bush in the chair.

Dr. J. S. Greene read a paper on

THE OBSCURE ORIGIN AND INDETERMINATE COURSE OF ACUTE INFECTION, AS ILLUSTRATED BY A CASE OF MALIGNANT ENDOCARDITIS.[1]

Dr. Putnam: I have been very much interested in Dr. Greene's case. It is a very striking one, and the account he gives opens a great many questions which we all wish with him we were better able to discuss. Some years ago I had a case similar to this in some respects. It was a case of infection causing death in one week or a little more and with lesions of parenchymatous neuritis. The patient had difficulty in swallowing and then difficulty in breathing, before his death. The patient was a man of nervous temperament, otherwise in good health, but had weakened himself very much by excessive sexual intercourse. Otherwise there was no apparent cause for the disease, except that he rode home one night in a open horse-car and was exposed to a severe wetting and chilling. The symptoms came on that night, and he died at the end of ten days. It is rather unfortunate that the discoveries which we make in pathology sometimes chain our knowledge and even our imagination to a considerable degree. We felt we had learned a great deal when multiple neuritis was first discovered, and when the cases began to pour in they seemed to be covered by that term; but, as a matter of fact, as Dr. Greene has pointed out, I think when it comes to a case of rapid death of that sort, the term multiple neuritis, even where we can establish the existence of manifest changes in the peripheral nerves, is often inadequate to cover the whole condition which is present. In my case there was a considerable amount of parenchymatous degeneration, swelling of axis cylinders, and great injection, with escape of leucocytes into the surrounding tissue in the nerves, and a few changes of the muscle. I examined the diaphragm and the phrenic nerve with considerable care; and although changes were present there, it did not seem as if that could have been sufficient for death. It seems more probable that death was due to poisoning of the nervous centres; and in my case that was in a measure borne out by the discovery of changes at the root of the vagus nerve, although there was nothing in the actual nucleus of the vagus which could be called pathological as far as I could tell. I should think it might be still open to doubt whether in Dr. Greene's case there may not possibly have been alterations in the peripheral nerves, for the reason that these alterations sometimes occur at the very extremity of the nerve and not in their course or at the roots. The question of the cause of death in these cases is very interesting; and, as far as I know, the bacteriologists do not pretend to say why patients with diphtheria die, or why patients with tubercular meningitis die. The information at our disposal seems inadequate to account for the result. In an interesting disease more or less allied to one of the many forms of multiple neuritis, — acute ascending paralysis — the patients apparently die from some poison before the changes are established in any portion of the nervous centres, so far as we are able to detect them.

---

[1] See page of the 557 Journal.

Dr. Ernst: I have but little to say. Of course, from the scientific point of view it would be well for some protest to be entered against the immediate injection of cases where autopsy is likely to be held, because it is not uncommon that the ultimate examination is very much injured by the preparations of undertakers.

Dr. E. M. Greene read a paper entitled,

CRYSTALLINE DEPOSITS IN THE URINE, THEIR OCCURRENCE AND SIGNIFICANCE.[2]

Dr. Putnam: I should like to ask whether the high specific gravity generally indicates increase of the total solids, and also whether Dr. Greene can throw any light on the controversy with regard to the symptoms of the uric-acid diathesis?

Dr. Greene: The high specific gravity was indicative of diminution in the amount of water. I did not consider the subject of uric-acid diathesis, on account of the length of the paper. Uric acid has been injected into animals without doing harm. I have seen the explanation where there were severe headache and uric acid, that it was similar to precipitation in the joint, precipitation in the meninges of the brain — a mechanical cause and not uric acid in solution.

Dr. Ayer: I should like to ask Dr. Greene in regard to the effect of irritation of oxalate of lime or uric acid upon the kidneys, as he states that some authors are of the opinion that it may cause chronic nephritis of serious character. I wonder if he has followed along cases to be certain of that. I have been following five or six years a case where the irritation of the kidneys was probably started by a renal calculus, and since then the urine has generally contained quite a trace of albumen, with casts of different kinds, and almost always oxalate of lime. The patient is no worse. I have been puzzled to know whether it was chronic nephritis or a persistent irritation from oxalate of lime and uric-acid crystals, which might continue many years and be of no consequence.

Dr. Greene: The points I brought out in my paper were chiefly these, that constant irritation of the kidney, producing hyperæmia with blood in the urine and albumen, must do harm if kept up long. I have not been able to follow any case long enough to see it run into a chronic interstitial nephritis. That is a condition which may go on years and years. I know of one case in which a considerable amount of albumen and casts has been present ten or twelve years, and the woman has had several children without bad effect.

◆

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, Washington, D. C., May 29, 30, 31 and June 1, 1894.

FIRST DAY. — TUESDAY.

The Association was called to order by the President, **Dr. J. Ewing**, of Philadelphia, who delivered the

PRESIDENT'S ADDRESS.

In this was considered only matter of interest to the Fellows of the Association, referring to the previous work of the Association, and the method of best carrying on the work of the Society. The Secretary, Dr. J. R. Weist, presented, for the President, the Association with a gavel which had been made from a portion of the office chair of Prof. S. D. Gross, the founder of the Association. This was accepted with the thanks of the Association.

The first paper was entitled

THE SURGICAL TREATMENT OF EMPYEMA,

by **John Ashhurst, Jr.**, M.D., of Philadelphia.

The following summary was presented:

(1) No operation is justifiable unless the presence of pus is certain; unless thorough treatment by medicinal agents, blisters, etc., has failed; or unless the symptoms, dyspnœa, etc., are so urgent as to demand immediate relief.

(2) The first operation should consist of simple aspiration, with antiseptic precautions.

(3) When the fluid has partially reaccumulated, as it almost certainly will do, if purulent, incision and drainage should be practised.

(4) Drainage is best effected by making two openings, one at the lowest point, and carrying a large drainage-tube through the cavity from one opening to the other.

(5) Drainage should be supplemented by washing out the cavity with mild antiseptic fluids; when the lung has expanded and the discharge has nearly ceased, the tube should be shortened, the upper opening being allowed to heal, and the tube then being gradually withdrawn through the lower opening.

(6) When the lung is so bound down by adhesions that it cannot expand, resection of two or more ribs should be practised (Estlander's operation, so-called), in order to allow collapse of the chest-wall and to promote healing by bringing the costal and visceral layers of the pleura into contact.

(7) The more extensive operations of Schede and Tillmans, while probably justifiable in exceptional cases, are not to be recommended for general employment.

Dr. Chas. B. Nancrede, of Ann Arbor, did not see the advisability in cases where pus was shown to be present by aspiration, of limiting the treatment to this operation. It is held that in a few cases this will be followed by cure, but he had never seen such a case. Where pus is present, he preferred to immediately provide for its permanent evacuation. He called attention to the danger of the drainage-tube becoming occluded by the pressure of the ribs, and he believed that in empyema of long standing some form of excision of the ribs should be employed.

In irrigation, if the pus is not too much contaminated, sterilized water is sufficient; but, if necessary, an efficient antiseptic solution may be used, and if there is fear of absorption, the chest can afterwards be flushed with sterilized water.

If provision is made for the free escape of pus, he had seen no necessity for the removal of large segments of ribs.

Dr. T. F. Prewitt, of St. Louis, thought that the rule that no operation is justifiable unless the presence of pus is certain, needed modification. As a rule, we can determine only that fluid is present and cannot be sure that it is pus. He thought it advisable to aspirate even when serous fluid is present. If thorough antisepsis is maintained, this can do no harm. He had never seen it result in the formation of pus, and this method greatly shortens the duration of the disease. In empyema in children he had seen several recoveries follow aspiration, but never in adults. In children the pus does not seem to possess that thick clotting character so common in adults, and which requires a free opening. In empyema in adults he invariably resects a rib, sometimes two ribs.

---

[2] See page 560 of the Journal.

Attention was called to the great necessity of caution in the administration of anæsthetics in cases of this affection.

As to washing out the cavity, he always does that, using a weak solution of bichloride of mercury.

Dr. DeForest Willard, of Philadelphia: It seemed to him that the whole question was one of thorough drainage of an abscess cavity. Whether or not the ribs should be excised was to be determined by the question of securing free drainage. In children the ribs were so close together that removal of a portion of the ribs was usually required.

In the early treatment he favored the use of a clean aspirator rather than to compel nature to cause the absorption of a large quantity of fluid. Such operation did no harm and saved several weeks in time.

He believed that washing, as a routine measure, did more harm than good. If the pus was decomposed it indicated that freer drainage was needed. If strong antiseptic solutions were employed there was danger of renewed inflammation.

Dr. John E. Owens, of Chicago, called attention to the necessity, when evacuating pus from the chest or washing out the pleural cavity, of changing the position of the patient during the process, in order that all the pus might be removed.

Dr. Christian Fenger, of Chicago, considered that there were certain cases in which Schede's operation was required. Its place was after milder measures such as incision, drainage, and Estlander's operation. He reported a successful cure where this operation was performed after other measures had been resorted to during seven years.

Dr. Roswell Park, of Buffalo, N. Y., thought that the treatment of empyema should be based upon the same principles as are applicable to other abscesses. In acute cases, where we have to deal with streptococcus and staphylococcus forms of suppuration, it may be sufficient in a few instances to simply aspirate. A large proportion of cases of empyema, however, are essentially cold abscesses, — tubercular abscesses. In these cases free incision, free drainage and excision of a rib is required. In certain cases he had resorted to scraping with the sharp spoon, and in some had cauterized the diseased surface with a fifty-per-cent. solution of chloride of zinc. He reported several cases where death would have occurred had it not been for some such radical operation.

Dr. W. H. Carmalt, of New Haven, Conn., asked how far it was justifiable to go in the way of resection of ribs in these cases. He reported a recent case in which he had removed portions of five ribs, the longer piece exsected being four and a half inches. In these cases it was necessary to remove enough of the chest wall to permit of obliteration of the cavity. He had also used the sharp spoon in order to secure a fresh surface.

Dr. M. H. Richardson, of Boston, Mass., said that the questions that arose in the treatment of empyema were different from those in ordinary abscess, for in the former we have an abscess with rigid walls. With regard to drainage, he had used double tubes provided with valves, but considered them inapplicable and liable to cause increased trouble, for when air or pus is forced out through the tubes by coughing, a vacuum is established and the valve is held against the chest wall, preventing drainage. He believed that Estlander's operation was applicable only to certain forms of cavity, and that there were certain cases where the cavity involved a large portion of the thorax. The operation of Schede is the only one applicable after a failure of Estlander's operation.

Dr. Stephen F. Weeks, of Portland, Me., thought that the rule of Dr. Ashhurst, to aspirate, especially in children, was a good one. Sometimes that will result in cure. The tuberculous cavity is to be treated differently from the cavity where this condition does not exist. Thorough drainage is sufficient in many cases. He called especial attention to drainage by packing the cavity with sterilized gauze. In twenty-four hours he removed the gauze and washed out the cavity.

Dr. L. McLane Tiffany, of Baltimore, Md., considered that the treatment of acute empyema was of more importance than that of the chronic form as it was the more common. The most important point as bearing upon treatment and prognosis was the character of the pus and its bacterial cause. The reason that the child's empyema often yields to aspiration was that in many of these cases the pus was simply a pure culture of the pneumococcus. In the adult we rarely have the pneumococcus form. Here we had a mixed infection. If the empyema was of the amœbic form the patient died. If empyema was due to the streptococcus, the odor was offensive and the cavity needed to be carefully washed out. If empyema was due to the staphylococcus, washing out was not required. Where there was time he preferred to withdraw some of the fluid with the hypodermic syringe and have it submitted to bacteriological examination.

While he used ether in general work, in these cases he preferred the use of a few whiffs of chloroform which appeared in these cases to have a peculiarly happy effect. Only a very small quantity was employed.

The employment of respiratory gymnastics was of much benefit in favoring the expansion of the contracted lung.

Dr. James McFadden Gaston, of Atlanta, Ga., referred to the natural tendency of the empyemic cavity to open spontaneously in the anterior part of the chest. He reported two cases in which this spontaneous opening had occurred, followed by recovery.

W. W. Keen, M.D., of Philadelphia, read a paper on

AMPUTATION OF THE ENTIRE UPPER EXTREMITY (INCLUDING THE SCAPULA AND CLAVICLE) AND OF THE ARM AT THE SHOULDER-JOINT,

with especial reference to methods of controlling hæmorrhage, with the report of one case of the former amputation and four of the latter.

In this paper were considered, first, those amputations which allow of simple disarticulation at the shoulder-joint itself; second, those cases in which the axilla is invaded, yet only to such an extent as to allow of its being thoroughly cleaned out, followed by amputation at the shoulder; and, third, those in which removal of the entire upper extremity, including the scapula and clavicle, is required.

Simple amputation at the shoulder-joint. — Here the control of hæmorrhage is the key to the situation. The methods for the prevention of hæmorrhage are, first, those applicable to the subclavian vessels; and, second, those applicable to the axillary.

Most text-books recommend compression of the subclavian by the thumb or a well-padded key. Dr. Allis has modified this method by substituting a stick eighteen inches in length, with a pad of sterilized gauze at its extremity. This pad obviates the danger of slipping, and can be applied without fatigue on the part of the operator. The author had suggested compression by means of a solid pad held in position by an Esmarch bandage passing over the perineum; but on trial in the case of a child, this had proven unsatisfactory. A third plan consists in ligation of the subclavian artery. This is objectionable on account of the prolongation of the operation, also on account of the necessity of resecting the clavicle in order to ligate the vein, and if the vein is not ligated there is danger of the entrance of air.

The axillary methods are, first, those in use prior to the introduction of Esmarch's tubing, and, second, the different methods of using Esmarch's tubing.

Under the first head we have: (*a*) compression of the inferior flap by the fingers, which seize the vessels before they are cut; (*b*) Harvey's method, by compression of the vessels by means of a padded ruler thrust into the axilla; (*c*) ligation or seizure of the vessels with hæmostatic forceps before they are cut; (*d*) Gross's compressor (but practically this is never used); (*e*) Furneaux Jordan's method, by making a circular amputation at the surgical neck, securing the vessels as in a hip-joint amputation, the blood-vessels having been compressed by an Esmarch band or other method, followed by disarticulation of the upper end of the humerus.

Under the second head are:

(*a*) After making the antero-external flap, a stout pin is passed through the postero-internal flap between the vessels and the bone, and elastic tubing wound over the ends of the pin. In this method there is danger of the vessels retracting above the constricting band.

(*b*) Esmarch's method, in which an elastic tube is placed in the axilla and drawn tight over the shoulder, where it is grasped by the hand of an assistant. This is open to the danger of slipping of the bandage after disarticulation of the bone.

(*c*) Morre's method. In this method the tubing is applied as in the Esmarch method, but is held in place by a bandage passing around the chest and under the tubing in front and behind.

(*d*) Wyeth's method, by pins and elastic tubing. In this method the operation is performed as follows: The arm is held at a right angle to the body. The sharp-pointed cylindrical pins, eleven inches long and one-fourth of an inch in diameter, are used. The anterior pin is introduced through the middle of the anterior axillary fold at a point a little nearer the body than what may be called the centre of the fold transversely. The point of emergence is of much greater importance than the point of insertion; this should be one inch within the tip of the acromion. The second pin is introduced at a corresponding point through the posterior-axillary fold, emerging an inch within the tip of the acromion. The point of emergence is of importance, for if the pin emerges near or at the tip of the acromion, the moment the head of the humerus is removed, the tubing is apt to slip downward and compress the two flaps against each other, thus hiding the cavity and permitting the vessels to retract. The pins being in position, a piece of rubber tubing is wound around the axilla and shoulder on the hither side of the pins. The disarticulation having been effected, the main vessels and all visible vessels are tied and the tubing removed, the vessels spurting being grasped with hæmostatic forceps. The author considered this the most satisfactory method of controlling hæmorrhage, and he felt confident that any one who adopted it would abandon all other methods in its favor, except possibly in emergency cases.

Amputation at the shoulder-joint in cases in which the axilla is invaded so high that Wyeth's pins cannot be used. — In 1812, Dalpech proposed to make "an oblique incision extending from the external third of the clavicle to an inch above the inferior border of the great pectoral muscle. We thus discover, and can cut near to its origin on the coracoid process of the scapula, the lesser pectoral. The index finger is then carried through the cellular tissue along the serratus magnus, then the subscapular, and is used as a hook in order to draw outward the mass of vessels and nerves. The artery is found in the anterior portion of this mass." The artery and vein are then ligated. The advantages of this method are that it gives wide access to the axilla; that we can determine with ease how far and how great is the invasion of the axilla, and if thought advisable, the operation can be abandoned at this point, or if it is decided to proceed with the operation, the incision already made serves as the inner part of the deltoid incision. The author had employed this method with great satisfaction in a case where a sarcoma of great size had invaded the axilla nearly to the clavicle.

Control of hæmorrhage in cases in which it is necessary to remove the arm, the scapula and the clavicle. — The methods which have been employed in these cases have been the following: (1) Simple compression of the subclavian artery. (2) Compression of the artery after resection of the clavicle. (3) Ligation of the subclavian prior to beginning the amputation. (4) Resection of the middle half of the clavicle and ligation of the subclavian. (5) Wyeth first tied the artery, then formed his flaps; and when the arm, clavicle and scapula were only connected with the trunk by the veins and nerves, secured the veins and cut the nerves. (6) The artery and vein have both been tied after resection of the middle portion of the clavicle. This seems to be by far the preferable method. The advantages of this method are that it prevents hæmorrhage from division of the axillary and its branches, diminishes the amount of blood lost during the operation, prevents the entrance of air into the veins, permits of a large opening of the space between the upper extremity and the chest, and enables us to divide the posterior attachments of the upper extremity, where the arterial circulation is still going on, at the end of the operation.

As a rule, recovery from this operation follows in from two to three weeks. The mortality in the more recent operations has been extremely low, one in fourteen. Again, by this method we can often amputate wide of the disease, in consequence of the relative smallness of the flaps required. In view of these facts, the author urged that in all cases of malignant disease of the upper end of the humerus, or even of the lower end when it is already diffused, we should not content ourselves with mere amputation at the shoulder-joint, but should at the same time extirpate the scapula and clavicle.

The author reported a case in which the arm, scapula and clavicle were removed for myeloid sarcoma, occurring in a woman aged twenty years. The operation was done November 20, 1893. The patient recovered, and is still perfectly well.

Dr. Roswell Park, of Buffalo, N. Y., said that he had had two cases of total removal of the upper extremity, both which had been successful. One was for railroad injury and the other for extensive epitheliomatous ulcer. In the first case the clavicle was already broken, and the subclavian vessels were secured at the point of fracture. In the second case the clavicle was divided and the vessels tied.

Dr. Charles B. Porter, of Boston, Mass., as an illustration of the rapidity with which a malignant disease may advance, reported the case of a patient with sarcoma of the radius where the arm was amputated above the elbow. The disease soon recurred, and amputation at the shoulder-joint was made; and again the disease (sarcoma) recurred so high up that no operation could be employed. The whole history of the case extended over only one year after the first operation. A case was also reported where the arm had been torn off in a railroad accident, where he had subsequently removed the scapula and outer portion of the clavicle by an osteoplastic resection, and the wound was closed by skin grafts. Three months later a hard plate of bone had formed, very similar in shape to the scapula.

Dr. John Ashhurst, Jr., of Philadelphia, said that he had once used the Wyeth pins satisfactorily in an amputation at the shoulder-joint. Another device to which he had resorted in several cases was to make the incision in the lower flap from without inwards, and secure the vessels in the wound.

(*To be continued.*)

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Third Triennial Meeting, Washington, D. C., May 29, 30, 31 and June 1, 1894.

GENERAL SESSIONS.

TUESDAY AFTERNOON, MAY 29TH.

The Congress was opened with a brief address by **Dr. Landon Carter Gray**, of New York, Chairman of the Executive Committee. Dr. Gray then introduced the President of the Congress, **Dr. Alfred L. Loomis**, of New York, who in a few remarks thanked the Congress for the honor that it had conferred upon him by electing him to the presidency; but as the time allotted to the session was so short, he refrained from making any extensive address.

This session was under the direction of the Association of American Anatomists, and the subject selected for consideration was

MORPHOLOGY AS A FACTOR IN THE STUDY OF DISEASE.

The discussion was opened by **Dr. Harrison Allen**, of Philadelphia.

It has often been asserted that anatomy is a finished subject, that nothing new can be said of it; but no true anatomist would be content for a moment with a science thus limited. The science of anatomy is awaiting important advances to be brought about by new readings in the infinite book of Nature. The anatomical text-book assumes an ideal which is properly described. The facts that exceed this ideal or otherwise disturb it are ignored unless they are needed by the surgeon. Three sciences have appeared since the days of Vesalius and of Hunter, sciences so vast as to command the time and energy of distinct bands of workers. These are histology, embryology and general morphology, the most important of the three. Morphology is anatomy writ large. Within it is to be placed the subject of descriptive anatomy as a conventional and unimportant part. The author regretted that anatomy was still taught pretty much as it was a century ago. The demands of the surgeon still dominate the lecture-hall. The forces for the education of the medical scholar are unused; the powers of observation of the practising physician are not stimulated; the outlines of methods by which the science of morphology can be extended, unthought of; while the opportunities of accumulating at the hands of physicians, materials to be used in the explanation of phenomena of organic structure acting perversely, or serving as the causes of diseased action, are neglected. While such knowledge is in the possession of advanced clinical workers it has been obtained after their academic education has been completed. Is it not entirely proper that they should be carefully educated in these points before graduation? Empirical knowledge never leads to true conceptions. Diseases are not related to one another but to their causes. Etiology is the single factor that yields conditions which can correlate. Tissue changes furnish truer guides than function changes. In medicine, elaborate experimentation combined with anatomical observations on the dead, are worth all that is possible from empirical observations on the living. The physician should refer more problems than he is inclined to do to the morphologist.

Reference was then made to the chemical conditions that underlie texture and this was illustrated by the growth of the teeth particularly as influenced by gout.

In like manner the nails show the effect of the gouty diathesis. If among wild animals varieties were found to vary as much among themselves as do gouty and non-gouty persons, zoölogists would be justified in defining therefrom subspecies. Why should not gout be defined as well by the results of the chemical compositions of the fluids as by these compositions themselves. Morphological data are the most reliable.

So long as we study diseases as distinguished from their causes and effects, we are empirical. The theories of the humorists, the solidists, or any one of the many theories which have agitated the profession would have been impossible had the system of medicine been broadly based on morphological data.

The changes in the shape and composition of a part of an organism constitute a variation, and the detection of these variations and the propositions on which they are based, constitute one of the chief occupations of the morphologist.

The value of minute knowledge of muscle fibres was illustrated by reference to the causation of œsophageal pouch and heart-failure.

In an exact sense, the structure of an animal may be said to express the resultants of certain forces. In a sense less exact, the work of the anatomist can be said to be that of analyzing the results of these forces.

Disease in a morphological sense is the expression of forces operating inordinately or eccentrically, but yet our systems completely fail when we attempt to explain them by the tests of nutrition or of heredity. The reason of this lies in the inadequacy of knowledge of the causes of which structures are simply the effects. In the study of anatomy it is not so much the fact as the import of the fact that is essential.

The author called attention to the fact that the anatomical material coming under our observation is almost always that of a highly domesticated nature and that in order to study it with advantage we must recall what is in common between man and the animals (both in a wild and domesticated state) about him. Our acquaintance with man as a domesticated animal, as a degenerate animal, and our ignorance of him as a wild and primitive animal, causes the morphologist to regard human structure with the same sort of interest as the botanist entertains for those plants which have been cultivated so long that he has lost knowledge of the typical form of the species. Can the anatomy of such an animal be said to be closed?

Degeneration while a phase of specialization, is one which portrays structures that fail to subserve the highest possible use in the economy. Illustrations were drawn from alterations in the shape of the crown of the teeth and also from the phenomena of polycuspidation in the molars. Reference was also made to the proportionate size of the face as compared with the brain-case. The short-faced specimens of the skull of civilized man are the result of some profound impression on the nutritive forces rather than a reversion brought about by natural selection.

To what extent structures which are degenerate become on that account predisposed to disease it is difficult to say, but taken as a whole the animal economy resists the inroads of disease in proportion as its vitalities are maintained at high levels of efficiency. It may be asserted without fear of contradiction that the skeleton of civilized man differs from the skeleton of uncivilized man. In the crania of the wilder types of man, there is usually a disposition for one part of the skull to be in harmony with another part. This is largely absent in civilized types.

Perhaps the best single conclusion to be drawn from the study of morphology as a factor in the study of disease, is its value to humanity. The scientific study of race in connection with diseased action is almost an unbroken field. When this comparative phase of anatomy shall have been formulated, we shall for the first time have a reasonable hope that the subject of human acclimatization, the geographical study of diseases, the causes and motives of migration, and thus indirectly, the history and destiny of man himself, may be in shape for elucidation.

He was followed by Dr. Thos. Dwight, of Boston.

Dr. Allen defines morphology as anatomy writ large. The underlying idea of his paper is to plead for a longer, broader, deeper course in anatomy. The tendinous heart-strings of every anatomist will vibrate in sympathy, producing a chorus of musical murmurs. Perchance in some of us one of the factors will be the moderator band of the ruminant which has left its normal place near the apex of the human heart to cross near the middle of the right ventricle. The expert auscultator can recognize this cord. It is good for his patient that he should know from anatomy that such a band may be present and that its sound is no sign of even functional disturbance. The ophthalmologist is none the worse that embryology teaches him the whereabouts of the hyaloid artery which may persist throughout life. Anomalies, therefore, as well as slighter variations are of practical importance. The surgeon needs to know of the fibrous or muscular band which may cross the axillary artery, that the brachial artery may divide high up the arm (very rarely in the lower third), and that the diverging artery, be it radial or ulnar, almost always runs superficially. A third trochanter, which seems much larger than it is, when felt through the soft parts, must not be mistaken for an exostosis, nor a deltoid tubercle of the clavicle for an old fracture.

Before removing the kidney, the surgeon will do well to be sure that it is not the only one. I, myself, within a few months have seen a case of complete absence of one kidney, the other being of about the usual size and in its proper place.

But it is not necessary to turn to anomalies to support the need of a deeper knowledge of anatomy for the practitioner. The statics and mechanics of the skeleton, the action of the muscles are becoming daily more important to the orthopædic surgeon and to the neurologist.

The anatomy of childhood is still almost in its infancy. Though not quite helpless it has not yet made its way into text-books, but hides itself bashfully in scattered papers and monographs. A more thorough knowledge would be of great value to the practitioner in children's diseases. How interesting and how practical in view of infant feeding is the story of the rate of growth of the stomach in the first months of life, and how few know it.

My views of the esteem in which anatomy is held are far less pessimistic than Dr. Allen's. It is but too true that we have many in high places absolutely ignorant of anatomy themselves, who look on its progress with a jealous aversion, but they are mostly on the wrong side of fifty, and they belong to a school of thought that is doomed. On the other hand, I look with confidence to the rising lights. I see in the better class of our young practitioners, a great respect for anatomy. They have a clearer vision of its sphere. One of the most gratifying incidents of my professional life is the constantly increasing number of those who come to me for information on anatomical problems or for the means of solving them.

Surely, from what I have said, I shall not be suspected of indifference to the cause if I do not quite agree with Dr. Allen as to the remedy. He would have students thoroughly instructed in the highest anatomy before graduation. I reply that there is no time. As a practitioner myself of twenty-five years' standing, I am appalled at the amount of knowledge of all kinds which is now necessary for the simplest practice of the profession by any one who would not fall behind his colleagues. I heartily agree with Buxley's saying, that any one who adds one tittle that is unnecessary to medical education, is guilty of a very grave offence. I would leave the matter to the good judgment and tact of the professor of anatomy. While his teaching should be eminently practical in the ordinary sense of the word, I would have him incidentally point out the explanations of structures from comparative anatomy and embryology, and still more insist upon the application of morphology to disease. But I would have these things pointed out rather than pursued. I would have him show the possibilities of anatomy which unfortunately are impossibilities in the regular course. Thus he will enlarge the student's horizon. It is not necessary to have followed a certain line of research to know that it gives promise of great results. The mind of a student so trained will be in a very different state from that of his comrade who has been crammed with facts from a compendium. Advanced students and graduates are those to whom the highest anatomy will be most profitable, and the more so that they can see for themselves its value, which the beginner must take on trust.

Dr. F. Baker, of Georgetown, D. C., spoke next.

The study of the human organism, of its structure, its functions, its diseases, of the effects that various agents have upon it, therapeutically and otherwise, must necessarily be a study of life and its manifestations; it is a biological science. The study of morphology as a preliminary to the study of disease is a necessity. The great impulse given to the study of anatomy by Vesalius and his followers in the 16th century has not yet exhausted itself. The error in the Vesalian anatomy which has prevailed up to the present time consists in considering the body as an essentially fixed organism. From this view arises the notion that anatomy is a fixed science, but even a cursory view of the history of the science shows this assumption to be baseless. To the modern biologist the human body is by no means fixed and invariable.

The human body has been studied far more than any other organic form. There is no lack of knowledge of details, but for the ordinary student these details are not classified and arranged as the results and sequences of morphological laws. It may even be said that inflammation itself cannot be properly understood without a knowledge of the morphological character of the tissues involved. The whole subject of tumors has, since the investigations of Virchow, been studied from a morphological standpoint, and it has become evident that in order to understand their causes and their history, we must know more about the laws that control cell formation and the growth of tissues.

The human body is built up of cells, and the gross variations in form must depend upon these minute cell activities. These variations may be of all grades. The morphologist studies these variations as indicating slow modifications of the form of the human body. It is well known that the body of man is slowly changing, that adaptations are going on within slowly fitting it more and more to its environment. In this process there are constantly left structures which have ceased to be of value and may properly be termed vestigial. Among such may be noted the vermiform appendix, Meckel's diverticulum of the intestine, the thyreoglossal duct, hypospadias and the persistence of the choroidal fissure of the eye producing coloboma.

The erect position of the human body was gradually acquired, and in many respects the body has not yet become perfectly adapted to this posture. The shape of the pelvis has necessarily become modified that it may support the weight of the viscera, yet with all this, that weight is often a cause of hernia. As a result of these changes the pelvis of the civilized woman is less adapted for easy parturition than that of her savage grandmother of the Stone Age. Many of the abdominal viscera show signs of maladaptation. The cæcum and ascending colon are not favorably situated. The liver, instead of being supported from the spine, is slung from the diaphragm, which to support the weight must receive strong connections from the pericardium and the fascia which supports the heart. This must interfere with the growth and expansion of the lungs. The heart itself works at great mechanical disadvantage. The valves of the veins are not adapted to the erect posture.

As the science progresses there is no doubt that many important generalizations will be made. Some, already, seem almost ready for statement. Among those may be mentioned what may be called the law of stability. It is this: that the stability of a structure varies directly according to the time it has been functionally active in the ascending series of animal life. The structures most readily attacked by disease are those at either end of the scale of activity. The original elementary tissues, epithelium and connective-tissue are the most stable, their derivations, nerve-tissue, muscle-tissue, glandular-tissue are the least stable.

Morphology is throwing light upon a vast variety of subjects connected with the domain of medicine, not only upon the causes of disease, but upon the action of cells, the problems of therapeutics, the very springs of life that underlie heredity, development, training and education. It is a growing science, one that is destined to a great future, promising much for the elucidation of the highest problems of medicine.

Dr. Burt G. Wilder, of Ithaca, N. Y., regretted that he had been unable to prepare a formal paper, but he wished to express his agreement with the statement of Dr. Baker, that the human body is not to be regarded as a completed structure. It is by no means completed. The physician should consider very seriously whether it is not his duty to improve the human body in the direction in which it has been moving, namely, by the obliteration of that most frequent source of trouble, the appendix of the intestine. It is the unanimous consensus of opinion among surgeons that the removal of the appendix, if not gangrenous, presents no great likelihood of mortality. It is now four years since he proposed that we should not only do vaccination but also de-appendicize the child at a period of life when time was not very valuable, and thus improve his chances of existence.

Dr. Dwight had alluded to the impossibility of putting more into the curriculum of the schools, and to this the speaker partly agreed; but he held that there should be more morphology taught in the preliminary school education, and he predicted that it would not be many years before most children prior to leaving the ordinary college will know as much anatomy, physiology and morphology in the broad sense as can now be obtained by the average physician.

WEDNESDAY AFTERNOON, MAY 30TH.

The first portion of the session was under the charge of the American Climatological Association. The subject discussed was

SEWER GAS.

Dr. Alexander C. Abbott, of Philadelphia, presented the first paper, entitled,

CHEMICAL, PHYSICAL AND BACTERIOLOGICAL STUDIES OF AIR OVER DECOMPOSING SURFACES, WITH ESPECIAL REFERENCE TO THEIR APPLICATION TO THE AIR OF SEWERS.

A study of the literature of this subject leaves the impression that many of the opinions advanced are not based on exact methods of investigation. We are now tolerably well acquainted with the nature of the air of sewers, and we know that as ordinarily found it does not differ conspicuously from the air that we are accustomed to breathe. Studies in bacteriology demonstrate the comparative poverty of sewer gas in bacteria. The general impression is that the air of sewers is under an active pressure and tends to force its way into houses, but numerous experiments with pressure gauges show that such is not the case. The studies upon the chemical, bacteriological and physical side of the subject, together with observations on the health of those constantly exposed to the emanations of sewage, are not of a nature to warrant the opinion that sewer air is the dangerous factor that some believe it to be. There does not seem to be a single conclusive demonstration that the air of sewers stand in causal relation to the diseases for which it has been held accountable.

Among the problems which the author had endeavored to solve experimentally in the laboratory was whether or not it was possible to demonstrate on animals that the gases arising from sewage or from other decomposing substances, have any direct effect upon the health of the animal or its ability to resist infection. The method of experimentation was given in detail. The teaching that because materials containing organisms capable of producing disease are constantly gaining access to the sewers, the air of these sewers must of necessity also contain such organisms is simply an opinion. It is not supported by observations that lead us to accept it as a fact. The more conservative of those who believe in a causal relation between the air of sewers and pathological conditions are coming to the opinion that it is not directly concerned in the production of disease, but that its continuous respiration in some way interferes with the normal vital resistance of the tissues, and thus renders them more susceptible to infections to which they may be exposed.

The author detailed his experiments on animals, and concluded that if experiments upon animals are of any value in demonstrating the positive or negative effect of air saturated with the gaseous products of decomposition, it does not seem reasonable to suppose that the air of a sewer or cesspool, in the enormous dilution in which it exists at the time that it reaches an individual in a house to which it has access, can be of much importance either in the direct production of the diseased conditions or in influencing the vital powers of the resistance of the individual who inhales it.

THE EFFECT OF SEWER GAS IN THE PRODUCTION OF DISEASE,

by Dr. A. Jacobi, of New York.

The author presented the following conclusions:

The atmosphere contains specific germs both living and dead. They are frequently found in places which were infected with specific disease.

In sewers, fewer such germs have been found than in the air of houses and school-rooms.

Moist surfaces, such as the contents of sewers and cesspools and the walls of sewers, while emitting odors, do not give off specific germs even in a moderate current of air.

Splashing of the sewer contents may separate some germs, and then the air of sewers may become temporarily infected, but the germs will sink to the ground gain.

Choking of the sewer, the introduction of hot factory refuse, leaky house drains and the absence of traps may be causes of sewer air ascending or being forced back into houses, but this complication of circumstances certainly will be rare.

Whatever arises from the sewer under these circumstances is offensive and irritating. A number of ailments, such perhaps as sore throat, may originate from this cause, but no specific disease will be generated by it except under the rarest of conditions; for specific germs are destroyed by the process of putrefaction in the sewers, and the worse the odor the less is the danger, particularly from diphtheria. The causes of the latter disease are very numerous and the search for the origin in an individual case is often unsuccessful. Irritation of the throat and naso-pharynx is a frequent source of local catarrh. This creates a resting-place for the diphtheria germs, which are ubiquitous during an epidemic, and thus an opportunity for diphtheria is furnished.

Of the specific germs, those of typhoid and dysentery appear to be the least subject to destruction by cesspools and sewers. These diseases appear to be sometimes referable to direct exhalations from privies and cesspools. Fewer cases, if any, are attributable to sewer air.

A simple outlet from the sewer would be dangerous to the general health because of the density of the odors (not germs) arising therefrom. Therefore a very thorough and multiple ventilation is required.

The impossibility or great improbability of specific diseases arising from sewers into our houses protected by good drains and efficient traps must, however, not lull our citizens and authorities into indolence or carelessness; for the general health is suffering from the chemical exhalations, and the vitality of cell-life and the power of resistance are undermined.

SEWER GAS A CAUSE OF THROAT DISEASE, OR THE EFFECT OF BAD DRAINAGE ON THE THROAT.

by Dr. Beverly Robinson, of New York.

Defective sewage may produce a sore throat of a benign character, which affords a soil suitable for inoculation by the diphtheria germ when present in the air. It is an admitted fact that the throat swarms with bacteria at all times; and possibly the Löffler bacillus is among these occasionally, but they are incapable of doing much harm if the individual is in good health. Through the depressing influence brought about by bad drainage, etc., they are capable of multiplying and increasing in virulence, and finally causing infectious sore throats. It is therefore clear how important it is to keep up an excellent condition of general health to avoid contracting throat disease. Proper disinfecting washes and gargles are also of value. While the connection between effluvia from sewers and drains and the condition of the throat cannot always be determined, yet in many cases it is clearly demonstrated. That many cases of tonsillitis are immediately caused by the air of sewers and fæcal emanations scarcely admits of doubt. In some cases the sore throats have been confined to particular parts of houses; and when the bad sewage has been remedied, they have ceased to recur. When cases of diphtheria, tonsillitis or erythematous sore throat occur in houses where the plumbing is found to be defective, we should be careful not to ascribe these diseases necessarily to this cause. While throat affections often occur where the drainage is bad, they may occur where the sewage is in perfect condition or where there is no sewage at all.

The second part of the Session was under the direction of the American Dermatological Association. The subject for discussion was

LEPROSY.

James Nevins Hyde, M.D., of Chicago, read the opening paper, which was on

THE DISTRIBUTION OF LEPROSY IN NORTH AMERICA.

Reference was first made to the different ways in which the disease could gain entrance into the United States. The northern part of the country has suffered far less than the southern, and even in the latter portion the disease is more common in the southern than in the northern provinces. The United States is exposed to the entrance of leprosy from the four principal points of the meridian, north, south, east and west. That the total result up to the present time is insignificant, has been due, not to wisely-directed vigilance, but rather to the general excellence of the habits of the people, and to their resources and environments.

At the present time the distribution of leprosy in the United States cannot be determined with any accuracy. The credit of being the first to collect statistics as to the number and location of lepers is due to the American Dermatological Association. According to these statistics and those of others, it may be said that the cases of leprosy in the United States have been distributed as follows: Arkansas 3, California 158, Dakota 2, Florida 6, Georgia 1, Idaho 2, Illinois 13, Indiana 2, Iowa 20, Louisiana 83, Maryland 4, Massachusetts 5, Minnesota 120, Missouri 2, Mississippi 2, New York 100, New Jersey 1, Oregon 3, Pennsylvania 6, Utah 3, Wisconsin 20, making a total of 560. The accumulation of cases is found to be principally at points of commercial activity. The number of lepers in this country at the present time cannot be definitely stated.

These facts call for intelligent discussion and for wise provision looking after the needs of the unfortunate leper, and for the safety of the community in which the infected are now living. Tuberculosis alone, at the present time, exposes the health of our population to a greater danger than leprosy. The presence of leprosy in this country offers a constant menace to its inhabitants, and proposes a problem in State and sanitary science which I believe the general government alone can readily solve.

THE CONTAGIOUSNESS, PROPHYLAXIS AND CONTROL OF LEPROSY,

by Dr. James C. White, of Boston.

The establishment of the proof of the contagiousness of a disease should be based upon the following points:

(1) The history of its action upon communities or nations.

(2) The study of its action upon individuals.

(3) Its resemblance to other affections generally regarded as contagious.

(4) The establishment of a satisfactory cause for such contagion.

(5) The influence of control upon its history and course.

These tests were then applied to the disease under consideration:

(1) The history of its action upon communities and nations. Reference was made to its course in mediæval Europe, where, introduced from the East, it became a pestilence of such overwhelming proportions that no influences of heredity alone could account for its spread. Belief in its contagious nature was then universal. In our own day, the extraordinary rapidity of the spread of the disease in the Hawaiian Islands can be accounted for on no other grounds than its infectious nature. The same is true of its introduction and spread in British Guinea, Trinidad and other places.

(2) The study of its action upon individuals. Great difficulty is here met with on account of the long period of incubation of leprosy, which may be of two, five or even ten years' duration. Such a retardation of the tangible effects of the contagion renders direct historical proof in individual cases almost an impossibility. Again, the tissues of animals other than man thus far studied show themselves indifferent to inoculation experiments. The possibility of using human tissues for such demonstration in satisfactory sufficiency is too remote for serious consideration. In one case a condemned criminal was inoculated, and three years later leprosy appeared. Reliance must therefore be laid upon a careful study of the beginning of endemics in small communities. Another class of evidence is the acquisition of the disease by immigrants of non-leprous nationality into leprous countries. Of this there are many instances on record. Another important fact is the development of leprosy among the personal attendants of lepers. Of this several instances were cited.

(3) Resemblance to other affections generally regarded as contagious. Under this head, reference was made to the many points of resemblance between leprosy and syphilis and tuberculosis, and the speaker held that these strong resemblances suggested an intimate relationship in etiology and pathology.

(4) Establishment of a satisfactory explanation of its contagiousness. With the discovery of the bacillus lepræ, the cause of its contagious nature was demonstrated as clearly as was that of tuberculosis by the discovery of the bacillus tuberculosis. Leprosy is preeminently a bacillus disease, for this organism is found in rich abundance in the tissues.

(5) Influence of control upon its history and course. In mediæval Europe, when the disease was regarded as infectious, the leper was segregated and placed in lazarettos. In later centuries, when the disease had been thus controlled and confined to a few districts, the belief grew up that the disease was not contagious, but was hereditary, and scarcely any one thought of questioning this dictum. At the International Medical Congress in 1876, the author had called attention to the prevalence of the disease in the United States. In 1882 he again called attention to the subject in a paper presented to the American Dermatological Association. His conclusions that the disease was increasing to an alarming extent, and that it was contagious, at that time found few supporters, but since then professional opinion has greatly changed. A study of the disease in other countries shows that where laws for its control have been enacted there has been a great decrease in the number of cases, and that where it has been given free license the number of cases has rapidly increased.

While not denying the possibility of the transmission of leprosy by heredity, the author held that its apparent occurrence in any instance should not be accepted without the absolute demonstration of the impossibility of inoculation after birth. He believed the theory of heredity to be a dangerous one, and that the sterner judgment of the Middle Ages, which made the leper individually the responsible agent rather than the progenitor, must again be adopted before the affection can be exterminated.

With regard to the prevention and control of leprosy in the United States, the consideration of the following propositions was recommended:

(1) Every physician should be compelled by State law to report to the nearest board of health the existence of a case of the disease, and the neglect to do so on the part of the medical attendant or a member of the leper's family should be a penal offence.

(2) Immigrants affected with the disease should be arrested at ports of entry and along our border, and turned back to their previous homes by the authority of the National Board of Health.

(3) Graded hospitals should be established by the national government, in insular localities where possible, within which both suspected and confirmed cases should be confined, and to which all access should be prevented excepting under proper restrictions.

Such compulsory isolation may be considered cruel to the few, but its longer neglect on our part is certainly a greater cruelty to the many, for in no other way shall we exterminate this most miserable disease.

In the general discussion of the subject, **Dr. George H. Fox**, of New York, said, that whatever might be the result of inoculation experiments, he was sure that those who had given special attention to the study of leprosy would agree that the disease was communicable, but that the danger of infection from association with the leper is extremely slight. In the United States, the disease has never shown any tendency to spread among those brought in contact with communities of lepers. He thought that there was no necessity for the segregation of the lepers to be found in the United States. To forcibly take these individuals from their homes would be an injustice which the slight menace to the general health would not warrant. Syphilis and tuberculosis are much more liable to be communicated to others than is leprosy. He believed that many cases of leprosy are amenable to treatment and capable of being cured, and he would be in favor of the establishment of hospitals for leprosy where these cases could be studied.

Dr. Joseph B. Bryant, of New York, advocated the institution of active measures, because such a course would be a humane one as far as the leper was concerned; it would conduce to public security and confidence; and it would secure good sanitation and better therapy. He offered the following propositions:

(1) That a wise public policy and humane considerations demand that lepers be not permitted to associate with the unaffected.

(2) That the exercise of local authority for their segregation is unwise and unsanitary, as establishing innumerable abiding-places for the disease at great expense, and without the assurance of proper surveillance.

(3) That a safe, prudent and humane policy demands that lepers be properly segregated under the care and control of the general government.

Dr. Walter G. Wyman, Surgeon-General, United States Marine-Hospital Service, described the effect of the quarantine laws which had been promulgated with the object of preventing the entrance of lepers into the United States. He then considered the reasons in favor of and against the national control of leprosy, and presented the draft of a bill relating to this object. He also suggested that, as a preliminary measure, a leprosy commission should be appointed to study the disease and report upon the best methods of controlling the disease in this country. For himself, he believed that leprosy should be under national control.

Dr. Arthur Van Harlingen, of Philadelphia, dwelt upon the importance of all physicians studying leprosy so as to be able to recognize its earlier manifestations, which were frequently overlooked. He had good reason for saying that, notwithstanding the rigid quarantine laws, many cases of leprosy had gained access to the country, although they had been subjected to some sort of an examination. This was due to a failure to recognize the early manifestations of the disease.

THE DIAGNOSTIC FEATURES AND TREATMENT OF LEPROSY,

was the subject of a paper by **Dr. P. A. Morrow**, of New York, which was read by title.

THURSDAY AFTERNOON, MAY 31ST.

The first portion of the session was under the direction of the American Association of Genito-Urinary Surgeons.

Dr. Edward L. Keyes, of New York, read the first paper which was on

NEPHRITIS IN ITS SURGICAL ASPECTS.

In opening the discussion on this subject, Dr. Keyes announced his intention of confining himself to a consideration of that form of surgical nephritis in which suppuration occurs, either spontaneously in the course of suppurative disease of the urinary tract below (ascending pyelö-nephritis), or originating below as a result of infection by the surgeon, or in the blood (the descending variety) — all the various forms of so-called surgical kidney.

He divided his paper into three parts: (1) introductory, (2) practical, (3) bacteriological. The introductory section demonstrated by a plentiful citation of authority, mainly French and German, the following points:

(1) Without microbic infection, suppuration in the kidney is impossible.

(2) The bacilli found most often are, notably, the bacterium coli communis, less often (alone or in company with the bacterium coli) the staphylococcus pyogenes aureus and the streptococcus pyogenes.

(3) These bacilli find entrance in a variety of alleged ways.

(4) The introduction alone of these bacilli does not occasion ascending pyelitis, or even necessarily cystitis. It is as much a question of soil as it is of seed.

(5) The soil is made receptive for microbic invasion by a variety of local physical maladies — by anything that interferes with free, urinary outflow; by over-distention or tension; and also by traumatism, and failure of the general vitality of the individual. The kidney is especially prepared for invasion by dilatation of the ureters, a dilatation always occurring from above

downwards, always due to a moderate obstruction of urinary outflow below, never to sudden stoppage of the urinary drainage nor to back-pressure of the urine.

The practical part of the paper contained Dr. Keyes's personal views upon urinary asepsis and antisepsis, and detailed the methods which he employed in everyday clinical work and the solutions he used, together with his method of instituting catheter life upon an old subject with clear urine atony, retention, thin-walled bladder, dilated ureter and damaged kidney (as regards its vitality).

The bacteriological study was conducted by Professor Dunham of Bellevue Hospital Medical College, under Dr. Keyes's direction, to determine the destructive or inhibitive power over the three bacilli under consideration, of a great variety of medical substances often used for local antiseptic purposes in the treatment of vesical suppuration, and of a variety of urines medicated by the ingestion of a number of different drugs. About five thousand tubes were examined and the conclusions generalized and tabulated, with the result of showing theoretically which drugs possessed the greatest value under varying conditions — those of direct infection by the surgeon, the tissues not being involved; and those in which, chronic suppuration already existing, the bacilli were protected from the action of the antiseptic. These conditions were reproduced in the laboratory, a method of investigation apparently novel and yielding suggestive results. The experiments consisted in comparing the action of the same drug upon bacteria in Group I, where direct infection immediately created was simulated, with its effect on bacteria in Group II, where chronic inflammation was simulated, the bacteria being more or less protected.

This investigation showed that nitrate of silver was by far the most reliable agent we possess in counteracting the effects of local contamination, while corrosive sublimate was more reliable in Group II, where the tissues were involved. Salicylic acid was shown to be a very reliable antiseptic, and Dr. Keyes proposes a new solution for greater convenience of use. Boracic acid has little or no value, common salt being about as good. Many other agents were experimented with. The various medicated urines showed little or no inhibitive power over bacterial growth.

The following general conclusions were presented:

(1) Healthy urine is sterile.

(2) Purulent urine is always microbic.

(3) Microbic infection takes place from within the body by a number of methods in the course of disease; it is often brought about by instrumental manœuvres on the part of the surgeon.

(4) A healthy organism and vigorous bladder can cope successfully with microbic invasion, and rid itself spontaneously or with a little aid of all damage arising therefrom, showing little or even no inflammatory response.

(5) A suitable condition of the patient's soil is essential to the propagation and perpetuation of the inflammatory phenomena upon the urinary tract, after microbic invasion.

(6) This condition, intensified by traumatism and physical weakness, notably of the degenerative variety, is most intense when there is vesical distention with atony, and when the ureters are dilated and the kidneys involved in the changes incident to tension below, namely, atrophy and sclerosis above, with or without surface catarrh.

(7) Under these circumstances surgical pyelonephritis is most likely to declare itself as a result of microbic infection from below (occasionally from above) in the course of suppurative disease.

(8) Asepsis, antisepsis and sterilization of urine are ends to be aimed at in genito-urinary surgery, but like all other greatest goods not yet attained in perfection. Much, however, can be done by local means in a prophylactic and curative way, little by internal medication, and possibly as much or more than by any other means by flushing the urinary passages with natural mineral waters.

Dr. Geo. M. Sternberg followed, with a paper on

THE BACTERIOLOGY OF NEPHRITIS.

Ascending nephritis or pyelonephritis is very commonly secondary to cystitis of long standing.

Recent researches show that the bacillus coli communis is found more frequently than any other micro-organism in the so-called "surgical kidney." This bacillus is now known to be the usual cause of peritonitis. It has been obtained in pure cultures in some cases of abscess of the liver, from urinary abscess and from the pleural cavity in certain cases of pleurisy.

Injections of a pure culture made into the ureter, after tying it below the point of injection, have been shown by Schmidt and Aschoff to give rise to pyelonephritis, and the changes induced are said to correspond with those seen in the "surgical kidney" of man. Clado in 1887, Albarran and Halle in 1888, and Rovsing in 1890, have described non-liquefying bacilli found by them in the urine of cases of chronic cystitis and of pyelonephritis, which appear to be identical with the bacillus coli communis, which has been shown by the subsequent researches of Schmidt and Aschoff and of others, to be very variable in its growth on various culture media — upon gelatine the growth is sometimes transparent and sometimes opaque.

Krugius in 1891, first identified the bacillus described by Clado (his "bacterie septique") and by Albarran and Halle ("bacille pyogene") with the bacillus coli communis, and this identification is verified by the researches of Achard and Renault, Schmidt and Aschoff, and others. In 22 cases of cystitis studied by him (1892) Krugius obtained the bacillus coli communis 14 times in pure cultures. Reblaub (1892) obtained the same bacillus in pure culture in 6 cases out of 16 cases of cystitis examined.

The number of cases of pyelonephritis reported by various authors since 1889, in which the bacillus coli communis was found, and was probably the cause of the ascending nephritis, is 29, and in 20 of these it was found in pure culture.

The etiological relation of this bacillus to ascending nephritis seems extremely probable in view of the facts referred to. Certain cases appear to be due also to the presence of one or more species of proteus, and possibly to other micro-organisms.

The general discussion was participated in by Dr. George Chismore, of San Francisco, Cal., and Dr. Francis S. Watson, of Boston.

The second portion of the session was under the charge of the American Gynecological Association.

The first paper by **Dr. Wm. M. Polk**, of New York, was entitled

THE CONSERVATIVE SURGERY OF THE FEMALE PELVIC ORGANS.

The data from which the author drew his deductions have been furnished by a study of 164 cases on which he had done abdominal section for disease of the appendages. Of these, 64 were operated on by the radical method, and 100 by so-called conservative measures. By the term conservative he meant to indicate the retention of all tissues which have a reasonable chance of adding to the local or general well-being of the individual. Conservative surgery is applicable to traumatisms, non-malignant disorders and the early stages of infectious disorders of the female pelvic organs.

The advisability of conservative operations on the perineum, vagina and cervix has long been recognized and accepted. The author then went on to speak of myomectomy. Where the tumor has a pedicle or a distinct capsule and the tumors are not too numerous, operations for the removal of the tumors themselves may be indicated. Ligation of the broad ligament has been suggested in order to check the growth and lessen the hæmorrhage. This operation seems to be capable of filling a valuable place for these indications. It seems to be better than the operation of oöphorectomy, but as yet our knowledge is insufficient to enable a more definite statement to be made.

One of the most conservative operations is curetting, with the drainage and depletion to be obtained by packing. This is applicable in all forms of endometritis and metritis, whether acute or chronic. In acute or subacute inflammation after abortion or labor, it is of great service if done at once.

It may be that in affections of the appendages, efficient depletion can be secured by the cavity of the uterus, and will do much toward effecting a cure. The results should be best in the early stages of salpingitis and oöphoritis, but the chronic cases are not beyond its influence. If done properly, it is harmless and renders the secondary operation safer. The more the speaker had employed this method of treatment, the better was he pleased with it. Women are the better mentally and physically for the maintainance of menstruation and ovulation. Until recently many conditions of the tube or ovary were considered adequate causes for their removal. Such is not now the case. The functions of menstruation and ovulation should be preserved when it can be done without sacrificing the patient's health or life. In cases of destructive inflammation of the appendages, the operation is best done after the subsidence of the acute inflammation. The tendency of these inflammations is in the direction of resolution. There are many cases of occluded adherent tube in which the ovary is in good condition. The same statement applies to some cases of pyosalpinx and many cases of hæmatosalpinx. The author's proposition was to remove such tubes and leave such ovaries. The nearer the patient is to nature's menopause the less is the necessity for such conservatism. In early life it is urgently necessary. He had operated on 45 cases in this way; and in their ability to work and enjoy life they are in as good condition as any equal number of cases of oöphorectomy. Mentally they are far better.

In 36 cases he had resected ovaries the seat of simple or blood cysts. In all but five cases the results were entirely satisfactory. In two cases there was fresh development; and in three suppuration in the cyst occurred due to infection from the catgut. Where the tubes have been simply adherent, they are released and allowed to remain. Twelve such cases have done well with the exception of one where gonorrhœal infection spoiled the work. Where the abdominal opening is closed, this is opened and the fimbriated ring stitched back.

As demonstrating the possibility of pregnancy after operations of this character, he reported five cases from his own practice where women had become pregnant after such procedures. The precise question is, however, not so much the possibility of pregnancy but the mental, moral and physical influences of allowing the ovary or a portion of it to remain.

Dr. William Goodell, of Philadelphia, said that he had taken the liberty of changing the title of his remarks to

THE CONSERVATIVE TREATMENT OF THE FEMALE PELVIC ORGANS,

preferring to use the word "treatment" instead of "surgery." This enlarged the scope of the subject, and was more in keeping with his views; for he held that besides strictly surgical ones, there were other kinds of conservative treatment which are especially adapted to the ailing female organs. He considered the whole question of the proper treatment of these disorders to hinge on the effect of castration in women. These effects are prolonged and distressing vaso-motor disturbances (often very hard to bear) and a tendency to morbid brooding, low spirits, melancholy, suicidal impulses, and even to insanity. Then, again, castrated women are liable to become unsexed to that extent as to lose all sexual feeling, or to have it greatly blunted. In some cases senile atrophy of the genitalia takes place, or in its place a hypertrophic condition of the vulva occurs, which forbids coition and causes much domestic unhappiness. An inevitable and deplorable result is sterility, which is often a cause of great sorrow. The author laid stress upon the prevalent lay opinion that women deprived of their ovaries are thereby wholly unsexed. Castration in the male or in the female is alike regarded as a sexual mutilation to which is attached a stigma. No woman would marry a eunuch, and few men would wed a woman without ovaries. It is then manifest that during the period of woman's menstrual life her mental, physical and social welfare depends largely upon the continuance of the catamenial and reproductive functions. Hence the conservation of those organs which preside over these functions is of the utmost importance.

The speaker reprehended that hasty operative interference based on the plea that chronically diseased appendages are dangerous to life, for in his experience few women perish from chronic disorder of these organs even when pus is present. More women die from the radical operation than from the disease itself. To restore such women to health, abdominal section is by no means always necessary. Many have been cured by curetting and draining the womb. Others he had seen get well under the use of rest, massage, electricity, alteratives and local applications, although they had been sent to his private hospital to have their appendages removed. In a few instances among his own patients this treatment was followed by conception and pregnancy.

The possibility of a closed-up Fallopian tube regaining its lumen is warmly disputed; but since uterine fibroids of large size spontaneously disappear through retrogressive metamorphosis, why may not the thin tubal septa of inflammatory origin also melt away and restore the bore of the tube? He cited examples in which great disorganization of the tubes and ovaries did not prevent conception. Cases were also related in which, after a small fragment of an ovary and a short stump of a tube were left behind, pregnancy took place.

In view of these interesting facts, he advised that when therapeutic measures failed and the final appeal was made to the knife, as little as possible of the appendages should be taken away. If the tubes and ovaries are simply adherent and not otherwise damaged, they should merely be freed from these adhesions, and not extirpated; if they are diseased, only the unhealthy portions should be removed. He had found that a piece of ovary not larger than a small bean was quite ample to maintain intact menstruation and the sexual feelings.

He contended that the aim of modern surgery is conservation. Limbs, members and organs are now saved which formerly would have been sacrificed. This is its glory, and this has been brought about by antisepsis. On the other hand, antisepsis, by the glamor of success, so dazzled modern gynecology as to make it a spoiler rather than a conservator. Reform here is greatly needed, the reform of conservative gynecology.

The general discussion was participated in by Dr. Lutaud of Paris, Dr. Matthew D. Mann of Buffalo, Dr. Joseph Taber Johnson of Washington, Dr. Howard Kelly of Baltimore and Dr. Florian Krugg of New York.

Recent Literature.

Treatise on Ruptures. By Jonathan F. C. H. Macready, F.R.C.S, Surgeon to the Great Northern Central Hospital; to the City of London Hospital for Diseases of the Chest, Victoria Park; to the Cheyne Hospital for Sick and Incurable Children; to the City of London Truss Society; and Surgeon in London to the Merchant Taylors' Company's Convalescent Homes at Bognor. Philadelphia: P. Blakiston, Son & Co. 1893.

The author divides this book into two parts. Part first is on ruptures when the function of the bowel is undisturbed. Part second is on ruptures where the function of the bowel is interrupted.

As surgeon to the City of London Truss Society, Mr. Macready has had an exceptional opportunity to study herniæ, particularly from the non-operative point of view. Statistics are presented in this work in a thoroughly judicial way; they are so misleading at times that it is a pleasure to read the unbiassed presentation of this interesting subject by Mr. Macready.

The forms of herniæ are clearly described, and attention is called to the changes which occur in the shape of the abdomen, especially in long-standing cases of hernia.

The trusses which are shown in the illustrations are not models of lightness; they suggest clumsiness.

The subject of hernia is presented in a clear and scholarly manner. The list of references at the end of each chapter is especially to be commended. The book's value is added to by an admirable index. It is well illustrated, printed and bound.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, JUNE 7, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

THIRD TRIENNIAL CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

The Third Triennial Congress in Washington of the fourteen special national associations and societies has furnished additional proof, if any were needed, of the distinct and increasing value of such an organization to medical science and medical practice and to the higher aspirations of the medical profession in our country. It is a comparatively short time — only thirty years — since the first of these associations began to be started amid some misgiving and against some opposition. The older associations soon proved their usefulness to the profession, and successive years have witnessed the formation of others in new fields until the present number has been reached, and all departments of medicine are represented from anatomy and physiology, through general medicine and general surgery to climatology, pediatrics and genito-urinary surgery. All of these associations are flourishing; their annual meetings are well attended; good work is presented and intelligently discussed; and membership is prized and sought for by the best men — teachers and practitioners — in the profession.

It would seem, however, as if the division of subjects had gone quite far enough, and we see no good reason for the further multiplication of separate societies. But there is every reason for the continuance and perfection of these triennial gatherings of all the separate societies at one time and one place. The very subdivision and specialization of professional interest and work is the strongest argument in their favor. The opportunity afforded for the discussion of such subjects as those appointed for consideration in the General Sessions of this Congress, by representative members of the special societies from their different points of view, is of great value if availed of, and might be of much greater value if made more available.

Whilst appreciating the force of the reasons which led to the adoption of the arrangement of this year, we still think it a mistake to attempt the presentation and discussion of two important and debatable subjects in one afternoon, allotting to each only an hour and a half. The result must inevitably be that which obtained this year. We shall have a presentation of the subjects, an excellent one it is true, but still such as might be had at an annual meeting of the special society of the day; but the discussion, and such a discussion as is only possible under the conditions of the triennial congress, is conspicuous by its absence. It would be better to have one subject treated as it might and should be treated by such a body of men, than to give each association more frequently the empty honor of selecting and presenting the topic of the day. We hope the Executive Committee will see its way to putting the Congress in a position to do for the profession in this respect what may reasonably be expected of it.

The best papers presented, as a rule, were the short ones, and the presiding officers would do well to be more rigorous with those readers who have not learned to appreciate the merit and the possibilities of condensation.

Under any management, the great advantage of meeting distinguished and rising colaborers in congenial pursuits is inherent in such a reunion. Men from different parts of the country make new professional acquaintances and cement old friendships. Junketing is happily absent, the only general festivities being the gracious reception by the President and Mrs. Cleveland of the members of the Congress, and a subscription dinner at the Arlington Hotel.

The weather was all that could be desired, and Washington looked its best; under such conditions it is a national capital of which no American need be ashamed, especially if he avoids the so-called debates in the Senate and House of Representatives. No wonder the "industrials" (we refer to Coxey armies, not to the "trusts" or "industrials" of the Stock Exchange) were tempted to look upon it as a place of hope and promise!

The *Congressisti* registering numbered four hundred and ten, and of these comparatively few had cause to regret their visit. The sufferings experienced three years ago were not repeated, and, with few exceptions, the gastro-intestinal tract made no protest. Notwithstanding this amelioration, the Executive Committee was empowered to name the place of meeting of the next Congress, Washington not being specifically designated.

At the business meeting held Friday afternoon, June 1st, at the instance of the Dermatological Association, it was voted to memorialize the Congress of the United States with the view to the appointment of a commission of five to investigate the prevalence of leprosy in the United States and in the countries upon its borders and to suggest means for its control.

A resolution was passed entering the most earnest protest of the Congress against any legislation tending to interfere with the advancement of medicine by means of experimentation upon animals conducted by properly qualified persons.

A resolution was passed that, in the opinion of the Congress, the proposed reductions in the number of medical officers in the army and in the appropriation for the Library of the Surgeon-General's office, are unwise and are contrary to the best interests, not only of the army, but of the medical profession of this country and of all who depend upon its members for skilled professional services.

◆

THE CONVEYANCE OF SCARLET FEVER AND DIPHTHERIA BY PUBLIC CARRIAGES.

It has not infrequently been noted that a ready source of infection with scarlet fever and diphtheria exists in the public hackney vehicles of a large city — inasmuch as they are used without regard to contagion by patients with such diseases. Even among physicians it is not, however, generally known that such a source for contagion has no legal right to exist, and that with a little energetic coöperation it might practically be done away with.

The great majority of all cases of these contagious diseases carried in public vehicles in Boston are patients taken to its City Hospital. A large number of these patients are sent to the hospital by their physician, who is probably in most cases ignorant of the police regulation forbidding such procedure, which reads: "No person having charge of any hackney carriage shall receive or permit to be placed therein, nor convey in or upon the same, any person sick or infected with any contagious disease, or the body of any person deceased from such disease."

The drivers of herdics and cabs are, of course, aware of this regulation, but are too often willing to take their chance of escaping conviction and fine. Convictions have not been many, fines have not been large and have involved no loss of license, so that financially the risk is a good one. The sense of moral responsibility toward the public is not highly developed in the average cabman, nor is his diagnostic knowledge of disease acute. Heavier penalties would doubtless improve both faculties.

It is by the physician, however, that much may be done towards abolishing this dangerous practice. In the past many have sent their contagious patients to the hospital in cabs through ignorance of this rule or through thoughtlessness.

The City Hospital sends its ambulance, free of charge, for any and every case of scarlet fever or diphtheria which it can admit. The transfer from the house to the hospital can be made with as much speed and more comfort in an ambulance than in a cab, and without subsequent exposure of other people. Now that attention has been called to this easily remediable evil, it is hoped that all physicians will coöperate in suppressing it by refusing to sanction carriage-transfer of patients, and insisting that cases which they send to the hospital be taken only in the proper ambulance.

If physicians are to be firm in requiring their patients to make use of a hospital ambulance they have a right to expect that, on their side, the hospitals will take all precautions to have no secondary infection traceable to the use of the same ambulance for conveying both scarlet fever and diphtheria patients. There are many cases in which, either from an undetermined diagnosis or from personal feelings of the patient or the family, the physician's line of duty to his patient and to the general public is not an easy or simple one to follow. In such cases his position of insisting on the use of a hospital ambulance will be made much easier and more secure if he can assure his patient that the ambulance is not used indiscriminately for both scarlet fever and diphtheria. In this city he cannot make this statement, as there is but one ambulance for contagious diseases at the City Hospital. He should, at least, be able to state that the same blankets, pillows and mattress are never used without precautions for more than one patient, and that the ambuance is thoroughly disinfected after every trip.

◆

RECENT SANITARY IMPROVEMENTS IN HAMBURG.

The great Hamburg fire, half a century ago, prepared the way for the broad streets, the great water park made by damming the Elbe and flowing extensive flats, the excellent water-supply and the admirable system of sewers which made the city the pioneer, under the distinguished English engineer Lindley, in modern sanitation. Paris, and next London, but in a far inferior way, followed with their improved sewerage, and then came the filtration system of the London water-supply. The exemption from cholera in Hamburg in subsequent epidemics, furnished the most powerful argument in Europe, and especially in Germany, for cleaning up their cities and for establishing the theory that cholera comes chiefly from drinking water contaminated by human excrement.

It is rather curious that, in the growth of the city and in the subsequent contamination by human excrement of the river providing their drinking water, Hamburg should have suffered so from cholera in 1892, as to be the great lesson to the few remaining doubting Thomases who held to Pettenkofer's ground-water theory of the origin of that disease.

Under the title of "Hamburg's New Sanitary Impulse," in the June number of the *Atlantic Monthly Magazine*, Mr. Albert Shaw has admirably described the methods of sewage-discharge, of a new intake from the river and of a vast system of water-filtration which had been planned before the last epidemic.

Under an American, Dr. Dunbar, the hygienic laboratory makes frequent and minute bacteriological examinations of the drinking water, and carefully notes the results of filtration. It would be curious to know whether the very valuable original work in that direction done in recent years by the Massachusetts State Board of Health had given any hint or had furnished any knowledge as to the efficacy of efficient filtration in making safe water which had contained the specific germs of disease. The fact had been demonstrated practically by the London and Altona filter-beds, but the scientific investigations made have provided the explanation of the fact and showed the degree to which filter-beds could be depended upon.

◆

MEDICAL NOTES.

An Honor to Dr. Goodell. — Dr. William Goodell, of Philadelphia, has received the honorary degree of LL.D. from Jefferson Medical College.

Billroth's Successor at Vienna. — Professor Dr. Czerny, of Heidelberg, is reported to have been officially called to be Billroth's successor at the University of Vienna.

Cholera in Prussia. — Cases of cholera were reported lately from Upper Silesia and the city of Stettin. Dr. Fairfax Irwin, of the Marine-Hospital Service, Sanitary Inspector at Berlin, was immediately ordered to Stettin to make an investigation.

A Surgical Operation upon Kaiser Wilhelm II. — It has been officially reported from Berlin that a small encysted tumor was removed from the Emperor's cheek last week by Drs. Bergmann, Leuthold and Schlange. It is stated that the operation was done without anæsthetics.

Small-Pox in Chicago. — The Health Department of Chicago is having great difficulty in preventing the spread of small-pox, owing to the opposition of the Polish and Bohemian population, among whom it is chiefly epidemic. In the house-to-house investigation which they have been forced to make, the Board is obliged often to have police protection, and in many cases to break down the doors of houses with sledge-hammers. On June 1st fourteen cases were found in this manner, concealed in tenement-houses.

A Dissatisfied Patient. — The cable announces that Prince Bismarck's left leg is so feeble he can only stand on it a few minutes at a time. He explained to a friend that upon the recommendation of a Russian Grand Duchess he consulted a Russian doctor some time ago. He has since learned that this doctor was an idle and ignorant fellow — the head of a children's hospital in St. Petersburg, where he killed off 3,000 patients annually! "He ruined my leg, and I have suffered the consequences ever since."

Individual Communion-Cups. — The opposition to the common use of one communion-cup is increasing rapidly among the laity, as well as among physicians, for the laity nowadays are by no means ignorant of bacteriology. The fruit of the tree of knowledge is bitter indeed, and is now found to be infected with bacilli. Kissing, the world old expression of bodily love, has been found scientifically dangerous and is going out of use, so it is said; and now even a spiritual love must not manifest itself by the use of a common cup. As one advocate of bacterial individuality has recently written, "Let us mingle our tears in sympathy, our prayers in supplication, our songs in praise, but permit each one to possess in solitude his individual bacteria."

A NEW ENGLISH "SPECIALIST." — According to the *British Medical Journal*, a new specialist has made his appearance in England, and at present is busily engaged in sending his circulars to his expected patrons. As this new operator is a "circumcision specialist," his notices are sent to newly-made fathers of finely-formed but too preputially endowed sons. The following are extracts from one of these circulars: "Every Circumcised person have always been so hardy and thereby escaping obscure nervous disorders, the facts of which are acknowledged by highest medical authorities." "Every invalid or victim of some obscure nervous disorder should not neglect this, as it will materially assist in restoring him to health." "What are the benefits derived therefrom? Predisposition to and Exemption and Immunity from disease."

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon June 1, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 37, scarlet fever 55, measles 25, typhoid fever 1.

A CASE OF SMALL-POX IN RUTLAND, VT. — Last week a traveller from Chicago was taken ill at a hotel in Rutland, Vt., with what proved to be small-pox. The hotel was at once quarantined by the health authorities.

AWARD OF THE BOYLSTON MEDICAL PRIZE. — The Boylston Medical Prize for 1894 has been awarded to Dr. Norman Walker, of Edinburgh, Scotland, for an essay entitled "The Histological Varieties of Cutaneous Cancer."

DR. WALCOTT'S SMOKE-TALK AT THE UNIVERSITY CLUB. — Dr. Henry P. Walcott, Chairman of the State Board of Health, gave a smoke-talk at the University Club last Wednesday upon the proposed changes in the Charles River Basin.

THE MASSACHUSETTS CREMATION SOCIETY'S INVITATION TO PHYSICIANS. — In connection with the annual meeting of the Massachusetts Medical Society, the building of the Massachusetts Cremation Society at Forest Hills will be open for inspection from two to four P. M. on Tuesday, June 12th, when the heat will be applied to the retorts and the process carefully explained.

NEW YORK.

SMALL-POX QUARANTINE AT SING SING REMOVED. — On June 2d, Warden Durston removed the quarantine from Sing Sing prison, which had been closed to visitors for nearly two months on account of several of the convicts having had small-pox. All of the patients have now recovered and are at work again.

THE DEAD FISH IN THE WATER-SUPPLY. — Considerable alarm was occasioned a short time since by the publication in the newspapers of the report of Dr. J. G. Wood, health-officer at Brewster's, in the Croton water-shed, that there were large numbers of dead fish in Haines' Pond, a part of the Croton system, near Sodom Reservoir, and that he was led to believe that some epidemic was prevailing among the fish which might pollute the water. The gills of the dead fish, he claimed, had a diphtheritic appearance. The matter was at once investigated, although the officials of the New York Board of Health, recognizing the fact that diphtheria is a disease confined exclusively to warm-blooded animals, felt that the only danger that could arise from the presence of dead fish in the water was from decomposition, and that that was very slight. It is stated by Dr. Biggs, bacteriologist to the Board, that chubs, or suckers, are susceptible to a peculiar disease every spring, which develops a fungus-like growth about the head, and which carries them off in great numbers. At the meeting of the Board of Health held May 28th, reports were submitted by Dr. Biggs and by Dr. Lederie, chemist to the Board, which showed that there was no contamination of the water from the cause mentioned. It is interesting to note that while, according to Dr. Biggs's examinations, the water taken from Haines' Pond, where the presence of the dead fish first excited alarm, showed 182 colonies of bacteria, and the water from Sodom Reservoir, 384 colonies, a sample of water drawn from a hydrant just outside the Board of Health Building, on Mulberry Street, showed no less than 520 colonies of bacteria.

◆

Miscellany.

RETROGRESSIVE LEGISLATION IN REGARD TO MASSACHUSETTS BOARDS OF HEALTH.

THE following comments appeared in the *Boston Herald*, of May 25th:

"In the year 1797 a law was enacted in Massachusetts providing for the election of boards of health in towns. By an amendment which was made twenty years later it was further provided, that, if any town failed to elect such a board, 'the selectmen shall be the board of health.'

"By this wise enactment, towns in Massachusetts have, for nearly a century, had some provision for boards of health; and, for nearly eighty years of that period, such a board has been in actual existence in every town in the Commonwealth, to which the people had the right to look for sanitary protection.

"Let us now examine the legislation of 1894 upon this subject. By the provisions of Chapter 218 of the Acts of the present year, the Acts of 1797 and 1817 are repealed so far as all towns having *more* than 2,000 inhabitants in each are concerned, and a board of health may or may not exist, in accordance with the varying whims of the voters of such towns. If the town does not elect a board of health, then, under the present law, such town is entirely without any local sanitary protection — a condition of affairs which has not existed for at least three-quarters of a century.

"In Section 2 of the same Act, provision is made for the election of a board of health in every town having a population of *less* than 2,000, the old provision being here retained, that if a board is not chosen, 'the selectmen shall constitute such board of health.' By this provision it appears that each one of the small towns *must* have a board of health of some sort, while in the large towns the law is permissive only.

"Now it is nothing less than a sanitary axiom that increasing density of population requires the enactment of better sanitary laws for the protection of the people; and since the population of the State has increased from about 400,000 in 1797 and a half-million in 1817 (the date of enactment of the early laws upon the subject) to two and one-half millions at the present time, and, since this increase has been mainly in those towns which have populations of more than 2,000 in each and not in the small towns, the legislation in this direction ought to be in the line of improvement and not of retrogression. Measures ought, therefore, to be taken to remedy this defect before the close of the present session."

◆

MR. GLADSTONE'S TRIBUTE TO SIR ANDREW CLARK AND THE MEDICAL PROFESSION.

A LARGELY attended public meeting was held in London recently to take definite action upon the memorial to Sir Andrew Clark. The chief address was made by Mr. Gladstone, who paid a most eloquent tribute to his late physician and to the whole medical profession as well. He said:

"The profession itself, is one with regard to which it is impossible, I think, not to be conscious that its position in our generation, and in some generations previous, has been a position continually advancing and continually widening. The other learned professions undoubtedly had a start of the medical profession. Four or five hundred years ago property was of more worth than human life and physicians were little heard of. But the position of the medical profession to-day is becoming one of vital and commanding interest to the whole of society, and I anticipate that that interest must continue. While wealth increases, while inventions and discoveries increase, wants will increase and enjoyments will increase; and, in connection with those wants and enjoyments there will, I fear, be a corresponding increase of infirmity and disease, and the medical profession braces itself to grapple with the situation which has been created, and continually advances in knowledge, credit and importance. My own life has been long enough to enable me to witness, and in some degree to measure, the change that has taken place. I have had the good fortune of knowing many eminent and distinguished men in the profession during the last threescore years, and I have seen also a great change in capacity, in attainments, and in competency to deal with the difficult, the almost insoluble, problems that are continually presenting themselves to the mind of the medical man.

"It appears to me that it was eminently desirable that, in a time like this, a man such as Sir Andrew Clark should rise to the head of his profession. For, after all, we require something more than knowledge, something more than skill. We require great devotion to the purposes of the profession; and that devotion never, I think was exemplified in a more remarkable manner than in the career of Sir Andrew Clark. He loved his profession with his whole heart and soul. While engaged in that profession he loved it not only with sincere and cordial but with chivalrous devotion. We need not say that the age of chivalry is altogether passed so long as we have among us men of the type of Sir Andrew Clark.

"I think the profession has done well in taking by common consent Sir Andrew Clark as the typical man, the representative of all that is best and noblest in the profession and its purposes. Others may judge better than I can of his scientific ability. What I have seen is his patience, his thoroughness, and his absorption in the care of his patient as if that one case was all with which he had to occupy his mind. I have had to note in my own instance a warmth of friendship and assiduous prosecution of the task of watching my health which I know not how adequately to describe. Although he was a much younger man than I, yet he followed me from month to month and week to week with something that resembled paternal affection. I am sure that whatever happens; whatever may have been the past advances of the medical profession, and they are great; whatever may be the future advances of that profession, and they will be greater still, — there will never come a time when the profession will not be justly satisfied, and glad to have recorded upon its annals, a name such as the name of Sir Andrew Clark."

◆

Correspondence.

"RESERVING THE CLAIM OF EXEMPTION FROM REGISTRATION."

BOSTON, June 4, 1894.

MR. EDITOR: — In the *Boston Medical and Surgical Journal* of May 24th, a correspondent suggests correctly, that members of our State Society, by its act of incorporation, have a complete license to practice without registering under the proposed new law. Incomplete as this law may be, a refusal to register might, by some, be construed as showing a disposition to obstruct *any* legal regulation.

I will mention a way of registering, and at the same time of reaffirming the old corporate right. It was suggested by an eminent attorney, and adopted by several physicians in regard to a law for regulating a specialty, a few years ago. It is to write before or over the signature, the phrase: "Reserving the claim of exemption from registration."

Very truly yours,
J. L. W.

METEOROLOGICAL RECORD.

For the week ending May 26th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer Daily mean.	Thermometer. Daily mean.	Maximum.	Minimum.	Relative humidity. 8.00 A. M.	8.00 P. M.	Daily mean.	Direction of wind. 8.00 A. M.	8.00 P. M.	Velocity of wind. 8.00 A. M.	8.00 P. M.	We'th'r.* 8.00 A. M.	8.00 P. M.	Rainfall in inches.
S..20	30.25	46	48	44	96	96	96	N.E.	N.E.	20	21	R.	R.	.04
M..21	30.34	46	48	43	92	86	89	E.	E.	24	9	O.	C.	
T..22	30.16	50	62	39	72	62	67	N.W.	S.W.	3	13	C.	C.	
W..23	29 93	60	70	50	68	84	76	W.	E.	7	4	O.	F.	.03
T..24	29.74	49	52	46	100	97	98	N.E.	N.E.	13	22	R.	R.	1.10
F..25	29.64	54	59	48	80	90	85	S.W.	N.	4	7	T.	O.	.05
S..26	29.85	54	61	47	70	78	74	N.W.	S.E.	10	9	O.	O.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week

RECORD OF MORTALITY

For the Week ending Saturday, May 26, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Scarlet fever.
New York . .	1,891,306	721	272	16.94	14.84	.98	9.66	2.10
Chicago . . .	1,438,000	—	—	—	—	—	—	—
Philadelphia .	1,115,562	363	109	9.62	7.28	1.04	5.46	.78
Brooklyn . .	978,394	344	128	14.70	14.70	1.50	7.80	.90
St. Louis . . .	560,000	—	—	—	—	—	—	—
Boston . . .	487,397	226	66	14.08	13.64	1.76	6.16	2.20
Baltimore . .	500,000	—	—	—	—	—	—	—
Washington .	308,431	95	22	11.55	11.55	4.20	2.10	—
Cincinnati . .	305,000	103	39	7.76	14.55	2.91	2.91	—
Cleveland . .	290,000	139	72	14.40	13.76	2.16	2.16	1.44
Pittsburg . . .	263,709	—	—	—	—	—	—	—
Milwaukee . .	250,000	—	—	—	—	—	—	—
Nashville . .	87,754	35	12	8.58	17.16	—	2.86	2.86
Charleston . .	65,165	29	15	13.80	3.45	6.90	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	96,217	22	12	18.20	—	—	13.65	4.55
Fall River . .	87,411	41	22	—	—	—	—	—
Lowell . . .	87,191	28	7	—	—	—	—	—
Cambridge . .	77,100	21	6	33.33	—	—	4.76	23.80
Lynn	62,656	13	6	15.38	7.69	—	7.69	—
Springfield . .	48,684	13	3	—	15.38	—	—	—
Lawrence . .	48,355	—	—	—	—	—	—	—
New Bedford .	45,886	19	10	—	21.04	—	—	—
Holyoke . . .	41,278	—	—	—	—	—	—	—
Salem	32,233	13	6	38.45	7.69	—	15.38	15.38
Brockton . .	32,140	9	1	11.11	22.22	—	—	—
Haverhill . .	31,396	5	2	—	20.00	—	—	—
Chelsea . . .	30,264	13	1	22.38	44.76	—	7.69	7.69
Malden . . .	29,394	9	1	—	22.22	—	—	—
Newton . . .	27,556	4	1	—	—	—	—	—
Fitchburg . .	27,146	4	1	—	—	—	—	—
Taunton . . .	26,972	6	1	—	—	—	—	—
Gloucester . .	26,688	—	—	—	—	—	—	—
Waltham . .	22,058	6	2	—	16.66	—	—	—
Quincy . . .	19,642	—	—	—	—	—	—	—
Pittsfield . .	18,802	2	0	—	—	—	—	—
Everett . . .	16,585	2	0	—	—	—	—	—
Northampton .	16,331	4	0	25.00	—	—	—	—
Newburyport .	14,073	2	1	—	—	—	—	—
Amesbury . .	10,920	5	1	—	20.00	—	—	—

Deaths reported 2,339: under five years of age 829; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 329, acute lung diseases 307, consumption 262, diphtheria and croup 152, scarlet fever 41, diarrhœal diseases 34, measles 30, whooping-cough 27, typhoid fever 19, cerebro-spinal meningitis 9, erysipelas 6, small-pox 5, malarial fever 4.

From measles Brooklyn 10, New York 8, Cleveland 6, Philadelphia 3, Fall River 2, Nashville 1. From whooping-cough New York 9, Boston 5, Brooklyn 3, Washington and Cleveland 2 each, Cincinnati, Charleston, Fall River and Salem 1 each. From typhoid fever Philadelphia 6, New York 3, Washington 2, Brooklyn, Boston, Cincinnati, Cleveland, Charleston, Lowell, North Adams and Woburn 1 each. From cerebro-spinal meningitis New York 5, Cleveland 2, Lynn and Brockton 1 each. From erysipelas Philadelphia, Boston, Cleveland, Lowell, Haverhill and Northampton 1 each. From small-pox New York 4, Washington 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending May 19th, the death-rate was 17.1. Deaths reported 3,426: acute diseases of the respiratory organs (London) 234, measles 257, whooping-cough 112, diphtheria 72, scarlet fever 37, diarrhœa 37, fever 22, small-pox (London, West Ham and Birmingham 3 each, Manchester 2, Wolverhampton and Oldham 1 each) 13.

The death-rates ranged from 7.9 in Croydon to 22.2 in Norwich; Birmingham 18.6, Bolton 15.4, Cardiff 15.5, Gateshead 15.5, Hull 15.9, Leeds 16.2, Leicester 13.0, Liverpool 21.8, London 17.5, Manchester 17.4, Newcastle-on-Tyne 16.8, Nottingham 20.1, Portsmouth 9.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 26, 1894, TO JUNE 1, 1894.

First-Lieut. William H. Wilson, assistant surgeon, now on duty at Fort Leavenworth, Kansas, will proceed at once to Camp Merritt, Montana, and report for assignment to temporary duty at that post.

NEW HAMPSHIRE MEDICAL SOCIETY.

The one hundred and third anniversary meeting will be held at G. A. R. Hall, Concord, Monday and Tuesday, June 18 and 19, 1894.

Monday, June 18th.

Medical papers and communications: "On the Prevention of Communicable Diseases," D. Edward Sullivan, M.D., Concord. Discussion opened by Wm. Child, M.D., New Hampton. "Sleep, How Best Induced in Certain Pathological Conditions," J. B. Raynes, M.D., Lebanon. Discussion opened by W. T. Smith, M.D., Hanover. "On Puerperal Infection," J. Elizabeth Hoyt, M.D., Concord. Discussion opened by John W. Parsons, M.D., Portsmouth. "Retrospective Glances," A. G. Straw, M.D., Manchester. "Report on Bone Surgery," D. S. Adams, M.D., Manchester. Discussion opened by Robert Burns, M.D., Plymouth, who will also report a case of "Exsection of the Astragalus." "Report on Empyema," William H. Lyons, M.D., Manchester. Discussion opened by G. C. Blaisdell, M.D., Contoocook. "On the Differential Therapeutics of Strophanthus and Digitalis," W. K. Wadleigh, M.D., Hopkinton. Discussion opened by Henry Dodge, M.D., Webster.

There will be a meeting of the Council at 7.30 p. m.

After the meeting of the Council (probably about 8.30 p. m.), the members of the association residents of Concord will welcome the Society in the G. A. R. Hall, and will entertain the members and their friends with a lecture on "Potable Water," by Prof. E. J. Bartlett, of Hanover, after which there will be a meeting of the alumni of Dartmouth Medical College.

Tuesday, June 19th.

"On the Pathology and Methods of Treatment of Hypertrophic and Atrophic Rhinitis – with Especial Reference to the Work of the General Practitioner," Albert Pick, M.D., Boston, Mass. "On Laceration of the Cervix Uteri," F. A. Stillings, M.D., Concord. Discussion opened by M. W. Russell, M.D., Concord. "Glimpses of Fifty Years in the Medical Profession," Cyrus K. Kelley, M.D., Plymouth. "On Sanitation in Mexico," G. P. Conn, M.D., Concord. "On the Importance of the Early Recognition of Certain Diseases of the Eye by the General Practitioner, with Suggestions Regarding Management," H. W. D. Carvelle, M.D., Manchester. Discussion opened by Geo. Cook, M.D., Concord. President's Address, Samuel P. Carbee, M.D. Introduction of officers.

The Anniversary Dinner will be served at the New Eagle Hotel at 1 p. m.

Exhibit. – Exhibitors will use the banquet-room adjoining the assembly-hall, which will be in charge of Dr. Day, of the Committee of Arrangements.

Granville P. Conn, M.D., *Secretary*, Concord, N. H.

SOCIETY NOTICE.

Massachusetts Medico-Legal Society.—The annual meeting of the Society will be held on Tuesday, June 12, 1894, at 1 o'clock, p. m., in the hall at 19 Boylston Place, Boston.

The usual business of the annual meeting will be transacted, and the following communications will be presented:

1. "What Cases Shall the Medical Examiner View?" J. A. Mead, M.D.
2. "Suicide or Homicide? A Medico-Legal Diagnosis." C. S. Holden, M.D.
3. "Comments on a Case of Homicide." A. H. Hodgdon, M.D.

Fellows of the Massachusetts Medical Society are invited to be present.

Z. B. Adams, M.D., *President.*
F. W. Draper, M.D., *Recording Secretary.*

BOOKS AND PAMPHLETS RECEIVED.

Home Dumb Bell Drill. Robert J. Roberts. Springfield, Mass.: Triangle Publishing Co.

Measurements of the Chest and Lung-Capacity. By Edward O. Otis, M.D. Reprint. 1894.

Neuratrophia, Neurasthenia and Neuriatria. By C. H. Hughes, M.D., St. Louis, Mo. Reprint. 1894.

Self-Inflicted Injury in a Case of Chronic Mania. By Chas. B. Mayberry, A.M., M.D. Reprint. 1894.

Tenorrhaphy by Means of the Suture à Distance of Catgut, with Report of Case. By Emanuel J. Senn, M.D., Chicago. Reprint. 1894.

Treasury Department, Quarantine Laws and Regulations of the United States, April 26, 1894. Washington: Government Printing Office. 1894.

Report of the Rush Hospital for Consumption and Allied Diseases, from February 1, 1892, to February 1, 1894, with the Second Report of the Women's Board of the Rush Hospital, Philadelphia.

Addresses.

THE LEGISLATIVE CONTROL OF MEDICAL PRACTICE.[1]

BY REGINALD H. FITZ, M.D., BOSTON.

Mr. President and Fellows of the Massachusetts Medical Society: — With the advancement of learning, and the progress of civilization, it has been found necessary for those in authority to exercise more and more control and restraint upon such as are engaged in the practice of medicine.

As it became evident that the name of physician or surgeon was offered in excuse for the grossest ignorance or neglect, or to incite the actual destruction of human life, laws were passed to aid the victim of malpractice, and to punish the criminal abortionist.

When it appeared that sane persons were sometimes, and perhaps for the worst of motives, placed under restraint, justified only in the case of lunatics, a physician's certificate became necessary for the commitment of the insane.

The public has learned that the surest way of controlling the ravages of contagious disease is by the isolation of the earliest cases, and that for the protection of the well, even arbitrary measures of isolation may be found necessary. It, therefore, makes it the duty of the physician to notify immediately the proper authorities when he knows that he has seen a case of cholera or small-pox, diphtheria or scarlet fever, that the community may rest assured that suitable measures are being taken to protect the healthy. Elaborate and costly quarantine methods, useless without the services of intelligent, skilful and especially trained physicians, are established for the same purpose. In addition, vaccination, compulsory if need be, must be guaranteed by the physician to promote the same object.

He must make a return of the birth at which he assists, and must furnish a certificate of the cause of death. When there is reason to suppose that the latter has occurred under suspicious circumstances, the community orders that these shall be satisfactorily investigated by physicians of its own choice, if it sees fit.

The people thus demand, and submit with more or less eagerness or readiness to certain attempts at regulating the practice of medicine. They admit the necessity of the control, and they require qualifications, which only combined intelligence, education and honesty can provide. They seek for them in physicians, and expect the latter to possess them.

It is well recognized among those possessing the best opportunities for judging that patients are at times treated with reckless ignorance or negligence, and die in consequence; but no verdict of homicide is rendered. Ignorant and unskilful persons have often assumed to treat patients in a medical way, have caused injury, and have not suffered civil damages. Equally ignorant and unskilful pretenders to practice do not know the symptoms of contagious disease, do not suspect its presence, make no report to the proper authorities, suggest no isolation, and are the direct cause of the spread of diphtheria, of scarlet fever and the like from house to house and from district to district. The physician's record of the cause of death not infrequently conceals criminal abortion, sometimes manslaughter, and is often indicative of such ignorance as to be wholly worthless.

Nowhere in the Union is the possibility of these evils greater than in Massachusetts. In this State any one who chooses may practise medicine. He has but to announce himself a physician and he becomes one. He may assume a title to which he has no claim, and may place a forged certificate upon his walls. He He may advertise himself a graduate of any institution he prefers; may claim to have accomplished any number of cures of what have been pronounced incurable disease. He may promise preventives and specifics against any and all maladies; he may publicly announce the most glaring untruths — all for the sake of deceiving and fleecing a credulous public — and the law cannot interfere with his actions. We are repeatedly told that our law makes no distinction between the various schools of medicine, or between the various kinds of practitioners. Members of this Society, homœopathists, electrics, clairvoyants, faith-curers, mind-healers, Christian scientists, are alike legally qualified as physicians. Since the people demand, at times under penalty, services from physicians which only intelligence, education and honesty can supply, and since it is a matter of common knowledge that many stupid, ignorant, and dishonest pretenders to practise exist, it is clearly the duty of the State to discriminate between the two, to legally qualify those who deserve the confidence of the people, and to disqualify those who are often the abettors of crime, the victimizers of youth and the constant source of danger to every member of the community.

The object of such legislation is unmistakable. It is for the protection of the entire community, but especially for that portion of it less favored by education or fortune, by experience or knowledge. Its design is to promote their health, happiness and prosperity by giving them a means of deciding to whom they shall apply for intelligent, skilful and honorable aid in the time of need, often so sudden and unexpected in its coming. It enables them to determine by the only feasible means who is educated and who is not, what physicians are deserving of esteem and consideration, and what practitioners are pretenders, sometimes honest, perhaps, usually specious and presumptuous, and generally wofully ignorant.

To license the physician does not imply that he is not to treat his patients in any way he or they may prefer. It should mean that he is to show, before being allowed to treat disease, that he can discriminate between those which are dangerous to the individual and those which are a source of peril to the public. The former may, perhaps, take his life in his own hands, but he should not be allowed to imperil that of his neighbors.

Such a law offers no protection to the licensed physician, who can take care of himself. His education and opportunities have taught him to whom he is to go for suitable advice. Nor does it favor his occupation, since the more unskilful or negligent treatment in the community the more the demand for the services of the skilled and upright physician.

The many who ask for this protection and appreciate its need, suffer from the few, who, ignorant of the necessity, are deceived by false pretences, or are blindly devoted to a theory.

The numerous attempts at the legislative control of medical practice which have been made in the past twenty-five years show that these aims may be accomplished to a certain extent. Every effort meets with opposition, and it is to the nature of the latter and the arguments it offers that your attention is now requested.

---

[1] The Annual Discourse before the Massachusetts Medical Society, delivered June 13, 1894.

Such opposition is diverse and its motives extremely mixed.

On the one hand is to be found the entire class of those likely to be shown ignorant, unskilful, dishonest or corrupt. These are encouraged and supported by those whose occupation it is to systematically oppose all antagonistic legislation — for a consideration. On the other hand we see intelligent theorists and educators, at times leaders in thought and morals, who object to the infringement of personal rights, or the exercise of paternal care by the government. With these are associated respected leaders of the profession who have vigorously and persistently struggled for the highest possible standard of medical qualification, and oppose or discourage all measures which fall short of it. Thorough supporters of some medical legislation, they are determined opponents of all plans of which they cannot approve. These leaders of the opposition are followed by a considerable number of citizens, insufficiently educated, often ill-balanced, and frequently influenced by arguments of the most specious and superficial character.

In general the grounds for the opposition to the legislative control of the practice of medicine are the following assertions:

It invades personal liberty.
It legislates for a class.
It tends to obstruct the progress of therapeutics.
It is unnecessary.
It is not wanted.
It has proven a failure.

Let us consider these somewhat in detail:

It is claimed to be a violation of personal liberty, since it denies to some their right to pursue the occupation they desire and to others the right to select as medical adviser any person they please.

Herbert Spencer is usually quoted as the leading exponent of this view. He says:[2]

> "If it is meant that to guard people against empirical treatment, the State should forbid all unlicensed persons from prescribing, then the reply is, that to do so is directly to violate the moral law. . . .
>
> "The invalid is at liberty to buy medicine and advice from whomsoever he pleases; the unlicensed practitioner is at liberty to sell to whomsoever will buy. On no pretext whatever can a barrier be set up between them without the law of equal freedom being broken; and least of all may the government, whose office it is to uphold that law, become a transgressor of it.
>
> "Moreover this doctrine, that it is the duty of the State to protect the health of its subjects, cannot be established, for the same reason that its kindred doctrines cannot, namely, the impossibility of saying how far the alleged duty shall be carried out. Health depends upon the fulfilment of numerous conditions — can be 'protected' only by ensuring that fulfilment; if, therefore, it is the duty of the State to protect the health of its subjects, it is its duty to see that all the conditions of health are fulfiled by them . . . enact a national dietary; prescribe so many meals a day for each individual; fix the quantities and qualities of food, both for men and women; state the proportions of fluids, when to be taken, and of what kind; specify the amount of exercise, and define its character; describe the clothing to be employed; determine the hours of sleep, allowing for the difference of age and sex . . . and to enforce these regulations it must employ a sufficiency of duly qualified officials, empowered to direct every one's domestic arrangements."

It is to be remembered that this argument of Mr. Spencer is directed against placing restrictions upon "empirical treatment," which is regarded as a violation of the moral law. But let us quote further:[3]

> "Let it be conceded that very many of the poorer classes are injured by druggists' prescriptions and quack medicines. . . .
>
> "Inconvenience, suffering and death are the penalties attached by nature to ignorance, as well as to incompetence — are also the means of remedying these. . . . All means which tend to put ignorance upon a par with wisdom, inevitably check the growth of wisdom. Acts of parliament to save silly people from the evils which putting faith in empirics may entail upon them, do this, and are therefore bad. Unpitying as it looks, it is best to let the foolish man suffer the appointed penalty of his foolishness. For the pain — he must bear it, as well as he can; for the experience — he must treasure it up, and act more rationally in the future."

This argument of more than forty years ago is persistently brought forward whenever the question is raised of the control of medical practice by the State. It is usually overlooked that it relates especially to prescribing, whereas the practice of medicine includes other considerations than that of providing means of treatment.

Despite the reasoning of Mr. Spencer the government finds it necessary to take certain steps, theoretically objectionable, for the protection of the health of the individual. It does not prescribe the number of meals per day, or the proportion of fluids and solids, the amount and character of the exercise, the kind of clothing and the hours of sleep. It does, however, insist that food offered for sale shall be unadulterated and wholesome; that water-supplies shall be uncontaminated; that noxious trades shall be rendered, as far as possible, harmless; that clothing shall be made under certain conditions. The State cannot protect the health of its subjects in every respect; but it everywhere endeavors to accomplish something. Even Mr. Spencer may be quoted in approval:[4]

> "He who contaminates the atmosphere breathed by his neighbor, is infringing his neighbor's rights . . . and in the discharge of its functions as protector, a government is obviously called upon to afford redress to those so trespassed against."

Professor Huxley's name is usually coupled with that of Mr. Spencer as an opponent to placing restrictions upon the practice of medicine. His words are as follows:[5]

> "In my judgment the intervention of the State in the affairs of the medical profession is to be justified . . . simply and solely upon the ground that the State employs medical men for certain purposes, and as employer, has a right to define the conditions on which it will accept service. It is for the interest of the community that no person shall die without there being some official recognition of the cause of his death. It is a matter of the highest importance to the community that in civil and criminal cases, the law shall be able to have recourse to persons whose evidence may be taken as that of experts; and it will not be doubted that the State has a right to dictate the conditions under which it will appoint persons to the vast number of naval,

---

Social Statics 1851, 373.

[3] Social Statics, 1851, 377.

[4] Op. cit., 372.

[5] Nineteenth Century, 1884, xv, 228.

> military and civil medical offices held directly or indirectly under the government. Here, and here only, it appears to me, lies the justification for the intervention of the State in medical affairs."

Although this plea that the regulation of the practice of medicine is a violation of human rights has regularly been brought forward for the purpose of exciting sympathy, it has repeatedly been declared by the courts, except in New Hampshire, to be invalid.

It is best answered in the words of Judge Williams:[6]

> "In a certain sense it is true that every man has a natural right to follow out the bent of his inclination, and be a clergyman, a lawyer, a doctor, a scavenger, a peddler, an auctioneer, just as he may choose. But, it is not true that a man can practise any one of these professions or occupations except he does it upon such terms as the law imposes, and the law can impose just such terms upon any one of these professions or employments as the legislators in their discretion deem best for the interest of the community. . . .
>
> "The right to practice medicine is a mere statutory privilege, subject to be changed at any time by the legislature."

It is claimed to be class-legislation, producing a monopoly, and, therefore, unconstitutional. We have again a statement, which is offered to excite sympathy, although its illegality has been demonstrated. It is everywhere recognized that legislation designed for the welfare of the people is the duty of the State, and is approved, if not demanded, by the public. The only question is to what extent shall such class-legislation be carried. The people alone are to decide. Licenses are given to peddlers, plumbers and apothecaries, to dealers in liquor, milk and oleomargarine. Pilots must show a familiarity with the dangers to navigation in the waters through which they undertake to guide vessels, before they can be permitted to take charge of them. Surgeons must be examined as to their medical and surgical knowledge before they can be appointed to the service of the militia. These are but a few of the illustrations that such class-legislation as is contemplated in the licensing of physicians is taking place constantly and with uniform approval. It does not create a monopoly, since it does not limit the practice of medicine to any particular sect or school. Any person can still become a physician by taking the necessary steps to secure a proper preparation for an occupation which is generally conceded to be one of great responsibility, and one demanding a various training. What is open to all is no monopoly. But this objection, too, has been definitely settled by the decision of the Supreme Court of the United States, given by Mr. Justice Field in the case of Dent *v.* West Virginia.[7] According to him

> "there is no arbitrary deprivation of such right where its exercise is not permitted because of a failure to comply with the conditions imposed by the State for the protection of society. The power of the State to provide for the general welfare of its people authorizes it to prescribe all such regulations as, in its judgment, will secure or tend to secure them against the consequences of ignorance and incapacity at well as of deception and fraud. . . . The nature and extent of the qualifications required must depend primarily upon the judgment of the State as to their necessity. . . .
>
> "We perceive nothing in the statute which indicates an intention of the legislature to deprive any one of his right. No one has a right to practice medicine without having the necessary qualifications of learning and skill; and the statute only requires that whoever assumes, by offering to the community his services as a physician, that he possesses such learning and skill, shall present evidence of it by a certificate or license from a body designated by the State as competent to judge of his qualifications.
>
> . . . .
>
> "There is nothing of an arbitrary character in the provisions of the statute in question; it applies to all physicians, except those who may be called for a special cause from another State; it imposes no conditions which cannot be readily met."

We are told that a law to license medical practitioners will obstruct the progress of therapeutic knowledge, since certain so-called healers and curers will refuse to be examined for a license. This class is likely to include the hydropaths, psychopaths, naturepaths, omnipaths, mind-healers and faith curers, spiritualists, mesmerists and Christian scientists, botanic, hygienic and Indian physicians, the seventh son of a seventh son, and the retired clergyman whose sands of life have nearly run out, and the like.

They will refuse to be examined, since they are conscious of their inability to pass an examination, or they may claim that they will suffer a loss of therapeutic power by acquiring knowledge of the anatomy and physiology of the body or of the symptoms and diagnosis of disease. These people should not be licensed unless they submit to the requirements which are deemed sufficient to test the qualifications of physicians. There need, then, be no interference with such therapeutical experiments as they and their patients see fit to carry on, at their own exclusive risk.

The demand for such persons, under some title or other, will always exist. There are many worthy citizens, some of a high degree of intelligence in many things, who firmly believe that most remarkable and wonderful cures have been accomplished by such "healers." They are told, and are willing to believe, that the latter possess the gift of healing, and have "divined" the successful treatment of disease. Such miraculous cures have been reported in all ages, but the methods of their accomplishment have proven no commendable additions to therapeutic knowledge. They are recognized as dependent upon mental peculiarities, by no means to be encouraged, of the patient, and equally striking and frequently objectionable characteristics of the practitioner.

We are told that the latter will refuse to be examined because he may lose his power. It is to be remembered that Christian scientists are not the only practitioners who have obtained successful results by the use of faith. Dishonest charlatans have been as fortunate as religious enthusiasts, and eminent physicians have proven quite as successful as either. Mental therapeutics may accomplish wonderful results in certain instances, but the ability to use them is in no respect limited to persons ignorant of any claim to medical knowledge. It may well be admitted that there are some patients who will recover under certain therapeutists, but not when licensed physicians attempt their treatment. It is unfair to deprive such individuals of this possibility unless there is a risk to others.

Even Mr. Spencer recognizes the importance of restraining those "who contaminate the atmosphere," and no person should be allowed to undertake the treatment of the sick without previously having given evidence of a sufficient knowledge of the means of recognizing contagious diseases and the measures to be adopted to check their dissemination.

---

[6] Rep. Ill. State Board of Health, 1885, vii, 432.

[7] 129 United States, 114.

There are those who claim that were there no other objection to the further control of medical practice it is unnecessary, since it would add but an infinitesimal degree of security to the citizen's chance of being faultlessly treated when sick, and the people are already protected by the existing laws against malpractice and manslaughter.

No honest and intelligent physician of practical experience claims to treat faultlessly a sick person. No sensible physician, familiar with the seats and causes of diseases, believes that it ever will be possible to always treat faultlessly the sick person, provided it is meant by this phrase to cure him of his disease. But the treatment of the sick person is but a part of the doctor's duty. To enable his patients to avoid disease, to prevent them from becoming dangerous to others, are not the least important parts of his occupation. Education alone, in addition to intelligence and honesty, can enable him to promote these aims.

The practise of Massachusetts courts in medical cases during the greater part of the present century was based on the decision of Chief Justice Parsons in 1809,[8] that if the patient's death is the result of treatment honestly administered, the person prescribing is not guilty of manslaughter. It is only within the past ten years that this decision has been reversed[9] by the declaration of Judge Holmes that one who practises with reckless ignorance or negligence is liable for homicide, and for civil damages if he causes injury by ignorant or unskilful practice.

The number of cases of death due to the gross ignorance or negligence of the charlatan is unknown. Some are probably familiar to many members of this Society. I merely allude to the statement of the court that Thomson, who gave his name to Thomsonianism, without reasonable doubt caused the death of his patient by unskilful treatment. That Franklin Pierce was the cause of his patient's death by ordering the application of flannels saturated with kerosene oil for some three days. That a barber in Illinois, by the unscrupulous methods of the quack, obtained a considerable practice, and caused "the brutal butchery of a mother in labor and her unborn offspring."[10]

Other instances, occurring in his own experience, are mentioned by the medical examiner for Suffolk County, Dr. F. W. Draper, in his argument before the Public Health Committee of the Legislature, February 14, 1894.

Dr. F. B. Harrington, of Boston, informs me of a poor woman who was suffering from copious and continuous hæmorrhages from uterine cancer. These were controlled in accordance with his advice. She later came under the care of a Christian scientist, who told her there was nothing the matter, and that she might go out and pursue her daily occupation. The bleeding returned, but the advice to go about was persisted in. A hæmorrhage took place while she was away from her home and caused her death shortly after her return. Similar illustrations of death following the gross ignorance of persons claiming to cure disease might be produced almost without limit, and the existing laws fail to prevent them.

But it is claimed, if the person is injured as a result of negligence or lack of skill, a suit for damages may be brought. As a rule such cases do not come to trial. Those which are brought before a jury are usually directed against educated physicians of means for various motives. The hospitals of every large city are constantly resorted to by unfortunates who have been induced to apply to ignorant and pretentious charlatans for medical or surgical aid, and have suffered grievous injury from following their advice. If the sufferer realizes the cause of his misfortunes, he may be unable to secure the services of counsel. If he should be successful in this effort he usually recovers nothing, since the charlatan either has no visible means, or leaves the State in time to escape an unfavorable verdict. Much more often he suffers in ignorance of the cause of his suffering.

Not only are the laws against manslaughter and malpractice insufficient to protect the community, but those intended to guard against the spread of contagious diseases are alike ineffective. The ignorant pretender, under whatever title he or she may appear, often does not recognize the nature of the contagious disease. No suggestion is made of isolation. Well children are allowed to play with the sick. All are permitted to go to school, and the outbreak of scarlet fever or diphtheria is thus promoted, which could have been avoided by the intelligent precautions of an educated physician. I have before me the advertisement of a person employed in a street-car, announcing "Diphtheria cured in all stages." Cases were taken to him for treatment and were not reported to the Board of Health. The law concerning the notification of contagious diseases could not apply to this person, since he did not call himself a physician; neither was he a householder, and he could have pleaded ignorance of the nature of the malady. The cases under his treatment which were about to die were referred, at the last moment, to physicians who were then called upon to give such aid as was possible. Existing laws do not protect the community from such persons as these.

We are told that the legislation is not wanted, since the people do not ask for it. The history of medical legislation in the various States of the Union furnish direct evidence to the contrary. Appeals are made by clergymen, lawyers, authors, physicians and public-spirited men of every degree. Physicians, it is true, as a rule, take the initiative, since the evils resulting from the ignorance or lack of skill of the pretender are usually first brought to their notice. The grievously sick or dying victims of the abortionist, the moribund patient deceived by the promises, or injured by the statement of the charlatan, eventually seek aid from the educated physician in good standing, often at a time when death is but a few hours removed, or permanent deformity has been made a necessity, or conditions often bordering upon insanity have been reached.

It is this experience of the doctors which has opened the eyes of the people, and it is the enlightened common-sense of the latter which has decided upon the need of the regulation of the practice of medicine throughout nearly all the United States.

Finally, we are told that the State control of medical practice has proven a failure. At the present time some sort of law intended to regulate the practice of medicine exists in nearly every State and Territory of the Union. These laws differ widely in their scope and in their results, but all have the same end in view — the protection of the people. As some have failed to produce the desired result, suitable amendments have been made. Some of the most recent laws are those which promise to be the most efficient, and it would indeed be astounding were a series of failures likely to act in favor of a renewal of the same undertaking. On the contrary, the failure of the earlier attempts at medical legislation has led to the avoidance of the causes of failure, and the reports from various States give encouraging evidence of what has been accomplished.

---

[8] Commonwealth *v.* Samuel Thomson, 6 Mass. Rep., 134.

[9] Commonwealth *v.* Franklin Pierce, 138 Mass. Rep., 165.

[10] Rep. State Board of Health, Ill., 1884, vi, 10.

(To be continued.)

◆

THE INFLUENCE OF ANIMAL EXPERIMENTATION ON MEDICAL SCIENCE:

Abstract of the President's Address before the Congress of American Physicians and Surgeons, at its Third Triennial Meeting, Washington, D. C., May 31, 1894.

BY ALFRED L. LOOMIS, M.D., OF NEW YORK.

The specific problems with which medical science deals are questions of the relative influence of multiple forces on the production of given results. Only the deepest ignorance can fail to recognize that the forces concerned in the simplest change of inorganic nature are so numerous and their relations so complex that they defy recognition under uncontrollable conditions, while in the organic world the task is even more hopeless. Experimentation, therefore, in which one or more of the involved forces can be controlled, becomes an absolute necessity in all scientific investigation. However clear the mental analysis, however accurate the logical demonstration from cause to effect, it is possible by experiment alone to prove that no involved force has been overlooked. Is it not strange that medicine should be denied the right to follow those imperative methods of scientific reseach which are so unquestionably accorded to every other science? It is not a little surprising that men with an appreciation of the necessity of experimentation should for so long have preferred to be its subjects, and that even to-day so many refuse to yield the place to animals. For example, in widespread epidemics we note the effects of an infection on perhaps half a million of human beings, with a great sacrifice of human life. On the other hand, we study in laboratories the cause of the epidemics with a comparatively small sacrifice of animal life.

In entering upon the consideration of this subject the author fearlessly laid down this proposition: Every distinct advance, every established principle, and every universally accepted law of medical science has been in the past and will be in the future the direct, if not the immediate result of animal experimentation. He then passed to a review of some of the obvious and conclusive proofs of this proposition.

It is not too much to claim that during the latter half of the present century the results obtained from experiments on animals have done more than all the observations of the preceding centuries to raise medicine from conditions of vagueness to conditions of exactness. From the time of Aristotle, who proved that the blood, brain and spinal marrow in animals have no sensation, down to the present day, animal experimentation has been practised by all investigators who have gained any definite knowledge of the more important phenomena of animal life.

Galen must be regarded as the pioneer in this line of investigation. By his experiments on living animals he showed that arteries contain blood, that the lungs passively follow the movements of the chest, and that the diaphragm although the most important is not the only muscle of respiration. Further, by section of the spinal-cord and of the recurrent laryngeal nerve, he demonstrated the nervous control of the voice and explained the mechanics of respiration. He also advanced the knowledge of the functions and movements of the alimentary canal and laid the foundation of our knowledge of the functions of the brain and spinal-cord. The results of his experimental work are now as conclusive as when first made, and are the only part of his vast labors which have stood the test of modern investigation.

From Galen's time to Harvey's great discovery, little experimental work was done; and during this time medicine ceased to advance. Harvey's demonstration of the circulation of the blood in 1620 rests entirely on animal experimentation, as is shown by his writings.

The next series of important investigations on animals were applied by Galvani and Volta to the nervous system.

In 1664 Robert Hook, by inflating the lungs of animals by means of a bellows, demonstrated artificial respiration. The experiments of Boyle and of Priestly in the seventeenth century laid the foundation of our knowledge of the respiratory process.

The injection of fluids into the blood-vessels of animals was first done by Dr. Christopher Wren. In 1666 Richard Lower performed the first tranfusion, and the following year Dr. Denis performed the same experiment on man.

Haller, in the middle of the eighteenth century, proved that all motion in the human body proceeds in great measure from the brain and spinal-cord. He also demonstrated that irritation of the peripheral end of a severed nerve produced contraction in the muscle to which it was distributed. This was followed by the experiments of Sir Charles Bell. At the beginning of the present century Magendie demonstrated the difference between the anterior and posterior roots of the spinal-cord. His experiments on animals by the injection of various medicinal substances enabled him to lay the foundation of the doctrine that remedies exert their action upon special structures and organs. In this line of work he was followed by Claude Bernard. It is perhaps a conservative statement, that, excluding the medicinal foods, ninety per cent. of all our medication is made definite and valuable by this principle alone. Magendie, Bernard and Loget established by their experiments the doctrine of recurrent sensibility, which was followed by the discovery of Marshall Hall of reflex action of the spinal-cord. The doctrine of vaso-motor action was practically demonstrated by Bernard's experiments.

John Hunter, in 1785, by his experiments on dogs, established the fact that injuries to healthy arteries were soon repaired, and that ulceration after ligature occurred only when the vessel was diseased. The experiments led him to apply ligatures for the cure of aneurism to healthy portions of the arteries. Hunter first learned by experiment on pigeons and young pigs that the growth of bone was from the periosteum.

As we witness some capital operation performed at the present day without pain, almost bloodless, followed neither by fever nor suppuration, we may ask how far these results are due to experimentation on animals. The effect of chloroform was discovered through experimentation on the ant. Simpson practised and perfected his use of chloroform on animals before he placed his first patient in a state of anæsthesia. That other great alleviator of pain was first practised on dogs.

These results are sufficient to exalt animal experimentation to the first place, as a means of scientific advancement.

The first important step in the field of etiology based on animal experimentation was made in 1850, when it was proven that splenic fever could be communicated from animal to animal by inoculation, and the first hint of bacteriological study was given by the discovery constantly in the blood of these animals of little thread-like bodies.

About the same time Virchow made his observations on trichinosis. M. Viyaman inaugurated an important era when he established the fact that tuberculosis was an infectious disease. The invaluable studies of Pasteur introduced us into a new world of knowledge. He not only obtained pure cultures of organisms, but also studied their life-history and placed bacteriological science on a firm basis. The crowning glory of Pasteur's work came with the discovery of the attenuation of bacterial toxic products. It is not possible to point to a work of richer or grander promise, yet it is a work that was possible only by experiments on living animals. The application of Pasteur's doctrine by Mr. Lister to the antiseptic treatment of wounds has been a full confirmation of this principle.

The discovery of the bacillus tuberculosis by Koch marks another brilliant epoch in medical science.

Within the past two decades animal experimentation has accomplished more in the field of cerebral localization than all the preceding centuries of carefully recorded cerebral symptoms studied in the light of post-mortem investigation. It has opened a new field of operation.

From this history, it seems evident that most if not all of the real advances in medicine have been made possible through experimentation. This review of what our profession has done is not a plea for mercy — it is a cause for pride. So long as the moral and spiritual development of mankind remains the supreme purpose of creation, medical science can claim equal honor with the science of God, and in the conflict with physical evil must be the first to meet the foe. Until Infinity repeals the edict which gave man power over all created things, the right to claim the services of the brute can never be denied him who devotes his life to the service of mankind. We glory in our experimental work because we know the tenderness of cruelty, the balm of pain, the life whose birth is only in the throes of death. From the ignorant we expect to receive only censure; but from those who in the valley of the shadow of death have learned to know what manner of men we are, I have faith to believe that the reply will come, "We have trusted you with the lives of our loved ones, we entrust to you God's dumb creatures."

THE Pope has decided that cremation, while heretical in principle, may be allowed under special conditions.

Original Articles.

STRANGULATION OF MECKEL'S DIVERTICULUM CAUSED BY VOLVULUS OF THE ILEUM.[1]

BY J. W. ELLIOT, M.D., BOSTON,
Surgeon to the Massachusetts General Hospital.

THE patient, a man about thirty years old, was brought to the accident room of the Massachusetts General Hospital, October 17, 1893. He had been sick for four days, with vomiting, chills and abdominal pain. The bowels had moved twice in the previous forty-eight hours. The temperature was 103.6°, pulse 160, respiration 35.

The abdomen was distended, tympanitic and exquisitely tender, especially to the right of, and below the umbilicus. Free fluid was evidently present in the peritoneal cavity. Under ether, a large hard mass was plainly felt in about the middle of the abdomen, just below and slightly to the right of the umbilicus. Both Dr. M. H. Richardson and I considered it a severe case of appendicitis. Dr. Richardson also kindly assisted me with the operation, which proved to be the most difficult and perplexing operation I ever saw.

The abdomen was opened by a vertical incision two inches inside the anterior superior spine of the ileum. A quantity of turbid fluid escaped. The appendix was examined, and found to be normal. On exposing the mass near the middle of the abdomen by extending the incision, it looked like a large dilated and gangrenous knuckle of intestine, but without a mesentery. It sprang from the lower part of the convex surface of the ileum, and was tightly twisted at its point of attachment to the bowel. It extended upwards into a dense mass of adhesions, and when dissected free was found to be attached to the under surface of the umbilicus. It was then evident that we were dealing with a Meckel's diverticulum in a strangulated and gangrenous condition. It was seven inches long, and about the same size as the ileum. During the dissection, the gangrenous diverticulum was ruptured, allowing the escape of a quantity of fæcal-smelling fluid into the peritoneal cavity. The diverticulum was removed, and the opening in the ileum was closed with several Lembert sutures. The ileum at this point was found twisted on itself and held in this abnormal position by adhesions. The gut was not wholly obstructed by the twist. On untwisting the bowel old adhesions were found extending deep into the mesentery so as to shorten it at one point. This contraction of the mesentery seemed to have caused the volvulus of the ileum. The diverticulum having its outer end fixed at the umbilicus, was twisted and strangulated at its base by the turning over of this coil of the ileum. The gangrene of the diverticulum was most intense near the ileum, the end at the umbilicus being only moderately inflamed. This is explained by the fact that the diverticulum has its blood-supply from the mesenteric artery of the ileum.

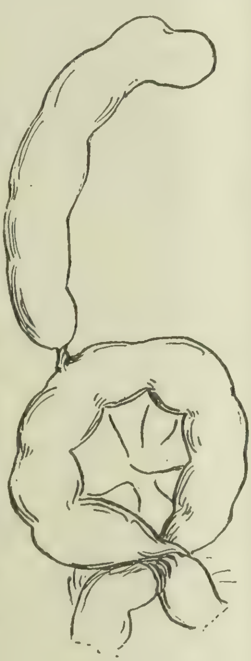
The operation was severe, causing the pulse to rise to 180 at the end. The patient, already septic at the time of operation (unfortunately the cultures of the turbid fluid found in the abdomen were lost), died of septic peritonitis on the second day.

As is well known, Meckel's diverticulum is due to the persistence or incomplete obliteration of the vitelline duct. It is usually small, and has its principal interest in the fact that it not infrequently acts as a band and causes intestinal obstruction.

---

[1] Read at the Congress of American Physicians and Surgeons at Washington, May 31, 1894.

Dr. R. H. Fitz,[2] in a very valuable paper on this subject, quotes Roth [3] as calling attention to the origin of retention cysts from Meckel's diverticulum. "Such cysts are divided into two classes, according as their cavity is continuous or discontinuous with that of the intestine. The wall is composed of the various layers found in the intestine." Roth describes a cyst of this kind occurring in a child one year and four months old. "It was connected with the concave surface of the ileum, near the mesenteric insertion twenty-six inches above the ileo-cæcal valve. The pedicle having become twisted, a hæmorrhagic infiltration and necrosis of the mucous membrane had occurred, also acute peritonitis."



The case here reported is unique, but this case of Roth's resembles it in several important particulars. In both cases the diverticulum was strangulated by twisting of the pedicle, and acute peritonitis followed.

These cases are sufficient to establish the fact that strangulation of Meckel's diverticulum is one of the causes of acute peritonitis. This fact has an additional interest at the present moment in that the diverticulum resembles the vermiform appendix, and the two lesions may easily be confounded, clinically, as in the present case. While the diverticulum is often without a mesentery and is therefore freer and more likely to suffer from strangulation by twisting of its pedicle, yet it not infrequently has a mesentery; in which case it must be liable to the same pathological processes (though evidently much less frequent) as the appendix. Such cases are not wanting. Fitz mentions a case reported by Dr. Beale,[4] where acute peritonitis followed perforation of a diverticulum, in the cavity of which were a cherry-stone, the coriaceous covering of several orange-pips and other substances; and also a case of adherent diverticulum described by Houston.[4] This diverticulum was filled with a hard matter, apparently inspissated fæces. "The omentum and intestines in the neighborhood were closely joined to the tumor by adhesions, the result of former inflammatory attacks, and the woman had complained for many years before her death of occasional severe pain in the abdomen."

The symptoms of inflammation of these two intestinal pockets are the same, as they both cause peritonitis. The only points in the differential diagnosis which the writer is able to suggest, are that a history of a discharge from the umbilicus (this occurred in a case of intestinal obstruction due to diverticulum in the practice of Dr. John Homans) would suggest the presence of a diverticulum, while a history of previous attacks of pain would be significant of either an inflamed appendix or diverticulum, as, according to Fitz, "In nearly one-half the cases of vitelline remains previous attacks of pain were recorded." The presence of a tumor or tenderness near the umbilicus should favor the theory of inflamed diverticulum as against the appendix. It will be remembered that in the case here reported a distinct tumor could be felt just below and slightly to the right of the umbilicus.

The only treatment to be thought of in such cases is prompt laparotomy and the removal of the inflamed or strangulated diverticulum. The special points to be observed in the operation are the careful stitching of the pedicle, as it often opens directly into the intestinal canal; also the careful ligature of the vessels, because the diverticulum is supplied by a branch of the mesenteric artery, which is the persistent omphalo-mesenteric artery, and may be of considerable size.

◆

SUICIDAL GUNSHOT WOUND OF THE ABDOMEN; FÆCAL FISTULA; COMPLETE RECOVERY WITHOUT OPERATION.[1]

BY P. RALPH EGAN, M.D.,
Assistant-Surgeon, United States Army.

The older surgeons looked on gunshot wounds of the abdomen with feelings akin to despair. The mortality from these injuries under the most favorable circumstances amounted to over eighty per cent. In less fortunate cases it reached a hundred per cent.

Need we wonder that after the successful cases of Kocher and Bull, ten years ago, the motto became, "Laparotomy for diagnosis and treatment." It was the inevitable enthusiasm following a new and successful method of treatment. It is now, however, beginning to be modified before the tests of experience.

In military practice the difficulty of diagnosing a perforation, and the frequent necessity for immediately transporting the patient from the seat of action, generally caused laparotomy to be deferred. It will further be necessary to differentiate as far as possible between wounds of the various parts of the intestines.

It has always been a well-known fact that wounds of the large intestine were less fatal than those of the stomach and small intestine. Even wounds of the different divisions of the large bowel give different results. Assistant-Surgeon Otis, United States Army, writes:[2] "While few instances are observed of recovery from gunshot wounds of the transverse colon, many were seen of survival after perforation of the cæcum and ascending portion of the bowel, and a still larger proportion of recoveries was observed in wounds of the sigmoid flexure and other parts of the descending colon. . . . Nearly all were attended by stercoral fistulæ which commonly closed after a time, without operative interference, reopening at intervals, and then healing permanently." He then gives a history of 59 recoveries, in 50 of which the stercoral fistulæ had completely closed.

---

[2] American Journal of Medical Sciences, July, 1884.

[3] Virchow's Archiv, 1881, lxxxvi, 377.

[4] Report of Proceedings of the Pathological Society of London, 1851–52.

[5] Descriptive Catalogue of the preparations in the Museum of the Royal College of Surgeons in Ireland, 1831, 1, 38.

[1] Read for the author at the April (1894) meeting of the Society of the Alumni of Charity Hospital, New York, by Dr. Walter Lester Carr.

[2] Medical History of the War of the Rebellion.

In 1886, during the discussion of gunshot wounds of the intestines, Dr. W. T. Bull[3] spoke as follows: "In conclusion, let me make one exception to the rule of treatment I have advocated, namely, to explore bullet wounds. It is in cases where the wound is situated in the posterior part of the abdomen, or in the lateral wall covered by the lower ribs, and there is no evidence of any wound anteriorly."

In the same debate, Dr. Parks, of Chicago, thought that sufficient data had not been offered on which to form a correct diagnosis. He thought the size of the firearm must be taken into consideration, as also the distance, shape of the bullet, its calibre, and that the result of the injury might be affected by the obliquity with which the missile entered the body. He then detailed the remarkable case of a thief who was shot while running away from his pursuers. The bullet was of 44 calibre, and struck him in the back. The next morning he went to the hospital, where it was found the ball had entered the back about four inches from the spinal column, and came out near the umbilicus. He never developed any serious symptoms, and left the hospital on the second day.

Dr. Bryant,[4] believed laparotomy was a justifiable operation, but that it should not be attempted even in so-called favorable cases, unless the operator could avail himself of many of the recognized means of procedure necessary to combat the shock of the operation, and was sufficiently familiar with its steps to operate with accuracy and despatch.

Dr. Weir said: "Clinically, it is found that every case of such a wound (that is, penetrating,) does not justify laparotomy. When such a case comes under the eye of a surgeon, the collapse which he or she is in may, and too often does, prohibit utterly surgical interference. In only one condition is there an operation justifiable, and that is for the arrest of hæmorrhage which may be the cause of shock."

Before the International Medical Congress in 1887, fæcal extravasation was considered the only clear indication for operation (Hingston). The same year Sir William McCormac wrote: "Some degree of doubt must always exist on account of the necessary obscurity of the symptoms, except in the rare event of prolapse of the injured gut, fæcal extravasation appearing externally; or very free hæmorrhage from the wound." Operation, he thought, was practically useless after twenty-four hours had elapsed, or when general peritonitis and great collapse had set in.

In 1888, Reclus reported the recovery of three cases of perforation of the abdomen. He claimed as the result of experiment that perforation was not necessarily present in cases of penetration, and that therefore laparotomy need not be performed unless the signs were unmistakable. He advised firm compression of the abdomen and large doses of opium; and only when this treatment had failed was laparotomy to be performed.

Two years later, Dr. Lewis A. Stimson showed that the integral statistics of the principal hospitals in New York City to that date were as follows:[5] without operation, 23 cases (15 deaths, mortality 65 per cent.); with operation, 16 cases (13 deaths, mortality 81.2 per cent.). He thought perforation occurred in all cases of penetration save when a small bullet has entered so that its course must lie through the liver, and those in which the ball has traversed the abdominal wall very obliquely. He concludes that in the present state of our knowledge it cannot be said that either interference or non-interference should be the rule of practice, and the surgeon may be guided by his own convictions and feelings, whether they lead him to seek to do as much good, or only as little harm as possible.

In the discussion, Dr. Wyeth thought the question of operation was then involved in as much obscurity as it had been nine years before.

In 1892,[6] Luhe concluded, from 324 cases, including those of McCormac, Coley and Morton, that laparotomy was indicated in undoubted cases of perforation. He found the mortality in 152 cases of shot wounds was 62.9 per cent.; while for other forms of wounds it was 34 per cent. In those cases in which laparotomy was performed within the first twelve hours, the mortality was 58.2 per cent.; but in those cases in which it was delayed for a longer period, the mortality reached 79.5 per cent.; while the mortality in those cases in which the length of time was unknown was 82.4 per cent.

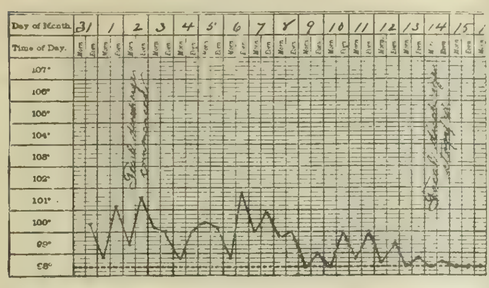
This shows that delay increases the mortality in operations after these wounds. The rule that immediate laparotomy is necessary, must, of course, have some exceptions, as in military practice where antiseptic precautions and the time necessary for the proper performance of the operation are wanting. He believes the formation of artificial ani will be often necessary, and that transportation should be prohibited during the first few days at least.

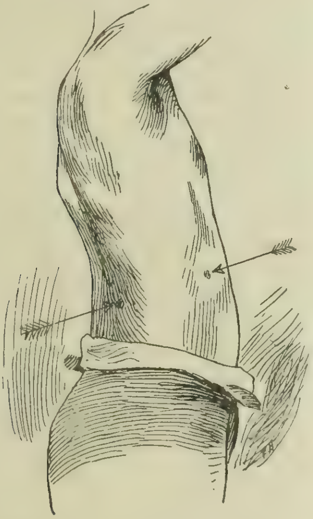
In the above papers the difference in the mortality according to the part of the intestine injured, as shown by Assistant-Surgeon Otis, seems to have been overlooked. The following case is cited in support of the correctness of his views:

F. W., colored, age twenty-four, was admitted to hospital on May 31, 1893, about 10.22 A. M. A number of petty robberies had been committed in the place. He was accused by his companions of being the thief. This so preyed on his mind that he tried to commit suicide. With this object he placed the muzzle of a 45-calibre Springfield carbine to the front of his abdomen. The stock he rested on a box about two feet high, then bending forward he pulled the trigger. The bullet entered in the mammary line just a little to the right and immediately below the lower edge of the false ribs on the right side. It made its exit just over the highest point of the innominate bone and about one-fourth of an inch external to the line of the outer border of the axilla. He was seen inside one-fourth of an hour after the accident. A slight amount of pallor existed. He had no hæmorrhage and no blood in his stools. The only sensation he experienced around the wound was one of numbness. There was nothing to indicate that a perforation of the intestines had occurred. It was concluded that if any portion of the intestines had been injured it was the ascending colon, and in view of the favorable results given by Assistant-Surgeon Otis, laparotomy did not seem justifiable. His wounds were dressed aseptically. He was given a liquid diet, and placed on his back. His temperature was sub-febrile in the evening, and thereafter as shown in the accompanying chart. On the third day he began to lie with his knees drawn up. This position he explained was to relieve pain which had developed round the wound. At the same time a slight odor was noticed in changing the dressing. It came from the posterior opening. During the night a quantity of fæcal matter came out; and on the following day it amounted to over a pint, and necessitated frequent dressings. For the next ten days it decreased in quantity, and on the twelfth had completely ceased. The photograph was taken a little after this period when both wounds had closed.

---

[3] Medical News.
[4] Medical Record.
[5] New York Medical Journal
[6] Centralbt. für Chir.





As he suffered from pains on exertion, he was kept under treatment until July 20th, when he was discharged. The wounds never reopened; and he has continued to ride horseback and do ordinary work without any inconvenience. His general health remains excellent.

From the above citations, we may safely reach the following conclusions:

(1) That wounds of the large intestine are more liable to spontaneous cure than those of any of the other abdominal viscera.

(2) That antero-posterior perforation of the abdomen, though nearly always followed by perforation of the bowel, is not necessarily so, as shown by the remarkable case of Dr. Parks.

(3) That prolapse of the wounded intestine or fæcal extravasation is alone diagnostic of a perforation.

(4) That if operation is indicated, it must be performed as soon as possible, and with the withdrawal and examination of only a small portion of the intestine at a time. The examined portion to be replaced and another section examined in the same way until a thorough search has been completed.

(5) That if the case is not seen for several hours after the accident, drainage by iodoform gauze should be alone attempted, as fibrinous adhesions have been found to occlude the wound and wall off the peritoneal cavity in a few hours.[7]

(6) That in military practice the impossibility of always taking antiseptic precautions, and the urgent necessity for transporting the patient to a base hospital, will often prevent the performance of laparotomy.

The introduction into warfare of the small jacketed bullet, projected with great velocity, will probably not modify the status of abdominal wounds in any material degree. The wounds will be more like a punched-out hole, with little, if any, contusion of the neighboring parts. Fatal hæmorrhage will be more prevalent, and there will be about four times more dead than wounded.[8] There will also be more men killed and wounded in a given time by the new rifle. The wounds produced, if not immediately fatal, will, however, be more amenable to surgical skill, and much more promptly recovered from.[9] More penetrating wounds of the abdomen will be liable to spontaneous recovery, while those that come to operation will show an increased percentage of recovery. The general opinion of military surgeons seems to be favorable to the new weapon, so far as experiment and its limited employment in actual warfare enable them to judge.

◆

Reports of Societies.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Third Triennial Meeting, Washington, D.C.,
May 29, 30, 31 and June 1, 1894.

GENERAL SESSIONS.

(Concluded from No. 23, p. 575.)

FRIDAY AFTERNOON. — JUNE 1st.

The business meeting of the Congress was held at 1.30 p. m., the President, **Alfred L. Loomis**, in the Chair.

Dr. Nevins B. Hyde presented, on behalf of the American Dermatological Association, the following resolution:

> *Whereas*, The American Dermatological Association recognizes the importance of the undoubted existence of leprosy in North America, therefore
>
> *Resolved*, That the Congress of American Physicians and Surgeons be requested to memorialize the Congress of the United States of America, with the view to the appointment of a commission of five to investigate the prevalence of leprosy in the United States of America and in the countries upon its borders, and to suggest means for the control of the disease.

Dr. William H. Welch, of Baltimore, stated that a bill had been presented in Congress prohibiting experiments on animals in the District of Columbia, and presented and moved the adoption of the following resolution:

---

[7] Abbe and McGraw.

[8] Colonel Boonen-Rivera on the War in Chili.

[9] Thurnwald, in Austria, as the result of experiment, has come to this same conclusion.

> *Whereas,* The attempts in other countries to regulate by legislation the practice of experimentation upon animals have proven most disastrous to the progress of medical science and art,
>
> *Resolved,* That the Congress of American Physicians and Surgeons enters its most earnest protest against any legislation tending to interfere with the advancement of medicine by means of experimentation upon animals, conducted by properly-qualified persons.

Dr. L. McLane Tiffany, of Baltimore, offered the following resolution:

> *Whereas,* The army appropriation bill reduces the number of medical officers in the army by twenty-five, and also reduces the appropriation for the library of the surgeon-general's office from ten thousand dollars to seven thousand dollars,
>
> *Resolved,* That it is the opinion of this Congress that these proposed reductions are unwise and are contrary to the best interests, not only of the army, but of the medical profession of this country, and of all who depend upon them for skilled professional services, and that we respectfully request our representatives and senators to so amend this bill as to prevent the reductions above referred to.

These three resolutions were adopted.

The question of amendment of the by-law relating to the place of meeting was brought up, and its consideration postponed until the next meeting, when it should be made the special order for the first day's session.

The Congress then proceeded to the scientific work. The first portion of the afternoon was under the direction of the American Laryngological Association, and the subject for consideration was

THE SURGERY OF THE ACCESSORY SINUSES OF THE NOSE.

Dr. F. H. Bosworth, of New York, read the first paper, which was on

DISEASED CONDITIONS OF THE ETHMOIDAL SINUSES.

Diseases of these sinuses differ from diseases of the other sinuses in their anatomical peculiarities and in their symptoms. In the other sinuses there is one large single cavity; in the ethmoid we have a mass of small cells more or less completely separated from each other. In order to establish a radical cure, it would be necessary to open each one of these cells. This is impossible, and therefore the separating walls must be broken down and a single cavity formed.

Whereas, in the other sinuses the principal symptom is the occurrence of a purulent discharge, ethmoidal disease sets up a train of symptoms more or less neurotic in character, such as headache, intra-orbital pressure, sneezing, asthma, and interference with the action of the brain. Ethmoidal disease is more frequent than is commonly supposed. In the last five years 97 cases of ethmoidal disease had been under his care. There are three varieties of disease of the ethmoid, the extra-cellular myxomatous, intra-cellular myxomatous and purulent ethmoiditis. These varieties are really simply successive stages of one and the same affection. As the disease progresses, the mucous membrane may project into the nasal cavity in the form of small polypi. Another result may be crowding out of the middle turbinated bone, from extension of the ethmoid cells. The final result is suppuration, and the pus may be discharged through the anterior or through the posterior cells.

Treatment in these conditions should be instituted early, if possible, before the occurrence of suppuration. In acute ethmoiditis, the ordinary measures employed in acute rhinitis are indicated. Of all measures, he regarded the douche as the most valuable. One or two gallons of water, rendered saline and as hot as can be borne, should be passed through the nose twice daily. This is devoid of danger provided the patency of the nostrils is determined beforehand and the water is passed in the narrower nostril so as to obviate any interference with its discharge.

In the chronic stage, surgical treatment is demanded when other measures have failed. The object of the treatment is to relieve the intra-cellular pressure. To remove the projecting portions, the snare answers the purpose best. In operating on the ethmoid cells a small burr attached to a dental engine is the best instrument. The operation usually requires several sittings, and care must be taken on account of the thin bone separating the cavity from the orbit and from the brain. The operation is not especially painful and can be done under the application of cocaine.

Ninety-seven cases had been treated. Of this number three were cases of carcinoma, and one was a case of sarcoma. Excluding these, there were 93 cases. Of the simple inflammatory cases, 15 in number, 9 were cured, 3 improved, and 3 disappeared. There were 29 cases of myxomatous degeneration, of which 12 were cured, 10 improved, and 7 were seen but once or twice. There were 22 cases of myxomatous change with polypi; 9 were cured, 10 improved, and 3 disappeared. There were 27 suppurative cases; 8 were cured, 12 improved, and 7 disappeared. In nearly all of these cases radical measures were employed.

SURGERY OF THE MAXILLARY SINUS.

Dr. J. H. Bryan, of Washington, read a paper on this subject.

Of the surgical affections of the antrum, empyema is the most important, and the principal question that has arisen in regard to its treatment has been as to the method of opening the cavity. The washing out of the cavity through the natural opening has been strongly advised. This is applicable to acute, but not to chronic cases, and the results are uncertain. In the majority of cases, an artificial opening is necessary. If there is a carious tooth present, it should be extracted, and frequently in this way the cavity will be opened. If not, it will be necessary to establish connection by a trocar or small trephine propelled by an engine. The opening should be large, and a metallic drainage-tube introduced. If the anterior wall of the antrum shows signs of weakening, it may be opened at this point. If it is desired to enter the cavity from the nose, it may be done through the inferior meatus by a spear-shaped knife, but it is better to use the trocar or drill. After the cavity has been opened, it should be washed out with mild antiseptic solutions.

Where the case is an obstinate one, the opening should be enlarged so that the cavity may be thoroughly explored with a probe, the little finger or the endoscope. This will often show the presence of spots of ulceration, necrosis, supernumary teeth, etc., as the cause of the trouble.

Dr. J. N. Mackenzie, of Baltimore, also called attention to the various methods of opening the antrum. Washing out through the natural opening is not applicable to many cases, for it is often difficult to find the opening, and this is so even after death. In order to obviate this difficulty, it has been proposed to remove the inferior turbinated bone; but that does not seem justifiable in the majority of cases. It has also been proposed to make an artificial opening below the natural opening. This is rather difficult to carry out, and the hæmorrhage is sometimes great. The operation of entering the antrum through the canine fossa should only be done in cases of growths, or where the antrum wall is so thin that it is an easy matter to pierce it, and where, if the surgeon does not open the antrum, it will discharge itself. By far the best operation for gaining access to the antrum is that through the mouth, by the extraction of a tooth, whether sound or decayed, or by going through the alveolar process without the extraction of a tooth. The speaker considered this method far superior to any other. This opening furnishes drainage from a dependent point; and when injections are made through the opening, most of the fluid escapes through the nose. The objections that have been urged against the operation are that it involves the loss of a tooth (perhaps sound), that food may enter through the tube, and that there is danger of microbes finding entrance from the mouth. These objections are, however, without weight. There is only one contraindication, and that is the presence of an edentulous alveolar process. In these cases the operation had better be done through the nose.

Dr. John O. Roe, of Rochester, read a third paper on this subject.

The treatment of these cases is largely surgical, on account of the fact that they are largely out of reach of ordinary medicinal treatment. Most cases of ozœna are in all probability due to discharge from some of the sinuses of the nose. In cases where the discharge does not rapidly subside under treatment, a free opening should be made. If there is no history of long-standing disease, the treatment should be begun with injections through the natural passage. If the case is recent, the discharge persisting after an acute inflammation, this may bring about a healthy condition. When such treatment cannot be employed, an artificial opening should be made. When the teeth are sound, the opening can be made through the zygomatic region or through the meatus. If the disease does not rapidly subside, it is probable that there are conditions of the cavity which must be dealt with radically. Then a free opening should be made and the diseased conditions removed. The opening should be maintained until we are sure that the disease is entirely cured, when the opening can be safely allowed to close.

The following conclusions were presented:

The old idea of considering drainage and cleanliness as the treatment, regardless of the exciting cause, should be abandoned.

In all cases where the purulent discharge does not cease after a reasonable time, the cavity should be freely laid open, so that the exact pathological condition can be determined.

The opening should be maintained for inspection and treatment until the disease has been cured.

The second portion of the session was under the charge of the American Neurological Association.

Dr. James J. Putnam, of Boston, read a paper on

THE INFLUENCE OF INFECTIOUS PROCESSES ON THE NERVOUS SYSTEM, PATHOLOGY AND ETIOLOGY.

The relation of nervous diseases to infectious processes may be studied from the point of view of the bacteriologist or that of the neurologist; it is the latter which mainly concerns us now. The nervous system may suffer from local bacterial action, from the effects of toxic products, or from the effects of a lower vitality of the nervous system, making it prone to show signs of constitutional weakness or fall a prey to new causes of disease. The term "infection" is here used for convenience (somewhat loosely) to denote the action of specific virus as well as that of specific organisms.

The infectious diseases which would be admitted by every one to cause nervous affections are tetanus, rabies, syphilis, tuberculosis, diphtheria, lepra, gonorrhœa, typhoid, erysipelas, influenza, mumps, the acute exanthemata, the pyogenic organisms, the diplococcus lanceolatus, malaria, actinomycosis. The nervous affections which follow acute infectious diseases are not always due to that primary infection, but to a secondary infection, or they may be only an indirect result.

The diseases of the nervous system which are suspected (but not fully proved) to be of infectious origin are, especially, beri-beri, poliomyelitis, Landry's disease; certain forms of myositis, neuritis and myelitis; some of the cerebral palsies of children; chorea; disseminated sclerosis and other cerebro-spinal and spinal scleroses; amputation neuritis; herpes zoster.

Finally, we find a number of affections following in the wake of infectious processes, but hardly to be classed as indicating the action of specific virus. Such are the constitutional neuroses and psychoses, the adynamic cerebral affections, the results of œdema or of arterio-scleroses; various forms of scleroses of the spinal cord, to which the nervous system is always prone, and which any one of various poisons will help to bring out; subacute forms of multiple neuritis of the ordinary type, such as arise from manifold causes.

A disease may be suspected to be of infectious origin when bacteria are found in the tissues; when the outbreaks occur in epidemics or are related to seasons or locality; when it exhibits vascular and histological changes characteristic of the infection, or specific toxicity of the blood and urine; or it has become much less frequent since the introduction of antiseptics. The discovery of bacteria is by no means conclusive, since they are often only incidentally present. We should suspect a disease of not standing in a very close relation to infection if it was of a kind developing under other influences; and it is therefore important to study what are the morbid conditions which occur most easily as a consequence of various general strains and as a result of heredity. The French school has done much in this direction. The arguments are strong in favor of the infectious origin of the different forms of acute (often hæmorrhagic) myeloneuritis or polymyositis, including beri-beri (the epidemic disease of Northern fishermen), Landry's disease, poliomyelitis. We can at least say that they are due to some poison acting powerfully for short periods and in the manner characteristic of bacterial toxines. Bacteria have been found in Landry's disease, but are not yet accepted as specific. Chorea is probably of infectious origin (Pianese, Dana, Berkley). Bacteria have been found which may or may not be specific. Myelitis (acute, focal or transverse,) may be produced experimentally by injection of cultures. It also may follow gonorrhœa, and may occur in a manner suggestive of other infectious causes. Amputation neuritis is said to have become less common since the introduction of better methods of asepsis. There is little to be said for the infectious origin of zoster.

Acute multiple neuritis may follow almost any one of the infectious processes, but it is difficult to say just what relation it bears to them. The lesions observed have more of the vascular and interstitial character than is ordinarily met with in neuritis of inorganic origin, but are doubtless often due to the products of metabolism. Sometimes, as in diphtheria of rapidly fatal course, no obvious lesions are produced, but modern research is continually widening our resource in this direction; witness the recent observations of Golgi in rabies, and the investigations of Nischl and others into the pathology of the nerve cell. The meningitis which follows the exanthemata is probably due to secondary infection. It cannot, however, be affirmed that the absence of bacteria indicates the absence of specific local action in diphtheria and other affections; the virus seems to be almost the equivalent of the organism in its power of exciting local reaction. The meningitis which complicates typhoid, pneumonia, and perhaps influenza, is generally due to the primary infection, at least in part. Epidemic cerebro spinal meningitis and sporadic forms are generally due to the diplococcus lanceolatus, the same germ which causes pneumonia; sometimes also to other organisms. Recent research has accentuated the importance of purulent and even simple catarrhal affections of the naso-pharynx and the ear as starting-points for meningeal affections. The specific organisms liable under favorable conditions to cause meningitis are often present in even the healthy pharynx.

Sometimes the infective agent seems to make its way in from the intestinal tract.

If we except the cerebro-spinal membranes, which are a great breeding-place for many bacteria, we may say that the instances of local bacterial action upon the nervous system are few, while, on the other hand, the nervous system is especially prone to suffer from toxic agents circulating in the blood. These poisons are sometimes separable into several definite constituents, which vary as regards their volatility, their solubility in alcohol and their physiological action. Several of them have a strong tendency to attack the vasomotor system in various ways; and the disturbance of the circulation thus produced is liable to prevent the normal vascular dilatation which is so necessary for the protection of the body against the invasion of pathogenic organisms. These poisons affect the nervous system in various characteristic ways, though it is not improbable that they are capable of acting as universal neurotic poisons. In tetanus (Brunner) the irritability of the spinal cord is heightened as in strychnia poison; in diphtheria, the cardiac centres are sometimes strongly involved, though gross lesions may be absent; in influenza the tendency of the poison is towards the brain more than in the case of some of the analogous diseases. Besides the psychoses which are common, acute hæmorrhagic encephalitis occurs.

As regards chronic poisoning or its results, we find disseminated sclerosis after various acute infectious diseases, and especially after malaria; but it is not probable that they are due to the action of the specific virus of this antecedent malady.

The causes which contribute to increase the liability of the nervous system to suffer from the effects of infectious disease may be divided into two classes:

(1) Those which increase the liability to invasion of the body by pathogenic organisms;

(2) Those which lower the resistance of the nervous system.

Of the latter class are hereditary weaknesses in special directions, the presence of other poisons in the nervous system, the effects of trauma, a poorly acting vaso-motor system.

Debility of the nervous system may contribute to increase the liability of the body to invasion by impairing the vitality of the tissues which should resist the germs of disease, besides impairing the efficiency of the vaso-motor reaction.

The most important lines of research for the future are in the direction of classifying the special liabilities on the part of the nervous system to disease independently of infectious causes, the refinement of our methods of histological research, the more widespread and thorough study of bacteriology and of the means of determining the toxic condition of the blood and urine.

RELATION OF INFECTIOUS PROCESSES TO MENTAL DISEASE,

by **CHARLES K. MILLS**, M.D., of Philadelphia.

Nearly a century ago, Rush declared that certain causes as gout, dropsy, consumption, pregnancy, and fevers of all kinds produced madness by acting on the brain in common with the whole body; and before the time of Rush and since, this subject has claimed the attention of the medical profession. It is, indeed, only one aspect of the old humoral doctrine, to which we now recur with the important aid furnished by experimental research.

Among the questions to be considered are, Whether the mental disorders of well-known forms of infectious disease are toxæmic, or are due to anæmia, exhaustion or other causes, and whether particular types of insanity are due to the action of special micro-organisms? In endeavoring to answer these and similar questions, we are naturally led to consider inferences and conclusions drawn from, first, clinical and clinico-pathological observations; second, from analogies with affections of the nervous system not psychoses, but which are known or believed to be of microbic origin; and third, from the consideration of the combined clinical, pathological and bacterial observations and investigations.

Under clinical and clinico-pathological observations are included the so-called febrile and post-febrile insanities. Regis and Chevalier-Lavaure, in a report at the Congress of French Alienists in 1893, and Hurd, in a paper published in 1892, have furnished valuable summaries of the literature of infectious processes in their relations to mental disorders, and have considered the subject from various points of view. The former distinguished mental disorders due, first, to infectious diseases; second, to visceral disturbances; and, third, those associated with diathetic maladies.

While not denying the origin of mental manifestations and even special types of insanity from other causes, such as traumatism, anæmia, exhaustion, and emotional shock, these are sometimes due to the action of infectious intoxication and probably to specific micro-organisms, although the last cannot be regarded as absolutely proved. The question of febrile delirium and febrile and post-febrile insanity has been especially considered by numerous observers. A special type of confusional insanity has been suggested as following infectious and diathetic disorders. Hurd, Korsakoff and Tuke and Woodhead favor the idea that this type of insanity is essentially a toxæmia, and due to a special poison such as is developed in multiple neuritis, influenza and other infectious disorders. Numerous cases have been reported by Chomel, Esquirol, Simon, Hurd, Chaslin, Lloyd and Tull, Frantzel and Strube, and Liebermeister. Much negative evidence in favor of the infectious origin of acute mania or acute delirium has been furnished by clinico-pathological observations. In the case of Lloyd and Tull (one of severe acute delirium or mania), the autopsy revealed nothing positive, unless it was an uncertain incipient meningitis.

Several similar cases have fallen under the author's observation. In one case of acute delirious mania (with hyperæsthesia, active contractions and petechial eruption), the symptoms were highly suggestive of cerebro-spinal meningitis, but the autopsy revealed nothing and the case was apparently one of toxæmia associated with anæmia. Many other such cases might be cited.

An argument in favor of the view that the mental disorders of the infectious diseases are due to toxæmia rather than to anæmia, exhaustion or other causes, is furnished by the well-known fact, that such diseases are sometimes ushered in by violent mental manifestations, or that such manifestations are the chief features of the disease which pursues a course largely afebrile.

In considering the analogies with mental affections, not psychoses or insanities, but which are known or believed to be of microbic origin, it is only necessary to briefly refer to such diseases as multiple neuritis, some forms of myelitis and chorea. The mental disorders of multiple neuritis have now been frequently recorded; as also have chronic insanities with mental manifestations equal in violence to the motor disorder. The teachings of the recent epidemic of influenza are important in this connection. Of great interest are the views of Marie, with reference to the poliomyelitis origin of the lesions of the white medullary fasciculi in pellagra. Pellagra is a disease doubtless of infectious origin, with marked nervous and mental manifestations associated with the lesions of the skin, and in which pathological and microscopical investigations show combined lesions in the lateral and posterior regions of the spinal cord. Comparing lesions of this affection with those of general paralysis, and the forms of sclerosis, it is fair to argue in favor of the possibly infectious origin of all.

As yet, literature has afforded but few combined bacteriological, clinical and pathological investigations. The most valuable contribution thus far is that of Rasori, on the etiology and pathogenesis of acute delirium. Rasori describes in detail a case of acute delirium, with autopsy, and the results of a careful bacteriological examination. The autopsy was conducted with the strictest bacteriological precautions. Two inoculations with subdural fluid led to the development of the same micro-organism, a small bacillus with rounded ends three times as long as its width. Rasori made numerous experiments, and found that the micro-organism grew well in different culture media. He made a series of four inoculation experiments upon rabbits. The experiments demonstrated that the bacillus obtained from the subdural fluid of the patient grew and multiplied in the body of a rabbit, and produced a toxic substance which destroyed the animal, with symptoms of septicæmia, at a period varying from one and a half to six days.

In 1893, in consultation with C. S. Potts, of Philadelphia, the author saw a case of acute delirious mania — also taking part in the autopsy on the case — a report of which has since been made by Dr. Potts. Cultures were made from the cerebro-spinal fluid by Dr. D. Braden Kyle, and demonstrated the presence of the so-called streptococcus lanceolatus, or pneumococcus of Fränkel and Weichselbaum, and also the staphylococcus pyogenes aureus and albus. Microscopical examination of the cortex showed peri-vascular exudation and leucocytes in the lymph sheaths and perigangliar spaces. Dr. Potts, in reporting the case, suggested that as the germs isolated were those usually found in meningitis, the lack of microscopic findings was probably due to the fact that the toxæmia was so violent as to cause the death of the patient before naked-eye appearances had time to develop.

Through the kindness of Dr. N. P. Ball, of Philadelphia, the author was able to present the report of a case of acute delirium, with autopsy and the results of a careful bacteriological examination. The patient was suddenly attacked with delirium, having previously been to all intents and purposes in the best of health. He had marked delusions with hallucinations, and believed that people were coming to attack him. He committed suicide. The autopsy revealed under the dura several fresh patches of exudation; the pia was glassy, and covered with two or three spots of a greenish-white exudate; the ventricles did not contain the usual amount of serum. Three small round cysts filled with a milkish-colored gelatinous fluid were found in the choroid plexus on each side. Cultures were obtained from the ventricle serum and the contents of the cysts. The following is an extract from Dr. Ball's bacteriological report: "In both cases in two days a fine growth occurred along the needle tracts in a gelatine agar tube; a sparse, whitish growth on the surface of the tube not liquefying. The germ obtained was a very small bacterium arranged in twos and threes, resembling micrococci very much, and plainly larger in one diameter than the other."

Dr. James R. Hunt, of Philadelphia, had furnished the author with the notes of another unpublished case. The patient was under the care of Dr. John Ashhurst, Jr., in the surgical wards of the University Hospital. He was a German laborer, twenty-six years of age, who presented a history of obscure renal disease extending over a period of six years. A distinct resistance was felt in the region of the right kidney, which was quite tender on pressure. The urine contained numerous pus cells, but no blood and no crystals. An exploratory operation was performed. The man was irrational immediately after the operation; and this state gradually merged into one of moderate delirium, which on the seventh day actually amounted to mania; this lasting until death, which occurred ten days after the operation. The autopsy was made by Dr. H. W. Cattell. The right kidney lay in a bed of foul-smelling, somewhat greenish pus resembling tubercular sputum. On section, the renal substance was found infiltrated with pus, with great destruction of its upper portion. Examination of the brain and meninges was negative, with the exception of a slight haziness of the pia and some turbidity of the fluid in the lateral ventricles. Cultures made from the meninges were negative, but from the fluid found in the lateral ventricles a pure culture of the bacillus pyocyaneus was obtained. Cultures from the pus in and about the kidney contained yeast and pus organisms, but not the bacillus or bluish-green pus obtained from the ventricular fluid.

Interesting studies showing the toxic and bactericide action of the blood of the insane have been made by D'Abundo, and have yielded interesting results. The toxæmias of pregnancy and the puerperal state sometimes result in a mental disorder, and are important in the discussion of this subject. A certain number of the cases point strongly to an acute intoxication with the products of bacteria. In one of a series of cases reported by Davis, a condition of marked toxæmia (with restlessness, melancholia and other grave symptoms) was noted, but in which examination of the urine failed to reveal casts, albumin or marked deficiency in the urea. Tuke and Woodhead believe that in puerperal insanity a considerable proportion of the cases are due to toxic influences without reference primarily to childbirth. Olshausen has observed psychoses eleven times following eclampsia in two hundred cases. He suggests classifying these cases as psychoses directly due to febrile puerperal processes, idiopathic psychoses without bodily or febrile disease, intoxication psychoses following eclampsia or, exceptionally, uræmia without eclampsia.

While, so far as the author has been able to learn, no satisfactory bacteriological examination has been made in a case of puerperal mania, Kaltenbach, or rather Gerdes under the direction of Kaltenbach, made an exact and exhaustive bacteriological examination of the organs of a woman who died of puerperal convulsions; and the results obtained in this investigation would have equal significance in the explanation of fatal puerperal mania. Cultures were made from the lungs, kidneys, liver and the aortic blood; and in all cases a growth developed which consisted entirely of a pure culture of a very short, thick bacillus. Its culture showed certain characteristic peculiarities. In a later article Gerdes declared that the eclampsia bacillus is the sole cause of puerperal eclampsia, and is found in no other disease, and that there can be no eclampsia without its presence. The infection proceeds from the uterus, probably from an endometritis existing prior to conception. The bacteria of puerperal infection as summarized by Williams, are, however, the streptococcus pyogenes, the staphylococcus albus and aureus, the gonococcus and the colon bacillus. He holds that it is also quite probable that some of the putrefactive organisms play an important part in what Matthews Duncan has designated as sapræmia.

Conclusions may be drawn as follows:

(1) Specific infection must be included among the causes of the mental symptoms, in diseases which precede, accompany or follow febrile and other infectious disorders.

(2) Much negative evidence can be adduced to show that acute delirium or acute mania is due to toxæmia. Such evidence is afforded by autopsies which reveal neither gross or histological lesions; in these cases the toxæmia probably overwhelms the patient before the production of meningitis or other diseases with recognizable structural lesions.

(3) Analogies with nervous affections which are known or believed to be of microbic origin — such diseases as multiple neuritis, myelitis and chorea — favor the view that insanities with similar or related phenomena and lesions are also microbic in origin.

(4) The evidence afforded by careful bacteriological investigation of cases of acute insanity is thus far meagre and shows that various micro-organisms may induce the same or similar types of mental disease.

(5) The mental disorders of pregnancy and the puerperal state are in a considerable proportion of the cases toxæmic without reference primarily to childbirth; but it cannot be regarded as proved that a bacillus of either eclampsia or puerperal mania is the sole cause of these affections.

THE THERAPEUTICS OF INFECTIOUS PROCESSES OF THE NERVOUS SYSTEM,

by FRANCIS X. DERCUM, M.D., of Philadelphia.

The consideration of the treatment of infectious nervous processes involves not only the treatment after infection, but also its prevention. From much that we know, we have reason to believe that the occurrence of infection is markedly influenced by the nervous system. The ability to resist infection depends largely upon the maintenance of normal nervous tone. We have also learned that the nerve cells undergo certain changes in the course of their functional activity, and these changes can only be interpreted as those of fatigue. The first problem is the prevention of undue waste of nervous substance from undue or excessive fatigue. The necessity for a proper proportion of sleep and exercise, and suitable food, must be borne in mind as an important element in prophylaxis.

Are there any means of special prophylaxis against this or that infectious disease? Here the answer is uncertain. The preventive inoculation of Pasteur, Behring, Tizzoni and Catanni suggest themselves, but at the same time doubts as to the advisability and the applicability of the methods arise.

Again, is there anything that can be done in the various infectious fevers, in general pyæmia, to prevent nervous infection? Where the nervous system is threatened by the existence in other structures of foci of infection, the indications to remove these foci of infection is clear.

In regard to treatment, the general indication is to arrest or limit the infectious process, and to bring about elimination of the morbid products. To meet the first indication is not as yet possible; but the field of chemistry and of the biological laboratory may in the future yield great discoveries.

The attempts to combat infectious microbes by means of the toxines which they produce was then considered; but with the possible exception of tuberculosis and lepra, the symptoms produced by infectious micro-organisms appear to be due, not so much to the germ, as to these very toxines.

With regard to tuberculosis of the nervous system, the use of the lymph of Koch has been shown to be not only useless but dangerous.

In the treatment of leprosy by the use of lymph, the failure appears to have been almost equally marked.

With regard to hydrophobia, the literature was reviewed at length, and the conclusion reached that it was vain to deny the truth of Pasteur's experimental researches on animals, while the evidence as regards human beings in specific instances is strong and convincing.

In reference to tetanus, the condition is still more interesting. A full review of the literature of the subject was given by the author, who had himself collected reports of 34 cases treated either by the powder of Tizzoni or by the serum. Of these, 20 cases were successful, but in some of these cases other measures such as amputation or early active treatment of the wound were employed. There is no contra-indication to the employment of these antitoxines, as it appears to be in no way injurious.

The other means at our disposal for combating the infectious nervous processes resolve themselves into general remedies, drugs and surgical procedures. Cold has been applied with varying success. It is not improbable that baths of suitable temperature might prove of service in the treatment of infectious nervous diseases. Whether or not by this means the elimination of toxines would be favored, is a matter that at present can only be conjectured.

With regard to drugs, we meet little that is encouraging or gratifying. In leprosy, especially, much has been claimed for gurjon, oil of chaulmoogra. In chorea, which is probably infectious, Dr. H. C. Wood has advanced quinine as of considerable value. Antipyrine also has its advocates.

Surgical procedures enable us occasionally to accomplish definite and often brilliant results. This is especially true with regard to the evacuation of pus in positions formerly considered inaccessible, as in brain abscess.

In conclusion, the author offered a suggestion in regard to the treatment of tetanus which he thought might prove of value. It has been observed that the tetanus bacillus while growing in thymus infusion did not develop spores, and that animals injected with such cultures were highly immune to the cultures of tetanus grown in other media. If thymus-juice possesses such remarkable properties, it should be tested with a view to its possible therapeutic effect. Its administration, in a case of tetanus, beneath the skin, could certainly do no harm, and might do good; and it might also be administered by the mouth. If successful, it would prove far more valuable than the anti-toxine, because so readily procured.

This completed the scientific work of the Congress.

The President Dr. Alfred L. Loomis, in adjourning the Congress, congratulated the members on the fact that registration had been larger at this than at any other of the previous meetings. The attendance at the sessions of the various constituent associations had also been larger, and the work of a high degree of merit. There had been a united feeling and action among the different societies in support of the Congress, and the different associations had become more closely united than ever before. He considered the Congress to be one of the most important medical bodies in this country, as it brings together skilled workers in all the departments of medicine and surgery, and brings about unity of thought and action among medical men. If there is one body more than another in this country that is to raise our profession from the position which it has occupied so long, it is such a body as has been assembled here for the last four days.

Cost of the Small-Pox Epidemic in Boston. — The recent epidemic of small-pox cost the City of Boston nearly $25,000, of which $19,000 was spent for providing free vaccination.

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, Washington, D. C., May 29, 30, 31 and June 1, 1894.

(Concluded from No. 23, p. 567.)

SECOND DAY. — WEDNESDAY.

The first paper read was that of Dr. John S. Billings, of Washington, on

METHODS OF TEACHING SURGERY.[1]

This was followed by a paper sent by John Chiene, M.D., of Edinburgh, on

THE TEACHING OF SURGERY.

In discussing this subject one must begin with a warning. The personal equation relating to himself and the traditional equation relating to his school must be allowed for and discounted. The teaching of surgery resolves itself into two heads:

(1) Systematic consideration of general principles illustrated by clinical examples.

(2) A clinical (bedside) opportunity given to observe, to use, and to educate all the faculties, physical and psychical.

Under either head the teacher must be a learner, the student must be a teacher. The teacher has constantly to warn the student against a blind belief, and at the same time he has to speak most decidedly in giving his opinion. The practice of surgery to be successful must be dogmatic.

It has been objected to systematic lectures, that now that we have books there is no need of a hundred lectures on any subject. Those who hold these views can never have known the stimulus of speech; can never have felt the electrical impulses passing between hearer and speaker.

The method of teaching surgery in Edinburgh was then described.

In conclusion, the writer wished to add a word with reference to the teacher of surgery. He believed in a fallow time, in a time of rest from mental activity. The best rest is change of scene. He suggested the advantages that would accrue from an interchange of chairs in the great English-speaking educational centres. In this way once in seven years a teacher would for a session leave his alma mater and speak to the students of another school. Or the fallow might take another aspect; give a teacher a session off every seven years, and let him do in it what seems to him good.

The discussion of these papers was participated in by Dr. J. Collins Warren, of Boston; Dr. W. W. Keen, of Philadelphia; Dr. Hunter McGuire, of Richmond, Va.; Dr. Chas. B. Nancrede, Ann Arbor, Mich.; Dr. P. S. Conner, Cincinnati, Ohio; Dr. W. S. Forbes, Philadelphia, Penn.; Dr. Robert F. Weir, New York, N. Y.; Dr. T. F. Prewitt, St. Louis, Mo.; Dr. John E. Owens, of Chicago, Ill.

THE SURGERY OF THE KIDNEY,

by L. McLane Tiffany, M.D., of Baltimore, Md.

The subject was such a large one that the author considered only those points which offers opportunity for difference of opinion. In the human body bilateral organs are more than sufficient for the carrying on of life; not only may one such organ be removed without impairing existence, but even the remaining organ may be more or less damaged and yet life be carried on. Any paper on surgery of the kidney at the present day must take into consideration the influence of the disease of the kidney on various operations of general surgery. The influence of anæsthesia on the healthy kidney should be considered. In 150 cases of operation where healthy kidneys were present, albumin was found only in two per cent. of the cases after operation. Every case of railway accident, and some other cases where the patient had been exposed for a certain time, showed albuminous urine on admission to the hospital. In these cases operation has not been deferred on this account. Cases of advanced diabetes have not been operated on. In cases with healthy kidneys the amount of urine passed in the twenty-four hours following operation is diminished in quantity, the specific gravity usually being a little higher.

---

[1] See Journal, No. 22, page 535.

As to wounds of the kidney, there was no good reason why the kidney should be separated from the rest of the body and require different surgical treatment. A kidney wound should be exposed, sutured, drained, tamponed with gauze, or a piece of it excised in injury beyond repair, or drained, as the case may be, and not the whole kidney sacrificed.

Nephritis and pyelo-nephritis, so-called surgical kidney, is generally met with by the surgeon — a process (organic) resulting from extension upwards of inflammation from the urethra or bladder due to the presence of bacteria. The bacteriology of the trouble in question is yet to be written. In so-called pyelonephritis beginning in the kidney, the most frequent cause is stone. The surgeon has especially to deal with the ascending inflammation from the urinary channel below, more often obstructive. The diagnosis is usually not difficult when the disease is advanced. In the early stages the difficulty of diagnosis is great, especially is it difficult to recognize whether the trouble affects one kidney or both. Here it is that the cystoscope offers great opportunity. A moderate amount of urine, with a low specific gravity, and an habitual low temperature independent of the conditions of the pulse are danger signals more important than any others. In the recognition of the kidney affected, we have to rely on pain, pressure and the cystoscope. The treatment before operation consists in exciting the kidneys to secrete by means of infusion of digitalis, acetate of potassium and infusion of buchu. Acid urine and pus suggest pyelo-nephritis very strongly. It is the author's habit not to operate until the patient's kidneys are acting well. After operation, strychnine hypodermically is a useful addition to the previous treatment. The hot-air bath has proven unsatisfactory in chronic cases. In acute cases it is beneficial. Free purgation is of advantage.

Where an operation on the bladder is called for, and there is evidence of disease of one kidney or decided pain in one kidney suggesting disease, that kidney should be operated on at the same time as the bladder. Twice the speaker had done lithotomy for stone in the bladder, the lithotomy being done and the kidney opened at one and the same sitting. All went well. In another stone case, within two weeks, acute suppurative inflammation took place and was followed by death. In a second case there was a similar occurrence.

THE SURGICAL TREATMENT OF SURGICAL KIDNEY,

by **Robert F. Weir, M.D.**, of New York.

Suppurative pyelo-nephritis, suppurative interstitial nephritis and surgical kidney are the ordinary names given to a disease which originating, as a rule, in the bladder, generally affects both kidneys. In this affection the kidneys are congested and studded with foci of pus. Dr. Delafield states, that so far as he knows all cases die. While this may be the general result, a case reported by the speaker shows that some modification of this prognosis must be made.

H. W., age twenty-five years, was admitted to the surgical wards of the New York Hospital on April 2, 1894. Four years previously he had scarlet fever followed by nephritis. About one year ago he had a mild attack of urethritis. Three months ago he had a severe attack of urethritis which invaded the bladder; gonococci were present in the discharge. This gradually subsided under treatment. Twelve days prior to admission to the hospital he had, without assignable cause, a chill followed by fever. The following day there was pain in the loins, with subsidence of the fever, but the next day the temperature reached 103° F. There was no increase in frequency of urination. The lumbar tendency gradually increased. He was admitted to the medical wards of the New York Hospital March 28th. During the next seven days he had four chills, the temperature ranging between 103° and 105°.

The patient was seen by Dr. Weir April 3d. His condition was a most serious one. The urine contained pus, and was fifty or sixty ounces in amount. There was pain in the right lumbar region, with tenderness on pressure. It was thought that some enlargement of the right kidney could be made out. The impression of the speaker was that there was an abscess of the kidney, or possibly several such of considerable size. He did not think that it was the "surgical kidney," on account of its one-sided character. On April 4th the kidney was exposed in the usual manner. Puncture in two or three places gave no evidence of pus. An incision was made into the kidney, disclosing numerous miliary abscesses, and showing that we had to do with ordinary surgical kidney. It was then decided to extirpate the infected organ. Immediately after the operation the temperature fell from 105° to 99°. The patient made an uninterrupted and rapid recovery, being discharged on April 20th.

It is difficult to say how often the affection is limited to one kidney, but this may not be infrequent. Even where both organs are involved, it may be that something may be done for the relief of tension and the egress of pus by means of free incision made into the kidney substance.

With the happy experience of this case, the reader considered it hereafter justifiable, if the patient's general condition would warrant it, in a case of acute septic invasion of the kidneys, to make on one or both sides an exploratory incision, not only in the hope of relieving the acute interstitial invasion, but also of perhaps encountering a larger and well-defined focus of pus — which pathological condition cannot always be readily discriminated from the more dangerous lesions of the veritable surgical kidney. Should the symptoms point, as in the case narrated, to one kidney only, or should a double exploratory incision show the same result, a nephrectomy may with some hope be resorted to.

SURGERY OF THE URETERS,

by **Christian Fenger, M.D.**, of Chicago.

Accidental wounds and subcutaneous ruptures of the ureter have not as yet been objects of direct surgical procedure upon the ureter at the seat of lesion.

Catheterization of the ureters from the bladder for the purpose of diagnosis has given valuable information. The procedure is reasonably practicable in the female. In man, catheterization is practicable only through epicystotomy.

Catheterization of the ureter from the bladder as a curative measure for the evacuation of hydro- or pyonephrosis, has occasionally been performed. This is more difficult and uncertain than nephrotomy and the attempt to find and remedy the stenosis of the ureter from the pelvis of the kidney.

Dilatation of strictures of the female ureter by elastic bougies has been tried from the bladder with temporary success, and from the pelvis of the kidney successfully.

Permanent catheterization of the ureter from the bladder, a fistula or an implanted ureter is often tolerated only for a limited time, and must be employed with caution.

Uretero-lithotomy is a safe operation by the extra-peritoneal method.

Intra-peritoneal ureterostomy should be done only when access outside of the peritoneal cavity is impossible, and should be completed by careful suturing, covering with omental or peritoneal flap, and drainage.

Opening of the peritoneal cavity to locate the seat of stone may occasionally be necessary; but when the diagnosis is once made, ureterostomy should be done by the extra-peritoneal method.

In valve formation or stricture of ureter causing pyo- or hydro-nephrosis or a permanent renal fistula, nephrotomy should be followed by exploration of the ureter. This is to be done by a long, flexible, silver probe or an elastic bougie. The size of a bougie that will pass a healthy ureter is from No. 9 to No. 10, French scale.

Operation for valve formation should be done through the wound in the pelvis. A stricture in the ureter, if not extensive, can be treated by a plastic operation. Resection of the upper end of the ureter and implantation of the distal end into the pelvis has been performed with success.

Utero-uterine fistulas can be treated satisfactorily by plastic closure of the vagina, or nephrectomy. Implantation of the ureter into the bladder is, under favorable circumstances, the operation of the future for this condition.

Uretero-vaginal fistulas should be treated by vaginal plastic operation for displacement of the distal end of the ureter into the bladder.

Complete transverse wounds in the continuity of the ureter should be treated by uretero-ureterostomy after the method of lateral implantation if possible. Complete transverse wounds of the upper end of the ureter should be treated by implantation of the ureter into the pelvis of the kidney. Complete transverse wound of the ureter near the bladder should be treated by implantation into the bladder.

Loss of substance of the ureter too extensive to permit of uretero-ureterostomy, or too high up to permit of implantation into the bladder, may be treated by implantation on the skin or into the bowel. Implantation into the bowel is objectionable. Implantation on the skin in the lumbar region may have to be followed by secondary nephrectomy, which, however, is much less dangerous than the primary operation.

THIRD DAY. — THURSDAY.

EXECUTIVE SESSION.

The following officers were elected: President, Dr. F. S. Dennis, of New York; Vice-Presidents, Drs. J. R. Weist, of Richmond, Ind., and J. B. Roberts, of Philadelphia. Secretary, Dr. M. H. Richardson, of Boston. Treasurer, Dr. N. P. Dandridge, of Cincinnati, O. Recorder, Dr. DeForest Willard, of Philadelphia. Member of Council, Dr. T. F. Prewitt of St. Louis, Mo.

The next meeting is to be held in New York City.

Dr. Dudley P. Allen, of Cleveland, O., was elected to membership.

The following were elected to honorary membership: Sir Spencer Wells, F.R.C.S., London; Dr. William MacEwen, Glasgow; Dr. M. H. E. W. Schede, Hamburg; Prof. Ernst V. Bergman, Berlin; Prof. Karl Thiersch, Leipzig; Prof. Theodor Kocher, Berne; Prof. Jules E. Péan, Paris.

REGULAR SESSION.

DISCUSSION ON RENAL AND URETERAL SURGERY.

(Postponed from Wednesday.)

Dr. M. H. Richardson, of Boston, emphasized the importance of examination of the urine prior to all operations. In regard to the method of performing nephrectomy, he dwelt upon the abdominal method, the incision being made in front laterally. This enabled the operator to control bleeding which was the chief source of danger in the operation. In this method the surgeon was able to determine the presence or absence of the other kidney. He believed that by this method the mortality of nephrectomy would be greatly reduced by so providing for hæmorrhage that it could not be an element in the mortality.

Dr. H. H. Mudd, of St. Louis, Mo., agreed with Dr. Tiffany that in traumatic lesions of the kidney (even gunshot and stab wound), it is not always necessary to do nephrectomy. He had seen such cases recover. He had also met with a number of cases of extensive laceration of the kidney from contusion, in which there was no external evidence of such injury. Many of these cases recovered without operation. When operation was needed, he believed that partial nephrectomy was justifiable. If necessary, a secondary operation could be done as a primary operation; the removal of kidneys so injured was apt to be disastrous.

In pyelo-nephritis and renal lithotomy the first operation should be tentative, consisting of incision and evacuation, the kidney being allowed to remain; a secondary operation being performed if necessary.

He did not favor the abdominal incision for the removal of the kidney, on account of the risk of infecting the abdominal cavity in suppurative conditions of the kidney, and because the lumbar incision was usually sufficient, and if necessary it could be extended and the abdomen opened.

Dr. T. F. Prewitt, of St. Louis, called attention to several cases of renal stone, laceration, etc., coming under his observation. One of these cases was that of a man who had passed scales of stone by the urethra, and in whom operation showed a stone in the pelvis of the kidney, with several small detached particles. He was unable to offer an explanation of this separation. With regard to diagnosis, he held that a large amount of pus with a small amount of mucus in the urine indicated that the trouble was in the kidney rather than in the bladder.

DR. W. S. FORBES, of Philadelphia, called attention to the tolerance of the kidney to the presence of stone. He related a case where autopsy revealed the presence of a stone in the pelvis of the kidney, and in which during life there were no indications of stone. The character of the stone was peculiar, in that it was what is known as indigo stone.

DR. CHAS. B. NANCREDE, of Ann Arbor, Mich., had used the abdominal method of nephrectomy in four cases, but he did not favor it in suppurative conditions of the kidney. In order to avoid hæmorrhage he had used an elastic ligature, gradually slipping it down and removing the kidney piecemeal until the pedicle was reached. In the treatment of suppression of urine that may follow these operations he recommended the use of nitro-glycerine, which he had used with advantage.

DR. JOHN B. DEAVER, of Philadelphia, added his testimony in favor of the anterior incision in nephrectomy. He felt certain that with proper precautions the danger of infection of the peritoneal cavity could be avoided.

DR. STEPHEN H. WEEKS, of Portland, Me., reported the case of a man who developed an abscess in the groin after having had symptoms of renal colic some months before. On opening this abscess, pus was discharged, and subsequently a small calculus was passed. No urine was discharged through the abscess at any time. The sinus has since almost healed.

DR. WILLIAM H. CARMALT, of New Haven, Conn., reported the case of a woman on whom it was thought that nephrectomy might be required. On preliminary examination through an abdominal incision, only one kidney could be discovered. The patient died three years later, and autopsy showed that the second kidney was located in the pelvis.

THE TREATMENT OF INOPERABLE MALIGNANT TUMORS BY THE TOXINES OF ERYSIPELAS AND PRODIGIOSUS,

by **DR. WILLIAM B. COLEY**, of New York.

Dr. Coley began the treatment of inoperable sarcoma by repeated injections of living cultures of erysipelas streptococci, in May, 1891, and continued this method of treatment in ten cases (six sarcoma and four carcinoma) a report of which was published in the *American Journal of Medical Sciences*, May, 1893.

In but four of these ten cases was he able to produce erysipelas; yet the marked improvement which in several cases followed the repeated injections where no erysipelas was produced, led him to believe that the greater portion, if not all, of the curative action of the erysipelas, was due to the toxic products rather than to the germ itself.

The first experiments with the toxines were made in 1892, with bouillon cultures prepared by heating to 100° C. The effect on the tumors was slightly less than when living cultures were used.

Early in 1893, he began to use bouillon cultures filtered through porcelain, without having been subjected to heat. The toxines of bacillus prodigiosus, prepared in the same way, were used in conjunction with the toxines of erysipelas. This was done with the idea of intensifying the action of the erysipelas upon sarcoma, it having been proven by bacteriologists that the virulence of the erysipelas germ could be increased by combining it with the bacillus prodigiosus.

The action of the combined toxines has been proven, to the writer's satisfaction, very much more effective than that of the erysipelas toxines alone, and to this combination he attributes the successful results.

The toxines, to be of value, must come from very virulent cultures, and must be freshly prepared. All of the successful cases were treated by toxines derived from cultures from a fatal case of erysipelas.

Twenty-five cases of sarcoma, eight cases of carcinoma, and two cases of sarcoma or carcinoma, were treated with the combined toxines. Including one case treated by the injections of fluid living cultures, there were five cases in which it was reasonable to hope for permanent cure.

The first, sarcoma of the neck and tonsil, twice recurrent. Has gone nearly three years without treatment.

A second, sarcoma of the back and groin, is perfectly well and free from recurrence fourteen months after cessation of treatment.

A third, sarcoma of the abdomen and pelvis, is in perfect health one year after leaving the hospital, and the very small portion of the tumor which had not been wholly absorbed has remained dormant.

A fourth, sarcoma of the abdominal wall, which had entirely disappeared under two and a half months' treatment with the toxines, is perfectly well and without recurrence three months after treatment was discontinued.

A fifth, sarcoma of iliac fossa, is well one year since beginning of treatment, with the tumor one-third the original size, and the element of malignancy apparently destroyed.

A sixth, recurrent sarcoma of leg and thigh, is still under treatment. The sarcoma of the stump, the size of a hen's egg, has entirely disappeared.

Of the remaining nineteen cases of sarcoma treated, nine others showed marked improvement, while in eight the improvement was very slight, and in two no improvement was noted.

Of the eight cases of carcinoma, all but one showed more or less improvement, and in three cases it was very marked.

All of the cases treated were inoperable and hopeless. In all, the diagnosis was not only established by eminent surgeons, but confirmed by expert pathologists.

No rational explanation of the action of the toxines upon malignant tumors could be offered, except on the assumption that such tumors were of micro-parasitic origin. Admitting this theory, evidence in favor of which is steadily increasing, explanation would be easy, namely, antagonistic bacterial action.

The conclusions drawn from the cases treated, were as follows:

(1) The curative action of erysipelas upon malignant tumors is an established fact.

(2) This action is much more powerful on sarcoma than carcinoma.

(3) This action is chiefly due to the soluble toxines of the erysipelas streptococcus, which toxines may be isolated and used with safety and accuracy.

(4) This action is greatly increased by the addition of the toxines of bacillus prodigiosus.

(5) The toxines, to be of value, must come from very virulent cultures and must be freshly prepared.

(6) The results obtained from the use of the toxines, without danger, are so nearly, if not quite, equal to those obtained from an attack of erysipelas, that inoculation should rarely be resorted to.

VENOUS TUMOR OF THE DIPLOË,

by Dr. Lewis S. Pilcher, of Brooklyn.

The case reported differed from others which had been described, in that the tumor did not communicate with the longitudinal sinus, but was essentially a large venous cavity into which numerous diploic veins opened. The patient was a girl, aged fifteen years. When five years of age she fell and struck the top of her head. Within a few days a small, soft swelling was noticed at the site of injury, without pain or tenderness. This gradually increased in size. At the end of five years, it was lanced and a small quantity of clotted blood extruded. It immediately refilled. It was repeatedly opened, with the same result. She came under the observation of the author in 1894. At this time there was a prominent tumor over the site of the anterior fontanelle, about two-and-one-half inches in its largest diameter. Over the convexity of the tumor the skin was thin and without hair. In the right anterior quadrant of the base an elevated plate of bone could be felt. The tumor was soft, and could be diminished very slightly in size. It was gradually enlarging. On March 14th the author operated for the relief of this condition. The tumor was opened. In the anterior part of the base the cranial bone was wanting and over a space of two-and-one-half by one-and-one-half centimetres the dura mater was exposed. Certain venous channels of the diplœ were seen to be opened, and from these free bleeding took place. The overhanging bone edge was cut away with bone forceps, the base of the cavity was well curetted, the cavity packed with iodoform gauze, and as far as possible the wound was sutured. No complication disturbed the after-course of the case.

STRANGULATION OF MECKEL'S DIVERTICULUM CAUSED BY VOLVULUS OF THE ILEUM.[1]

J. W. Elliot, M.D., of Boston, read a paper on the above subject.

FOURTH DAY. — FRIDAY.

MOOTED POINTS AS TO FRACTURES OF THE ARM, WITH NOTICE OF AN IMPROVED SPLINT,

by J. McFadden Gaston, M.D., of Atlanta, Ga.

The purpose of the paper was to ask attention to practical considerations touching the treatment of fractures near the articulations of the arm. In cases of fracture complicated with dislocation, the author saw no advantage in first setting the fracture, but preferred to reduce the dislocation before treating the fracture, and efficient means should be taken to prevent the recurrence of the dislocation.

With regard to fractures at the wrist, the only one in which there is any notable diversity of opinion is Colles' fracture, which occurs from half an inch to one inch from the carpal articulating surface. In most cases the adjustment can be effected by extension upon the hand and pressure over the projecting lower fragment, but there is usually difficulty in maintaining apposition. The apparatus for Colles' fracture should control any movement of the wrist or of the fingers. This is effectually accomplished by the splint originally adopted by Nelaton. The dorsal and palmar Nelaton splints keep the fragments in their proper position, and with the extension effected by the pistol-handle-shaped splint, all the requirements are met. The injunction to leave the fingers exposed, that movements of these and of the carpal bones may accompany the treatment, is more likely to increase the local inflammation than the rule to maintain complete rest. Early movement of the fingers and of the carpal joint must increase the tendency to subsequent stiffness. After considerable experience with the double pistol-handle-shaped splint in the treatment of Colles' fracture, the author had never seen a case in which there has remained any permanent impairment of the use of the fingers or the wrist-joint, nor had any material deformity followed the treatment.

Dislocation of the head of the radius or the upper part of the ulna is frequently observed in connection with fractures of the lower extremity of the humerus. These require correction before the fracture is treated. In considering whether the arm should be dressed in the extended or flexed position, we should investigate thoroughly the bearings of the different modes of treatment when there is likely to be such inflammatory involvement as so induce anchylosis. A stiff arm in the extended position is practically useless, while in a flexed position it is of much service. While it is held that with proper precautions anchylosis should not occur, yet there are cases with such complications that anchylosis will ensue in spite of the best treatment. Where the surgeon cannot reasonably expect to avoid anchylosis, there is no question as to the necessity of treating the arm in an angular position. The practicability of maintaining the fragments in position where the fracture involves the articulation, is favored by the relaxed rather than by the extended position. The rather fanciful claim in favor of the extended position being favorable to the preservation of the outward angularity of the forearm upon the arm is not entitled to any special consideration, as there is nothing in the flexed position to interfere with the relation of the radius and ulna to the humerus. The comfort and convenience of dressing the arm in the flexed position also commend themselves. The author considered the use of a straight splint applicable only in fractures of the olecranon.

In the treatment of fractures near the elbow, the author applies a roller bandage from the fingers to above the seat of injury, and with the arm in a flexed position pasteboard splints are moulded to its inner and outer surfaces. These splints extend from the wrist to the shoulder. An internal angular splint is applied to the outside of the dressing until the pasteboard has become thoroughly dry. This dressing has all the advantages of plaster-of-Paris and can be removed daily if it is so desired. The results of this method have been entirely satisfactory.

Fractures near the head of the humerus may be intercapsular or may only implicate the tubercle outside of the capsule. The most frequent seat is through the surgical neck. It is for this class of cases that a special splint has been devised by the author, the object being to effect extension and counter-extension and keep the fragments in place and at rest. The splint is formed with a right angle in the plane of the board at the elbow, the upper branch extending into the axilla with a crutch-like termination, and the lower branch reaching the wrist. When fitted to the inner face of the arm and secured with a bandage, with a light board splint moulded to the outer aspect of the arm, all the conditions are met for retaining the fragments accurately in apposition. The arm is to be kept close to the body. The crutch-shaped branch is the special feature of this splint. Several cases were reported in which the splint had been used with success.

---

[1] See page 586 of the Journal.

THE REMOVAL OF STONE IN THE BLADDER, WITH THE PRESENTATION OF A NEW LITHOTRITE,

by Dr. W. S. Forbes, of Philadelphia.

The points considered were:

(1) The measured crushing resistance of vesical calculi.

(2) The lithotrite from a mechanical point of view.

(3) The measured strength of the lithotrite.

(4) A new lithotrite.

A table was given of the size, displacement, specific gravity and measured crushing resistance in pounds and ounces of 183 human vesical calculi. The strongest calculus in this group took, on the testing machine, four hundred and six pounds to crack it. Several took upward of three hundred pounds to crack them. In testing the strength of the lithotrites on the testing machine, the strongest lithotrite (No. 33 F., made by Tiemann & Co.) had the female blade bent at six hundred and fifty pounds. A Thompson lithotrite (No. 29 F., made by Weiss, London), bent badly at three hundred and thirty-three pounds, on the same testing machine. The practical bearing of these observations is, that the strength of the lithotrite may be tested and stamped on it, before it leaves the instrument maker's shop, thus enabling the surgeon to begin his operation knowing the strength of the lithotrite.

The testing apparatus for determining the force required to crush the stone and the strength of the lithotrite was exhibited and demonstrated. The apparatus was the invention of Mr. John S. Forbes, son of the author. Mr. Forbes has also devised a new lithotrite designed to furnish a stronger instrument and obviate some of the defects of former instruments.

EXTIRPATION OF THE LARYNX,

by Wm. H. Carmalt, M.D., of New Haven, Conn.

In this case the operation was done in such a way as to permanently close the opening into the mouth, so that there should be no communication with the lungs. He was induced to do this by his knowledge of a case in which the larynx was extirpated and the opening to the mouth subsequently closed. The operation was done two and a half years ago by Dr. J. Solis Cohen, of Philadelphia, and the man gained the power of speaking loud enough to be heard in a large room. This was preceded by swallowing or drawing air into the pharynx.

Dr. Carmalt's case was that of a man forty-four years old. The patient came under observation with severe attacks of dyspnœa due to the presence of an ulcerated nodule in the larynx, which had been first discovered two years ago. The dyspnœa necessitated the performance of tracheotomy. The larynx was extirpated March, 1894. The upper portion of the œsophagus was stitched to the epiglottis. On the second day he was able to swallow fluids, and made an uneventful recovery. The patient is now able to speak in a whispered voice.

Dr. Jarvis S. Wight, of Brooklyn, exhibited a number of instruments, including needle forceps, self-threading needle, aneurism needle forceps, and a new form of knife provided with a beak substituting the use of a grooved director.

The following papers were read by title: "The Effect of Erysipelatous Attacks on Tuberculosis," by Dr. DeForest Willard, of Philadelphia; "Hernia," by Dr. W. T. Bull, of New York; "Cases of Extra-Uterine Pregnancy, with Remarks," by Dr. M. H. Richardson, of Boston; "Treatment of Urethral Vegetations by a Circular-cutting Curette," by Dr. John B. Deaver, of Philadelphia; "Report of Surgical Cases," by Dr. Chas. B. Porter, of Boston.

◆

STATE MEDICAL SOCIETY OF PENNSYLVANIA.

The Forty-fourth Annual Meeting of this Society convened in Philadelphia, May 15th to 17th inclusive, the sessions being held in a vacant church building at Twelfth and Walnut Streets. Dr. H. G. McCormick, of Williamsport, was President. There were 520 names of delegates and members enrolled upon the register, making it the largest meeting in the history of the organization. It may also be said that the programme, under the efficient management of the Committee on Arrangements, Dr. E. E. Montgomery, Chairman, was the best ever presented to the Society. Unfortunately, so many papers had been prepared that more than half had to be read by title only, and there was but scanty time to discuss others, even on most important topics. As the rule, the contributions were on practical clinical subjects and in quality were excellent; in consequence, the forthcoming volume of transactions will be of more than usual value.

Addresses of Welcome were delivered by Hon. Edwin S. Stuart, Mayor of Philadelphia, and by Dr. E. E. Montgomery.

The Secretary of the Society reported a total membership of 2,500, with an increase greater than the average during the past year. The Treasurer, Dr. Geo. B. Dunmire, reported a balance on hand of nearly two thousand dollars, all expenses for the year having been met.

Dr. H. G. McCormick, Chairman of the Legislative Committee, reported the enactment of a law establishing a State Medical Council and three State Boards of Examiners and Licensers. The first examination of physicians for authorization to practice in Pennsylvania, will be held in Philadelphia and Pittsburgh on June 11, 1894. In order to aid the State Board in its work, the following resolutions, prepared by a committee, were submitted and adopted:

Resolved, That the Secretary of each county society is requested to forward at once to the Secretary of the State Board of Medical Examiners a correct list of registration of doctors under the last Act, on and from the 1st day of March last, and quarterly thereafter; and in communities where there are no county societies, the President of this Society shall appoint a member of this Society living in such county to procure such list, and in any case of neglect by either the officers aforesaid or the appointee to send such a list, the Secretary of the State Board of Medical Examiners of this Society shall be empowered to procure the same; and further be it

Resolved, That we recommend that $500 of the moneys of the Society, or so much thereof as may be necessary, be appropriated for the examination of the registration of physicians in this State, with the view of enforcing the

Medical Examiners' Act lately passed, said money to be expended only under the direction of the State Board of Medical Examiners representing this Society, and that they shall approve all bills before being paid. Further, that the said Board of Examiners report at the annual meeting of this Society their action and expenditures under this resolution.

A resolution was also unanimously passed calling upon the Medical Council and State Boards in all their publications to refrain from applying any sectarian designations to members of this Society or candidates from regular colleges applying for examination. The Luzerne County Medical Society also entered a formal protest at this meeting against the use of the word "alopath" in the public prints, to designate nonsectarian physicians.

The Trustees of the *Journal of the American Medical Association* were criticised severely for permitting quack advertisements and other unethical matter to appear in the *Journal*. With regard to the proposal to alter the Code of Ethics (which will come up at the San Francisco meeting) this Society unanimously voted to instruct its delegates to oppose any alteration in the National Code.

The subject of "The Care and Treatment of the Insane and the Organization and Construction of Hospitals for the Insane" was brought up by Dr. Hiram Corson, and was referred to the Committee on Legislation. At its last session, a committee had been appointed to memorialize the Legislature on this subject, and the Senate had passed the bill proposed by this committee, but it had been lost in the House of Representatives. This committee reported as above stated, and was discharged.

Dr. J. A. Lippincott, of Pittsburgh, Chairman of Committee on Contagious Ophthalmia, reported that circulars had been sent to prominent ophthalmic surgeons throughout the State soliciting co-operation. The committee urged the careful inspection of immigrants at ports of entry, for *trachoma*, and proper treatment of all such cases. The great danger lies in the general ignorance of the gravity of the disease. Dr. George M. Gould offered resolutions with regard to the legal restriction of ophthalmia neonatorum, which was adopted.

Resolutions were also adopted deprecating the crippling of the army medical service by the proposed reduction of appropriations, which would not only greatly impair its efficiency, but would seriously imperil the very existence of the Army Medical School in Washington.

On the third day of the session considerable time was devoted to a discussion on Tuberculosis, which was the principal medical feature of the session. It was really opened by the Address in Hygiene, delivered by Dr. J. H. Wilson of Beaver, in which special attention was directed to the means recently proposed for restricting the communication of the disease by means of disinfection and isolation under the control of State and County Boards of Health.

Papers were read by A. M. Cooper on "Psychical Phases of Tubercular Folk"; by Lawrence M. Flick on "Prophylaxis"; by Thomas J. Mays on "Strychnine Treatment"; by Daniel Longaker on "Tubercular Meningitis"; by S. S. Cohen on the "Curability and Treatment of Pulmonary Tuberculosis." Dr. Wm. P. Munn, a delegate from Denver, read a valuable paper on "Colorado Climate" extolling its comparative dryness, amount of sunshine, and freedom from infection. In the general discussion, Drs. J. S. Cohen, J. C. Wilson, J. M. Andus and others participated. No less than six papers upon allied topics had to be read by title on account of the expiration of the time.

The paper that attracted most attention at this meeting (and the only one published *in extenso* in the newspapers), was read by Dr. Hildegarde H. Longsdorf, of Carlisle; it was on "Christian Science in its Relation to the Medical Profession," and accounted for the existence of this mirage of modern medicine as a psychical manifestation, growing out of the love of mystery and the revolt from materialistic character of modern science. It is a "fad" especially liable to spread among a hyperæsthetic and ignorant leisure class, whose ills are largely neurasthenic, or entirely imaginary. On motion, a thousand copies of the address were directed to be printed for distribution to the laity, under authority of this Society.

A very interesting lecture on "Leprosy and the Leper Settlement in the Sandwich Islands" was delivered, by invitation, by Prof. Benjamin Sharp, M.D., of the Academy of Natural Sciences of Philadelphia. It was illustrated by photographs and lantern slides thrown upon the screen, which Dr. Sharp had made while on a visit last year to Hawaii. It forms a valuable contribution to the subject.

The Address in Surgery was delivered by Dr. G. D. Nutt, of Williamsport; that in Medicine, by Dr. W. F. Foster, of Pittsburgh; in Mental Diseases, by Dr. T. M. T. McKennan, of Pittsburgh; in Obstetrics, by Dr. E. E. Montgomery, of Philadelphia; and on Ophthalmology, by Dr. Geo. E. De Schweinitz, of Philadelphia.

The President's Address, by Dr. McCormick, was delivered in the evening, and was followed by a reception by the Faculty of the Jefferson Medical College at the Academy of the Fine Arts. Other entertainments were given by the Medico-Chirurgical College, the University of Pennsylvania, the Medical Club, and by the Philadelphia County Medical Society, the latter being a Theatre Party followed by a reception.

The following officers were elected for the year: President, Dr. John B. Roberts, of Philadelphia; First Vice-President, Dr. S. C. Stewart, of Clearfield; Second Vice-President, Dr. J. A. Lippincott, of Pittsburgh; Third Vice-President, Dr. J. H. Wilson, of Beaver; Fourth Vice-President, Dr. R. Armstrong, of Clinton; Secretary, Dr. Wm. B. Atkinson, of Philadelphia; Treasurer, Dr. Geo. B. Dunmire, of Philadelphia.

Next place of meeting, Chambersburg, Dr. George S. Hall, Secretary of Committee on Arrangements.

Tuberculosis in Domestic Pets. — Professor Fröhner, of the Berlin Veterinary School, has recently made some investigations as to the prevalence of tuberculosis among small domestic animals, the results of which are as important as they are interesting. He finds it rare among dogs, somewhat more frequent among cats, and quite common in parrots. As the latter usually live in rooms constantly used by members of the family, their liability to tuberculosis makes them rather dangerous pets.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, JUNE 14, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 ***Washington Street, Boston.***

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 WASHINGTON STREET, BOSTON, MASS.

THE TWENTY-SECOND ANNUAL REPORT OF THE BOSTON BOARD OF HEALTH.

THE annual report of the Boston Board of Health for the year ending January 31, 1894, contains, in addition to the usual valuable tables and charts, some interesting statements and some important recommendations. The death-rate per 1,000 inhabitants for the year was 24.02. Influenza is still held responsible in a great measure for the large increase in respiratory diseases. The prevalence of pneumonia during the year is reported as having assumed a character unequalled in the registration of vital statistics in this city.

In 1851, its percentage to the total mortality was 7.75; in 1893 it was 13.15 per cent., or a total of 1,540 deaths from this cause alone. On the other hand, the percentage of the total mortality from zymotic causes is less by .49 per cent. than for the year 1892, or 17.43 per cent. of the total number of deaths. The deaths from diphtheria increased 62, while the deaths from scarlatina decreased 14, as compared with the preceding year.

The Board finds that it is with the diseases over which control cannot be exercised that death claims the largest number of victims. The diseases of a constitutional character numbered 2,469, or 21.08 per cent. of the total mortality, and those of a local character, as pneumonia, bronchitis and heart disease, and the like, amounted to 5,712 deaths, or 48.77 per cent. of the whole number of deaths. There were also 572 deaths due to violent causes.

The number of children who died under five years of age was 3,987, or .80 per cent. higher than in 1892, but 1.15 per cent. less than the average for the previous ten years.

There was no epidemic during the year.

Some interesting items are given concerning the cases of small-pox which have occurred during the winter, exhibiting in a striking manner the value of vaccination. From October 30, 1893, to January 31, 1894, there were in all 36 cases. The percentage of deaths among the unvaccinated was 29.62. No vaccinated person died, and no vaccinated person was seriously ill. A mother nursed her infant, who had the disease, during the whole course of the attack, but the mother had two perfectly characteristic scars and did not contract the disease. Two vaccinated children, relatives of a patient, were constantly exposed from three to four weeks to the disease, and did not become ill. Of the 19 cases occurring in Ward 19, which were traced to an unrecognized attack of the disease, only one vaccinated person contracted it; and this patient, who had been vaccinated forty-five years ago, had such an extremely mild attack that, if it had not been for the existence of the other cases, the disease would probably not have been recognized.

The city of Boston made an extra appropriation of $25,000 for free vaccination, and, in round numbers, about 100,000 persons were vaccinated under direction of the Board of Health. If one compares the condition of Boston to-day with that of Chicago in regard to small-pox, any candid person must recognize that the energetic action of the Board and the sum of money have been well spent, to the great advantage of this city and its inhabitants.

Under the head of "Contagious Diseases," the report draws a sharp and instructive contrast between what the Board has been enabled to do during the last twenty years in restraining and suppressing small-pox, and its enforced comparative helplessness in its relation to such diseases as diphtheria, scarlet fever and typhoid fever. During that period small-pox has diminished to almost nothing, whilst the other diseases have continued practically endemic, as during the preceding period of twenty years. During the last twenty years there have been only 34 deaths from small-pox, and during the same time there have been 8,245 deaths from diphtheria, 3,281 deaths from scarlet fever, and 3,376 deaths from typhoid fever. Against these diseases there is, as yet, no prophylactic treatment such as we possess in vaccination against small-pox. Early recognition and report of cases, isolation until all power to impart the disease is lost, and timely disinfection, are the means by which these diseases may be controlled. The proper application of these means involves expense.

The Board of Health has repeatedly asked for an appropriation with which to increase its care for the uncontrolled cases of diphtheria and scarlet fever, and it has as often been refused. "The Board would like to have all cases seen by its own physicians or agents, held under proper surveillance while at home, and released from isolation only on the certificates from the same physicians or agents. It would like to aid in having all doubtful cases of sore throat decided by expert bacteriological examinations, and have all cases of diphtheria discharged from isolation by means of the same tests, or after a prolonged isolation when all local and general symptoms of the disease have disappeared. To do this the department must have more medical agents, and have its present medical officers relieved from duties now performed for other departments of the city."

In regard to diphtheria, the Physician of the Board, Dr. J. H. McCollom, emphasizes his conviction, as the result of careful personal study of the subject, that the manifest importance of a bacteriological investigation as a means of diagnosis in doubtful cases of diphtheria is becoming more and more evident, and of no less importance, as far as the well-being of the community is concerned, is the bacteriological investigation of cases after apparent recovery from diphtheria.

In an endeavor to diminish the prevalence of this disease, the two most important factors, in Dr. McCollom's judgment, are: first, the recognition of mild and doubtful cases; second, the actual disappearance of the special germs of the disease, which can only be recognized by means of a bacteriological investigation. In New York this conviction has reached the stage of practical application.

An appropriation of money for protection against the spread of infectious diseases does not furnish places for "workers" or work for voters; but there is absolutely no object through which an intelligent and faithful application of a sum of money, and that of moderate amount, can be made to yield such valuable returns to a community like that of Boston. Few will be found to deny this, and yet such an appropriation is not to be had. The city might even better be without a park or two, or at least without some of the very costly elaborations of a Park System!

◆

SUNSHINE AND MICROBES.

Prof. Percy Frankland has written an article in the May number of the *Nineteenth Century*, on "Sunshine and Microbes," which is interesting as a summary of what has been discovered on the influence of the sun's rays on bacteria. The first and most important step in revealing the cleansing and disinfecting properties of sunshine was made sixteen years ago by two Englishmen, Downes and Blunt. They established the remarkable fact that if certain liquids capable of undergoing putrefaction were exposed to the direct rays of the sun, they remained perfectly sweet, whilst exactly similar liquids kept in the dark became tainted and exhibited innumerable bacteria under the microscope.

They also ascertained that the oxygen of the air is a powerful adjuvant to the bactericidal power of the sun's rays. Recently, M. Moment in Pasteur's Institute, has obtained more exact information confirming these experiments by exposing anthrax-bacilli to sunshine in the presence of and in the absence of air, with the result that while the anthrax-bacilli exposed to the sun and air were killed in two and a half hours, similar bacilli placed in a vacuum were still alive after fifty hours' exposure to sunshine.

The next problem to be attacked was to ascertain whether all the solar rays were equally responsible for this important result, or whether the different colored rays composing the sun's beams produced different effects, as is known to be the case in those important vital processes which go on in green plants.

Geisler, of St. Petersburg, has given especial attention to this question. He decomposed the white sunbeams by means of the prism and then exposed typhoid bacilli to the light of the various parts of the spectrum. The rays of the red end he found had little or no effect at all on the growth of the bacilli, whilst the most powerfully deleterious action was obtained in the ultra-violet, the effect becoming less and less marked in passing from this to the red. The rays which exert this destructive or inhibitory effect on bacterial life are precisely those which also exert the most powerful action on the ordinary photographic plate.

Of much interest also is the comparison made by Dr. Geisler of the potency of the sun and the electric lights respectively in destroying bacterial life. His experiments have proved the striking inferiority in this respect of the most dazzling of artificial lights in comparison with sunshine.

Even if exposure to the solar rays is not sufficient to actually destroy the bacteria, it may yet profoundly modify their character, and bring about the most important changes in their subsequent behavior. Thus, while many bacteria can produce the most wonderful colors — yellow, orange, scarlet, crimson, indigo-blue, etc., it has been found that exposure to sunshine for a short time is able to rob them of this beautiful property.

Much hygienic importance and interest attaches to some recent investigations of Dr. Palermo, of Naples. The microbe selected for experiment was Koch's cholera bacillus. These bacilli are fatal to guinea-pigs in about eighteen hours. Dr. Palermo placed some of these bacilli in the sunshine for various periods of time, and found that whilst, when he protected them from the sun, they killed guinea-pigs in eighteen hours as usual, after they had been "sunned" for from three-and-a-half to four-and-a-half hours, they were perfectly harmless, and the animals experienced no evil results whatever from inoculation with them.

The cholera bacilli which refused to kill the guinea-pigs had not been destroyed, nor had their total number suffered any diminution, but their inability to work mischief was directly due to the removal ***during this exposure to sunshine of their virulence or disease-producing powers.*** More than this, it was found that those guinea-pigs which had survived the inoculation with these sunshine-exposed bacteria had acquired immunity toward the disease. Thus, when eight days later they were inoculated with ***virulent*** cholera bacilli, they were unaffected by doses which to ordinary guinea-pigs proved rapidly fatal.

Dr. Frankland has experimented to ascertain the action of sunshine on the spores of anthrax suspended in water, and has found that in this medium they are able to survive as much as one hundred hours or more of full sunshine, whilst in ordinary culture materials, like broth and jelly, they are generally killed by a few hours exposure to the sun's rays. He has also found that the addition of common salt greatly increases the destructive action of sunshine on anthrax spores.

In order to ascertain the effect of daylight on the bacteria of a running stream, two young German bacteriologists lately carried on an interesting experiment on the river Isar near Munich. They sat a whole night by the river bank, from six in the evening till six on the following morning, determining the number of microbes in the water at various intervals of time. The experiments were made towards the end of September, and they commenced their watch about sunset at a quarter past six in the evening. At this time, one hundred and sixty bacteria were found in twenty drops of water; but at three and four o'clock in the morning, when the water had therefore been for several hours in darkness, there were more than twice and even three times that number of germs present, indicating that in the absence of their deadly foe, the sunshine, they had multiplied with great freedom — only, however, as was found when morning approached and day wore on, to be kept once more in subjection and reduced in number.

These experiments were, of course, made with water taken from the superficial layers only, but it is obviously of particular interest to ascertain whether this destruction of bacteria can take place also beneath the surface of the water, and if so, to what depth the sun's rays can exercise this inhibitive power.

◆

MEDICAL NOTES.

A New Morgue for Philadelphia. — The Department of Public Safety of Philadelphia has completed the new city morgue on Wood Street, Philadelphia, and the building was open to physicians' inspection on June 1st.

A Royal Method of Paying the Doctor. — A correspondent of the *Medical Record* sends the following anecdote, which the late Prof. Edward Jäger, of Vienna, related of his father (at that time the first oculist in Europe), and of Milosh Obrenovich, who then was the first Prince of Servia: "Milosh had cataract of both eyes. Jäger operated for him on one eye with good result. Milosh paid for this operation 6,000 ducats (nearly $10,000). When Jäger had operated on the second eye, and the result was happy again, Milosh sent him this time 3,000 ducats. Later they met at the table of Prince Metternich, and were seated one next to the other. Jäger asked his neighbor why he had only given him 3,000 ducats for the second operation. Milosh, with the cunning smile of a savage or a peasant, answered: 'If I had had a third eye to be operated on, I would no doubt have paid you again 6,000 ducats for the second operation.' May not his sublime Highness, the Shah of Persia, feel inclined to play a similar trick on Dr. Galezowsky?"

"What Should a Doctor be Paid?" — This is the subject discussed by Dr. W. A. Hammond in the June number of the *North American Review*. Our readers will be glad to learn that, under certain circumstances, $500,000 would be a moderate fee. The *Lancet* (June 2d) publishes an address by Dr. Dickinson, on "Professional Remuneration." Dr. Dickinson's treatment of this topic is less exhilarating.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon June 13, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 39, scarlet fever 56, measles 15, typhoid fever 5.

Bovine Tuberculosis at the Massachusetts State Industrial School. — A second herd of imported cattle at the State Industrial School at Lancaster has been found affected with tuberculosis and the cattle have all been killed.

Medical Registration Law. — The Medical Registration Bill has passed both branches of the Massachusetts Legislature and received the Governor's signature. The full text of the bill has already been published in the Journal.

The Rockland, Me., Small-Pox Hospital Burned. — The house selected by the Rockland, Me., Board of Health for a small-pox hospital was burned June 8th. It is supposed that the fire was set by some one opposed to a quarantine hospital in that locality as the neighbors had already made much complaint of the selection.

Suffolk District Board of Censors. — The Board of Censors of the Suffolk District Medical Society will hold an adjourned meeting for the examination of candidates for the Massachusetts Medical Society on June 26th. This meeting is held for the convenience of students now taking their final examinations in the Medical School.

The Boston City Hospital Club. — The Executive Committee of the City Hospital Club has voted that in future the annual dinner of the Club be held some time during the winter months, instead of in June, as has been the case heretofore. It has been decided to hold the next dinner on the first Wednesday in February, 1895. It is proposed to make the annual meeting of the Club coincident with the dinner. No quorum being present at the annual meeting called for Tuesday, June 12th, an adjournment was voted to the first Wednesday in February, or subject to the call of the Executive Committee.

Mrs. Amory's Bequests to Hospitals. — The will of the late Mrs. Jeanne P. Amory of Braintree directs the executors to sell within two years all her right, title and interest in the real estate at 111 West 57th St., New York City, and to divide the net proceeds equally between the Massachusetts General Hospital in Boston, the City Hospital in Quincy, Mass., the Woman's Hospital and the Skin and Cancer Hospital, both in the city of New York.

The New Contagious Hospital at Waltham, Mass., not Accepted by the Board of Health. — At its recent meeting the Waltham Board of Health refused to make use of the new contagious hospital on the ground that there are serious defects in its construction which render it unserviceable. The reasons they give are: first, that there is no cellar; second, there is no adequate method of heating; third, no provision has been made for proper ventilation; fourth, that the diphtheria and scarlet fever wards are too near each other; fifth, that there is no satisfactory method of procuring hot water. The desired alterations are estimated to cost over three thousand dollars.

The Massachusetts Dental Society. — The Massachusetts Dental Society held its annual meeting in Boston on June 7th, 8th and 9th. The following-named officers were elected for the ensuing year: President, J. King Knights, D.D.S., of Hyde Park; First Vice-President, George A. Maxfield, D.D.S., of Holyoke; Second Vice-President, Waldo E. Broadman, D.M.D., of Boston; Secretary, Edgar O. Kinsman, D.D.S., of Cambridge; Treasurer, Edward Page, M.D., D.M.D., of Charlestown; Librarian, Thomas W. Clements, D.D.S., of Brookline; Executive Committee, Harry S. Draper, D.D.S., George C. Ainsworth, D.D.S., Joseph T. Paul, D.M.D., all of Boston; H. P. Cooke, D.M.D., of Worcester, and Robert T. Horn, D.D.S., of Brookline.

NEW YORK.

Fatal Poisoning from Water Hemlock.—Five lads were fatally poisoned and six others made seriously ill at the Institute of the Sisters of Mercy, at Tarrytown on the Hudson, on June 4th, by eating what they supposed to be sweet-flag root. The root, which was dug up by laborers engaged in laying some drain pipes in the grounds of the institution, has been pronounced by Dr. N. L. Britton, Professor of Botany in Columbia College, and Dr. H. R. Rusby, Professor of Botany in the New York College of Pharmacy, to be that of the water hemlock. In most of the fatal cases death resulted within half an hour after the poisonous herb was eaten.

Reported Death from Vaccination proves to be Untrue. — A short time since the announcement was made in the newspapers that a child three years of age had died from the effects of vaccination by one of the Board of Health's corps of vaccinators. The case was referred to the coroner's office for the death-certificate, as the attending physician had seen the child too short a time before its death to feel justified in making a certificate. The deputy coroner reported that death was due to tetanus induced by septicæmia which was the result of vaccination. The Board of Health felt satisfied that death was due to other causes, and ordered an investigation. On inquiring of other physicians who had seen the child, it appeared that the cause of death was most probably a traumatic meningitis. An autopsy confirmed this diagnosis, and the coroner filed a new certificate of death from "Exhaustion resulting from convulsions from acute meningitis due to a fall."

Miscellany.

OPERATIVE SURGERY UNDER DIFFICULTIES.

The recent death of Mr. Dickinson Crompton recalls the following story [1] of a surgical operation which he performed in his earlier years under great difficulty. He told the anecdote as follows:

"Some years ago I was called in the night to go to M—— to an accident, prepared to amputate. I found a poor laborer lying on his cottage bed, his left arm hanging over the edge of the bed, dropping blood into a chamber pot. The arm was black, as if it had already mortified. I heard that the man's arm had been caught in the cog-wheel of one of the agricultural machines, and was drawn in up to the shoulder. There was nothing for it but amputation above the injured part — in fact either close to the head of the humerus or by disarticulation of the whole. There was no room for a tourniquet, and I requested Mr. C., the surgeon of the village, to press upon the artery against the head of the bone.

"There was a boy in the room — an apprentice, I was told — but he declined to come near the patient to hold out the arm. I was therefore obliged to hold the artery against the head of the bone with my left hand, while Mr. C. held the arm out at full length by the hand; but he told me he always 'fainted at the sight of blood'; so turning his face and body away as far as possible, he held on till I had made my incision and sawn through the bone as high as I could.

"There was only a cottage candle in the room, and therefore I asked Mr. C. to hold it, so that I could look for the arteries, but he had had enough.

"The poor patient was sitting on a chair making no complaint; in fact I think there could not have been much pain felt, from the appearance of the parts; so he himself said, 'Sir, if you will give me the candle, I think I can hold it.' This he did, bringing his right hand round with the candle in it, so that I had a good view of the face of the stump. I was delighted to get my tired thumb and hand free, when I saw the orifice of the brachial and could pull it out by the tenaculum, and left it hanging till I could tie the artery, and so with the smaller vessels. After that I had no further difficulty, as only one or two small arteries seemed inclined to bleed.

"The man recovered, but I heard he died of phthisis six months afterwards."

THE FIRST EPIDEMIC OF MEASLES IN SAMOA.

The virulence of a first epidemic of measles among a new race is well known, but actual occurrences under medical observation are not so common as to be uninteresting. Dr. S. H. Davies of Savaii, Samoa, publishes a brief account of the first epidemic of measles in that group of Islands.[2]

"It was brought first to Tonga in June, 1893, where it nearly decimated the population. Three months later the same vessel brought the disease to Samoa. The entire population of the ten inhabited islands of the Samoa group is about 34,500; and by the first of this present year fully one thousand persons had died from measles, nearly half being adults. The epidemic was mild in its onset, and comparatively few died during the period of fever and eruption.

---

[1] Birmingham Medical Review, May, 1894.

[2] Australian Medical Gazette, April, 1894.

"The mortality from measles has arisen principally from the complications of gastritis, enteritis, diarrhœa and dysentery. A few died from suppressed measles. But the craving the natives have for raw fish, unripe or over-ripe fruit, and *especially* half-cooked *fresh pork*, became morbid during the period of convalescence. Many, lest they should be told to abstain from these, avoided foreign medicine. Nine-tenths of the deaths might have been prevented by care in diet. The worst cases of diarrhœa and dysentery yielded to treatment, and there were no deaths among those who followed instructions, and who were under one's own personal supervision. Since measles arrived, an unusually large number of these people including many adults, with their usual predisposition to scrofula, have suffered from the suppurating glands in the neck, submaxillary region and groin. Not a few had parotitis, going on to suppuration. During period of fever and rash there were numerous abortions. Single and multiple abscesses are very common at all times, but cases have been multiplied tenfold of late. Now that nearly three months have elapsed since last cases of fever and rash, a mild form of remittent fever is exceedingly common."

"The two epidemics of influenza in 1891 and 1893 increased the natural tendency of the Samoans to chest affections, and the measles has still further intensified their susceptibility. During the past two months two hundred persons, at the very least, have died from the effects of the measles epidemic which will be long remembered, as not one of the whole population seems to have escaped."

◆

THERAPEUTIC NOTES.

The Internal Treatment of Vesicular Eczema. — Dr. Leslie Phillips writes to the *British Medical Journal* the results of observations made during the last two years on the effect of certain remedies given in the hope of obtaining some specific or direct action in modifying the morbid tendency of vesicular eczema in adults. Calcium sulphate was perseveringly employed in a large number of cases, always with a disappointing result. Ichthyol in pills seemed to have a slight modifying influence in one or two cases. Calcium chloride and thyroid glands both gave negative results. The hypophosphites appeared to be occasionally useful. Tartarated antimony was very helpful in not a small proportion of cases. It was given in sensible doses; namely, one-tenth to one-sixth of a grain thrice daily, and continued for long periods, it being seldom found needful to discontinue it on account of ill-effects.

Treatment of Diphtheria at the Hospital Trousseau.[1] — The staff at the Hospital Trousseau in Paris, after trying various methods of treating diphtheria, has settled upon the following routine practice for exclusive use in all cases of diphtheria or doubtful angina, which is treated as diphtheria pending bacteriological cultures. The local treatment consists in large irrigations with solutions of carbolic acid in the strength of 1 to 150 or 200, and in the application of an antiseptic varnish. These are used in all cases and stages of the disease. The douches are especially insisted on in septic cases. The false membrane is wiped away as much as possible by pledgets of absorbent cotton. The carbolic solution, tepid, is thrown from an irrigator directly upon the denuded area, and is afterwards run through each nostril until it returns clear. The varnish is applied by swabs of absorbent cotton upon the false membrane which is not detached, or the place it once occupied. The formula is:

℞	Gum lac. (purified, wholly soluble in alcohol)	270	grammes
	Benzoin (purified, wholly soluble in alcohol)	10	"
	Balsam tolu	10	"
	Crystalized carbolic acid	100	"
	Essense of cinnamon	6	"
	Saccharine	6	"

Alcohol to make one litre.

The varnishing is repeated, according to the gravity of the case, every two or four hours during the day and every three or six during the night. In all cases the douching is repeated every two hours during the day and every three or four at night. "The application is naturally opposed by the child, but in view of the seriousness of the disease force is to be used if necessary. Accordingly, two or three persons are needed to immobilize the patient and hold the mouth open. On the first sign in the urine of carbolic intoxication the solution is to be changed for one of thymol or salicylic acid." The general treatment consists in (1) tonics (alcohol and quinine); (2) diuretics, to aid in the elimination of the diphtheria toxine; (3) caffeine or sparteine, for cardiac weakness; (4) a diet of milk, eggs or broth.

Treatment of Whooping-Cough by Quinine. — Baron[1] recommends the use of quinine in pertussis, and from a study of some fifty cases draws the following conclusions. In a small number of cases a favorable effect is obtained very early, even as soon as the second or third day. In most cases the result is doubtful for the first few days because the larger number of the children have a tendency to vomit and an uncertain amount of the drug is retained. From the fifth or sixth day a decided improvement, both as regards the number and severity of the paroxysms, is noticed. This improvement advances rapidly and continuously even though the quinine is given in gradually smaller and less frequent doses. The time required for a cure by this method is given as not over three weeks, and in some cases is so short as to almost warrant calling the treatment abortive. The administration is advised after the following manner: Each single dose of the hydrochlorate of quinine is estimated at 0.01 gm. for each month and 0.1 gm. for each year of the child's age. This is to be given three times a day, preferably at 6 A. M. and 2 and 10 P. M. Strong babies, as a rule, require a somewhat larger dose than that scheduled for their age, while even children over four years of age rarely need more than 0.4 gm. t. i. d. Upon a manifest amelioration of the symptoms two doses daily only are needed with a gradual lessening of each dose. A single dose at night-time should be given for some time after apparent full recovery. The quinine may be given in solution (not advised, owing to the varying size of spoons used), in capsule or in sugar pellets.

---

[1] L'Union Médicale.

[1] Berlin klin. Wochenschrift, 48, 1893; Deutsche Med. Zeitung, 24, 1894.

The chocolate and quinine candies might seem to be of use. Especial importance is attached to a continuance of the treatment for a few days beyond apparent cure, to lessen any chance of too early omission of treatment.

Correspondence.

WEIGHT AS A SYMPTOM IN PHTHISIS.

Denver, Col., June 4, 1894.

Mr. Editor: — I wish to offer a few suggestions as to the method of treatment of phthisis discussed by Dr. Boardman in your issue of May 17th.

To me it seems that not sufficient stress has been placed upon one sign in the summary of the condition of the patient after the treatment mentioned. I refer to the gain or loss of weight. I believe that physicians are coming more and more to the belief that this one factor is of infinitely more importance than all others together in estimating a patient's progress, and a fatal objection to the method of treatment mentioned is, as I see it, that in only one of the ten cases given in detail was there any gain of weight, and in that one this gain amounted to only three pounds. One case held his own, and the other eight cases lost an aggregate of thirty-two and three-fourths pounds, or an average of more than four pounds each, in a treatment averaging a little over two months. The temporary gain which was lost before the end of the treatment, is not considered in this computation.

In an experience of more than a decade in the treatment of this disease in Colorado, I have become more and more impressed with the fact that those patients in whom a gain in weight is observed, generally do well, while those cases in which a loss occurs, no matter how gradual, do badly in the end. It is my custom to inform patients who complain of this or that symptom, that, so long as the gain in weight, which we generally see in incipient cases here, continues, I do not care very much about the other symptoms.

In our anxiety to establish the bacillary origin of this disease and to found a treatment upon this discovery, we have been in danger of losing sight of the one fundamental fact which underlies the whole matter, namely, that this disease is one in which the patient is on the road to physical bankruptcy. We all recognize the fact that, in the absence of this essential condition, the bacillus does not thrive in the human organism. Practically, the patient's salvation, when attacked, lies in an improved assimilation of food. When placed under such conditions as enable him to hold his own, and then to begin to gain in weight, we have, in this gain, a form of evidence that he is overcoming his bacillary antagonists, which is infinitely better than any which can be obtained in the laboratory. As well assume that a suspected bank must be all right because of the acquisition of a new set of office furniture, in spite of the known fact that its cash account is running behind, as to consider a case of phthisis improving because of improvement in certain symptoms when the weight is decreasing.

I do not mean to intimate that the writer has, by any means, attempted to lead us to believe that this treatment is better than other recognized methods, but merely wish to point out the fact that an important factor in estimating the true value of this or any other means of treatment of phthisis has been passed over too lightly in this contribution. To those of us who have repeatedly seen patients gain twenty-five or even fifty pounds of flesh in this climate, coincidently with the recovery of health, the idea of improvement without decided gain in weight in tuberculosis seems preposterous.

We are all under obligations to Dr. Boardman, however, for his careful record of the cases he has presented.

Yours very truly,
1517 State St. J. N. Hall, M.D.

METEOROLOGICAL RECORD,

For the week ending June 2d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..27	29.96	58	65	50	87	78	82	S.W.	S.E.	3	9	O.	C.	
M..28	29.93	64	75	54	74	68	71	S.W.	S.	8	9	C.	O.	
T..29	29.85	56	59	54	93	90	92	S.E.	E.	23	3	R.	O.	0.85
W .30	30.02	58	70	47	43	45	44	N.W.	S.W.	9	12	F.	O.	
T ..31	29.81	50	54	46	93	97	95	E.	N.	15	7	R.	R.	0.62
F.. 1	29.64	58	66	50	76	58	67	S.W.	S.W.	16	10	F.	C.	0.17
S.. 2	29.73	60	68	53	69	89	79	S.W.	S.	11	15	F.	R.	0.04
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, June 2, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Scarlet fever.
New York . .	1,891,306	754	280	17.94	13.91	2.73	9.88	1.56
Chicago . . .	1,438,000	—	–	—	—	—	—	—
Philadelphia .	1,115,562	360	126	15.96	13.16	3.08	7.28	.56
Brooklyn . .	978,394	363	148	17.28	9.99	2.16	9.72	1.35
St. Louis . . .	560,000	—	—	—	—	—	—	—
Boston . . .	487,397	185	62	12.42	14.04	.54	6.48	3.78
Baltimore . .	500,000	—	—	—	—	—	—	—
Washington .	308,431	130	58	13.86	15.40	6.16	.77	—
Cincinnati . .	305,000	—	—	—	—	—	—	—
Cleveland . .	290,000	—	—	—	—	—	—	—
Pittsburg . .	263,709	81	43	23.37	6.15	6.15	3.69	—
Milwaukee . .	250,000	—	—	—	—	—	—	—
Nashville . .	87,754	33	12	6.06	21.21	—	—	3.03
Charleston . .	65,165	41	15	17.08	9.76	14.64	2.44	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	96,217	33	11	21.21	15.15	—	6.06	3.03
Fall River . .	87,411	33	12	21.21	9.09	12.12	—	—
Lowell . . .	87,191	—	—	—	—	—	—	—
Cambridge . .	77,100	26	10	11.55	11.55	—	—	7.70
Lynn	62,656	18	4	22.22	11.11	5.55	—	—
Springfield . .	48,684	8	1	—	—	—	—	—
Lawrence . .	48,355	18	5	11.11	—	11.11	—	—
New Bedford .	45,886	22	7	9.10	9.10	4.55	4.55	—
Holyoke . . .	41,278	—	—	—	—	—	—	—
Salem	32,233	9	5	—	11.11	—	—	—
Brockton . .	32,140	4	0	50.00	—	25.00	—	—
Haverhill . .	31,396	9	0	–	22.22	—	—	—
Chelsea . . .	30,264	13	4	7.69	30.76	—	—	—
Malden . . .	29,394	5	1	—	20.00	—	—	—
Newton . . .	27,556	5	2	—	—	—	—	—
Fitchburg . .	27,146	5	0	—	20.00	—	—	—
Taunton . . .	26,972	6	1	16.66	—	—	16.66	—
Gloucester . .	26,688	—	—	—	—	—	—	—
Waltham . .	22,058	5	2	20.00	—	—	—	20.00
Quincy . . .	19,642	—	—	—	—	—	—	—
Pittsfield . .	18,802	5	0	20.00	—	—	—	20.00
Everett . . .	16,585	6	1	—	—	—	—	—
Northampton .	16,331	5	0	—	20.00	—	—	—
Newburyport .	14,073	4	0	—	—	—	—	—
Amesbury . .	10,920	6	0	—	16.66	—	—	—

Deaths reported 2,227: under five years of age 816; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 366, consumption 283, acute lung diseases 278, diphtheria and croup 161, diarrhœal diseases 69, scarlet fever 36, whooping-cough 32, typhoid fever 18, measles 17, cerebro-spinal meningitis 15, small-pox 7, erysipelas 6, malarial fever 5.

From whooping-cough Brooklyn, Washington and Pittsburg 6 each, Philadelphia 5, New York 3, Fall River 2, Boston, Cambridge, Lynn and Somerville 1 each. From typhoid fever Philadelphia 7, Washington 3, Brooklyn, Pittsburg and Worcester 2 each, New York and Nashville 1 each. From measles New York 6, Philadelphia and Brooklyn 4 each, Pittsburg 3. From cerebro-spinal meningitis New York 8, Worcester and Lynn 2 each, Boston, Brockton and Chelsea 1 each. From small-pox New York 6, Brooklyn 1. From erysipelas New York 3, Philadelphia, Brooklyn and Boston 1 each. From malarial fever New York 2, Philadelphia, Brooklyn and Fall River 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending May 26th, the death-rate was 17.7. Deaths reported 3,543: acute diseases of the respiratory organs (London) 248, measles 248, whooping-cough 128, diphtheria 62, scarlet fever 41, diarrhœa 38, fever 31, small-pox (London 7, West Ham and Birmingham 2 each) 11.

The death-rates ranged from 10.1 in Plymouth to 28.4 in Salford; Birmingham 18.5, Bolton 16.7, Croydon 11.2, Hull 14.2, Leicester 15.2, Liverpool 20.9, London 17.3, Manchester 22.1, Newcastle-on-Tyne 18.8, Nottingham 21.0, Sheffield 17.4, Swansea 14.8, Wolverhampton 21.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 2, 1894, TO JUNE 8, 1894.

Upon being relieved from duty at Camp Merritt, Montana, by **First-Lieut. William H. Wilson**, assistant surgeon, **First-Lieut. Edward L. Munson**, assistant surgeon, will proceed without delay to Fort Yellowstone, Wyoming, and report to the commanding officer for temporary duty with troops in the National Park during the season.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JUNE 9, 1894.

Geo. A. Bright, medical inspector, detached from U. S. S. "Newark," ordered home and granted three months' leave.

R. A. Marmion, surgeon, detached from Smithsonian Institution and ordered to the U. S. S. "Newark."

D. McMurtrie, medical inspector, ordered to the Smithsonian Institution.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIVE WEEKS ENDING MAY 26, 1894.

Murray, R. D., surgeon. To proceed to Brunswick, Ga., for special duty. April 30, 1894. To proceed to Waynesville, Ga., as inspector. May 17, 1894.

Hutton, W. H. H., surgeon. Detailed for duty as inspector of Quarantine Stations. April 27, 1894.

Hamilton, J. B., surgeon. Granted leave of absence for three days. May 14, 1894.

Gassaway, J. M. surgeon. Granted leave of absence for fifteen days. May 12, 1894. Leave of absence extended five days. May 26, 1894.

Stoner, G. W., surgeon. To inspect Cape Charles Quarantine Station, monthly. April 27, 1894. Granted leave of absence for thirty days. May 18, 1894.

Godfrey, John, surgeon. To represent the service at meeting of the American Medical Association at San Francisco, Cal. May 11, 1894.

Irwin, Fairfax, surgeon. To proceed to Berlin, Germany, for special duty. May 5, 1894.

Carter, H. R., surgeon. Granted leave of absence for three days. May 3, 1894. To proceed to Key West Quarantine for temporary duty. May 4, 1894.

Banks, C. E., passed assistant surgeon. Granted leave of absence for five days. May 1, 1894.

Carmichael, D. A., passed assistant surgeon. To proceed to St. Louis, Mo, for temporary duty. May 15, 1894.

Peckham, C. T., passed assistant surgeon. To proceed to San Francisco Quarantine Station for duty. May 17, 1894.

Glennan, A. H., passed assistant surgeon. To proceed to Wilmington, Del., for special temporary duty. April 25, 1894.

White, J. H., passed assistant surgeon. To inspect quarantine Stations. April 27, 1894. Granted leave of absence for seven days. April 29, 1894. Granted leave of absence for twenty-three days. May 4, 1894.

Bratton, W. D., passed assistant surgeon. To report at Bureau and then to proceed to Delaware Breakwater Quarantine for duty. May 19, 1894.

Magruder, G. M., passed assistant surgeon. To proceed to Key West Quarantine Station for duty. May 15, 1894.

Kinyoun, J. J., passed assistant surgeon. To proceed to Wilmington, Del, for special temporary duty. April 26, 1894. Detailed as chairman, Board for physical examination officers, Revenue Marine Service. April 30, 1894. Detailed to attend annual meeting State Board of Health of North Carolina. May 11, 1894. To inspect property at Wilmington, N. C. May 14, 1894.

Woodward, R. M., passed assistant surgeon. To proceed to Chicago, Ill., for special duty. May 7, 1894.

Vaughan, G. T., passed assistant surgeon. Detailed as recorder, Board for physical examination officers, Revenue Marine Service. April 30, 1894.

Stoner, J. B., passed assistant surgeon. To inspect quarantine ports. April 26, 1894.

Perry, J. C., passed assistant surgeon. To assume command of service at Norfolk, Va. May 4, 1894.

Young, G. B., assistant surgeon. To proceed to Key West, Fla., for duty. May 15, 1894.

Brown, B. W., assistant surgeon. To proceed to Pittsburg, Pa., for duty. April 27, 1894.

Rosenau, M. J., assistant surgeon. To proceed to Boston, Mass., for duty. April 23, 1894.

Cofer, L. E., assistant surgeon. To proceed to San Diego, Cal., as inspector, and to assume command of the service after June 30th. April 26, 1894.

Eager, J. M., assistant surgeon. To proceed to New Orleans, La., for duty. May 16, 1894.

Nydegger, J. A., assistant surgeon, To proceed to Savannah, Ga., for duty. April 28, 1894.

Strayer, Edgar, assistant surgeon. To report for duty on Revenue Bark "Chase." April 28, 1894.

Oakley, J. H., assistant surgeon. To rejoin station San Francisco, Cal. May 16, 1894.

PROMOTIONS.

G. B. Young, assistant surgeon. Commissioned as passed assistant surgeon. May 25, 1894.

W. G. Stimpson, assistant surgeon. Commissioned as passed assistant surgeon. May 25, 1894.

APPOINTMENTS.

Arthur R. Thomas, of Illinois, commissioned as assistant surgeon. May 25, 1894.

Henry W. Wickes, of Maryland, commissioned as assistant surgeon. May 25, 1894.

Hugh S. Cumming, of Virginia, commissioned as assistant surgeon. May 25, 1894.

APPOINTMENT.

Governor Greenhalge has appointed **Mr. Henry S. Howe**, of Brookline, Trustee of the Massachusetts General Hospital in place of **Mr. T. E. Proctor**, resigned.

BOOKS AND PAMPHLETS RECEIVED.

Non Nocere. By A. Jacobi, M.D., New York. Reprint. 1894.

Transactions of the Indiana State Medical Society, 1893, Forty-Fourth Annual Session held in Indianapolis, Ind., May 11 and 12, 1893.

Two Cases of Brain Tumor; A Contribution to Cerebral Surgery. By Clarence Bartlett, M D., and W. B. Van Lennep, A.M., M.D Reprint. 1894.

Physiotherapy First; Nature's Medicaments before Drug Remedies: Particularly Relating to Hydropathy. By Edward Playter, M.D., Ottawa. Reprint. 1894.

Removal of the Gasserian Ganglion as the Last of Fourteen Operations in Thirteen Years for Tic Douloureux. By W. W. Keen, M.D., and John K. Mitchell, M.D. Reprint. 1894.

An Illustrated Dictionary of Medicine, Biology and Allied Sciences, Based upon Recent Scientific Literature. By George M. Gould, A.M., M.D. Philadelphia: P. Blakiston, Son & Co. 1894.

Transactions of the Obstetrical Society of London, Vol. XXXV, for the Year 1893. Part IV for October, November and December. Edited by P. Horrocks, M.D., Senior Secretary and F. H. Champneys, M.D. London: Published by the Society. 1894.

Essentials of Refraction and the Diseases of the Eye. By Edward Jackson, A.M., M.D., and Essentials of Diseases of the Nose and Throat. By E. B. Gleason, S.B., M.D. Second edition, revised, 124 illustrations. Philadelphia: W. B. Saunders. 1894.

The Nurses Dictionary of Medical Terms and Nursing Treatment, Compiled for the Use of Nurses and Containing Descriptions of the Principal Medical and Nursing Terms and Abbreviations, Instruments, Drugs, Diseases, Accidents, etc., Encountered in the Ward or Sick-Room. By Honnor Morten. Philadelphia: W. B. Saunders. 1894.

Address.

THE LEGISLATIVE CONTROL OF MEDICAL PRACTICE.[1]

BY REGINALD H. FITZ, M.D., BOSTON.

(Continued from No. 24, p. 585.)

The success of medical legislation in this country is now a matter of history; and it will be attempted to give a short sketch of what has been accomplished.

According to the researches of Dr. Joseph M. Toner,[11] the earliest legislation in the colonies relative to the practice of medicine was in Virginia in 1639. It appears that the charges of physicians and surgeons were so excessive

> "that the hearts of divers masters were hardened rather to suffer their servants to perish for want of fit means and applications than by seeking relief to fall into the hands of griping and avaricious men; it be apprehended by such masters, who were more swayed by politick respects than Xian duty or charity, that it was the more painfull and saving way to stand to the hazard of their servants than to entertain the certain charge of a physitian or chirurgern, whose demands for the most part exceed the purchase of the patient."[12]

A few years later this act was revised for the purpose of making a distinction between the charges of "surgeons, apothecaries, or such as have only served apprenticeship to those trades, who often prove very unskilful in the art of a physician"; and of those who have studied physic in any university and taken any degree therein.[18]

In 1649 Massachusetts passed a law forbidding "phisitians, chirurgians, midwives, or others," presuming "to exercise or putt forth any act contrary to the knowne rules of arte," or exercising "any force, violence or cruelty . . . no, not in the most difficult and desperate cases, — without the advice and consent of such as are skilful in the same arte, etc., etc."[14] This law was also inserted in the Duke of York's laws enacted about 1665 for the government of the province of New York.

Dr. Toner's valuable article contains no evidence of further attempts at regulating the practice of medicine during the subsequent century. The number of carefully educated physicians was inconsiderable, quacks abounded, and of New York in 1753 it was stated:[15]

> "That place boasts the honor of above forty gentlemen of the faculty, and far the greatest part of them are mere pretenders to a profession of which they are entirely ignorant." . . .
>
> "The war resulting in the conquest of Canada and subjugation of the French in 1763 created a demand for skilled medical officers and aided in the training of American students. Many of the English medical staff remained for several years in the vicinity of New York, establishing military hospitals and aroused the ambition of the colonial practitioners.[16] . . . .
>
> "Although partial recognition of the profession and protection of the people had been secured in several of the colonies, and particularly in some of the larger cities, by legislation, the first well considered act regulating the practice of physics was that passed in New York, June 10, 1760, beginning as follows: 'Whereas many ignorant and unskilful persons in physick and surgery, in order to gain a subsistence, do take upon themselves to administer physick and practise surgery in the city of New York, to the endangering of the lives and limbs of their patients, and many poor and ignorant persons inhabiting the said city, who have been persuaded to become their patients, have been great sufferers thereby; for preventing such abuses for the future —
>
> "'1. *Be it enacted*,'" etc.[17]

According to this act no person was allowed to practise, under a penalty of five pounds and costs, who had not previously passed an approved examination in physic and surgery before one of his Majesty's council, the Judges of the Supreme Court, the Attorney-General and the Mayor for the time being, or any three of them, taking to their assistance for such examination such person or persons as they in their discretion shall think fit.[18]

Twelve years later a similar act was passed in New Jersey at the instigation of the New Jersey Medical Society, and was the first comprehensive, protective law applied to a colony, the legislation above mentioned applying only to the city of New York. The examination was approved of and admitted by "any two of the judges of the supreme court, taking to their assistance for such examination such person or persons as they in their discretion shall think fit."[19]

In the following year, 1773, the code of Virginia required every surgeon, physician and dentist to take out a license, which authorized the holder to practise anywhere in the colony. Neglect to procure a license was punishable by a fine of not less than thirty nor more than one hundred dollars, nor could such negligent practitioners collect compensation for services.[20] In the same year, in Connecticut, a law for the suppression of mountebanks was enacted,[21] although a year later the Lower House of Assembly in this colony negatived the memorial of Norwich physicians asking for the appointment of a committee legally authorized to examine and approve candidates if found qualified.[22]

The War of the Revolution now occurred. Dr. Toner[23] thinks it probable that at this time

> "there were not living in all the colonies 400 physicians who had received medical degrees; and yet, as is stated elsewhere, there were presumed to be over 3,500 practitioners."

According to the same authority,[24] the war gave

> "great impetus and energy to the whole population of the colonies. The experience gained by the medical men who served in the army elevated their views, gave them confidence in the exercise of their professional duties, endeared them to the public, and made them almost oracles in the communities in which they resided. The spirit of gratitude also created friends for the profession in the various legislatures, led to the enactment of laws which were more just and protecting in their character, and popularized the more recent and thorough modes for the scientific study of medicine."

In 1783 New Jersey was the first of the States to pass a law regulating the practice of medicine. It was followed in 1792 by New York, which demanded of practitioners in the city and county of New York two years of study with a reputable physician, if the candidate was a graduate of a college in the United States, otherwise three years of study. Also an examination before the Governor, Chancellor, Judges of the Supreme Court, Attorney-General, Mayor and Recorder of the city of New York, or any two of them who were to take to their assistance any three respectable practitioners with whom the examined person had not lived. The certificate of this board was a license to practise, and without it no legal demand could be made for services. Physicians who had regularly received the degree of Doctor of Medicine, those already in practice, and consulting physicians from neighboring States or counties were exempt from the provisions of this law. The above, somewhat modified, was made, in 1797, the general law of the State.[25]

---

[1] The Annual Discourse before the Massachusetts Medical Society, delivered June 13, 1894.

[11] Contributions to the Annals of Medical Progress and Medical Education in the United States before and during the War of Independence, 1874.

[12] Hening's Statutes at Large, i, 316, 317; Toner, loc. cit.

[13] Hening, op. cit., iv, 509, 510; Toner, loc. cit.

[14] Records of Massachusetts, 1854, iii, 153.

[15] New York Independent Reflector, Toner, loc. cit., 49.

[16] Davis, History of Medical Education; Toner, loc. cit., 37.

[17] Toner, loc, cit., 51.

[18] Trans. Med. Soc. State of New York, 1840-43, 12.

[19] Toner, loc. cit., 52.

[20] Trans. Ill. State Med. Soc., 1881, xxxi, 256.

[21] Toner, loc. cit., 70.

[22] Times and Register, 1893, xxvi, 1027

[23] Toner, loc. cit , 106.

[24] Toner, loc. cit., 107.

In 1798 power was given to the Medical and Chirurgical Faculty of Maryland to grant licenses "upon full examination or upon the production of diplomas from some respectable college." The penalty for practising without a license was $50.00 for each offence.[26]

During the first forty years of the present century, legislation, with a view to regulate the practice of medicine, was frequent and various. The initiative was taken by those desirous of protecting the people from ignorance, lack of skill and extortion; and the opposition came from quacks and pretenders of every kind.

New York, in 1806, incorporated medical societies for the purpose of regulating the practice of physic and surgery, following the example set by Massachusetts, and which proved so successful in that State after the amendments adopted by the Massachusetts Medical Society in 1804. In 1808, a few years after the territory of Orleans was set off from the Louisiana purchase, a bill was enacted by the territorial government, stating "that no person shall presume to practise medicine" without an examination, for which a diploma from some university or school was a qualification. This law was amended in 1816, and was enacted as the law for the State of Louisiana.[27]

From this time on, State after State passed some form or other of a law for the prevention of quackery. And it is stated by Senn [28] that during the first half of our national existence every State had enacted such laws, with the exception of Pennsylvania, North Carolina and Virginia.

These laws, however, did not long remain operative; they were premature in many instances, there not being enough educated physicians to provide for the needs of the people. Quacks thus found their way into the remoter sections of the State, and their presence and assertions were welcomed by the sick and infirm. They practised in defiance of the law, whereas, now, unlicensed practitioners are declared exempt from the penalties of the law in States like Arizona and Idaho, when there is no licensed physician living within a convenient distance of the patient. Quackery spread from the remoter districts towards the centres of population, became more and more popular, and excited the more sympathy the more it was opposed. The difficulties in the way of enforcing the laws became greater. Juries refused to convict, officers of the medical societies neglected to bring charges, and finally the laws were so amended as to exempt all quacks, mountebanks and charlatans from the penalties. This result attained, the laws became useless, and in certain States were effaced from the Statute Book.

The first serious blow to the regulation by the State of the practice of medicine was the result of the spread throughout the country of the doctrines of Samuel Thomson, who died in 1843. He was an illiterate farmer of New Hampshire, an empiric of the first water, but distinctly a remarkable man. He denounced the heroic treatment then in vogue by means of bleeding, mercurials and mineral medicines in general, and advocated the use of certain vegetable agents whose value he claimed to have discovered. He stated that he was in the habit of tasting herbs and roots, and was thus enabled to ascertain what were useful for any particular disease. In his "Narrative," [29] first published in 1822, he announces as his general plan of treatment:

> "to cleanse the stomach by giving No. 1, and produce as great an internal heat as I could by giving No. 2, and when necessary made use of steaming, in which I have always found great benefit, especially in fevers; after this I gave No. 3, to clear off the canker; and in all cases when the patient had not previously become so far reduced as to have nothing to build upon, I have been successful in restoring them to health."

No. 1 consisted of lobelia; No. 2 of red pepper; and No. 3 of a variety of herbs, including rosemary, bayberry, myrtle, sumac or raspberry, although he states that a great many other articles were "useful in removing canker."

In 1809, he was tried for the murder of one of his patients.[30]

> "As the learned Judge could find no law, common or statute, to punish the accused, he directed or advised those present to stop this quackery, as he called it, and for this purpose to petition the Legislature to make a law that should make it penal for all who should practice without license from some medical college to debar them of law to collect their debts; and if this should not answer, to make it penal by fine and imprisonment.
>
> "This hint, thus given by the judge, was seized upon first in Massachusetts; from thence it has spread to nearly all the States of the Union. From this source may be traced all those unconstitutional laws which have been enacted in relation to this subject, and all those vexatious suits which I have had to attend in many of the States, from Massachusetts to South Carolina, more or less almost every year since. But I have been able to break them down by my patent being from higher authority, which Judge Parsons could not prevent, or perhaps he never thought of. He, however, made his own report, and handed it to the reporter, which is published in the sixth volume of Massachusetts Reports, and is resorted to by all the enemies of the practice for a defence against the system."

He afterwards brought suit against his principal accuser, Dr. French, which came to trial, again before Chief Justice Parsons, in 1811.[31]

> "The judge then gave his charge to the jury, which was considered by those who heard it, to be the most prejudiced and partial one that they had ever heard. He made use of every means to raise the passions of the jury and turn them against me; stating that the defendant was completely justified in calling me a murderer, for if I was not guilty of wilful murder, it was barbarous, ignorant murder; and

---

[25] Trans. Med. Soc. State of New York, 1840–43, 12.

[26] Quinan, New York Med. Record, 1886, xxix, 505.

[27] Chaillé, New Orleans Med. and Surg. Journal, 1877–78; N. S., 5 900.

[28] Trans. Wis. State Med. Soc., 1879, xiii.

[29] A Narrative of the Life and Medical Discoveries of Samuel Thomson, etc., 8th ed., 1832.

[30] Op. cit., p. 167.

[31] Op. cit., p. 176.

even abused my lawyers for taking up of me, saying that they ought to be paid in screw augers and bull dogs."

The jury brought in a verdict for the defendant.

In 1813 he obtained a patent to secure to him the exclusive right of his system, and to put him above the reach of the law in any State. But in 1821 Judge Story decided that its specifications were improperly made out, and in 1823 a new patent was obtained.[32]

> "The preparing and compounding the foregoing vegetable medicines, in manner herein described, and the administering them to cure disease, as herein mentioned, together with the use of steam to produce perspiration, I claim as my own invention."

The simplicity of his theories of disease and of its treatment, the use of simples, always commending itself to the popular mind, and the notoriety attained by numerous lawsuits, all served to attract attention to Thomson's doctrines. Many editions of his writings were published, and agents were employed to travel throughout the States, selling with the book and medicines a family right to practise for $20.00. "Friendly Botanic Societies" were established, the membership being composed of those who had purchased family rights, and the privileges in which are stated by him as follows: [33]

> "Every one who purchases a right for himself and family, becomes a member of the Friendly Botanic Society, and is entitled to all the privileges of a free intercourse with each other, and to converse with any one who has bought a right, for instruction and assistance."

Thomson's doctrines were especially favored in the eastern section of Massachusetts, and along the adjacent borders of Maine, New Hampshire and Vermont.

After the publication of his "Narrative" and the employment of agents, he and they travelled extensively in the South and West. Although they were unlicensed practitioners in most States, the laws had no penalties sufficient to prevent them from practising. His followers succeeded in securing the enactment of laws by which no person was to be debarred from using or applying for the benefit of the sick person any roots, barks or herbs, the growth or produce of the United States. At first the proviso was added, that they should be unable to recover by process of law any debt incurred from such practice. This objection was easily met by obtaining fees in advance. The restriction was of greater value to them for advertising purposes in creating sympathy, and we learn [34] that "thousands have had their sympathies enlisted in their behalf; have come to believe their senseless clamor, and had their prejudices aroused against the medical profession." Finally medical schools, called "eclectic," were established by those who were willing to take advantage of Thomson's success, adopting his practice, but avoiding his interference.

Thomsonianism prepared the way for the success of homœopathy, which proved to be the more effectual agent in annulling the licensing of physicians. In the words of Dr. J. W. Hamilton,[35] "It swaggered on the stage long enough to give a wholesome check to the excesses that brought it into being, and proved itself the bloodiest murderer that ever visited our too credulous community in the form of quackery."

In certain respects homœopathy bore a close resemblance to Thomsonianism. It represented a reaction from the heroic treatment of the regular physicians; it offered a few remedies, although in palatable form, with such specific and authoritative directions that the family provided with pellet and pamphlet had but little need of the educated physician. Its leaders, however, came from the ranks of the latter, and its followers were to be found among the more intelligent, prosperous and influential members of society. Its adherents increased in numbers in the cities and larger towns, and it throve upon the opposition it encountered from members of the regular profession. Like Thomsonianism, it called for sympathy on the ground of intolerance, and persecution on the part of licensed physicians, and Thomsonianism and homœopathy combined succeeded in so emasculating existing laws regulating the practice of medicine that they became useless, and their removal from the statutes was often sought by all alike.

In 1838, Maryland made it lawful for every citizen of the State to charge and receive compensation for his services and medicines. In the following year, Georgia passed a revised medical act, in which it was "provided nothing be so construed as to operate against the Thomsonian or botanic practice or any other practitioners of medicine in this State." [36] A few years later, in 1847, it established a Botanico-medical board, with the same powers and duties as the regular board.[37] In New York, in 1844, a bill was enacted, of which Judge Beardsley said: "Since the passage of the act of 1844, quackery may certainly boast its triumphant establishment by law." [38]

At the close of the first half of the present century there were practically no efficient laws controlling the practice of medicine by the licensing of physicians in this country. The history of such legislation in Massachusetts from the War of the Revolution to that of the Rebellion has been given elsewhere.[39] Existing laws had either been repealed or were not enforced, and the regularly educated physicians had ceased in their efforts to suppress quackery by attempting any legislative prohibitory enactments. They were largely responsible for this result. With the best of intentions throughout these fifty years, they failed to read aright the signs of the times, and by errors of omission and of commission they rather aided the progress of quackery than checked its growth.

With the incorporating of medical societies by the State, the licensing of physicians was placed in their hands. Examining boards were established and candidates were to appear before them. But in some States these boards were so few, and the members lived so far apart, that the examinations were not held. Such evasions of the law made it easy for a rejected candidate to obtain a special act of the legislature allowing him to practise. In case of rejection by one board he might appear before another less exacting. If all the boards in any one State were too stringent, it was possible for the candidate to obtain a license in another State, where the terms were less rigid, even by mere payment of the registration-fee. A license thus obtained was usually valid in other States. If he practised in violation of the law, it was the duty of no one to bring suit. Although the licensing power was transferred by the State to the medical societies, members of the latter were unwilling to act as accusers and prosecutors from the demand it made upon them for time and money, and the necessity it placed them under of assuming a disagreeable and opprobrious task. Even if cases were brought to trial conviction was difficult, since the penalty was so severe that the jury was unwilling to condemn what it was told was essentially a difference of opinion.

---

[32] Op. cit., p. 243.

[33] Op. cit., p. 220.

[34] Trans. Med. Soc., State of New York, 1844-49, vi, 46.

[35] Trans. Ohio State Med. Soc., 1867, 36.

[36] Trans. Med. Soc., State of New York, 1844-49, vi, 45.

[37] Southern Med. and Surg. Journal, 1866, i, 3d s., i, 156.

[38] Purrington, New York Med. Record, 1886, xxx, 152.

[39] The President's Address, Trans. Assoc. Am. Phys., 1894, ix.

What must be regarded as their chief mistake was the treatment of their homœopathic brethren. Irrespective of all questions of ethics it was a decided and decisive error of policy. The latter were educated physicians, certainly as honest as many of their associates, whatever may be said of their intelligence. Their expulsion and ostracism created two powerful opponents, largely representing two distinct classes of society, but united in their efforts to resist repression. The botanic, eclectic and physio-medical practitioners (the off-shoots and successors of Thomsonianism) and the homœopathists, as they increased in numbers and strength, were, combined, enabled to secure the repeal of all restrictive legislation. They became exempted by law from the need of a license, and the regular physician saw no necessity of paying the fee for a license which placed him in no different light before the public than the quack. As the irregulars formed chartered medical societies with the same privileges as those possessed by the regular societies, members of the latter in many States became active in securing the repeal of laws which proved of no value to the community. Eclectic and homœopathic medical schools were established, and the name of physician and the title of doctor of medicine no longer became of the least value in acquainting the public with any distinction between the educated practitioner and the ignorant pretender, and no check whatever was placed on the increase of the latter.

An interval of some twenty years now elapsed, during the first half of which the State medical societies were perfecting their organization with the view of maintaining a high standard of membership. A certain degree of uniformity in this action was the result of the formation of the American Medical Association in 1847. The annual meetings of this organization brought together representative men from the various State societies, most of whom had been actively interested in the legislative control of medical practice. They endeavored to improve the standard of medical education and the ethics of the regular profession throughout the country. The War of the Rebellion created a sudden and extensive demand for educated physicians and surgeons, their numbers speedily increased, and the subsequent rapid growth of the country has continued this increase. The brilliant progress in the various specialties of medicine made more apparent the distinction between the educated and skilful physician and the ignorant but pretentious quack. Homœopathic and eclectic medical schools were paying more attention to the instruction of their students, and the line was thus being more sharply drawn between practitioners of no training and those who had received some teaching. All educated physicians, whatever their degree of instruction, were interested in defending the community from mere pretenders, and their combination has led to the successful medical legislation of the past twenty-five years.

Since the law recognizes no distinction between regulars, homœopathists and eclectics, on the contrary, the legislators have given like privileges to each, by incorporating them into medical societies and medical schools, it became obvious that if any legislation was to be secured against the worst forms of quackery, it must be obtained by the practical agreement of these incorporated medical bodies. The numerous experiments which have been made in the various States during the past twenty-five years, and which have led to the enactment of licensing laws in nearly all the States and Territories, have been the result of this harmony of action.[40] It has been justified not only by the needs of the community for protection, but also by the fact that both homœopathists and eclectics represent a kind of practitioner whose education is constantly improving. Homœopathists, in particular, have been, from the beginning, physicians of a certain, and at times of a considerable degree of education. They are honestly and earnestly endeavoring to improve their educational facilities, and some of the eclectic schools are following in their footsteps.

In 1872, a bill was prepared under the auspices of the New York Medico-Legal Society, and was favorably acted upon by the legislature, but was subsequently vetoed by the governor.[41] This unsuccessful attempt was followed in 1873 by the passage of a law in Texas, requiring the registration of diplomas by all practitioners entering the State. It was repealed and replaced in 1876 by an act establishing boards of examiners, who were to examine all applicants for certificates of qualification without preference to any school of medicine. This law, to-day, in the words of Dr. West of Galveston, "is practically inoperative, as but few boards are organized, and about most that any of them do is to license non-graduates."

In the District of Columbia in 1874 it was the duty of every physician to register at the office of the board of health, under penalty of from $25.00 to $200.00. This regulation was legalized by Congress in 1880. All physicians required to register must do so upon a license from some chartered medical society, or upon a diploma from some medical school or institution.

The law of Nevada, enacted in 1875, makes a lawful practitioner one who has received a medical education and a diploma from some regularly chartered school having a *bona fide* existence when the diploma was granted. The county recorder accepts the diploma.

In 1877 a law was passed in Alabama according to which a license or diploma, or certificate of qualification, was essential to the lawful practitioner. If he wished to practise any irregular system, he was obliged to pass an examination in anatomy, physiology, chemistry and the mechanism of labor before the Censors of the Medical Association of the State of Alabama, or of some affiliated County Medical Society. This act was replaced by that of 1887, which was amended in 1891, and according to Dr. Cochran of the Board of Censors is

> "almost ideally perfect. If the State would invite us to change it according to our wishes, we would not know what change to suggest. All we have to ask of the State is

---

[40] For much of the information relative to the provisions of the laws in the various States and Territories, I am indebted to the admirable Synopsis of the existing Statutes, prepared by William A. Poste, late deputy attorney-general of the State of New York, and Charles A. Boston, Esq., of the New York City Bar, for the text-book of Medical Jurisprudence, Forensic Medicine and Toxicology, of Witthaus and Becker, just published. By the aid of our librarian, Dr. E. H. Brigham, I have been enabled to obtain from the respective officials of many of the States copies of the medical licensing laws of these States, and take this opportunity of expressing my thanks to all concerned.

[41] New York Med. Journal, 1871, xx, 64.

simply to let our law stand as it is and enforce it in the courts. . . . We have a very few homœopathic practitioners in Alabama, but a considerable number of doctors who, graduated in eclectic schools, have availed themselves of the advantages we have to offer them, and have become good working members of our organization."[42]

In the same year Illinois passed its first law, which was amended in 1887. It is unnecessary to enter into the details of medical legislation during the next fourteen years. It is merely to be stated that laws were passed as follows:

Year.	*State or Territory.*
1880	Vermont.
1882	Georgia, Rhode Island.
1883	Maine, Michigan, North Carolina.
1884	New Mexico.
1885	Indiana.
1886	Iowa.
1887	California, Idaho, Minnesota, Virginia, Wisconsin, Wyoming.
1888	Tennessee.
1889	Delaware, Kansas, Missouri, Montana, Oregon.
1890	New Jersey, North Dakota, Ohio, South Carolina, Washington.
1891	Colorado, Nebraska, West Virginia.
1892	Florida, Maryland, Mississippi, Utah.
1893	Arkansas, Arizona, Connecticut, Kentucky, New York, Oklahoma, Pennsylvania, South Dakota.

(*To be continued.*)

Original Articles.

THE FREQUENCY OF RENAL ALBUMINURIA, AS SHOWN BY ALBUMIN AND CASTS, APART FROM BRIGHT'S DISEASE, FEVER, OR OBVIOUS CAUSE OF RENAL IRRITATION.[1]

BY FREDERICK C. SHATTUCK, M.D., OF BOSTON.

IN no branch of human activity, perhaps, can more striking illustrations be found of the dangers of hasty conclusions from insufficient data than in medicine. This is no reflection on our calling. It naturally flows from the fact that our knowledge of many things is still very imperfect, while the demands for the practical application of our knowledge are constant and imperative. The sick man wants instant help, and cannot wait while doubtful points are being settled. Medicine is more than an art, less, in a sense, than an exact science. The clinical significance of albumin and casts affords one of these illustrations. The chemical preceded the microscopical examination of the urine, and the latter first made it possible to determine with any accuracy the portion of the urinary tract from which the albumin is derived. The presence of casts shows that the true renal tissue is involved, and was for some time held to be diagnostic of Bright's disease. I well remember the grave prognosis which the discovery of albumin and casts was thought to necessitate when I was a hospital interne, not much more than twenty years ago. Perhaps I incorrectly interpreted my teaching — students sometimes do — but I think this was at that time generally regarded by the profession as damning evidence. Albumin and casts meant Bright's disease, and that meant an inevitably and more or less rapidly fatal disease. Further experience and the irresistible logic of facts has led to such changes in these views that considerable discussion has been held as to whether albuminuria might not be physiological, so common is it found to be, so little bearing may it have on the vigor or longevity of its possessor. Into this discussion I do not propose really to enter. Absolute physical perfection is occasionally found in the human being; but the ideal and the real are nearly as sharply contrasted in the more purely bodily as in the moral qualities. Whether there be a physiological albuminuria is largely a matter of definition of the word physiological.

Much ingenuity has been devoted to the discovery and application of tests of extreme delicacy for albumin. My friend and colleague, E. S. Wood, assures me that for clinical and qualitative purposes none of these tests can compare with the old heat and nitric acid tests; and I am glad to see similar views expressed very recently by D. D. Stewart,[2] of Philadelphia. These are the tests used in the cases which I have analyzed. A cloudiness of the boiled upper layer of urine in the test-tube after the addition of acetic acid, and the opaque zone with nitric acid are therefore considered proof positive of the presence of albumin, as a negative result is proof of its absence. To my eye the heat test is the more delicate of the two, but I know that all do not find it so. Vanderpoel,[3] in a recent paper on albuminuria without manifest organic renal lesion, has collected the literature of the subject and justly calls attention to the discrepancy which exists between the percentages of different observers examining considerable numbers of presumably healthy persons. Chateaubourg finds albuminuria in 84 per cent. of 701 examined; Grainger Stewart in 31 per cent. of 407 examined. Others put the percentage still lower, but even this discrepancy is sufficient to show that something is the matter. Doubtless Millard is right in believing that Chateaubourg, who used Tanret's test in many of his examinations, mistook mucin or some other non-albuminous organic substance for albumin. As far as I know casts have not been looked for as carefully as albumin. The search for them demands a good deal of time if the sediment is scanty; and they may easily be overlooked when present if ample time is not allowed the urine to settle, and if skill in the selection of portions of the sediment is not exercised. Experience has led me to be skeptical when the statement is made to me that a distinct trace of albumin is present, but that casts as well as other formed elements, such as blood and pus, are absent. In such cases I have repeatedly found that more careful examination revealed the casts.

These bodies still enjoy a worse reputation in the minds of the laity than albumin, as well as in the minds of the profession in general. Patients are alarmed by the knowledge that there are casts in their urine, much as they used to be by hearing that they had a murmur in their hearts.

For five or six years now I have been more and more particular to have a thorough examination of the urines of patients seeking my advice made by competent men, quite irrespective of the nature of the complaint which brought the patient. The frequency with which albumin and casts, chiefly hyaline and finely granular of small diameter, was reported in those at or beyond middle life entirely apart from any other evidence of renal mischief, attracted my attention. This led to the preservation of the reports of those of fifty years of age or more, and more recently also of the younger patients. Consequently I deal with larger figures relatively or absolutely at the later ages. I now regret that I did not begin my collection on a more comprehensive basis. All the same, it does not seem probable that the result would be very materially modified. In the decade of twenty to thirty I believe that a larger number of cases would reduce the percentage of those with renal albuminuria, and I think also that larger figures would show the condition to be quite as frequent between eighty and ninety as between seventy and eighty; but I cannot regard these sources of error as serious.

---

[1] Paper read at the Ninth Annual Meeting of the Association of American Physicians, Washington, D. C., Thursday, May 31, 1894.

[42] Dunglison, Coll. & Clin. Rec., 1880, xi, 11.

[2] Philadelphia Medical News, May [illegible], 1894.

[3] Medical Record, November 11, 1893.

In the collection of these cases I have excluded all those with fever; all in which such well-known renal irritants as bile and sugar were present, no matter how small in amount; and also those in which examination rendered it probable that the mechanical effect of crystalline formation in the kidneys was directly responsible for the albumin and casts.

In the division of cases reported as showing albumin and no casts, no cases are included in which there was sufficient blood or pus, either from the vagina or lower urinary passages, to account for the reaction. In many of these I am convinced that more careful search would have revealed casts. Cases of cardiac and other organic disease are included, but I have tried to omit all those in which passive congestion could account for the findings. Of course, all cases of unquestioned Bright's disease are excluded. In short, the attempt has been made to determine approximately how frequently renal albuminuria and casts are encountered in the urine in the ordinary run of adults who consult a doctor, but present no evidence outside of the urine of primary or secondary renal disease. Some sixty of the patients were hospital cases, partly medical, partly surgical, suffering from widely varying maladies or injuries. No record has been kept as to the time at which the urines of my cases were voided. The larger number probably were passed on rising in the morning; many were passed at mid-day in my office; some both morning and evening; not a few were mixed specimens of the twenty-four hours.

TABLE.

Age.	No. of Cases.	Albumin and Casts.	Albumin and no Casts.	No Albumin or Casts.
20-30	25	8, or 32%	3, or 12%	14, or 56%
30-40	39	9, or 23%	4, or 10%	26, or 66%
40-50	47	26, or 55%	3, or 6%	18, or 38%
50-60	99	64, or 65%	11, or 11%	24, or 24%
60-70	57	42, or 74%	5, or 9%	10, or 17%
70-80	16	16, or 100%	00	00
80-90	14	11, or 79%	00	3, or 21%

The personal equation can be eliminated from my results for the reason that the examination was made in, roughly speaking, nearly equal proportion by four different observers, and a few by two others, all competent to distinguish mucous from renal casts. The small percentage of cases in which albumin was found without casts shows, I think, that no serious suspicion can attach to my results on the ground that other substances were often mistaken for albumin. In the great majority of cases but a single examination was made, but in a fair number there were two or more.

The table needs little explanation. It shows that the percentage of urines containing albumin and casts rises steadily with each decade from the fourth to the eighth, while those free from albumin and casts are in steadily decreasing percentage, and the proportion of those containing albumin but no casts remains nearly the same throughout. The number of cases in which casts were found without albumin was so small that these have not been classified.

The question remains as to the significance of these results. The pathological meaning is not easy of absolute proof. The class of patients who form the basis of my statistics are slow to die, and office and hospital patients are easily lost sight of. A considerable number of the patients I know to be alive, and apparently as well as when albumin and casts were discovered a number of years ago. In only two have I notes of autopsies. In one patient of eighty-five death was the result mainly of old age, and the kidneys were exceptionally healthy to the naked eye. In another of eighty-six years death was due to sudden uræmia supervening on prostatic enlargement necessitating repeated catheterization, cystitis, and impacted calculus at the vesical end of the left ureter; the kidneys were cystic and atrophic, especially in the cortices. Albumin and casts were found four years before death, and yet the general health was remarkably good for a person of upwards of eighty. In some of the cases albumin and casts were undoubtedly due to active hyperæmia or to irritation of the kidneys, and was perhaps transitory; but it is my belief that the facts in my table are best explained on the theory that the albumin and casts are the expression of senile renal atrophy, especially as far as the higher decades go.

There is no internal organ in which it lies in our power to detect so unerringly minute and slight changes as in the kidney. The heart, lungs, and blood-vessels as a whole are far less accessible to our examination. Age is not a matter of years, nor do we grow old symmetrically. I see no other reasonable explanation for the progressive increase in the frequency of albumin and casts as age advances. Whether this pathological doctrine be true or not the clinical significance admits, to my mind at least, of no doubtful interpretation. My anxiety is not awakened either for the present or the future by the report that a faint trace of albumin and hyaline and finely granular casts of small diameter are found in the urine of a patient after the age of fifty, provided that the kidneys are doing sufficient work as is shown by the twenty-four-hour excretion of solids, and provided that there are no symptoms.

Three years ago I was consulted by two brothers, fifty-two and fifty-five years of age, who had been urgently solicited to take out life insurance policies for one hundred thousand dollars each. But the ardor of the company was cooled when it was found that their urines contained a slight trace of albumin and casts, and their anxieties were awakened. Albumin and casts were constantly found in several examinations during the succeeding year; but the men were and remain perfectly well. The urines were rather concentrated. In patients under fifty albumin and casts do not disturb me anything like as much as they did formerly. The important practical point is that they are not necessarily the precursors of serious kidney disease, and that their presence does not inevitably demand very careful regulation of the life and constant medical supervision.

In a certain proportion of cases, how large this proportion may be it will take years to determine, interstitial changes will reach a degree to shorten life, advancing more or less rapidly. It is not in our power at present to distinguish accurately which these cases are. Some help is afforded by the close estimation of solids in the twenty-four-hour urine; but in the average individual the reserve balance of kidney power is sufficient to permit of extensive renal impairment without curtailment of the ordinary daily work. The reserve may be diminished or gone; but if the reserve is not drawn upon too much or at all no apparent stringency is felt. We can grant that renal albuminuria is always pathological. Chronic pharyngitis is also pathological. It may be heresy, but I cannot resist the feeling that we are coming to believe that the clinical significance of the one is not necessarily greater than that of the other. I shall follow up my cases as far as I can and hope to be able in the course of years to throw further light on this important practical question. Life insurance companies are right in refusing risks reported as presenting albumin and casts. Life insurance is more like the French than the English criminal law; — it holds that innocence must be proved beyond reasonable doubt. But I have no doubt that risks are daily accepted by the best companies where an expert examination would detect albumin and casts. Few examiners apply the heat and nitric acid tests in a manner to try their full delicacy, and a microscopical examination is practically not demanded. Even if it were it would not ordinarily be sufficiently careful to be of much value.

Finally, my results may be summed up in the following conclusions:

(1) Renal albuminuria, as proved by the presence of both albumin and casts, is much more common in adults quite apart from Bright's disease or any obvious source of renal irritation than is generally supposed.

(2) The frequency increases steadily and progressively with advancing age.

(3) This increase with age suggests the explanation that the albuminuria is often an indication of senile degeneration.

(4) Though it cannot be regarded as yet as absolutely proved, it is highly probable that faint traces of albumin and hyaline and finely granular casts of small diameter are often, especially in those past fifty years of age, of little or no practical importance.

◆

PELVIC INFLAMMATIONS.[1]

BY LEONARD WHEELER, M.D., WORCESTER, MASS.

The subject of Pelvic Inflammation is one of great importance to every practitioner; for the condition is very common, and, for two reasons beyond inherent difficulties, it is not easy to diagnosticate. These two reasons for the difficulty in diagnosis are, first, that in its present aspect the subject is so novel that only the younger men among us learned anything of it in the medical school; second, that any degree of expertness in diagnosis requires the handling of a good many cases.

The pathological history of pelvic inflammations has been long and varied, but the salient points are interesting, and may be made very brief. Up to 1850 there was nothing extraordinary. Correct post-mortem observations had been made and recorded. Forty years ago, however, Nonat in France, followed by West and Simpson in Great Britain, and they again by Emmet in this country (of course, there are other names in plenty, but these were leaders), placed the seat of all these pelvic indurations and suppurations in the cellular tissue of the pelvis. It is wrong to say that these men based their ideas unduly on what they were able to feel during life, on clinical appearances and signs rather than the revelations of the post-mortem table. Autopsies do give strong credence to this view. It is only abdominal surgery, after all, that has proved it false. Where the pelvic inflammation has gone on to a fatal result, this cellular tissue has become extensively involved, and it is quite impossible to determine the point of origin of the disease. The suppurative process gets into this cellular area and follows it along, just as Schlesinger's air and liquid glue followed it between the folds of the broad ligament, along the psoas muscles, inward around the cervix, outward to the inguinal ring and downward between vagina and rectum. Having felt the disease during life and in its earlier stages apparently in the broad ligament, and after death finding a vast suppuration involving this very cellular area, it was natural enough to conclude that the disease had been all the time an affection of the cellular tissue, and that the diseased tubes always found with it were secondary. All this time, however, the opposite and correct view was stoutly maintained by Aran and his followers. He insisted that the masses felt during life were the same as those found so often after death from other causes as well as this pelvic inflammation, namely, diseased Fallopian tubes.

In 1857 appeared the first account of Bernutz's remarkable researches on the nature and pathology of pelvic inflammations. He clearly described the disease clinically; and he showed pathologically that it was a disease of the tubes and ovaries accompanied by peritonitis, and that cellulitis had no influence in causing the symptoms, that, in fact, it rarely existed at all as a primary disease except as a phlegmon in puerperal cases. This is the accepted doctrine of to day, in the past few years made plain by hundreds of operations for the radical cure of that large class of cases until recently regarded and treated as chronic cellulitis.

Notwithstanding this thorough work and its thorough discussion for years, the opposite theory still had its supporters, and would have had to the present day but for the revelation of Tait's operation, so-called.

In 1872 Battey did his first oöphorectomy, and the discussion and operations following prepared men's minds for the favorable reception of Tait's operation. Tait may have done some operations before, but the table in his book "Diseases of Women" begins with 1880. The operation for removal of diseased appendages was not done in this country until 1882. In 1883 it began to be much talked about, and has been ever since. The more it was discussed, the more attention was diverted from cellular tissue and fastened upon Fallopian tubes, though men were slow of conversion. Emmet held his ground firmly until 1888 or 1889.

It seems strange that so common and so grave a disease as salpingitis should have been neglected for so long a time, especially after it had been so well described as it was by Bernutz. Still there would probably have been no further advance in these times except that Lister's grand discovery and proof of the value of cleanliness in surgery had made modern abdominal work possible. Except for this the pioneer work of Battey, Hegar, and Tait would have been quite likely to be dropped and forgotten.

---

[1] Read before the Worcester Society for Medical Improvement, April 4, 1894.

With the advance in pathological knowledge and surgical treatment has come an eager study of the causes producing these inflammations, and all this attention has resulted in finding the disease of far more frequent occurrence than had been supposed. Gonorrhœa in the female has received a new meaning, and the necessity of surgical cleanliness in all gynecological and obstetrical work has received a capital emphasis.

In 1875 Noeggerath first published in this country his ideas in regard to latent gonorrhœa, which have given rise to a vast amount of discussion. It was a saying of Ricord that in the great conflagration of the final judgment the last thing to be consumed would be a drop of gleet. Noeggerath's ideas were in the same line. He maintained that any stricture after a gonorrhœa supplied a secretion capable of infecting the female, and that the favorite chronic abiding place of this inflammation in the female was in the tubes. His views have not been proved, but they went far in bringing about the modern idea of gonorrhœal disease in women. It used until quite recently to be considered a trivial disease. But with the present better knowledge of tubal pathology it becomes plain that it may be a very serious and dangerous disease.

It seems to be proved that some, perhaps many, deaths ascribed to puerperal fever are really cases of ruptured gonorrhœal pyosalpinx.

Another and probably more important cause than even gonorrhœa is the septic inflammation that extends over the genital mucous membranes after an unclean confinement, or especially abortion, or after the use of unclean instruments obstetrically or gynecologically.

There are other causes like syphilis, tuberculosis, exanthematic fevers, tubal pregnancy; but the important truth is that pelvic cellulitis, as it used to be understood, practically does not exist. The hard vaginal vault, the pre-uterine masses, the lumps by the side of or behind the uterus, the thickenings, the indurations, the areas of fulness with which we are so familiar, all these come from diseased tubes and consist either of swollen and adherent tubes and ovaries, or of peritoneal adhesions, or cicatricial bands. Other masses, of course, are often enough felt in the pelvis, but practically all the cases which used to be considered cellulitis are of this sort, and they are caused by an extension of inflammation from the uterine mucous membranes into the tubes.

Having in mind the bacterial nature of the disease its etiology may be expressed as follows: pus in the pelvis may owe its origin, first, to an inflammation of one sort or another (that is, may be owing to some form or another of germ growth) extending over the uterine mucous membrane into or through Fallopian tubes (gonococcus, etc.); second, to an inflammation extending through the parenchyma of the uterus via lymphatics or veins (streptococcus, etc.); third, to an inflammation derived from the intestine — the appendix, in one of my cases (bacillus coli communis).

In the great majority of cases it comes in the first way, via utero-tubal mucosa. It is a pyo-salpinx or the sequelæ of a pyo-salpinx. Those occurring in the second way, by an infection through the lymphatic or venous channel of the uterus, are of septic origin, starting from an abortion, confinement, or some surgical operation on the genital organs. The third sort is rare.

The prognosis and treatment of these cases of pelvic inflammation is a matter of much perplexity, and each case has to be decided on its own merits. One would think that a consultation of the authors writing just before the surgical treatment of the disease began, would give a definite idea of the prognosis of the disease. As a matter of fact, however, one finds merely vague statements of personal impressions, the general idea being that pelvic inflammation, except in puerperal cases, is not often fatal but is apt to entail a vast amount of distressing sequelæ. Wherever figures are used, however, the mortality becomes more conspicuous, as in McClintock's twenty four cases with seven deaths.

The comparison is often made between salpingitis and appendicitis, but the two cases are only distantly similar. The appendix is a useless organ, and it is an advantage to be rid of even a healthy one, whereas there is no more important organ, except those necessary to life, than the Fallopian tube. Again, the diseased tube more frequently drains successfully into the uterus than the appendix into the cæcum. The universal surgical treatment of appendicitis may be maintained with some show of reason. Not so with salpingitis. Men make very definite statements as to certain conditions of the tubes entailing sterility, but it is a matter of much difficulty to determine what tubes are hopelessly diseased. I have seen a chronic pelvic inflammation, many months in duration, where the pelvis from side to side was of wooden hardness, in a woman who afterwards bore several children. Diseased appendages are not to be indiscriminately removed.

The cases to be operated upon are those where there is a recurrence of disease arising from a permanent focus of disease; second, those where there is a permanently palpable enlargement of the tube causing symptoms which wear upon the health; third, a few acute cases which have to be treated simply as abscesses.

As an illustration of my subject I have briefly reported the following ten cases, all but one of which occurred in my last year's service at Memorial Hospital. Four recovered without operation, two after the removal of the appendages, one after vaginal drainage, one died of peritonitis after operation, and one (a puerperal case) of peritonitis without operation.

CASE I. D. W., admitted October 28, 1892. Thirty-eight years old; widow; three children, youngest thirteen years. History of salpingitis one year before entrance. Recurrent attack two weeks before entrance. Whole pelvis found filled with hard irregular, sensitive mass, in which no organs could be made out. In three months this had gradually disappeared until there was nothing abnormal beyond slight lateral thickenings with backward displacement of the uterus. Patient was feeling well and having no pain even at time of menstruation.

CASE II. E. D., thirty-six years old, married. Admitted to Memorial Hospital November 24, 1892.

No children. Abortion four months before admission, followed by pelvic inflammation. Probable abortion five weeks before admission, followed again by pelvic inflammation. On admission there was a hard, tender mass extending from the retroflexed uterus to left pelvic wall. Under treatment this mass slowly disappeared, leaving an adherent retroflexed uterus; and patient had pretty well recovered her health in ten weeks.

Case III. J. S., twenty-two years old, single. Admitted to Memorial Hospital February 16, 1893, with appendicitis. Abscess opened and drained (pus two ounces) February 17th. Limits of abscess cavity could be touched by finger in all directions except toward pelvis. This wound was completely closed by March 23d. Two weeks before this a purulent vaginal discharge led to the discovery of a double salpingitis, which gradually disappeared under treatment in the course of two months, leaving nothing palpably wrong in the pelvis except a retroflexion with adhesions.

Case IV. J. McS., twenty-two years, single. Admitted to Memorial Hospital January 10, 1893. Confined with first child in Canada two weeks before entrance. Placenta adherent and removed. Chill on seventh day with abdominal pain and tenderness, vomiting and diarrhœa. Acute symptoms abated; but patient lost flesh, color and appetite, and complained of nearly constant pain up to time of entrance. Examined at this time, pulse was 95, temperature 101° Abdomen somewhat distended and tender. P. V. uterus crowded backward and to the right by a hard, tender, immovable mass, filling left side of pelvis and extending above pelvis brim. After six weeks in the hospital, the mass had entirely disappeared, and the uterus was normally movable.

Case V. L. R., twenty-one years, single. Admitted to Memorial Hospital January 20, 1893. A thin, pale, nervous girl. Gives history of invalidism, amenorrhœa, polyuria, etc., for four years. Has had local treatment. On left of uterus is a pear-shaped mass, twice as large as uterus, closely juxtaposed but not adherent to that organ. The diagnosis was solid tumor of ovary. The abdomen was opened February 15th. The tumor proved to be a huge pyosalpinx larger than the fist, with a few light adhesions to floor of pelvis and one very firm attachment at utero-vaginal junction, where the pus was apparently creeping toward the vagina. The breaking of this adhesion allowed a single drop of pus to escape. The tumor was easily tied off and removed. The right tube was found enlarged into half the size of this, and filled with pus. This was also removed. The recovery was uneventful. Discharged well March 14th.

Case VI. B. W., twenty-five years, single. Entered Memorial Hospital November 22, 1893. Suffering from acute gonorrhœal salpingitis (gonococci found in vaginal discharge). Pain was very severe, and patient altogether very sick. The acute symptoms passed away in the course of a few weeks, and she began to improve decidedly. The pelvic organs became less matted, and it was possible to distinguish the uterus with the swollen tubes on either side. At this point improvement ceased, pain became worse, and we decided to remove the tubes. This was done January 26th. The tubes were perhaps double the size of the thumb, and tensely filled with thin pus. As always in these cases, they were folded downward and backward under the broad ligament. Adhesions were strong and universal. At first, it seemed impossible to find any place of cleavage. By patient scratching they were dug out, tied off without the loss of any pus. Was allowed to sit up in two weeks. Discharged well March 2d.

Case VII J. E., twenty-five years, married. Entered Memorial Hospital March 2, 1893. Artificial abortion a year ago followed by severe hæmorrhage. Confined at term six weeks ago. Had chill and fever on second day, otherwise recovery was not interrupted. Yesterday, March 1st, was seized with severe pain in pelvis accompanied by nausea and vomiting. Entered hospital March 2d at 5 P. M., temperature 104.4°, pulse 120. No dejection for two days; no urine for thirty hours, 22 ounces drawn by catheter. Abdomen moderately distended and tender. Masses on both sides of uterus felt by vagina. Uterus much enlarged. Free catharsis caused improvement in symptoms. Patient was so severely sick that hesitation was felt about opening the abdomen, so an opening was made per vaginam, drawing off four ounces of pus, and a drainage-tube inserted. The cavity was washed out daily, discharging pus for two weeks. Patient slowly improved, and was discharged after six weeks in hospital feeling nearly well. Uterus was still too large; adherent to it on the left was a mass the size of an English walnut. The right adnexa were naturally soft.

Case VIII. N. M., thirty-one years, married. Entered Memorial Hospital March 12, 1893. Patient had a history which led to a probable diagnosis of tubercular peritonitis. Laparotomy was done. No tubercles found, but the whole pelvis was found occupied by what appeared to be a soft, solid mass, easily bleeding, in which pelvic organs, omentum and intestines were hopelessly involved. The next day began a discharge of pus from the rectum, which continued several days and was estimated at about a pint in amount. She improved rapidly; the pelvic mass melted down to an insignificant thickening; and she was discharged well on April 16th.

Case IX. M. C., twenty-eight years, married. Entered Memorial Hospital February 14, 1893. Married at eighteen; child one year later. Three years ago had inflammation of the bowels. In bed four weeks. Unable to do full work for a year, and has been subject to pelvic pain since. December period copious, followed by recurrence of inflammation. In bed since. January, flow scanty, and followed by purulent vaginal discharge, which has continued since. Patient is thin, pale, with little appetite, small pulse, temperature nearly normal. Hard mass felt by palpation above pubes. Uterus in nearly normal position, partially embedded in hard mass on right, which extends from pelvic wall to beyond median line. Mass is hard, immovable, not sensitive. Orifice of sinus from which the pus comes, felt behind cervix to right. It was found impossible to follow this sinus for the purpose of dilatation. It was thought better to attack the trouble through the abdominal wall.

At the operation on March 28th, the right tube was found divided into two distinct four-ounce cavities filled with pus, extending from the side of the uterus to the cæcum and universally adherent. Omentum could not be separated, and was tied off. When the tube was nearly enucleated, it burst and covered the field of operation with pus. This was washed out with hot water, the enucleation completed, and the tumor tied off. There was no difficulty of separation at the point of the fistulous opening into the vagina. Left tube healthy. Large gauze drain was left in. Patient died of peritonitis at the end of the third day.

Case X. R. E., forty years, married. Admitted to Memorial Hospital March 15, 1893. First child born three weeks before entrance. Confinement normal. Was up feeling quite well on the eighth day, March 10th. Five days before entrance, eighteen days after confinement, after exposure, wetting feet, etc., had a chill followed by fever, vomiting, abdominal pain and tenderness. On 13th, temperature 103°, pulse 130. On 15th, when she entered hospital, temperature 103°, pulse 100. Abdomen moderately distended and tender; countenance dull. Said she felt better than the day before. Nothing abnormal was felt by the vagina. A few hours later she grew rapidly worse. At evening, temperature was 105°, pulse 170; and she died at 4 a. m., March 16th. Autopsy five or six hours after death. Body warm. Rigor mortis not present. When abdominal cavity was opened, a sero-purulent fluid escaped. The amount of this fluid in abdominal cavity estimated at from six to eight ounces. Peritoneum everywhere covered with lymph flakes. Intestinal coils just beginning to adhere one to another. Signs of peritonitis as much marked in upper part of abdomen as lower. Vermiform appendix and gall-bladder normal. Uterus possibly a trifle subinvoluted. Site of placenta evident upon posterior part of fundus. Fallopian tubes and broad ligament free from adhesions. Broad ligament not thickened. Cause of the general peritonitis not determined by the post-mortem appearances.

Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

Ninth Annual Meeting, Washington, D. C., May 29, 30, 31 and June 1, 1894.

FIRST DAY. — TUESDAY.

President Reginald H. Fitz, of Boston, called the Association to order, and delivered an address on the

RISE AND FALL OF THE LICENSED PHYSICIAN IN MASSACHUSETTS, 1781–1860.[1]

Dr. Beverly Robinson, of New York, read a paper on

THE TREATMENT OF CERTAIN SYMPTOMS OF CROUPOUS PNEUMONIA, PARTICULARLY IN ADULTS.

The treatment of pyrexia and pulmonary congestion, he said, are of special interest in the first stage. The modern antipyretic drugs are not ordinarily useful, although good, occasionally. Phenacetine is the most satisfactory. More reliance is placed upon the use of spirits of Mindererus, citrate of potash and sulphate of magnesia to reduce temperature by action on the skin, kidneys and bowels. Three to five grains of quinine every four to six hours tends to diminish fever while strengthening somewhat the heart. Cold sponging, the ice coil, cold pack or cool bath for the purpose of reducing temperature do not act with any special efficacy as usually employed. Occasionally, when the temperature is beyond 104° and there are evidences of adynamia, the tub-bath at 80° to 90° F. may be usefully employed, combined with continuous friction.

Aconite or aconitin may often be injurious by diminishing the energy of cardiac contraction. Even when combined in its use with digitalin, or digitalin and strychnine, it is not free at times from grave objections. There are other drugs eminently more useful, both theoretically and practically. In this stage of pneumonia no drug acts as well as antimony in small repeated doses. Kermes mineral, or the oxysulphuret of antimony, is the best form. It is given usually in doses of $\frac{1}{32}$ of a grain every two hours, or every hour for a while, in a mixture with syrup of gum and orange-flower water. Employed in this manner, fever and pulmonary congestion diminish at times in a very obvious manner. Expectoration becomes easier and more abundant, and the sputa from being very tenacious and viscid are more fluid and brought up with relative ease and increased frequency. Kermes mineral given in this way is not irritating to the digestive tract as tartar emetic often is, and does not produce a collapsed condition. It suits children, also, remarkably well. To aid its advantageous effect, we should employ at times alcohol internally, and revulsives to the chest wall. The great mistake formerly made in the use of antimony was the employment of the wrong salt and its use in excessive doses.

When the heart is particularly taxed by reason of pulmonary congestion and a tendency to œdema, no drug produces the rapid and remarkable results of nitroglycerin given by the mouth, or better still, hypodermically. We must not rigidly adhere to the ordinary dose of $\frac{1}{100}$ grain, but should use $\frac{1}{50}$ or $\frac{1}{25}$ if the condition of the patient is iminently threatening.

The use of inhalations of oxygen in relieving pulmonary congestion affords marked temporary relief to breathing in the greater number of cases of pneumonia; but, in a few instances, not even relief is afforded, but the dyspnœa, and subjective distress is obviously increased. These differences of action cannot always be accounted for.

It is essential to have pneumonia patients drink abundantly of water, and not force them simply to take milk, beef-tea, or broths of different kinds, with the idea that all that is required is to give nutritious fluids, losing sight of the great importance of water given by the stomach to promote the elimination of poisonous excreta through the skin and kidneys. The abundant use of cold spring-water or soda-water gives relief to thirst and helps reduce the fever, and may diminish slightly the viscidity of the expectoration.

The proper use of alcohol in the treatment of pneumonia is a difficult problem. Unquestionably, in many instances it is very beneficial. It is generally judicious practice when any reasonable doubt prevails as to the condition of the patient with respect to any one of the numerous conditions which seem threatening to life, to give moderate and repeated doses of alcohol. There are two absolute contra-indications: first, cases in which the patient is highly plethoric; second, cases in which the hepatic engorgement and gastric catarrh render it pernicious because nausea and stomachal intolerance are increased by its exhibition even in moderate amount, and assimilation of food and water is prevented.

The use of calomel in small repeated doses often has marked beneficial effect in cases where the tongue remains yellow and thickly coated with fur, while the breath is offensive. An engorged and sometimes tender liver, a hard and distended abdomen, are frequently dissipated by this medication.

---

[1] See page 529 of the Journal.

The two dangers most to be feared in the state of hepatization as well as that of crisis, come from heart-failure or pulmonary hyperæmia. How are these conditions to be met? The author's convictions are opposed to the use of digitalis or digitalin, except in very small doses, and then only to control cardiac irregularity when it occurs. The pulse is sometimes lowered in a sudden and alarming manner from this drug. The author employs in these conditions, large doses of strychnia, at first by the mouth, and later, whenever there is evidence of heart-failure coming on, by the hypodermic method. Results of considerable value have been obtained by the use of hypodermic injections of extract of coco, made up aseptically. Reliance must also be placed in these cases upon the use of nitroglycerin hypodermically. Bleeding, alone, saves certain cases. After venesection, the use of the drugs mentioned is more valuable. In reflecting upon some cases in which general pneumonic congestion at first seemed to be the immediate cause of death, the author has concluded that a slowly forming ante-mortem heart-clot had much to do with the fatal termination. Frequently repeated doses of strong black coffee is often beneficial. Black coffee and alcohol, particularly old brandy or rum, will be assimilated and hold the vitality of the patient when other food or stimulant will be of little or no apparent benefit. Caffein does not replace the use of coffee.

In the treatment followed at St. Luke's Hospital, New York, half-milligramme doses of arseniate of strychnine are usually given together with digitalin and aconitin. The author has for some time watched this method of treatment, and prefers the treatment outlined in his paper to the one with the so-called "trinity pill."

Dr. G. L. Peabody, of New York, said that he was in accord with Dr. Robinson, that at the present time there was no possibility of any other treatment of pneumonia than the symptomatic. One combination of symptoms which is very distressing and which needs treatment, had not been given by Dr. Robinson, namely, pain together with insomnia. Frequently doctors object to the administration of morphine in pneumonia, even in the minute doses in the cough mixtures, on the ground that opium and its alkaloids impair the activity of the respiratory centres; and as here the respiratory system is at fault or impaired, it is undesirable to do anything that would still further impair it. This reasoning is very fallacious, for it is not the respiratory centre that is impaired, but the respiratory periphery; and small doses of morphia do not further impair the respiratory system of the thorax but will often act as a cardiac stimulant and aid matters in the chest. Small doses of morphia, one-sixth of a grain, repeated once or twice if necessary, during the course of the night, will relieve the symptom of pain, or insomnia dependent upon pain or excessive cough, in a way that nothing else will.

It is not necessary to treat every case of pneumonia whose temperature reaches 103° by any form of bath; but if the temperature is particularly high or prostrating, then the bath is exceedingly valuable, in conjunction with friction to the surface.

Dr. Robinson's experience as to the occurrence of heart-clot as a cause of death in pneumonia was at a variance with that of Dr. Peabody. In many autopsies in deaths from pneumonia, he had very rarely found heart-clot present. He thought that the French authors particularly have been inclined to mistake a post-mortem for an ante-mortem heart-clot. They have relied for a differential diagnosis upon the imprint of the aortic valve upon the clot, which is fallacious. The heart-clot is so infrequent that it is not possible to predict it or to avert it by treatment.

Dr. J. C. Wilson, of Philadelphia, said, in croupous pneumonia we have to deal with a pathological condition associated with certain clinical phenomena which vary within the widest limits, so that the croupous pneumonias of infancy, of early life, of adult life and of old age; the croupous pneumonias of alcoholic subjects; the croupous pneumonias which are secondary to antecedent infectious processes; the croupous pneumonias in which there are corresponding or equally varying local lesions; central pneumonias, apex pneumonias, crossed and double pneumonias, and so on, give us a series of clinical pictures which present not only wide variations in symptoms, but indicate an equally varying treatment. So that the treatment of pneumonia to-day, while we have no specific treatment to fall back upon, must be, in the first place, a treatment of expectancy, and, in the second place, a treatment in which the symptomatic factor must enter largely in the process.

The experience with cold baths in the German Hospital in Philadelphia has not been satisfactory in the treatment of any form of pneumonia. The cases have not done well that have been immersed in the cold bath. The application of cold locally to the chest has at times seemed to be of decided benefit.

Regarding venesection, it would appear from the literature of the subject that too much attention is paid to the mechanical indications for venesection. Venesection in croupous pneumonia has often proved advantageous, doubtless by relieving the toxæmia by withdrawing from the blood-supply in large volume the toxic principles to which the nervous symptoms and other serious symptoms must be due. Venesection is therefore useful in cases where the old mechanical indications are not very well marked.

Regarding the use of opium, it is not only safe but often advantageous, in a large proportion of cases of pneumonia, to give small amounts of morphia. Small doses of Dover's powder, two, two and one-half or three grains, at intervals of two, three or four hours, according to the degree of pain or restlessness of the patient, may be given throughout the case.

Dr. V. C. Vaughan, of Ann Arbor, believed that Dr. Robinson had not used the true digitalin, but a so-called digitalin the greater part of which is digitoxin. The true digitalin, which has been studied by Pfaff, has a wholly different action from that described by Dr. Robinson.

Dr. B. Robinson said that he had purposed in his paper to oppose what seemingly is the conviction of some eminent practitioners in New York of the efficacy of the so-called "trinity pill," or a modification of it, in the treatment of certain threatening symptoms of pneumonia.

He also wished to direct attention to the fact that we are using drugs very often in a way that is not altogether rational, simply because we do not know what we are using. Different doctors, using what they suppose to be the same drug, secure different results, which are due to the fact that the agents they use are not the same.

Dr. J. W. Roosevelt, of New York, stated that the "trinity pill" was not used in all the cases at the Roosevelt Hospital. It had been used in about one-third of the cases during the past year.

Dr. S. A. Fisk, of Denver, read a paper on

A TREATMENT OF TYPHOID FEVER.

Dr. Fisk exhibited a chart on which his article was based. It was compiled from thirty average cases of typhoid under his treatment, running through three years. The chart is a composite of these cases. The morning temperature for any one day of all the cases are added together and divided by thirty, and a mean temperature is thus obtained. The same way with the evening temperature; so that the chart as presented is a composite of the thirty cases, both with reference to the temperature and the pulse-rate.

The cases were mostly hospital cases, and were obtained, as most hospital cases are, about the fourth or fifth day. They were cases of undoubted typhoid, not selected, having the usual symptoms, including rose spots, and treated almost by routine according to the method outlined.

The chart shows a steady decline in both temperature and pulse-rate from the very beginning and a short duration. Together with this chart was exhibited a typical chart of typhoid fever taken from Pepper.

The treatment is: Calomel, five grains, at the very start, followed by a saline; a tumbler of milk, peptonized if necessary, every three hours, followed in twenty minutes by four minims of the oil of turpentine, four minims of castor oil, ten grains of the subnitrate of bismuth and a drachm of mucilage of acacia. This has the effect of constipating the bowels, so that every second morning anywhere from two teaspoonfuls to a tablespoonful of castor oil is given, the patient usually feeling better on the days on which he takes the oil. Plenty of water, which can be iced if they prefer; lemonade, not to conflict with the milk, if they choose. Delirium of the early stage is quieted with Dover's powder, five grains, repeated once or twice p. r. n. at night. But little attention is paid to high temperature; occasionally the patient is sponged a few times, if the temperature runs very high. Dr. Fisk believes with Dr. Steadman, in the city hospital reports of Boston, that the pulse is a better indicator of prognosis than the temperature. After the temperature has remained normal, or in many cases subnormal, a week or ten days, he begins to feed gradually, preferring animal diet, in the way of broths, eggs and the juice of beef, to starchy foods. If the pulse becomes feeble, he stimulates with whiskey, one-half ounce every two or three hours p. r. n., and uses digitalis or strophanthus, rather preferring the latter.

Dr. I. E. Atkinson, of Baltimore, agreed with Dr. Fisk that milk was the proper diet of typhoid fever patients, but with some qualifications. He had a number of times seen patients whose death was doubtless due to the efforts made in attempting to expel the undigested portion of the casein of the milk which had accumulated in the rectum. He thought that the judicious mingling of liquid animal food with the milk toward the end of treatment of typhoid fever was useful and desirable in nearly all cases.

Insomnia in typhoid, especially that insomnia which may be called the coma vigil, is extremely ominous. In a number of cases Dr. Atkinson had averted fatal consequences by abandoning the use of ordinary hypnotics and using a slight inhalation of chloroform. In cases where the patient has taken the ordinary hypnotics to the danger point, a few whiffs of chloroform has allowed the patient to go into a slumber and permitted the other hypnotics to assert themselves.

It has been well established that all the symptoms of typhoid are favorably modified by the use of the cold bath. The dry, brown tongue is not present; there is absence of tympanites, subsultus, of delirium and of profound depression, all due to the use of the cold bath, even where the temperature is only temporarily modified.

The efficacy of the line of treatment which Dr. Fisk points out is not shown quite clearly by the chart. One or two cases widely different from the rule would have given quite a different picture. It is not shown that his method is as good as the cold-bath treatment now in vogue.

Dr. C. F. Folsom, of Boston, thought that Dr. Fisk had had the luck to have treated 30 unusually mild cases. Since Dr. Folsom has been a visiting physician at the Boston City Hospital, probably 1,500 to 2,000 cases of typhoid have been treated; and of these, 300 to 400 were under his care. After he had treated 150 cases, he had been rash enough to write a paper and to generalize from these cases on the treatment of typhoid fever. Now, when he needs a little humiliation he refers to that paper. The number of Dr. Fisk's cases is altogether too small to generalize upon. Medicine, strictly speaking, has very little effect in typhoid, excepting in controlling symptoms which cannot be better controlled in other ways, and those are very few. Almost all the symptoms are best treated with cold water.

Dr. J. F. A. Adams, of Pittsfield, Mass., expressed his appreciation of the composite charts presented by Dr. Fisk, and thought it would be well for others to follow the same plan. He referred to the fact that typhoid fever in different parts of the country, and at different times in the same locality, is almost an entirely different disease. In Western Massachusetts, about ten years ago, there had been an invasion of intermittent fever, and following this invasion typhoid fever became greatly changed, and instead of following the typical chart of Dr. Pepper, followed more nearly the chart of Dr. Fisk. The mortality was very much diminished; and every form of treatment that was used during the two or three years following the invasion of malaria, was highly successful, because of the mild and short form of typhoid fever.

Dr. Wm. Osler, of Baltimore, said that the paper of Dr. Fisk illustrated a common therapeutic fallacy, as it was doubtful whether Dr. Fisk's treatment had any influence on the disease. The chart indicates that he had a peculiarly mild series of cases which would have doubtless recovered with diet and a nurse. For the year ending May 15th, Dr. Osler had treated in his wards at the Johns Hopkins Hospital, 80 cases by the Brand method with a mortality of only just over six per cent., which is a very satisfactory showing for a general hospital to which the cases are brought at all stages.

Dr. S. A. Fisk said that the criticisms upon his paper were as he expected. While the treatment he outlined was not a specific, yet it had been employed satisfactorily in Denver for many years, where there has been much typhoid fever. In the fall of 1890, there were 700 cases of typhoid in Denver during the month of October. He believed that there were other methods of treating typhoid fever than by cold baths.

DR. C. F. FOLSOM, of Boston, read a paper on

CASES OF TRAUMATIC HEADACHE.[2]

Six cases were reported of injury to the head from severe blows, in five of which there were irregular, ragged cicatrices from healing by granulation. In two trephining was done. In the others the cicatricial tissue was excised. The pathological conditions found by Dr. W. F. Whitney were interstitial neuritis, thickened pericranium, increased cell proliferation causing pressure, and, in one case, diffuse hyperostosis of the skull. The symptoms — pain, various morbid nervous and mental indications and petit mal — were relieved. In two cases, there was also an ocular defect as a partial and contributing cause of the trouble.

DR. M. ALLEN STARR, of New York, said that although such a severe operation as trephining was a rather serious matter to recommend for headache, yet there are some cases, such as those related by Dr. Folsom, in which it should be used as a last resort. He related a case similar in many features to the cases of Dr. Folsom. A young man struck upon the head four years ago had suffered very intensely since that time from constant pain at the seat of injury, and his disposition had changed very much. From being a good-natured, fairly intelligent boy, he had become a perfect little devil. He had, at times, attacks of rage in which he would act in a maniacal manner. After all other measures had been tried in vain, Dr. McCosh trephined at the position of the pain, which coincided with the position of the cicatrix. A slight depression was found in the external table, but there was no fracture of the internal table and no adhesion of the dura to the bone. Under the dura was a small angioma, which was taken away. Punctures were made with a hypodermic needle in three directions under the wound, in search of a possible cyst beneath the cortex, but nothing was found. The patient made a good recovery. He has been entirely free from headaches; his disposition has become tractable; and he is in every way a new and better boy.

In a large experience with traumatic epilepsy and other cases of traumatism of the scalp, Dr. Starr has found pain at the seat of the injury the exception and not the rule.

An interesting observation in connection with this case was, that for six weeks subsequent to the operation the boy had an absolute loss of muscular sense in the right hand and arm below the elbow. There was no disturbance whatever, of motor power, no disturbance of touch, temperature or pain senses. It is perhaps the only case on record in which a cortical lesion has produced a loss of muscular sense alone, and settles a disputed question as to the existence of muscular sense as separated from motion and sensation.

DR. FREDERIC P. HENRY, of Philadelphia, read

A CLINICAL REPORT OF TWO CASES OF RAYNAUD'S DISEASE.

The author gave in detail the history of two interesting cases of Raynaud's disease, and exhibited colored sketches of the patients. He then discussed the distinction between genuine and spurious cases of Raynaud's disease, the genuine affection being distinguished by the stages of local "syncope" and "asphyxia," the absence of traumatism, and symmetrical distribution of lesions. The disease has nothing in common with senile gangrene.

The chief theories of the cause of Raynaud's disease are: (1) that it is due to an endarteritis obliterans; (2) that it is due to peripheral neuritis; (3) that it is the result of vascular spasm. The last is the theory of Raynaud himself, and, in the opinion of the author, is the one that is in accordance with the clinical phenomena. The disease is most prevalent in females and in the young, that is, in those whose vaso-motor system is most impressible. It occurs in paroxysms, which are caused by the surest exciter of vascular spasm — cold. Finally, in several cases, during the paroxysm, there has been dimness of vision, which was shown by the ophthalmoscope to depend upon a contraction of the central artery of the retina and its branches; and in one recently reported by Dr. H. M. Thomas, the attacks of local syncope were followed by a chill, loss of consciousness and convulsions. Such facts are in the highest degree corroborative of Raynaud's view that the disease is due to an "enormous exaggeration of the excito-motor energy of the gray parts of the spinal-cord which control the vaso-motor innervation."

The symptom hæmoglobinuria, occasionally observed, is best explained by the theory of vascular spasm, and is dependent upon an excretion of hæmoglobin which has been separated from the red corpuscles in the peripheral asphyxiated parts.

DR. HENRY M. LYMAN, of Chicago, thought that from the physiognomy of the pictures presented both of the patients were arthritic subjects. The relationship between arthritism and Raynaud's disease should be borne in mind. He had seen quite a number of cases in which that relationship was very evident.

DR. WM. OSLER said: Dr. Henry has referred to a case reported by Dr. H. M. Thomas from my clinic. It was very interesting in this respect, that the attacks occurred only during winter, were always associated with epilepsy, and usually associated with hæmoglobinuria. In connection with the cerebral manifestations of the disease, we have also had under observation a remarkable case in which with the local asphyxia, sometimes without, the patient has aphasia sometimes with and somtimes without hemiplegia.

DR. M. ALLEN STARR said that the disease could be entirely outgrown, and spoke of a case under his observation which had resulted in recovery.

DR. W. H. WELCH, of Baltimore, said that it was not at all clear to him how there could be a connection between hæmoglobinuria and arterial spasm. It is possible that the hæmoglobinuria in these cases belongs to the general type of paroxysmal hæmoglobinuria that follows exposure to cold. The experiments of Ehrlich and of Rosenach indicate that the red blood-corpuscles in this condition are unstable and readily, under the influence of cold, give up their hæmoglobin. It is probable that the corpuscles give up their hæmoglobin in those cases described by Dr. Henry from this cause, and that vascular spasm has nothing to do with it.

DR. F. P. HENRY believed that there was a greater vulnerability on the part of such patients to such causes as dissolve the red blood-corpuscles than on the part of other people; but it seemed to him also, that the arterial spasm, the effect of which is to produce local asphyxia, is also concerned in the production of the hæmoglobinæmia. The hæmoglobinuria is a result of the hæmoglobinæmia.

---

[2] To be published in full in the Journal.

Dr. H. C. Ernst, of Boston, then reported

DR. S. C. MARTIN'S RESEARCHES ON THE BACTERIA OF VACCINIA.[3]

The paper presented was made up of the work of Dr. Stephen C. Martin upon Vaccine Virus, obtained from a complete set of notes left to Dr. Ernst by Dr. Martin before his death, which occurred last fall, and which he wrote out when he found that he would not be able to continue his work by reason of the illness, that finally proved fatal. Briefly stated, the results of Dr. Martin's investigations are as follows:

(1) The germ of cow-pox is a bacterium.

(2) This bacterium, in different stages of development, is in the form of a coccus or of a bacillus.

(3) It can be isolated and grown in pure culture on blood serum at the temperature of the blood.

(4) Inoculation on the calf from such cultures readily produces the typical cow-pox, while inoculations in man, have produced typical cow-pox but once in eleven times.

All that remains to be done now is to find under what conditions to grow the pure culture, that it may be uniformly relied upon for vaccination in man.

Dr. W. H. Welch thought that the results reported in this paper were very important, if true. Others have made observations in much the same way, with negative results. The work is left by Dr. Martin in that condition where it needs confirmation.

Dr. A. C. Abbot, of Philadelphia, thought the results obtained by Dr. Martin exceedingly interesting, but felt that subsequent observations might modify the results.

Dr. G. M. Sternberg said he would like to have these experiments repeated by an accomplished bacteriologist. There ought to be no difficulty in confirming the experiments if they were reliable.

Dr. H. C. Ernst said that the work had been done in his laboratory, that he had carefully questioned Dr. Martin at different times, but could never detect any fallacy. His object in presenting the work to the Association was to secure confirmation or refutation.

(To be continued.)

ASSOCIATION OF AMERICAN ANATOMISTS.

The Sixth Annual Meeting of the Association of American Anatomists was held in conjunction with the Congress of American Physicians and Surgeons in Washington, D. C., May 29 to June 1, 1894.

The Secretary reported that Dr. Chas. B. Ewing, Assistant Surgeon, U. S. A., and Dr. F. C. Schaefer, Professor of Anatomy in the Chicago Medical College, had resigned; and that three members had died, namely, Dr. Wm. Lee, Professor of Physiology, Columbian University, Washington; Dr. Wm. B. Towles, Professor of Anatomy and Materia Medica, University of Virginia, and of Anatomy, University of Vermont, and Dr. Corydon C. Ford, Professor of Anatomy and Physiology, University of Michigan.

The officers elected for the ensuing term were: Dr. Thos. Dwight, of Harvard University, President; Dr. B. G. Wilder, of Cornell University, 1st Vice-President; Dr. F. J. Shepherd, of McGill University, Montreal, 2d Vice-President; Dr. D. S. Lamb, Army Medical Museum, Washington, Secretary and Treasurer. Prof. C. L. Herrick, Denison College, Granville, O., delegate to the Congress of American Physicians and Surgeons; Dr. D. K. Shute, Columbian University of Washington, D. C., alternate. Dr. Theo. M. Gill, Smithsonian Institution, Washington, D. C., was elected to the vacancy in the Executive Committee.

The following new members were elected: Dr. John A. Boger, Assistant Demonstrator of Anatomy, University of Pennsylvania; Dr. H. B. Ferris, Assistant Professor of Anatomy, Yale University; Dr. Robert L. Greene, Professor of Anatomy, University Medical College and Western Dental College, Kansas City, Mo.; Dr. Wm. Keiller, Professor of Anatomy, University of Texas; Dr. Joseph Leidy, Assistant Demonstrator of Anatomy, University of Pennsylvania; Dr. Mary B. Moody, New Haven, Conn.; Mr. Robert O. Moody, Yale Medical School; Dr. Chas. D. Smith, Professor of Physiology, Bowdoin College; Dr. Wm. O. Stillman, Albany, N. Y.; Dr. W. C. Woodward, University of Georgetown, Washington, D. C. Sir Wm. Turner, of London, was elected an honorary member.

The following papers were read: "On the Identity of Structure of Protoplasm with that of Striped Muscle," by Dr. Carl Heitzmann, of New York City; "Some Problems Relating to Cerebral Fissures," Dr. Wilder, of Cornell University; "A Plea for a Methodically Written Text-Book on Anatomy," Dr. Edmond Souchon, Tulane University, New Orleans; "Study of the Human Cranium," also, "Shortening of the Face-Axis in the Evolution of the Mammalia," Dr. Harrison Allen, University of Pennsylvania; "Methods of Estimating the Height from Parts of the Skeleton," Dr. Dwight, Harvard University; "The Perineum and Perineal Body," Dr. Shute, of Columbian University, Washington, D. C.; "The Study of the Muscular Tunic of the Large and Small Intestine of Man in the Region of the Cæcum," also "A Note on the Occurrence of the Scapulo-Clavicular Muscle," Mr. Moody; "Theoretical Anatomy of the Sympathetic System," Dr. Wm. Carr, Columbian University, Washington; "The Female External Genital Organs, a Criticism on Current Anatomical Description," Dr. Lamb, Army Medical Museum, Washington, D. C.

The following papers were read by title in the absence of the authors: "In Our Two Years' Study of Anatomy, What Part of the Subject should be Covered in the First Year's Work, What Part in the Second?" by Dr. A. D. Bevan, Rush Medical College; two papers "The Form and Relations of the Nerve-Cells and Fibres in Desmognathus Fusca," and "The Terminology of the Nerve-Cell," by Prof. P. A. Fish, Cornell University.

A Strike Caused by Toothache. — A dentist is attached to all the French lucifer match factories. At one of these all the hands went on strike recently, so it is said, because the dentist made them suffer so much. As their visits are compulsory at certain stated intervals, there was no escape except by the means adopted. The dentist resigned, and was replaced, and the hands returned to their work.

---

[3] To be published in full in the Journal.

AMERICAN MEDICAL ASSOCIATION.

FORTY-FIFTH ANNUAL MEETING, SAN FRANCISCO, CAL., JUNE 5, 6, 7 AND 8, 1894.

FIRST DAY. — TUESDAY.

THE Forty-fifth Annual Meeting of the American Medical Association was held at San Francisco, June 5th. The general session of the opening day was attended by over two hundred members, and was held at Odd Fellows Hall, which was abundantly decorated with orange, scarlet and white festooning. The President, **JAMES F. HIBBERD**, of Richmond, Ind., called the meeting to order at 10.45 A. M. In the unavoidable absence of both the Governor and the Mayor, Supervisor J. C. James extended to the guests "the freedom of the city and a hearty and cordial welcome."

The formal Address of Welcome by the California State Medical Society was given by **DR. J. L. DIMMONS**, of Sacramento.

DR. H. R. PLUMMER, Chairman of the Committee of Arrangements, reported that the entire expenses of the meeting had been provided for without calling upon the funds of the Association. After announcing the official programme, he presented President Hibberd with a gavel made of orange-wood (representing the State color) and manzanita-wood. The sides were of gold, one inscribed "A.M.A., S.F., 1894," and the other "James F. Hibberd, President."

The chairman of the various sections were each presented with a gavel of yew and myrtle wood by the physicians of Oregon.

THE PRESIDENT'S ADDRESS.

After thanking the convention for its gift, **PRESIDENT HIBBERD** delivered the address.

He discussed the various points at which the Association comes into touch with the general medical needs and work of the country. He considered it of the greatest importance that a more satisfactory arrangement should be made of subordinate medical societies in their relation to the American Medical Association. At present many delegates are annually not received because their credentials are not issued by a society technically entitled to representation.

"Every medical man who belongs to any medical society should belong to a county or an equivalent medical society, and every member of a county society should be *ipso facto* a member of his State society, and this is an "open sesame" to the American Medical Association.

By this arrangement, all reputable physicians in the United States would be brought together in the common fold, whose power for good within its legitimate sphere would be limited only by its aggregate wit and energy. Such a consummation would elevate the American profession to a plane for useful work the highest conceivable for the disciples of scientific medicine.

This would in no wise interfere with the organization of medical men devoted to special lines of practice or investigation; indeed, the more of these, and the more special their fields of labor and inquiry, the more rapid will be the development of medical knowledge, the nearer will expert art approach to perfection, and the greater will be the blessing to humankind. In these special and limited societies there will be a concentration of thought and labor that will yield results advanced and true to a degree beyond hope from a more promiscuous assembly.

All the adherents of the special organizations will be members of county societies, and thereby of their respective State societies, whence, for the asking, they can step through the portals of this Association, and find in our sections a department already organized and at work, into which they can enter, each according to his tastes or qualifications, and feel at home among fellow-laborers.

After discussing in detail the organization and functions of the various sections and committees of the Society, he devoted the remainder of his address to the more public duties and opportunities of the Society. A determined effort should be made by the whole Association to prevent the threatened mistake of reducing the number of assistant surgeons in the army, and to have Congress restore the appropriation for the National Medical Library to its original $10,000. Reviewing the efforts to secure a National Bureau of Public Health, he said:

"Without rehearsing details, I feel free to declare my conviction that enough has been ascertained of the sentiment of the executive and legislative departments of the government to rob us of all hope of the establishment of a Department of Public Health within the remainder of the nineteenth century."

A bureau of public health, with a commissioner as its chief, within one of the existing departments of the government, was apparently within reach of a united, harmonious, aggressive effort of the profession for a year or two previous to the enlargement of the power of the Marine-Hospital Service by the last preceding Congress, but the excellent work of that service at home and abroad since its increase of authority and means has lessened the anxiety of the government and the apprehension of the public in such degree as to make those in power less attentive to appeals to do what should yet be accomplished.

As to the relation of the medical profession to public opinion on small-pox and vaccination, he said:

"It seems to me the reasonable duty of this Association at this time is to declare and proclaim its unabated faith in the virtue of vaccine to protect from small-pox, to render persons as immune against variola as an attack of variola itself, and that it is innocent of all mischief when the vaccination is done by a vaccinator who is a competent judge of both the purity of the vaccine and the fitness of the vaccinee.

"The progress of medicine in the immediate future must be along biological lines. The microscope has revolutionized our knowledge of the world of living things, and to us has been discovered the generators of the most extensive and persistent and malignant epidemics that periodically decimate the earth, as well as intractable and fatal disorders that we have always with us. Another line of biological workers have carried us back through the morphology organs, tissues and cells to the origin of vital activity in protoplasm, and still more important, in doing so have given us glimpses of the origin and development of the somatic mind that will, when the scheme of nervous organization and function shall be clearly portrayed, dissolve the mystery that has in the past obscured our realization of the true nature of hypnotism, Christian science and other anomalous neuroses which the sciolists and, in an especial manner, those claiming to be doctors, are promulgating and practising to the discredit of true scientists and the injury of the weak-minded and ignorant classes. We should apotheosize protoplasm, the dividing line between organic and inorganic matter, itself at once the result of the law of perpetual motion with which the Creator endowed the atoms of elemental matter, and the beginning of that phase of energy known as vital activity, which constitutes the entire vegetable and animal kingdom. No one people or class of people can claim exclusively to have opened the way into this more primitive arcanum of nature. The physicists of all nations, botanists, zoölogists, anatomists, physiologists and their congeners, have all participated in this progress. The distinction of Schawn, Virchow, Ferrier, Jackson, Pasteur, Koch and Steinberg is due to their advanced study of biology."

As to the proposed changes in the Code, he said:

"For years there has been a feeling among many most excellent and intelligent working members of the guild that the Code of Ethics did not fairly accord with the demands of the advanced profession in their intercourse with each other, nor with the proper reciprocal relations between the profession and the public, while, on the other hand, many members equally intelligent and devoted to the Association have felt that the Code of Ethics that has guided the Association through nearly half a century prosperously and honorably, and is still a reliable guide in every advanced thought and action, cannot be bettered for our present status, and should not be disturbed."

The Address of the President was referred to a committee of five — Drs. W. T. Bishop, Z. B. Todd, R. B. Cole, F. W. Mann, and J. P. Woodbridge.

On motion of Dr. Quimby, of New Jersey, a committee was appointed to draft a resolution of protest to Congress against the threatened reduction of the medical and surgical force of the army. Dr. Quimby was appointed chairman of this committee.

The Report of the Treasurer, which was read by the Secretary owing to Dr. Dunglison's illness, showed a balance of $6,156, in the treasury.

The Secretary's Report was largely devoted to presenting the action of the various State societies as to the revision of the Code. Twenty-one societies were opposed to the change. Nebraska, Vermont and Indiana were in favor of the change. Wisconsin and Florida laid the matter on the table. Three had not yet considered the question, and from eleven no reply had been received.

The following resolution was adopted:

Whereas, Dr. R. J. Dunglison has been for seventeen years a faithful, energetic Treasurer of this Association, without any compensation; therefore, be it

Resolved, That the hearty and unreserved thanks of this Association be cordially extended to him for his efficient and laborious duties on behalf of this Association, and a copy of this resolution be forwarded by the Secretary to Dr. Dunglison.

In the afternoon the sections held their meetings.

In the evening the San Francisco County Medical Society gave a reception to the members of the Association and ladies, which was attended by over five hundred guests.

SECOND DAY. — WEDNESDAY.

The general session of the second day was called to order at noon by the President to listen to the Address on Medicine by Dr. C. H. Hughes, of St. Louis, on

THE NERVOUS SYSTEM IN DISEASE AND THE PRACTICE OF MEDICINE FROM A NEUROLOGICAL STANDPOINT.

He spoke first of the great advance of modern medicine, saying that as Hippocrates drove the devotees of superstition from the Temple of Hygeia, and taught the people that offended gods could neither bring, nor propitiated gods dispel, disease, and as Andreas Vesalius defied the popular prejudice and ecclesiastic power of his day, at the risk of his life, to make his first human dissection, so his professional descendants of to-day continue breaking down barriers of ignorance, of prejudice and superstition in the way of man's happiness and prosperity, unlocking the secrets of Nature's arcanum and setting the captive mind and organism free from the enthralment of disease.

The recent epidemics of influenza had done much to emphasize to physicians the great therapeutic importance of understanding the intricate influence of the nervous system. All forms and manifestations of disease were dominated by the nervous system, and it was in the slightly disordered functionation of this marvellous organization that the early approach of disease was to be recognized. Even bacteriology was second in importance to an understanding of neurology for the explanation of the origin and onset of disease.

"And now in the sunlight of advancing science, and of the approaching twentieth century, I proclaim that neuriatry and the practice of general medicine are practically one. The practice of medicine is rapidly becoming one of neurological methods, of neuriatry and psychiatry; and the best neurologist, all other attainments being equal, must of necessity make the best general practitioner. The boon of hypnosis and narcosis under the many methods for its induction known to our art, saving the insomniac from the precipice of mental overthrow or neural failure in the lower centres of the cerebro-spinal axis or peripheral nervous system; the power of antisepsis, and through it the wonderful procedures and possibilities of modern surgery, and this *fin de siècle* hygiene; the many and marvellous therapeutic and hygienic advances in promoting the phagocytosis of the toxic bacteria, the destruction of the ptomaïnes, and in other directions of relief and cure: the discoveries of pathology, histology, medical chemistry, biology, neurology, psychology, psychiatry, and the contributions of surgery, gynecology, ophthalmology, otology, laryngology, proctology, and the other specialties of study and work, have made the later decades of the present century the most memorable in resourceful discovery in the history of medicine or in the history of mankind."

The Librarian's Report recommended the transfer of the library of the Association to the Newberry Library in Chicago.

The Report of the Trustees of the *Journal* was accepted, after some opposition, by a vote of 86 to 33.

THIRD DAY. — THURSDAY.

The Society was called to order at 10.30 A. M. After some general business, and the election of Dr. H. H. Brown of Chicago to fill the vacancy in the judicial council caused by the death of Dr. Murphy, the Committee on the Revision of the Constitution made its reports. The majority report was presented by Dr. W. M. Holton and the minority report by Dr. H. D. Didama. After a sharp discussion, the minority report (opposed to a change) was adopted as the report of the Committee by a vote of 161 to 70.

FOURTH DAY. — FRIDAY.

The closing session of the Association was called to order at 10.30 A. M., the President in the chair.

The first business to come before the meeting was the debate on the

REVISION OF THE CODE OF ETHICS,

which followed closely the lines of the discussion on the Constitution of the day before. The minority report, presented by Dr. Didama, was adopted. The next business was

THE ELECTION OF OFFICERS.

The ticket presented by the Nominating Committee was elected by acclamation.

President, Donald McLean of Michigan. Vice-Presidents — Starling Loving of Ohio, William Watson of Iowa, W. B. Rodgers of Tennessee, F. S. Bascom of Utah. Treasurer, H. P. Newman of Illinois. Permanent Secretary, William B. Atkinson of Pennsylvania. Assistant Secretary, G. H. Rohe of Maryland. Librarian, passed. Chairman of Committee of Arrangements, Julian J. Chisholm of Maryland. Board of Trustees — Joseph Eastman of Indiana, J. T. Priestley of Iowa, John E. Woodbridge of Ohio (unexpired term), J. W. Graham of Colorado, (*vice* D. C. Patterson, deceased). Judicial Council — D. W. Crouse of Iowa, R. C. Moore of Nebraska, T. D. Crothers of Connecticut, G. B. Gillespie of Tennessee, W. T. Bishop of Pennsylvania, C. H. Hughes of Maryland, I. J. Heiberger of the District of Columbia, H. Brown of Kentucky.

The meeting of 1895 will be held in Baltimore.

The Address in Medicine will be given by Dr. W. E. Quine of Illinois; in Surgery, by Dr. C. A. Wheaton of Minnesota; and that in State Medicine, by Dr. H. D. Holton of Vermont.

The question of excluding advertisements of preparatory remedies from the *Journal* of the Association was referred, after some discussion, to the Judicial Council, which decided, after debating the whole afternoon, that one of the advertisements complained of had been inserted through inadvertence. The attention of the Trustees was called to the other one.

The Annual Addresses in Surgery and in State Medicine were then read by title only, as neither Dr. Rohe or Dr. Laplace attended the meeting or sent any manuscript.

◆

MASSACHUSETTS MEDICAL SOCIETY.

The One Hundred and Thirteenth Meeting.

The sessions of the Sections in Medicine and in Surgery were held at the Harvard Medical School on Tuesday, June 12th.

The Shattuck Lecture was given on Tuesday evening, by Dr. Thomas Dwight, upon

THE RANGE AND THE SIGNIFICANCE OF VARIATIONS IN THE HUMAN SKELETON.

The exhibit this year was chiefly educational in character. Boards of health were represented by those of Cambridge and Lowell. The latter had an excellent set of diagrams, tables, photographs, etc., illustrative of its special duties. The plant for cremation of garbage, in which Lowell has led the way, was illustrated in detail. Especially instructive tables were those giving the statistics relative to the recent small-pox cases, also to the falling off in the death-rate since the establishment of the board. Mr. James H. Emerton had a unique exhibit of his *papier maché* models of human bones, etc., so valuable for class purposes. Among them were a gigantic skull, two and a half by three and a half feet in diameter, long bones, vertebræ, brain, liver, an encysted trichina, all correspondingly enlarged.

There were the usual exhibits of representative instrument-makers and publishers.

The exhibit of especial interest was that of the Massachusetts College of Pharmacy. It consisted of a carefully prepared and authentic collection of all the crude drugs, preparations, organic products, chemicals, test and volumtric solutions and reagents official in the revised United States Pharmacopœia of 1890, collected, prepared and tested by students of the college. It was a surprise to all to see that the Pharmacopœia was so great a work as to permit so extensive an exhibit of over eleven hundred articles. Few of us realize that provision is made for seventy-two tinctures and nearly twice as many extracts and fluid extracts; and it was new to a good many who saw it that by following Pharmacopœial directions any pharmacist, just as the students had done, can prepare pills, troches, etc., of exact dosage, ready solubility in the body's fluids, and also of elegant appearance. As this pharmacopœial collection is unique, is of unusual interest, and as complete as it could be made, regardless of expense, the College of Pharmacy intends preserving it in its museum for permanent exhibition.

The One Hundred and Thirteenth Annual Meeting was held on Wednesday, June 13, 1894, the President, Dr. James C. White, in the chair.

The Secretary reported that during the year 153 members had been admitted, and that 26 had died.

Papers were read upon the following subjects:

ICHTHYOL IN GYNECOLOGY,

by Dr. Malcolm Storer, of Boston.

CHRONIC INFLAMMATION OF THE SEMINAL VESICLES,

by Dr. G. W. Allen, of Boston.

THE FREQUENCY OF PUERPERAL SEPSIS IN MASSACHUSETTS, ITS DIAGNOSIS AND EFFICIENT TREATMENT,

by Dr. Edward Reynolds, of Boston.

Discussion by Drs. C. M. Green, of Boston; E. H. Stevens, of North Cambridge.

THE ANNUAL ORATION [1]

was delivered at noon, by Dr. R. H. Fitz, of Boston.

THE ANNUAL DINNER

was served at one o'clock, there being about nine hundred and fifty members present.

At the close of the dinner the Anniversary Chairman, Dr. Silas D. Presbrey, of Taunton, spoke as follows:

Another year has passed, and once more our Society welcomes you to her annual festivities. At our last meeting we were reminded that we were then at the beginning of a great national celebration; at this time the Columbian Exposition is finished, and we may well consider some of the contributions that were made by the medical profession of the State, and we may justly take pride in the work that was done by members of this Society.

---

[1] See page 581 of the Journal.

The Massachusetts State Board of Health has received high praise, both in this country and abroad, for the comprehensive exhibit of its work and its methods. The *Journal of the American Medical Association* says: "This exhibit is an object-lesson well worthy of study by other States, as owing to the increased density of population and increase of manufacturing wastes, our water-supplies are annually becoming more polluted, and the necessity for such work more and more imperative." Thus the oldest board of health of the country justified the opinion that it is a leader and an authority in the work in which it is engaged.

The Medical Department of Harvard University made a striking exhibit of the most advanced methods of instruction, and in some respects methods entirely unique. A Harvard man could not fail to feel a thrill of satisfaction when he found himself surrounded by the familiar frozen sections and the mammoth models. Studies in physical culture, as expressed by charts, photographs and models, showed the zealous care with which the health and growth of the Harvard student are watched and promoted.

I would not miss the opportunity to call to your attention an innovation of the last year which seems to me especially worthy of your notice and of your patronage. Through the school year the Faculty of the Harvard Medical School has given a course of evening lectures on special subjects, which physicians were invited to attend without charge. The lectures were given on each Wednesday evening from October to May, vacations excepted. This work was done by gentlemen of great experience in teaching, and each lecturer is an acknowledged authority on the subject which he handled. I hope this, the first and experimental year, may prove the beginning of a permanent custom.

The third feature of the medical year is the adoption by the Legislature of an Act to provide for the Registration of Physicians and Surgeons in the State of Massachusetts. I am happy to say that after hard work and careful management the Act has passed both branches of the Legislature and has received the Governor's signature.

Fellows, the weightier matters of the physician's work and duty have had ample discussion for two days in the neighboring halls; here we have met for refreshment and entertainment. How well your admirable Committee of Arrangements have attended to the refreshment you are all able now to judge; it only remains for me to introduce to you the entertainment.

Dr. Presbrey then offered the first regular sentiment: "The Massachusetts Medical Society," which was responded to by the incoming President, Dr. F. K. Paddock, of Pittsfield, who spoke as follows:

It would seem to me more proper that the response to this toast should be made by my predecessor, Dr. J. C. White, who has so faithfully and successfully conducted the affairs of the Society for the last two years. It will be my greatest ambition to perform the duties of this office as satisfactorily as he has accomplished them.

There is no question about the importance and eminence of the Massachusetts Medical Society. Its members embrace the best medical talent in the State, and for seventy years it exerted a controlling influence over the practice of medicine throughout the Commonwealth. In 1859, for various reasons, the Legislature deprived the Society of this control, so that for thirty-five years the people of the State have been preyed upon and defrauded without opposition by hordes of quacks and charlatans.

The dignity of this Society and the welfare of the community demand that this condition shall be changed. Other States have laws to regulate the practice of medicine; this State should do likewise. During the last session of the Legislature a successful effort has been made to establish a law to regulate the practice of medicine. For this legislation we are indebted to a member of this Society, Dr. Harvey, of Westboro'.

The good influence of this Society is increased by every regularly educated, respectable physician who joins it; and I think that it is the duty of the members to personally solicit candidates for admission.

"Lessons from the Experience of Two Years in the Presidency of the Massachusetts Medical Society."

Dr. J. C. White, in response, said: I told you at a former dinner, in the few words I then addressed to you, that I hoped to have more of interest to say when I should have become better acquainted with the condition of the Society and the functions of the high office with which you have honored me. There is no other opportunity offered to the President to meet so large a gathering of members of our Association, and to present any opinions he may have formed concerning its welfare, as this occasion, so that he must avail himself of it for this purpose.

During my term of office I have visited, for purposes of observation and inquiry, all the eighteen districts into which our Society is divided, and which present so striking a diversity in their physical aspect and in the character of their inhabitants, as in the long stretch of sandy Barnstable, with its remote settlements, the lonely and sparse hill-towns of Berkshire, and the many busy centres of factory life, with their dense throngs of foreign peoples. We hardly appreciate here in the metropolis and its immediate surroundings how unlike our own are the life and professional relations of these other districts, which are so essential a part of our State Society. Think of a Massachusetts township with only 219 inhabitants, and of these all but 19, Indians; and of 80 or more towns in the State without a resident Fellow of this Society. It has been my object to study its workings in all these regions, and to gather the views of its members living under such diverse conditions as to how satisfactorily it may be fulfilling its mission.

Let me first briefly define what, in my opinion, should be the chief objects of this Association:

(1) The cultivation of friendly relations and mutual support among its members.

(2) The establishment and maintenance of rules to regulate the practice of medicine in its relations to the community.

(3) The stimulation of progress in our art by meetings for medical improvement, by encouragement of scientific research, by the foundation of scholarships and lectureships.

(4) The elevation of medical education.

(5) The securing and enforcement of laws for the

preservation of the public health and the enlightenment of the people concerning it.

Now I have found that, on the whole, a satisfactory loyalty to these objects prevails throughout the Society; that much interest is everywhere manifested in the district meetings, and that the papers there presented are most praiseworthy. In some parts of the State, where the towns are thinly peopled and widely separated, the attendance was not large.

It was a great surprise to me to note how small a proportion of the physicians in many places were graduates of our Massachusetts schools of medicine. Thus, in one district containing 36 Fellows, only three, and in another of 38 members, but two, had received such a degree of M.D. In the seventeen districts of the State (omitting Suffolk), representing 1,200 members, only 463 are graduates of our medical schools.

Again, I was astonished to learn how many physicians were practising medicine in this State, graduates of medical colleges whose diplomas are recognized by us, of excellent reputation, regarded as their peers by our Fellows, their associates in private medical bodies in many instances, and with whom they consult freely, and yet who are not members of the Massachusetts Medical Society. Many of these are gentlemen who have come from other States, where they were in good standing in their State societies. I cannot give you their exact number, but it is very large. The president of one district informed me that there were twenty such men in his city. Another president of a small district named twelve to me. The Treasurer of the Harvard Medical School Alumni Association informs me that 775 of its members reside in this State, and that of this number 118 are not members of our Society, or 15 per cent. Now it is very important that every good physician should be enrolled upon our list of Fellows. It is better for them, much better so for us, and why are they not members? Because in the majority of cases they are unwilling to run the possible risk of being stamped by our examining boards as incompetent. There can be no doubt that the examinations of our censors have often been too severe, and of a character to test the school rather than the practical knowledge of the candidate. Within two years two distinguished professors, recently become residents amongst us, and desiring membership, have refused to offer themselves to the test of such methods of examination. How many of my colleagues on this platform would venture to act otherwise? At the time when our present laws defining the duties of censors were formed, the requirements for a medical degree in most or all schools were lax and insufficient, and the Society had to protect itself by an independent and rigid examination. It is very different now, and in all good schools the requirements for the degree of M.D. give practical assurance of sufficient medical knowledge for our purpose. Yet within the last two years graduates of the Harvard Medical School have been turned aside by our censors. At a meeting of one district society I heard read aloud the names of several young men who had failed to pass the examination of a neighboring board. Can one wonder that our present system repels candidates, and serves to keep good men out of the Society, whereas its object is to get them in? You are aware that at a recent meeting of the Council a system has been adopted by which the entrance to this Society may be made more lax, but still sufficiently protected. This plan is to come before a special meeting of the Society next October, and deserves your careful consideration.

"The Commonwealth of Massachusetts."

Lieutenant-Governor Wolcott said that, having addressed the Society before, it required the delicate touch of a Hawthorne to give any charm to twice told tales. The two characteristic actions of the medical profession which were unparalled in any other are, first, the gratuitous treatment of the poor in hospitals and asylums, whereby the most unfortunate person can call upon and receive the aid of the most skilful physician; and, secondly, the close observance of that unwritten law, which has more force than statutory law, that whatever device or remedy for the alleviation of suffering a physician may by skill or study discover, shall be freely given to the public. The benefit to a community of the scientific knowledge and enthusiasm which the medical profession brings so freely to the service of the public good is not easy to estimate. For this, too, Massachusetts offers her congratulations and acknowledgment.

The Medical Registration Bill is certain to prove of permanent utility to the Commonwealth, although Massachusetts comes a little haltingly into line. If it but keeps the word "doctor" back to its old meaning of teacher — a teacher of sound sanitary law, of a high standard of honor, a teacher of the laws of public health — so that no charlatan can use it, the Governor and members of the Legislature are entitled to your thanks and those of the community.

"The City of Boston: New England's Thought-Centre."

Mayor Matthews being unable to attend the dinner, no response was made to this toast.

"Harvard University."

President Eliot said that in looking back over the last twenty-five years nothing was more clearly marked than the progress of professional education, and in this medicine has taken the lead. There has been more gain in the education of physicians and surgeons than in any other department of the university. He had often felt the wish that medical schools in general, and those of Massachusetts in particular, were producing more country doctors. The country doctor should be given chief place. He needs a better education than the city doctor. He has no specialist at his elbow. He must know himself, and act himself. The training of the country doctor is most important, and needs to be developed, for he is more than a physician. He is a missionary. He is a social reformer — a sanitary reformer. He brings to his community the scientific spirit, a most valuable and important thing. The country doctor has one immense privilege and great happiness for his comparative isolation, that of living in the country, an inestimable prize for himself and for his family — as one who from long observation of where the most promising students come from can testify.

Commenting on the examinations of the Society, he said it had been proven useless to examine at one time a man on studies which had taken six or seven years to acquire. This practice had been given up in the university, and it was not reasonable to do so in this Society. What is wanted is an examination which will test power. The question which the Council should put to each candidate is not, "What do you know of this book or that book?" but "What can you do in judgment and tact and good temper for your patients?"

"The Physician as seen by the Lawyer."

Attorney-General Knowlton spoke of the general relations of the lawyer and the physician. As the physician had been his first friend in this world, so he would be with him at the close of life to make it easy. It seemed to him that the same quality of character was essential to success in both the lawyer and the physician — that peculiar quality which for lack of a better term is called "nerve," the ability to face great danger and risk in an impassionate manner uninfluenced by personal feeling. The doctor who attempts to care for his own case was likened to the man who makes his own will; both are more daring than wise.

"The Physician as seen by the Journalist."

Hon. William Reed, Jr., spoke of the earlier attempts to secure a Medical Registration Bill, in some of which he was actively engaged himself while in the Legislature. He congratulated the Society, not that the members had protected themselves, for they needed no protection beyond the honor of the Society, but that the people of the State had been protected.

"The Medical Man of Japan."

Rev. Arthur M. Knapp spoke of the remarkable progress of medical science in Japan since 1854, and the magnificent work done by the medical school of Tokyo, which was the first step in the formation of the great university there. He related many interesting facts about the medical history of Japan.

MASSACHUSETTS MEDICAL SOCIETY.

Councillors' Meeting.

The annual meeting was held at the Medical Library, Boston, on Wednesday, June 13, 1894.

The meeting was called to order at eleven a. m. by the President, **Dr. James C. White.** One hundred and fifty-five Councillors indicated their presence by signing the roll.

The Secretary read the names of 153 Fellows admitted since the last annual meeting, and of 36 whose deaths had been recorded.

The Treasurer, **Dr. Forster**, presented his report, which was accepted, showing the receipts of the Society for the year ending April 15, 1894, with the balance on hand at the beginning of the year, to have been $11,887.92, and the expenditures $8,895.09, leaving a balance of $2,992.83.

Dr. Draper, for the Committee on Membership and Finances, reported the names of four Fellows whom the Committee recommended to become retired members; of eight to be allowed to resign; and of four to be dropped for non-payment of assessments.

The report of the Committee was adopted.

It was also voted, on recommendation of this Committee, that $1,900 of the surplus in the treasury be distributed among the district societies.

The Committee on Publications reported that **Dr. Robert T. Edes**, of Jamaica Plain, has been appointed to deliver the Shattuck Lecture at the annual meeting of the Society in 1895.

The Librarian, **Dr. Brigham**, presented his report.

The Committee on Nominations reported, and the following were chosen officers of the Society for the ensuing year: President, Dr. Franklin K. Paddock, of Pittsfield; Vice-President, Dr. Frederic A. Sawyer, of Wareham; Treasurer, Dr. Edward J. Forster, of Boston; Corresponding Secretary, Dr. Charles W. Swan, of Boston; Recording Secretary, Dr. Francis W. Goss, of Roxbury; Librarian, Dr. Edwin H. Brigham, of Boston. Dr. Alfred Worcester, of Waltham, was chosen Orator, and Dr. Herbert L. Burrell, of Boston, Anniversary Chairman, for the annual meeting of the Society in 1895.

Voted, That the next annual meeting of the Society be held in Boston on the second Wednesday in June, 1895.

The following Standing Committees were appointed:

Of Arrangements: Drs. H. Jackson, J. C. Munro, A. Thorndike, A. K. Stone, J. G. Mumford, N. V. Pierce.

On Publications: Drs. B. E. Cotting, O. F. Wadsworth, G. B. Shattuck.

On Membership and Finances: Drs. F. W. Draper, J. Stedman, E. G. Cutler, L. R. Stone, A. H. Johnson.

To Procure Scientific Papers: Drs. H. P. Bowditch, F. H. Zabriskie, H. L. Burrell, S. B. Woodward, L. Wheeler, C. W. Townsend.

On Ethics and Discipline: Drs. G. E. Francis, F. C. Shattuck, C. G. Carlton, E. Cowles, J. F. A. Adams.

On Medical Diplomas: Drs. E. J. Forster, H. E. Marion, E. N. Whittier.

Dr. C. M. Green called attention to the fact that for two years there has been no session of the Section in Obstetrics and Gynecology at the annual meeting of the Society; that owing to the interest of members in the other sections it is difficult to obtain a satisfactory audience, and an injustice to ask for the preparation of papers. He moved, and it was voted, that the rule by which the Obstetrical Section was established be rescinded, and that the Section be abolished.

Dr. G. B. Shattuck offered resolutions which were adopted:

> That a Standing Committee on State and National Legislation be appointed at the annual meeting of the Councillors.
>
> That this committee shall consist of five members, including the President, *ex officio.*
>
> It shall be the duty of this committee to take such action in reference to proposed legislation as shall, in their opinion, be most conducive to the interests of the medical profession, and to make an annual report thereon.

Dr. Gage offered the following, which, after some discussion, was adopted:

> *Whereas*, the expenses attending the annual meeting of the Society have been increasing in recent years, and now exceed what seems to be a reasonable amount for this object; and *whereas*, it is desirable that such expenditures should be more under the immediate control of the Council than hitherto,
>
> *Voted*, that the Committee of Arrangements for the anniversary shall hereafter consist, in part, of members of the Council.

Dr. J. F. A. Adams presented the following, which was passed:

Whereas, it is evident that the affairs of the Society can be best administered by the coöperation of those who have the widest experience with its condition in all sections of the State,

Resolved, that in the opinion of the Council it is advisable that District Societies shall include in their election to this body such ex-Presidents of the State Society as may reside therein.

The following preamble, together with amendments to the By-Laws abolishing the office of Anniversary Chairman were, on motion of Dr. Cheever, adopted:

Whereas, it is more consistent with the dignity of the office, and in conformity with the custom of all societies of such high character, that the President should preside over all meetings, and especially at the most important public occasion, the annual dinner: *Resolved*, etc.

Adjourned at 1.15 p. m.

◆

AMERICAN CLIMATOLOGICAL ASSOCIATION.

Eleventh Annual Meeting, Washington, D. C., May 29, 30, 31 and June 1, 1894.

FIRST DAY. — TUESDAY.

After a brief Introductory Address, the President, Dr. Andrew H. Smith, New York, read a paper on

ALIMENTATION IN PULMONARY DISEASE.

In pulmonary affections the problem of alimentation is complicated by special conditions growing out of the functions of the affected organs. We are too apt to regard nutrition as if it were only another term for digestion, and practically to assume that, if the food taken into the stomach goes through the proper changes in the alimentary canal, and the nutritive portion is properly taken into the blood, that is all with which we need have concern. The products of digestion when received into the circulation are not blood. They represent neither serum nor corpuscles: they are, in fact, dead matter, requiring to be vitalized by the process of assimilation before they become a part of the living blood.

Of the manner in which this change takes place we know almost nothing. But we do know that an essential factor is the process of oxygenation that takes place in the lungs. Material which has not undergone this change is, for the time being, not only useless to the economy, but a hindrance to proper metabolism.

If, then, a considerable obstruction exists to the entrance of air into the lungs, it follows that an addition of more nutritive material to the blood than can be acted upon under the circumstances of crippled respiration, will only add to the circulatory embarrassment and aggravate the condition of the patient.

Under these conditions, therefore, we should study in acute cases to give as little nourishment as will sustain the vital powers, rather than as much as the stomach can be made to digest.

If we pass to chronic affections of the lungs, the same principle will hold good, with certain important modifications in practice. We have a chronic condition in which we are confronted with a restricted hæmatosis on the one hand and urgent necessity for a high degree of nutrition on the other. The difficulty of reconciling these two conditions will be in proportion to the degree of lung-insufficiency.

In the minor degrees of chronic lung-insufficiency, the respiratory movements make up in frequency what they lack in amplitude. So long as this compensation can be fully maintained, there may be no considerable defect in hæmatosis, and, in the absence of fever, no marked failure of nutrition. But, sooner or later, a time comes when the respiration is so far impaired that enough oxygen cannot be taken into the blood to act upon such an amount of nutritive material as is necessary for the full maintenance of the economy. The moment this stage is reached, the appetite fails in proportion to the defect in hæmatosis. Unless we can improve the hæmatosis, and with it the whole process of metabolism, we shall only do harm by high feeding. Digestion in these cases fails as well as assimilation. Moreover, in these chronic cases with pronounced anæmia and emaciation, we cannot rely chiefly upon nitrogenous food, as we must do in acute affections of the lungs. The heat-producing hydrates and fats are required in addition, and these are more difficult of assimilation. A vicious circle is established, the defective hæmatosis aggravating the dyspepsia, and this in turn resulting in greater poverty of the blood. Under these conditions, life in the open air is of the utmost importance.

The speaker has obtained much benefit in cases of this kind from rectal injections of defibrinated blood. This material seems to be absorbed almost unchanged, the corpuscles as well as the serum; it being a frequent experience that no trace of blood is found in the next dejection. There being no digestive action upon the blood, its absorption into the venous circulation is almost equivalent to transfusion very slowly performed; and but little change in the way of hæmatosis is required to fit the added material for the immediate use of the tissues.

Dr. Smith described a case of phthisis treated in this way. There was an enormous cavity at the summit of the right lung; the patient was emaciated to the last degree, weighing only 101 pounds. After two weeks of the treatment with blood enemata, he gained seven pounds. At the end of three months he left the hospital; the cavity in the lung had contracted greatly; expectoration had nearly ceased; he had gained 33 pounds.

Dr. Smith said: Though defibrinated blood is preferable for this purpose, good results may be obtained with the materials usually employed for rectal feeding, provided the patient can live much in the open air.

In the discussion which ensued, Dr. Karl von Ruck referred to twenty or thirty cases in which he followed the method suggested by Dr. Smith, and carefully observed the number of corpuscles and the hæmoglobin present. All the cases showed marked improvement in the blood condition.

The paper of Dr. Boardman Reed, of Atlantic City, on

THE RELATION WHICH ALIMENTATION SHOULD BEAR TO OXYGENATION IN LUNG DISEASES.

was read by Dr. James B. Walker.

Dr. Reed concurred in the opinion of Dr. Smith, that any excess of food beyond the amount which can be perfectly digested and assimilated, is injurious. When the intake of oxygen is large, as in the case of a robust person exercising actively in the open air, a maximum amount of food can be safely given. When, on the other hand, a patient has one or even both lungs crippled, the amount of food which he can digest and thoroughly oxidize into a nutritive pabulum for the uses of the economy, is much less. Between these two extremes are found patients with all possible degrees of capacity and opportunity for absorbing oxygen, and in consequence equally varying degrees for digesting and assimilating food. Evidently, then, there is such a ratio as has been assumed. It is exceedingly important that this fact be borne in mind in deciding the proper feeding of a case of lung disease.

Dr. Reed gave a detailed report of six cases (four of the number being now either well or convalescent), concerning which he says: The results are, on the average, considerably better than when it was my practice to encourage the fullest feeding of consumptive patients. They have been obtained with the aid of so little internal medicine, and that addressed almost exclusively to the digestive tract, that the management of the diet and hygienic regimen generally should receive the credit.

An abundance of pure healthy blood circulating normally in the lungs is the most essential prerequisite to a cure of phthisis pulmonalis. Hence the paramount importance of looking closely to the blood-making processes by securing as perfect digestion as possible, together with a complete oxidation of its products, so as to spare the lungs from the injurious task of assisting in the excretion of the poisonous compound resulting from suboxidation and decomposition. To obtain these ends satisfactorily, the total amount of aliment ingested must not be in excess relatively to the amount of oxygen absorbed. Dr. Reed considered the importance of selecting a special climate for such cases greatly over-estimated, though changes of climate exert a powerful stimulant action upon nutrition, for a few months especially.

THE METHODS AND VALUE OF SUPERVISED EXERCISE IN THE PROPHYLAXIS OF PULMONARY PHTHISIS,

was the title of a paper by **Dr. Glentworth R. Butler**, Brooklyn. The substance of Dr. Butler's paper was as follows:

Pulmonary tuberculosis is essentially a disease of defective nutrition. Although of microbian origin, a certain vulnerability of the tissues precedes and underlies the bacillary growth. The same individual may be at one time vulnerable, at another time invulnerable, as shown by the onset and arrest of the disease. The therapeutics of this disease demands that every possible means should be employed to strengthen the resisting power of the tissues. Aside from measures designed to prevent tuberculous infection, these means may be thus enumerated: climate; abode and out-door life; medication, general and local; personal hygiene and habits of life; diet; exercise, general and local, with its corollary, rest.

For the pretuberculous status and incipient cases, one of the valuable resources for permanently increasing vital capacity is "pulmonary gymnastics." The appreciably best method of taking such exercise is under the instruction and supervision of a trained operator, acting under general directions from the physician. This method admits of beginning with the gentlest exercise and progressing to the severest, in accordance to the patient's varying condition. It ensures the patient's attendance and economizes the physician's time. Graduates of physical-culture schools can be found in all of the larger and most of the smaller towns and cities.

The paper embraced a detailed discussion of the physiologic effects and relative advantages of the use of compressed air, breathing-tubes, and voluntary exercise, with a report of cases, and a series of photographs from the living model.

Dr. E. O. Otis, in the discussion, laid great stress on the careful supervision of exercises by the physician, in contrast with the ordinary hap-hazard direction, "to take physical exercise." He said: "If this careful arrangement of exercises, in the first place, and careful supervision, in the second place, can be followed out with pretuberculous cases and incipient ones, as Dr. Butler has suggested, much might be achieved. The practitioner who treats cases of phthisis is bound to study the application of chest gymnastics as he would the effect of any drug he uses.

SECOND DAY. — WEDNESDAY.

The second day's proceedings began with a paper entitled:

THREE YEARS' EXPERIENCE IN THE SANITARIUM TREATMENT OF PULMONARY DISEASE, NEAR BOSTON,

by **Dr. Vincent Y. Bowditch**, which will be published in full in the Journal.

Dr. R. G. Curtin, in a paper on

CREASOTE, GUAIACOL AND BENZOYL OF GUAIACOL IN PHTHISIS,

gave a brief *résumé* of observations in the use of these drugs, covering a period of fifteen years. Concerning guaiacol, he says: "In acute catarrhal phthisis with high temperature, little or no good is to be expected from its use. In acute tuberculosis no material benefit results from its employment. The class of cases that seem to be most benefited is the one in which we have slight elevation of temperature with poor nutrition, slow digestion with fermentation. Guaiacol has no specific effect upon the bacillus. In cases where the process was slow, beneficial results followed the use of guaiacol."

Dr. Curtin's conclusions were as follows:

Guaiacol is not so irritating to the stomach as creasote. Guaiacol is not so liable to produce irritation of the kidneys, nor to be followed by hæmaturia.

Among the advantages of guaiacol are: First, it is more easily taken; second, the process of manufacture insures purity; third, the exact quantity of medicinal substance administered is known.

Dr. A. L. Loomis: We find no evidence that these drugs have any other effect than to aid assimilation and digestion in a certain class of individuals. We cannot use them hypodermically. Whether we shall gain something by the use of the vapor seems to me still unsettled. They have no specific action upon the bacillus.

Dr. Judson Daland reported five cases at the Philadelphia Hospital, in which the object was to see if guaiacol, administered by the skin, had any effect upon the temperature. No results were obtained.

Dr. von Ruck reported one case where a dangerous fall of temperature followed the administration of guaiacol by the skin; the other cases showed little change.

SHALL ANYTHING BE DONE BY LEGAL AUTHORITY TO PREVENT THE SPREAD OF TUBERCULOSIS?

Dr. Frederick I. Knight, of Boston, called attention, in this paper, to the fact that, though twelve years had elapsed since the infectious nature of tuberculosis was established beyond question, very little had been done to prevent its spread. This was attributed by Dr. Knight not to a want of belief in the infectiousness of the disease, but to the magnitude of the problem and manifest difficulties in dealing with it. Dr. Knight claimed, however, that boards of health are organized to keep people informed, and not in ignorance, of the dangers by which they are surrounded; and gave notice that in the business meeting he would introduce a resolution upon this subject.[1]

An interesting discussion followed the presentation of this resolution. All the members agreed that something ought to be done to prevent the spread of tuberculosis; the only difference of opinion being as to the means. Much regret was expressed as to the present constitution of boards of health in this country and their connection with politics; Massachusetts was congratulated upon the high character of the Chairman of its State Board of Health.

(To be continued.)

Recent Literature.

A Practical Treatise on Diseases of the Skin. Third edition, thoroughly revised and enlarged. By James Nevins Hyde, A.M., M.D. Philadelphia: Lea Bros. & Co. 1893.

Ten years have passed since the appearance of the first edition of this excellent text-book of skin diseases. The third edition, just issued, fulfils all the expectations warranted by the great accumulation of dermatological material since the earlier editions were brought out, and puts this work at the head of the modern American treatises on skin diseases. The author has introduced thirty-five new diseases in this edition, and has corrected and improved almost every page. He is especially to be congratulated on his chapter on tuberculosis, which he has amended so that lupus vulgaris, and scrofuloderma assume their proper place as varieties of this disease, and are intelligently considered in the light of modern pathology. Five plates and twenty-two wood-cuts, all of great excellence, have been added to the illustrations. The excellence of the chapters on treatment, together with the care that has been bestowed on subjects that have acquired new interest, make the book one to be warmly recommended to any one seeking for a reference book in this branch of medicine.

A Treatise on Headache and Neuralgia, including Spinal Irritation, and a Disquisition on Normal and Morbid Sleep. By J. Leonard Corning, M.A., M.D. With an Appendix, *Eye Strain, a Cause of Headache,* by David Webster, M.D. Third edition, 8vo, pp. 275, 17 illustrations. New York: E. B. Treat. 1894.

To the third edition of this book a chapter has been added on the localization of the action of remedies upon the brain. This method of treatment consists of applying the remedies to the nasal mucous membrane, and increasing their effect by compression of both jugulars.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, JUNE 21, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

THE PLAGUE IN CHINA.

The word plague has had but little of its terrible real meaning for Europeans for many years. Eastern Russia and Persia had a short and mild experience some fifteen years ago; but practically Europe has been free from the disease since 1665, when London was scourged. Its native home is China; and in some cities there it appears every year during the dry season, but with a mild degree of poison, attacking only the poorer class of natives. The present epidemic is so widespread as to be of serious menace, as it has already attacked European settlers in the healthy portion of the cities.

Toward the end of April the extent of the outbreak at Canton became so alarming that the Board of Health at Hong Kong wrote to the Consular Surgeon at Canton, for a report of the true state of affairs. Dr. Rennie replied as follows:[1]

> "The first outbreak occurred in the last week of March, and was confined to a poor quarter of the city, near the South Gate. This neighborhood we visited on the 8th of April, and had an opportunity of examining one or two cases and also inquiring into the sanitary condition of the houses.
>
> "The symptoms are as follows: With or without premonitory warning in the shape of malaise or chill, there is a sudden onset of fever rising to 105°, or over. There is much headache and cerebral disturbance, accompanied by stupor. In from twelve to twenty-four hours a glandular swelling occurs in the neck, arm-pit, or groin, rapidly enlarging to the size of a fowl's egg; it is hard and exceedingly tender. With or without a decline of the fever, the patient sinks deeper into a condition of coma and dies usually at the end of forty-eight hours or sooner. If six days are reached recovery is hopeful. The glandular swelling shows no signs of suppuration. In some cases epistaxis or vomiting of blood occurs; petechiæ appear in a few cases, but no regular eruption. Such are, briefly, the symptoms at the beginning of the disease. It was then extremely fatal, over 30 deaths having occurred in the small street we visited. The mortality was high, being over 65 per cent. of the patients attacked, whose houses are occupied by laborers and artisans; they are small and badly ventilated houses, with damp earthern floors. Underneath the flag-stones in front of the houses in question is the usual drainage arrangement, which, at the period of our visit, was in a very insanitary condition on account of the lack of water and in consequence of the prolonged drought.

---

[1] The article of Dr. Knight, including the resolution, will be published in full in the Journal.

[1] Report of Sanitary Board. Hong Kong Daily Press, May 11, 1894.

> The people stated that at first many dead rats were found about the houses, but that after a few days these animals entirely disappeared.
>
> "On the 17th of April we had again an opportunity of examining some cases in a Chinese hospital situated inside the North Gate of the city. The cases were all of a milder character than those we had seen the previous week. The native doctor in charge informed us that whereas the patients he treated at the outset of the epidemic died at the rate of about 80 per cent., the mortality had declined to about 25 per cent., and he seemed to be of the opinion that the disease was declining. Since then the disease has extended to other parts of the city, and also to Honam. We have had no opportunity of examining cases recently, but from what we can gather it appears to have in no way diminished either in frequency or severity. It is impossible to obtain reliable statistics as to the mortality, and we therefore refrain from expressing our opinion on this point."

The unspeakable filth of the poorer quarters of the Chinese cities had been much increased by the long drouth. For nearly seven months there had been no rain to speak of, but only a few light showers. The long time without serious epidemic had made the supervision of sanitary conditions lax, and the uncleanliness of the poorer quarters polluted the air for considerable distances. A general cleaning out was at once ordered at Hong Kong, but the water-supply was too scanty to allow of thorough cleansing.

Some idea of what a cleaning up in a Chinese city means may be had from the Report of the Sanitary Board concerning the first general cleaning out some years ago. This report says, that during the eight days on which special facilities were offered for the work, no less than 2,400 tons of rubbish were removed in excess of the normal quantity, which was stated to be 100 tons a day. Of late years there has been no such accumulation; but the drainage is still notoriously defective, and the amount of surface and concealed filth is sufficiently large.

The cleaning and disinfecting at Hong Kong was begun too late, however, for the plague had already appeared, and some twenty cases were at that time in the Tung Wah Hospital. The early deaths were reported as due to fever; and it was only when several had occurred in quick succession that the true nature of the disease at Hong Kong was realized. At first, it was hoped to keep the disease down; but the upturning of dirt appeared to favor its spread, until even the better portions of the city and the foreign inhabitants were attacked. The mortality in Canton at first was 80 per cent., falling for a while to 30 per cent., but soon rising to 55 or 60 per cent., where it remained until the end of May.

Under ordinary conditions the disease is reported by Dr. Lowsan, of Hong Kong, not to be contagious, "but if healthy persons remain too long in the same atmosphere there is great probability of their catching the disease. The attendants at the Canton Hospital take care to smell of a bag of sandal-wood and aromatics during their work, and say that none of them have taken the disease. The disease appears to me more of a chemical origin than a bacteriological."

The disease had gathered such headway that it is hardly possibly to expect the recent much longed-for rains to do much in the way of checking the scourge. Its course and developments unavoidably suggest a similarity to anthrax.

The terrible mortality rate, over 80 per cent., and the frightful rapidity of the disease, death ensuing often in twelve hours, should teach the lesson that cleanliness and sanitation should be the constant and precautionary care of a people, and not the last resort of a plague-stricken city.

MEDICAL NOTES.

The Plague in China. — A terrible epidemic of the plague is now raging in China for the first time in eleven years. The disease is reported by medical observers to be very similar, if not identical with, the Great Plague of London in 1665. The disease appeared first in Canton the 1st of April, and spread with frightful rapidity among the poorer classes until the deaths had numbered many thousands. Some statements put the mortality at 60,000. About the 8th of June the disease appeared in Hong Kong, where it is now epidemic. At first only the natives were attacked, the mortality being about ninety per cent., but finally the European inhabitants have become victims to the disease, and several deaths have been reported. The daily death-rate in Hong Kong is nearly one hundred. In Canton the spread of the disease continues, but the mortality is lessening.

The Cholera. — With the return of warm weather the cholera has made its reappearance at various centres in Europe. The epidemic which began in April at Lisbon has somewhat abated, and is now officially reported once more not to be cholera. Cases have occurred at various places in Spain, but none are officially admitted, so that early quarantine is much neglected. In France cases have occurred in Finistere since the middle of April and number about four cases a day. In Russia the disease is very widely scattered, and has broken out in many of the provinces. Appearing first in the Polish districts and along the East Prussian border, the disease has attained its greatest severity in the districts of Plozk, Radom and Petrokoff, where the number of cases has already reached several hundred. During the last week there have been reported nearly a hundred cases with twenty-five deaths from Ciecnanowiece, a town thirty miles from the German frontier. In Warsaw there have been about ten new cases with six deaths each day since the first of May. The disease has appeared at Mislowitz and Stettin and throughout the Vistula district. Many towns in Galicia have been affected, especially Sicierzynce and Skala. Turkey, as might be expected, has many centres of infection, none officially recognized. Although the epidemic at Constantinople has been severe, it is now stated to have ceased in that city, and the quarantine has been abolished. Several of the Black Sea ports are now infected.

Small-Pox Quarantine against Stapleton, S. I. — Dr. Doty, of the New York Board of Health, has recommended that a quarantine be established against Stapleton, S. I., for the reason that small-pox is epidemic there, that it is not properly dealt with by the local authorities, and that the conditions in the village constitute a menace to New York City. He urges the Board to act promptly by asking the intervention of the State Board to the end that Stapleton may be cut off from communication with New York.

Unseemly Jesting. — The *Medical Record* makes the following comment on the recent cartoon in *Life* called the "Vivisectionist": "The esteemed contemporary, *Punch*, does not always seem funny at this distance from its proper atmosphere, but it is always good-natured and generally just. Its New York imitator, *Life*, is sometimes neither one nor the other, but simply scurrilous. Its recent cartoon on the 'Vivisectionist' was a loathsome and cowardly performance, utterly false in its representation, mean in its insinuations and low in its intent." As descriptive of the picture, the *Record's* remarks are gentle and its language mild.

The Regulation on the Use of Open Street-Cars. — The New York City Board of Health has passed an amendment to the sanitary code, prohibiting the use of open street-cars except from June 1st to October 1st, and directing that during the daytime every fourth car on each line shall be a closed car, and during the night every third car.

Honorary Degrees. — At the annual commencement of Princeton College the degree of LL.D. was conferred upon Dr. Alfred A. Woodhull of the Army Medical Corps, and that of A.M. *honoris causa* on Dr. Austin Flint, Jr., of New York. Dr. Landon C. Gray, of New York, was given an honorary A.M. by Columbia College at commencement, June 13th.

Dr. Billings's Appointment Confirmed. — The Senate of the United States, on June 16th, confirmed the appointment of Dr. John S. Billings to be Lieutenant-Colonel and Deputy Surgeon-General of the United States Army.

A New Professorship for Northwestern University.— Dr. William Deering, of Chicago, has given to Northwestern Medical School the sum of $50,000, to found a professorship to bear the name of Dr. N. S. Davis, who has been a life-long friend of the donor.

Recent Appointments at Jefferson Medical College. — At a recent meeting of the Board of Trustees of Jefferson Medical College, Dr. W. Joseph Hearn was elected Clinical Professor of Surgery; Dr. Edward P. Davis, Clinical Professor of Obstetrics; and Dr. S. MacCuen Smith, Clinical Professor of Otology.

The American Association for the Advancement of Science. — The Forty-third Meeting of the American Association for the Advancement of Science will be held in Brooklyn, N. Y., from August 15 to 24, 1894, under the presidency of Dr. Daniel G. Brinton.

Dr. Lanphear's Removal to St. Louis. — Dr. Emory Lanphear has resigned the chair of Operative and Clinical Surgery in the Kansas City Medical College to become Professor of Surgery in the St. Louis College of Physicians and Surgeons.

A New Departure in Medical Literature. — The first number of *Teratologia*, a new medical quarterly, has just been issued in Edinburgh, under the editorship of Dr. J. W. Ballantyne. Its pages will be devoted exclusively to the subject of antenatal pathology.

Professor Czerny and the Professorship of Surgery at Vienna. — Professor Czerny is reported to have refused to be made Professor of Surgery at Vienna because of the inadequacy of the laboratory equipment of the hospital.

"Birthday" Knighthood for Physicians. — In the distribution of honors on her seventy-fifth birthday, Queen Victoria conferred knighthood upon Dr. J. C. Bucknill, F.R.C.P., F.R.S., Mr. F. S. Haden, F.R.C.S., and Dr. T. Grainger Stewart, F.R.C.P., Edin., Professor of Physics in the University of Edinburgh. Of these and several others, Dr. Stewart's is said to be the only one purely medical in origin.

Magistracy, Medicine and Malingering. — The special usefulness of a medical magistrate is reported from England. A workhouse inmate was arraigned before a medical J .P., charged with refusing to work, to which he pleaded that he was a victim of heart disease, whereupon the magistrate promptly descended from the bench, produced a stethoscope, auscultated the culprit, and re-ascending the throne of justice, sent him "up" for seven days for malingering.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, June 20, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 43, scarlet fever 59, measles 12, typhoid fever 9.

Harvard Medical Alumni Association Dinner. — The fourth annual dinner of the Harvard Medical Alumni Association will be held at the Hotel Vendome on Tuesday, June 26th, at one P. M. The guests will be Dr. W. M. Polk, of New York, Dr. W. W. Keen, of Philadelphia, Dr. William Osler, of Baltimore, and Deputy Surgeon-General John S. Billings, of Washington.

College of Physicians and Surgeons. — The commencement exercises of the College of Physicians and Surgeons of Boston were held in the Y. M. C. A. Hall on Wednesday afternoon, June 20th.

A Laboratory Course in Bacteriology at the Yale Medical School. — A six-weeks' course in bacteriology is to be given at the Yale Medical School commencing June 20th.

The Maine Medical Association. — The Maine Medical Association held its annual meeting at Portland, last week.

NEW YORK.

Mortality. — The recent hot weather has had the effect of augmenting to some extent the weekly mortality of the city. During the week ending June 16th there were reported 841 deaths, which represents an annual death-rate of 22.45 per thousand of the estimated population; an increase of nearly three per cent. over the previous week. The principal increase was in diarrhœal diseases, and there were also three deaths by sunstroke.

Columbia College Commencement. — On June 13th the annual commencement of Columbia College was held at Carnegie Music Hall, and the degree of M.D. was conferred upon 120 graduates of the Medical Department, the College of Physicians and Surgeons. The Hippocratic oath was administered to the class by Dr. James W. McLane, the President of the latter. The alumni fellowship in anatomy was awarded to Dr. F. J. Brockway, in physiology to Dr. R. J. Cunningham, and in pathology to Dr. W. S. Stone; and Dr. Ira T. Van Giesen received the Alonzo Clark scholarship. The degree of A.M. was conferred upon Dr. Landon Carter Gray.

Sterilized Milk for the Poor. — Mr. Nathan Strauss has been enlarging the field of his depots for the supply of sterilized milk and other food for infants and young children at the lowest possible prices by issuing blanks, (which have been distributed to the police stations and dispensaries) which, when signed by any reputable physician, will enable parents, too poor to pay at all, to secure these supplies free of charge. In addition, he has secured permission from the Park Commissioners to have pure milk sold at the low rate of one cent a glass in the various parks of the city.

Death of a Physician from Drugs and Septicæmia. — A physician, Dr. Frank W. Carmon, thirty-five years of age, recently fell a victim to his inordinate craze for drugs. It is stated that he had long been a great sufferer from rheumatism, and in order to relieve the pain used morphia freely, and became addicted to the opium habit. After a time he also took larger quantities of chloral, paralydehyde and other hypnotics, and a few days before he died, he is said to have swallowed about an ounce and a quarter of paralydehyde at a single dose. Yet the next day he had sufficiently recovered from its effect to go out. It was at first supposed that he had died of morphia poisoning, but the coroner's investigation showed that death was in reality due to septicæmia resulting from the excessive use of the hypodermic syringe. Both the arms, from the shoulders to the wrists, were in a state of violent inflammation. Dr. E. R. Squibb, of Brooklyn, mentions a case reported by Dr. T. Mackenzie, of Douglas, Isle of Man, in which a patient recovered, after thirty-four hours of sleep, from a dose of three and a half ounces of paralydehyde.

Miscellany.

THE INFLUENCE OF ODORS ON THE VOICE.

The subject of smells seems at present to be most passionately studied by French writers. We have recently been shown the psychological influence of smells on character and morals, as evidenced by M. Zola; and now another writer, M. Joal, has published a volume upon "Odors and their Influence on the Voice." That various odors may affect the voice is well known among singers, who consider the violet to be especially detrimental to a clear voice. A story is told of an envious soprano who sent her unsuspecting rival a large corsage bouquet of violets, and thereby caused her failure in a brilliant part. Now M. Joal rejects the idea that the odor of violets prevents a free vibration of vocal cords, which are unaffected by roses. "It is not a property of any particular perfume, but is wholly a question of individual susceptibility. One person may be unaffected by flowers, musk, civet or various toilet perfumes, but becomes at once hoarse and oppressed on perceiving the odors of oils or fats.

"It is difficult to offer any explanation of these vagaries which we must be content to call olfactory idiosyncrasies. There is no doubt, however, that odors may cause vocal disturbances, especially in persons of nervous temperament."

◆

ST. LOUIS AND ITS MEDICAL SCHOOL.[1]

Professor W. S. Chaplin, Chancellor of Washington University, St. Louis, in a recent address, gave the following explanation of the present condition of medical education in St. Louis:

"Don't think for a minute that these many medical schools in the West have been established for purely pecuniary reasons. The doctors do not make enough out of them certainly to pay for the work which they put into them. They might make more money, probably, by sawing wood the same amount of time. They do it in order to establish themselves as specialists. They have no other reason. Is this not a case where you have put on too much restriction in one direction? And that has produced an abnormal growth in another direction. If you look into the history of these medical schools, you find that there was a time when there was but one medical school. Some fifty years back, in St. Louis, I believe, there was just one. Then, by a process which the naturalists understand perfectly, by the growth of a kind of septum across the medical school, suddenly there were two medical schools, equipped fully, and those two medical schools were running in the most violent opposition. Here, in the East, I understand the medical profession have none of these differences and troubles, but in the West every medical school means a new set of mutual admirers. The professor of ophthalmology sends all his cases of surgery to the surgeon who is connected with his medical school. Go into St. Louis to-day, and you find just eleven sets of men who generally recommend and send all their patients to the men connected with their own schools. I do not despair of medical education in the West. I hope there will be constant and rapid deaths among the medical schools. The condition is certainly a disgusting one when viewed from the point of education."

---

[1] Medical Record, June 9th.

Correspondence.

[Special Correspondence.]

LETTER FROM SAN FRANCISCO.

ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

San Francisco, June 11, 1894.

Mr. Editor: — The American Medical Association has had its meeting and adjourned, or as the daily papers here express it, "The Medicos have gone and Odd Fellows' Hall no longer shivers with the echoes of comminuted fractures and the creaking of tubercular joints."

The regular reports of the meeting you have already had. While living quietly on milk and seltzer and thinking of the gastronomic glories of the recent past, it occurred to me that your readers might enjoy a bit of gossip about the social side of the convention. It was extremely social! The hospitality was generous and constant, and even when making allowance for Californian fondness for florid expression, the newspaper accounts were but just.

The first "feast and frolic" was a banquet tendered the American Medical Editors Association by Mr. R. E. Queen, on Monday evening, before the Congress met. Nearly two hundred guests were present. Dr. I. N. Love acted as toast-master, while Dr. Hughes made his usual speech to his "fellow cranks." The papers reported that "it was long after midnight when the last 'cat died,' and although the electric lights were out for a few minutes, neither the brilliancy of the wit nor the sparkle of conversation was dimmed for one moment."

The same evening a reception was held by the Committee of Arrangements in the Rotunda of the Palace Hotel.

On Tuesday evening occurred the great reception of the San Francisco County Medical Society. I quote: "Over five hundred ladies and gentlemen, nearly all of whom appeared in full evening dress, were present. The ladies, without exception, appeared in elegant toilets, lending to the scene charming grace and vivacity. The greater number were visitors from the East, and all expressed themselves in the highest terms of praise at the magnificent reception tendered them. Refreshments were served at ten o'clock. Liquid refreshments were served at the buffet in the vestibule throughout the entire evening."

On Wednesday evening Dr. W. F. McNutt entertained the Association with great hospitality. About six hundred persons were present. "Many, after paying their respects to the host and hostess and strolling around engaging in social converse, departed, but the majority remained and partook of the generous hospitality extended to the fullest extent. The toilets of the ladies present were elegant in every respect, and were only rivalled by the beauty and vivacity of the wearers of them."

The same evening a large reception was given by Dr. L. C. Lane at the new hospital of the Cooper Medical College; and it is probable that those who left Dr. McNutt's before supper were more eager to taste the bounties offered them at the College.

The ladies were given afternoon lunches and entertainments by Mrs. McLean and Mrs. Lane, and by Mr. Sutro at Sutro Heights, where they had an opportunity to see the "most sublime view in the world."

Many of the sections had dinners of their own; and the Obstetrical Section was banqueted by the Gynæcological Society of San Francisco. Besides those already mentioned there were several private dinners. The meeting of the Medical Temperance Association, which was held on Thursday, was not largely attended.

The numerous boat-rides and excursions, the visits to the Mid-Winter Fair, and other attractions of the neighborhood — though tempting to the casual visitor — I did not attend. What little time was left from the sessions and the dinners was required for rest and gastric repose. Certainly the thousand guests of this Golden City of the West have reason to remember a most generous hospitality and welcome.

Yours truly, S. F.

A QUALIFIED SIGNATURE TO THE REGISTRATION LAW.

Boston, June 18, 1894.

Mr. Editor: — For any members of the State Society who do not wish to ignore their "license to practise," given to members by the act of incorporation, perhaps, as the present law reads, the best phrase, over their signature of registration, would be this, *reserving the claim of a right to practise, irrespective of registration.* Thus, it would seem, no one need have any objection to registering.

Yours very truly, J. L. W.

◆

THE MEDICAL REGISTRATION LAW.

Boston, June 14, 1894.

Mr. Editor: — A law, as now enacted by the General Court, which calls upon medical graduates of Harvard University, and others already legally licensed, and upon members of a medical society authorized to license, whose charter has not yet been repealed (if indeed it can be without its own consent), while it expressly excepts certain noted quacks and persons who practise[1] "cosmopathic or *any other method of healing*" — such a law, some of us, young and old, are inclined to think a little *too utter* for an intelligent community. A clause above is italicized because it would seem to let in the whole crowd, — regulars, irregulars, one and all.

I suppose any one classed as a healer of any other method, may be entitled to subscribe himself,

Yours to register as, H. O. A. O. M. O. H.

---

[1] Thanks to Dr. Gay for his authoritative adoption of "practiser," the simple and correct form — "practitioner" being "an unlovely intruder." See "Words and Their Uses," by Richard Grant White, page 216.

RECORD OF MORTALITY

For the Week ending Saturday, June 9, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Scarlet fever.
New York . .	1,891,306	696	279	19.04	12.60	3.25	9.38	2.38
Chicago . . .	1,438,000	—	—	—	—	—	—	—
Philadelphia .	1,115,562	—	—	—	—	—	—	—
Brooklyn . .	978,394	362	145	19.04	14.00	.56	9.24	.56
St. Louis . . .	560,000	—	—	—	—	—	—	—
Boston . . .	501,107	179	44	13.44	11.70	1.12	7.84	2.24
Baltimore . .	500,000	—	—	—	—	—	—	—
Washington .	308,431	115	63	29.58	6.96	23.49	.87	
Cincinnati . .	305,000	93	24	9.72	9.72	1.08	2.16	1.08
Cleveland . .	290,000	110	63	17.29	9.30	1.82	1.82	2.73
Pittsburg . .	263,709	—	—	—	—	—	—	—
Milwaukee . .	250,000	—	—	—	—	—	—	—
Nashville . .	87,754	37	10	10.80	16.20	2.70	—	2.70
Charleston . .	65,165	39	13	17.92	2.56	17.92	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	100,412	26	8	7.70	24.80	—	3.85	—
Fall River . .	92,236	29	14	13.80	10.35	6.90	3.45	—
Lowell . . .	90,608	21	7	14.28	9.52	—	4.76	—
Cambridge . .	79,611	20	9	30.00	15.00	5.00	5.00	20.00
Lynn	65,124	14	—	—	—	—	—	—
Springfield . .	50,285	15	4	6.66	20.00	6.66		—
Lawrence . .	49,902	11	0	36.36	—	18.18	—	—
New Bedford .	47,744	22	8	4.55	9.10	—	—	—
Holyoke . . .	43,348	—	—	—	—	—	—	—
Brockton . .	33,939	5	2	20.00	20.00	—	20.00	—
Salem	33,155	11	2	—	9.09	—	—	—
Haverhill . .	32,925	10	1	—	—	—	—	—
Malden . . .	30,209	8	2	12.50	12.50	—	12.50	—
Chelsea . . .	29,806			—	—	—	—	—
Fitchburg . .	29,383	10	4	—	10.00	—	—	—
Newton . . .	28,837	5	2	—	20.00	—	—	—
Gloucester . .	27,293	—	—	—	—	—	—	—
Taunton . . .	26,951	10	8	—	—	—	—	—
Waltham . .	22,058	8	3	—	—	—	—	—
Quincy . . .	19,642	—	—	—	—	—	—	—
Pittsfield . .	18,802	—	—	—	—	—	—	—
Everett . . .	16,585	4	1	—	—	—	—	—
Northampton .	16,331	3	1	—	33.33	—	—	—
Newburyport .	14,073	7	0	—	14.28	—	—	—
Amesbury . .	10,920	0	0	—	—	—	—	—

Deaths reported 1,899, under five years of age 716, principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 327, acute lung diseases 245, consumption 229, diphtheria and croup 126, diarrhœal diseases 73, scarlet fever 33, measles 23, whooping-cough 23, erysipelas 13, typhoid fever 13, small-pox 10, cerebro-spinal meningitis 8.

From measles Brooklyn 10, Cleveland 7, New York 6. From whooping-cough Brooklyn 7, New York 5, Washington, Cincinnati and Cleveland 3 each, Boston 2. From typhoid fever Brooklyn, Washington, Cincinnati and Nashville 2 each, New York, Cleveland, Lowell, Somerville and New Bedford 1 each. From small-pox New York 7, Brooklyn 2. From cerebro-spinal meningitis New York and Lawrence 2 each, Washington, Worcester, Lowell and Lynn 1 each. From malarial fever Brooklyn 7, New York 3, North Adams 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending June 2d, the death-rate was 17.0. Deaths reported 3,403: acute diseases of the respiratory organs (London) 222, measles 240, whooping-cough 112, diphtheria 53, scarlet fever 40, diarrhœa 35, fever 26, small-pox (London 4, West Ham and Birmingham 3 each, Liverpool and Bradford 1 each) 12.

The death-rates ranged from 13.6 in Bristol to 30.0 in Wolverhampton; Birmingham 17.2, Bradford 16.8, Cardiff 18.9, Gateshead 17.3, Hull 14.0, Leeds 17.4, Leicester 13.8, Liverpool 20.0, London 16.4, Manchester 19.6, Newcastle-on-Tyne 16.8, Norwich 18.8, Nottingham 19.4, Portsmouth 14.6, Preston 13.6, Sheffield 16.3, Sunderland 20.3.

METEOROLOGICAL RECORD,

For the week ending June 9th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S.. 3	29.68	62	70	55	72	53	62	S.W.	W.	9	10	C.	C.	0.14
M.. 4	29.66	70	82	57	63	36	50	S.W.	W.	14	12	F.	C.	
T.. 5	29.82	57	60	54	52	67	60	E.	S.E.	6	5	O.	C.	
W. 6	29.91	56	65	47	59	65	62	N.W.	S.W.	14	11	O.	O.	
T.. 7	29.78	56	60	51	74	55	64	N.	W.	10	12	O.	C.	.11
F.. 8	30.02	60	73	48	44	44	44	W.	W.	9	8	C.	O.	
S.. 9	30.07	68	82	55	50	39	44	W.	N.W.	13	4	C.	O.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 9, 1894, TO JUNE 15, 1894.

First-Lieut. Deane C. Howard, assistant surgeon, is relieved from duty at Fort Buford, North Dakota, and will report in person to the commanding officer, Fort Snelling, Minnesota, for duty at that station.

The following named officers, having been found by Army retiring boards incapacitated for active service on account of disability incident to the service, are, by direction of the President, retired from active service: **Lieut.-Col. Samuel M. Horton**, deputy surgeon-general; **Captain Marcus E. Taylor**, assistant surgeon; **Captain William G. Spencer**, assistant surgeon.

PROMOTIONS.

First-Lieuts. Philip G. Wales and **Benjamin L. Ten Eyck**, assistant surgeons, to be assistant surgeons with the rank of Captain, June 7, 1894, after five years' service, in conformity with the act of June 23, 1874.

APPOINTMENTS.

Drs. J. G. Mumford, W. A. Brooks and **C. A. Porter** have been appointed surgeons to out-patients at the Massachusetts General Hospital.

RECENT DEATHS.

James Edwin Walker, M.D., M.M.S.S., died in Brookline, Mass., June 15, 1894, aged sixty-two years.

Dr. Middleton Michel, of Charleston, S. C., died in that city, June 4th, aged seventy-two years. He was a graduate of the Medical College of South Carolina and at one time Associate Editor of the *Charleston Medical Journal*.

Elija S. Elder, M.D., President-elect of the Indiana State Medical Society, died in Indianapolis, May 19th, aged fifty-three years. He was a graduate of the Medical College of Ohio and of Bellevue Hospital Medical College. In 1890 he was chosen Dean of the Medical College of Indiana.

August Kundt, Director of the Physical Institute of the University of Berlin and the successor of Von Helmholtz, died recently, aged fifty-five years.

Dr. William Frost Cunningham, formerly of Charlestown, died in Leamington, England, June 5th, aged thirty-five years. He was a graduate of the Harvard Medical School, class of 1881.

Dr. Sperk, the Director of the Imperial Institute of Experimental Medicine in St. Petersburg and a syphilologist and dermatologist of high repute, died recently. For twenty-one years he was chief physician to the Kalinkin Hospital in St. Petersburg. His best known works are those on "Prostitution and Prostitutes."

BOOKS AND PAMPHLETS RECEIVED.

A Contribution to the Study of the Physiological Actions of Sparteine. By David Cerna, M.D., Ph.D. Reprint. 1894.

Myxœdema, Acquired and Congenital, and the Use of the Thyroid Extract. By George W. Crary, M.D., of New York. Reprint. 1894.

Brain Surgery, with Report of Nine Cases. Surgical Clinic, given at Wesley Hospital, March 31, 1894. By F. C. Schaefer, M.D. Reprints. 1893–94.

De l'Hydronéphrose Intermittente. Par le Docteur Lucas-Championnière, Chirurgien de l'hôpital Saint-Louis. Paris: Coccoz, Libraire-Editeur. 1892.

A Case of Primary Tuberculosis of the Laminæ and Spinous Processes of the Vertebral Column. By John B. Roberts, M.D., of Philadelphia. Reprint. 1894.

Tumor of the Brain Simulating a Vascular Lesion; to which is added an Account of the Autopsy, with Remarks. By J. T. Eskridge, M.D., of Denver, Col. Reprint. 1894.

Recent Studies in Naupathia, or Seasickness, Symptomatology, Diagnosis, Pathogenesis and Treatment by a New and Efficacious Method. By Winslow Warner Skinner, M.D. (Par.) Reprint. 1894.

Sur la Cure Radigale des Hernies. Série Nouvelle de 116 Cas, Complétant un Total de 391 Cas, Mémoire présenté à l'Association pour l'avancement des Sciences à Besançon. Par le Dr. Just Lucas-Championnière. Paris: Coccoz, Libraire-Editeur. Reprint. 1894.

Zur Lehre von der Entwickelung des Beckens und Seiner Geschlechtlichen Differenzirung. Inaugural-Dissertation zur Erlangung der Doctorwürde einer Hohen Medicinischen Facultät der Universität Bern. Vorgelegt von Moses Konikow, Aus Zarizin (Russland). Reprint. 1893.

Surgical Shock. Procidentia Uteri. Profuse Menstruation. The Perfect Needle-Holder. A New Uterine Curetting Forceps. Acute Puerperal Cellulitis and True Pelvic Abscess. A New Method of Examining the Kidney, Especially for Stone. By Charles P. Noble, M.D., Philadelphia. Reprints. 1894.

Practical Lectures on Dermatology, Comprising a Course of Fifteen Lectures delivered at the University of Vermont Medical Department, during the session of 1892–93. By Condict W. Cutler, M.S., M.D., Professor of Dermatology, University of Vermont Medical Department, etc. New York: G. P. Putnams' Sons. 1894.

Rotura de la Uretra por Estrechez; Absceso Urinario y Gangrena del Escroto; Pérdida de Cinco Centímetros de Uretra; Uretrotomía Interna, por la Electrolisis — Curación. Por el Dr. Ramón Martin Fil, Médico-director del Hospital Noble de Málaga. Barcelona: Establecimiento Tipográfico de Amat y Martínez. Reprint. 1894.

Further Remarks on the Occurrence of a Form of Non-Albuminous Nephritis other than Typical Fibroid Kidney. A Serious Fallacy Attending the Employment of Certain Delicate Tests for the Detection of Serum-Albumin in the Urine, Especially the Trichloracetic Acid Test. By D. D. Stewart, M.D., Philadelphia. Reprints. 1894.

Pathological Notes on Two Pedunculated Tumors. Three Specimens of Tumors of the Heart: Metastatic Carcinomatous Nodule in the Myocardium; Implantation Sarcoma of the Right Ventricle; Primary Round-Celled Sarcoma of the Epicardium. A Specimen of Four Healed, Ascending, Ileal Invaginations, Symmetrical and Equidistant. By Ludvig Hektoen, M.D., of Chicago. Reprints. 1893.

The Relation of the Patellar Tendon-Reflex to some of the Ocular Reflexes found in General Paralysis of the Insane. A Series of Wools for the Ready Detection of "Color Blindness." Clinical History of a Case of Spindle-Celled Sarcoma of the Choroid, with a Study of the Microscopic Condition of the Growth. By Charles A. Oliver, M.D., of Philadelphia, Pa. Reprints. 1893.

Address.

THE LEGISLATIVE CONTROL OF MEDICAL PRACTICE.[1]

BY REGINALD H. FITZ, M.D., BOSTON.

(Continued from No. 25, p. 613.)

Thus, at the present time, there are laws intended to regulate the practice of medicine to a greater or less extent in all the States of the Union, except in Massachusetts and New Hampshire.

The requirements of these laws vary within very wide limits. Rhode Island merely demands that the name and residence shall be recorded in the town clerk's office. In Maine and Wisconsin the physician cannot recover compensation unless he has a medical degree from a public medical institution in the United States, or a license from the State Medical Association, or, in Maine, a certificate of good moral character from the town authorities. The simple registration of the diploma or license suffices in Arizona, the District of Columbia, Georgia, Idaho, Indiana, Kentucky, Louisiana, Michigan, Nebraska, Nevada, South Carolina, South Dakota, and Wyoming. The possession of a diploma or a certificate of qualification from a State or County Medical Society is sufficient in Kansas and Ohio.

The diploma must be verified by boards of examiners in California, Colorado, Connecticut, Delaware, Iowa, Montana, New Mexico, Oregon, South Carolina, Tennessee, Vermont; by boards of health in Illinois, Kentucky, Louisiana, Missouri, Nebraska, Oklahoma, South Dakota, West Virginia. They are only approved when representing certain periods of study in Maryland, Minnesota, Montana, Nebraska, New York, New Jersey and North Dakota.

Candidates who have no diploma are required to pass an examination in Alabama, Arkansas, Colorado, Connecticut, Delaware, Missouri, Montana, New Mexico, North Carolina, Oklahoma, Illinois, Iowa, Oregon, Tennessee, Texas, Utah, Vermont, Virginia, West Virginia.

Examinations are the sole qualification for license in Florida, Maryland, Minnesota, Mississippi, New Jersey, New York, North Carolina (except for graduates prior to 1880), North Dakota, Pennsylvania, Utah, Virginia and Washington.

The effect of these laws also is extremely various. In Arkansas, California, Florida, Georgia, Ohio, South Carolina and Texas the laws are said to be either unworthy of the name, contain glaring defects, are of low standard, unsatisfactory or practically inoperative. Even in North Carolina the law is defied with impunity. On the contrary in Alabama, Minnesota and Virginia, the laws are almost ideally perfect. In New York the promise has been more than fulfilled. More and more support is being given to the law in West Virginia, while in Illinois, Indiana, Iowa, Kentucky and Missouri the laws are efficient, salutary, working well, or meeting with general favor. In New York the number of physicians entering practice has been diminished, and the quality has been improved. Of 327 candidates in 1892, 267 fulfilled the requirements, of whom 244 were regulars, 17 homœopathists and six eclectics. In Indiana 559 practitioners left the State; in Kentucky 400 or 500, and 250 in Minnesota, during the year 1885.

A conspicuous effect of these laws has been seen in the improvement of the standard of medical education. To them, more than to any one cause, is due the difference which exists between the condition now and in 1870. In Alabama, Colorado, Connecticut, Illinois, Nebraska, Oregon, South Dakota and Washington, at least three full courses of five to six months each, no two in the same year, are demanded. The State of Oregon, after 1898, will require four courses of six months each from physicians who wish to practise in that State. There is not only a prolongation of the period of study as the effect of these laws, but there is also an increased demand for a preliminary education, the establishment of new professorships, and more exacting examinations for the degree. Of all agents distinctly bringing about this change, the Illinois State Board of Health, and especially its secretary, the late Dr. John H. Rauch, deserve the highest consideration.

Let us now consider the recent efforts in Massachusetts. In the address, previously referred to (p. 611), it is stated that all laws relating to the licensing of physicians by the State of Massachusetts were stricken from the statutes in 1859. The influence of the homœopathists in bringing about this result was obvious, but a number of them still retained their membership in our Society. They were inoffensive, but the feeling against homœopathy was so strong in the minds of certain members that, in 1870, a protest was made by some of the latter against the admission to the American Medical Association, then meeting in Washington, of delegates from the Massachusetts Medical Society. The Association voted, in effect, "that the Massachusetts Medical Society voluntarily and improperly furnishes shelter and gives countenance to irregular practitioners to such an extent as to render it unworthy of representation in the General Assembly of American Physicians."[43]

At the annual meeting of our Society, May 24, 1870, the following vote, "amid much confusion," was passed:

> "*Resolved*, That the Massachusetts Medical Society hereby expels from fellowship all those who publicly profess to practise in accordance with any exclusive dogma, whether calling themselves homœopaths, hydropaths, eclectics, or what not, in violation of the code of ethics of the American Medical Association."[44]

This vote, however, had no legal force, since no member could be expelled except after a trial in conformity with the by-laws. But Dr. Cotting, at the Councillor's meeting, June 6th, 1871, offered the following preamble and resolutions, which were adopted by the Council, and on the following day by the Society:

> "*Whereas*, The Massachusetts Medical Society has always endeavored to make, as its charter emphatically enjoins, 'a just discrimination between such as are duly educated and properly qualified for the duties of their profession and those who may ignorantly and wickedly administer medicine,' while at the same time it has ever acted in accordance with the 'liberal principles' of its foundation, and shows itself ready to examine and to adopt every suggestion, from whatever source, promising improvement in the knowledge and treatment of disease;

---

[1] The Annual Discourse before the Massachusetts Medical Society delivered June 13, 1891.

[43] Proc. Mass. Med. Soc., 1871, 204.

[44] Loc. cit., 1870, 149.

"*And, whereas,* It is alleged that some of its Fellows, in opposition to the spirit and intent of its organization, consort, in other societies or elsewhere, with those whose acts tend 'to disorganize or to destroy' the Society;

"*Therefore, resolved,* That if any Fellow of the Massachusetts Medical Society shall be or shall become a member of any society which adopts as its principle in the treatment of disease any exclusive theory or dogma (as, for example, those specified in Art. I. of the By-laws of this Society), or himself shall practise, or profess to practise, or shall aid or abet any person or persons practising, or professing to practise according to any such theory or dogma, he shall be declared to have violated the By-laws of the Massachusetts Medical Society by 'conduct unbecoming and unworthy an honorable physician and member of this Society.' By-laws, VII., § 5.

"*Resolved,* In case the Society concur with the Councillors in the foregoing resolution, that the President of the Society shall appoint a committee of five Fellows (to hold office one year and until others are appointed) to bring before a Board of Trial any Fellow who, three months from this date or after, shall be found chargeable with the offence set forth in the foregoing resolution.

"*Resolved,* That, after concurrence by the Society, the foregoing preamble and resolutions shall be printed, and a copy sent to every Fellow of the Massachusetts Medical Society.

"*Resolved,* That a committee of three be appointed by the chair to report the action of the Councillors on the foregoing preamble and resolutions to the Society, to-morrow, for concurrence."[45]

A board of trial was appointed; it reported in 1873, 1875 and in 1877, in each of which years a certain number of the homœopathic members were expelled until all were thus disposed of.

In the meantime, as already stated, successful efforts were being made to secure the legislative control of medical practice in various States. Their success depended upon the recognition of the principle that no attempt should be made to interfere with the chartered rights of existing medical societies. The action of our Society towards its homœopathic members was based on the view that their "conduct was unbecoming and unworthy an honorable physician." It, therefore, could not, then, consistently unite with the homœopathic society in favoring a law which should place both on the same level.

But the need of discriminating between educated and honorable physicians and the reverse was strongly felt by individual members of the Society, and the earlier attempts at securing legislation were initiated by them.

In 1877 a bill[46] was introduced by Mr. Ewing of Hampden, and was entitled "An Act to regulate the Practice of Medicine and Surgery in the State of Massachusetts." It provided that each and every existing chartered medical society shall elect censors, with authority to examine and license practitioners of medicine, surgery and midwifery. The license was to be valid for a year only, and was to be furnished on presentation of a medical diploma or satisfactory certificate of examination from an authorized board. The certificate of license was to be recorded by the county clerk, and might be revoked for cause. The penalty of practising without a certificate was from $50.00 to $100.00 for the first offence, from $100.00 to $400.00 for any subsequent offence, and fees for services rendered could not be collected by law.

This bill was intended to prevent the practice of medicine by uneducated persons, without, however, establishing any common or definite standard, and required merely the verification of certificates. It was referred to the Committee on the Judiciary, who reported against the bill,[47] and it was rejected. A month later another bill, relating to medicine and pharmacy, was presented, and was referred to the next General Court.[48]

In the following year the same bill was again brought before the Senate,[49] and was referred to the Committee on Water-Supply and Drainage. They reported, February 20, 1878, that it ought not to pass, and it was rejected. A similar bill[50] "to regulate the Practice of Medicine and Surgery in the City of Boston" was also referred to the Committee on Water-Supply and Drainage. The clause relating to the inability to collect fees by law was omitted. It was expressly stated that veterinary surgeons, exclusive practitioners of the Thomsonian or botanic system of medicine, clairvoyants or healing mediums, not assuming the title of doctor, physician, surgeon or midwife, persons practising gratuitously, and those not occupying an office or place of business for the practice or advertisement of medicine, surgery or midwifery in the city of Boston, were exempt from its provisions.

The practical effect of this bill was to limit the use of the title of doctor, physician, surgeon or midwife to persons of some degree of education, but the difference in standard might be extreme. It was less restricting than its predecessor. The committee reported leave to withdraw, but a minority recommended its passage. This bill also appears as House, No. 122, submitted in reply to a petition from the mayor of Boston, for an order relative to regulating the practice of medicine and pharmacy in the city of Boston. The same minority, as before, of the Committee on Water-Supply and Drainage, recommended its passage, but leave to withdraw was voted, March 15, 1878.

In 1880, Governor Long, in his inaugural address, stated that the necessity of protecting the community against medical impostors had been urged upon his attention, and he referred it to that of the legislature. At this time the health department of the American Social Science Association had its headquarters in Boston, and a number of the younger Fellows of the Massachusetts Medical Society were among its members. Through their initiative, a powerful effort was made in the name of the above association to secure a law to regulate medical practice. Dr. E. W. Cushing, of Boston, at a meeting of the Suffolk District Medical Society early in the year, explained[51] the steps which had been taken and the provisions of the bill. He stated that it had been prepared after consultation with eminent lawyers and representative physicians. The experience of other States had been utilized in its preparation, and the final draft met with the approval of the leaders of the homœopathic and eclectic medical societies. It was supported by eminent citizens of Massachusetts in Boston and elsewhere. It provided for the appointment, by the Governor and Council, of a board of medical registration composed of eight physicians and one dentist. The former were to be selected from the incorporated medical societies of the State in proportion to the whole number of members in each. This board was to examine, in medical subjects exclusive of therapeutics, applicants for a license to practise medicine, dentistry or midwifery. All members of the State medical societies incorporated at the time of the passage of the act were to be exempt from examination. Also all practitioners in the State, of one year's standing, having an approved diploma or license; all practitioners of good moral character and reputation having practised in the State for ten consecutive years; non-resident practitioners with an approved degree or license, and students of incorporated schools rendering gratuitous services. Licenses could be refused or revoked for cause. The penalty for practising without a license was a fine not exceeding five hundred dollars.

---

[45] Proc. Mass. Med. Soc., 1891, 201–216.

[46] Senate, No. 46.

[47] Senate, No. 119.

[48] Senate Journal, 1877, 255.

[49] Senate, No. 67.

[50] House, No. 86.

[51] Boston Medical and Surgical Journal, 1880, cii, 180.

This bill was referred to the Committee on Public Health, which held six hearings, and reported "An Act relating to Practitioners of Medicine,"[52] providing that persons offering or advertising to practise medicine, surgery or midwifery, without a reasonable degree of learning, skill and diligence therein, shall be fined not exceeding five hundred dollars. Another provision was that persons professing to heal or cure disease in whatever manner, shall not assume the title of doctor, or of doctor of medicine, without having received the degree of doctor of medicine from a reputable chartered medical institution, under penalty of a fine not exceeding five hundred dollars. There were exempt from this provision persons who had used the title for ten years in the State, and members of any medical society of the State lawfully exercising the power to examine and approve its members before admission.

The bill was rejected by a very large majority in the House. This attempt of the Social Science Association to protect the community against medical impostors was defeated, according to Dr. Granger,[53] largely because of counter-petitions and complaints that the law was intolerant and exclusive, for the benefit of the few, and an interference with the rights of the many. The opposition was determined and powerful. It comprised some of the oldest and most honored physicians, many educated and intelligent citizens, all the quacks and their friends, and was supported by many newspapers, and advocated by eminent counsel.

In 1882, Governor Long, in his veto of the bill to "regulate the practice of dentistry," stated: "It would perhaps be better worth while to consider the expediency of a general statute to the effect that any person pursuing a business or profession without sufficient skill therein shall be punished. Such a statute, in the hands of judge and jury, would never work injustice, and yet would be ample for those exceptional cases of imposition, on the strength of which vicious special statutes are urged from year to year."

This suggestion from Governor Long was in harmony with the provision of the bill of 1880. It was eminently necessary in the practice of medicine, since at that time, the ruling of Chief Justice Parsons in the case of the Commonwealth *v.* Samuel Thomson was generally held to be sound law. As has already been stated,[54] this ruling was replaced in 1884 by that of Judge Holmes. It was urged by Mr. Benton, in his argument before the Committee on Public Health in 1885, against the petition of the Massachusetts Medical Society for a law to regulate the practice of medicine, that the latter decision made further legislation unnecessary. He says:

> "The present law is clear and ample. A man or woman who assumes to practise the healing art impliedly contracts that he or she has sufficient skill and knowledge to do the thing which they assume to do, to cure the disease which they assume to treat, and no other. And if he or she does not have it, they are liable in damages for all the consequences that result from the lack of knowledge and skill. If he or she is grossly or presumptuously ignorant and negligent, and a person is thereby killed or injured, he or she is liable for manslaughter or for assault."

Even with this interpretation of the law, the security to the public is insufficient. As has already been shown, the cases of imposition are not so exceptional as assumed by Governor Long, neither is the victim nor his or her friends always conscious of it or competent to judge of the skill or knowledge of the medical adviser. None are more aware of the defenceless state of the public in these respects than physicians.

The next attempt was made in the name of our Society. In June, 1884, on motion of Dr. H. O. Marcy, it was voted[55] that a committee be appointed by the President of the Massachusetts Medical Society to secure, if possible, an act to protect the people from ignorant and incompetent practitioners of medicine. A committee of sixteen was appointed, Dr. Townsend, of Natick, being the chairman. This committee was subsequently strengthened by the addition of Drs. G. C. Shattuck, Cotting, Lyman, H. W. Williams and Hosmer, as a special committee to aid that of the Society in its petition.

A hearing was given, lasting four days, was largely attended, and excited much public interest. It was shown as probable that there was in Boston, at the time, "greater ignorance and criminality, disguised under the name of the profession, than in any other city of the Union. Even houses of ill-fame are covered under the name of a physician."[56]

The committee reported[57] June 3, 1885, "An Act to regulate the Practice of Medicine," but one member dissenting. It provided for a board of nine examiners, not more than four to belong to the same medical society or school of medicine, who were to register as qualified physicians all graduates of legally chartered medical colleges or universities having the power to confer degrees; also all practitioners of medicine of ten years' continuous practice in the State. All other applicants for registration were to be examined, and at the close of a year all applicants whatsoever were to be examined. The examination was to be elementary and practical, and to embrace the subjects of anatomy, surgery, physiology, chemistry, pathology, obstetrics and the practice of medicine, exclusive of therapeutics. Persons practising medicine or surgery without being registered were liable to a fine of not less than fifty nor more than five hundred dollars.

The bill was refused a third reading in the House by an overwhelming majority. According to the *Boston Medical and Surgical Journal,*[58] despite the origin of the movement at the annual meeting of the

---

[52] Senate, No. 198.

[53] Buffalo Med. and Surg. Journal, 1880-81, xx, 97.

[54] Page 291.

[55] Proceedings of the Massachusetts Medical Society, 1884, 18.

[56] Dunglison and Marcy, College and Clinical Record, 1885, vi, 22.

[57] House, No. 445.

[58] 1885, cxii, 203.

Society, and its advocacy, both by a general and special committee, "the sentiment of the great majority of the Society was one of entire indifference. But a small portion thought it worth while to put themselves on record at all."

Dunglison and Marcy state:[59] "It was presented during the last hours of a heated, long drawn out political contest, when time could not be given for its proper consideration, and, loaded down with amendments offered for its destruction, it failed of passage."

Four years later the attention of the legislature was again called to this subject through the labors of Dr. J. Frank Perry, at the time editor of the *Journal of Health*. The draft of the bill then presented[60] required that licenses to practise should be given by the Board of Health to medical graduates of legally chartered colleges, to members of at least one year's standing of incorporated medical societies, and to practitioners who had been in practice for ten years. All other applicants were to be examined by the censors either of the Massachusetts Medical Society, the Homœopathic Medical Society or the Eclectic Medical Society, and the Board of Health was to license the successful candidates. Violation of the law was punishable with a fine not exceeding $500.00, or imprisonment not exceeding six months. Three petitions were presented in favor of the object of this bill, and twenty-six against it.

The subject was referred to the Committee on the Judiciary, who reported, May 23, 1889, a bill[61] entitled "An Act to Regulate the Practice of Medicine and Surgery." It provided that practitioners should file an affidavit of their qualifications with the city or town clerk, who should give a certificate stating the substance of the facts set forth in the affidavit, which certificate was to be conspicuously displayed in the practitioner's office. Violation of the provisions of this act was to be punished by a fine not exceeding one thousand dollars, or imprisonment not exceeding one year, or by both fine and imprisonment.

This bill was sent up for concurrence by a vote of eighty-two to fifty-nine, and was defeated in the Senate. Dr. Perry informs me that he used every effort to defeat this bill in the Senate, since he was determined to obtain a good bill or none at all.

In 1890 the attention of the legislature was again called to the subject by Dr. George S. Wilson, of Boston, representing the Working People's Aid Society, and other workingmen's organizations. The matter was referred to the Committee on the Judiciary, who reported it inexpedient to legislate.

In the following year Dr. Wilson succeeded in obtaining a hearing before the Committee on Public Health, and presented the draft of a bill "to establish the registration of Medical Degrees." No one was to use the title of "Doctor," or of "Doctor of Medicine," or any abbreviation thereof, unless possessing a diploma from some reputable college or institution legally empowered to confer the degree. At the end of the year, after the passage of the act, no medical college was to be considered reputable which required less than three years of medical study and three annual courses of lectures of not less than twenty weeks each. The penalty was a fine of $50.00 to $200.00 for the first offence, and from $100.00 to $500.00 for each subsequent offence, or imprisonment from thirty to ninety days, or both fine and imprisonment.

The committee reported March 24, 1891, a bill[62] entitled: "An Act to regulate the Practice of Medicine by the Registration of Practitioners," the provisions of which were similar to those of the bill reported in 1889. This bill was returned to the committee, slightly amended, and again reported April 7, 1891.[63] Dr. Wilson states that, in his opinion, the bill was so unsatisfactory to the working people, that he "went to the State House and saw several influential members, who succeeded in killing the bill." It was refused a third reading in the House by a vote of eighty-six to forty-two.

In the present year, Governor Greenhalge, in his address to the legislature, makes the following request:[64]

> "I ask you also to consider the expediency of requiring that practitioners of medicine be registered in somewhat the same manner as pharmacists are now registered. In every State of the Union, except five, such a system of registration has been established, and it cannot fail to protect the public, and at the same time help to maintain a high standard among medical practitioners."

Pharmacists are registered by a board of registration appointed by the Governor and Council. The candidate is examined, receives a certificate, if qualified, and the certificate must be conspicuously displayed in his place of business. Unregistered pharmacists transacting the business of pharmacy are punished by a fine not exceeding fifty dollars.

The above section of the Governor's address, also a bill to regulate the practice of medicine and surgery by the registration of practitioners,[65] were referred to the Committee on Public Health. They reported, three members dissenting, the bill[66] "to provide for the Registration of Physicians and Surgeons." This bill was essentially the same as the House bill (No. 445) of 1885, and corresponded very closely with the act of the same year to establish a Board of Registration of Pharmacy. As a substitute for this bill, Senator Kittredge offered another,[67] which is practically the bill recommended in 1889,[68] with a smaller penalty and a clause making it a misdemeanor to append, without authority, the letters M.D. to the name of the person. The committee's bill was advocated in the Senate by Dr. Harvey, and was passed to be engrossed; Mr. Kittredge's substitute being defeated by a vote of twenty-two to six. The bill[69] as passed by the Senate differs from the committee's bill, in containing, as amendments, a clause preventing more than three members of the board being at one time members of any one chartered State medical society; also that practitioners of three years' continuous practice before the passage of the bill should be entitled to registration; also, that all applicants with the degree of M.D. from a legally chartered medical college or university having the power to confer degrees in medicine in this commonwealth shall be registered in the future without examination.

Finally, the bill was so amended as not to apply "to clairvoyants, or to persons practising hypnotism, magnetic healing, mind cure, massage methods, Christian science, cosmopathic or any other method of healing," provided such persons do not advertise or hold themselves out by the letters M.D., or the title of doctor, meaning doctor of medicine.

---

[59] Boston Med. and Surg. Journal, 1885, cxii, 203.

[60] New York Medical Journal, 1889, xlix, 195.

[61] House, No. 487.

[62] House, No. 292.

[63] House, No. 396.

[64] Address, p. 39.

[65] House, No. 137.

[66] Senate, No. 155.

[67] Senate, No. 178.

[68] House, No. 487.

[69] Senate, No. 263.

Senator Kittredge claimed that there were four thousand remonstrants against the bill, and none but doctors in its favor.[70]

Some of the opponents of the attempt to secure the legislative control of the practice of medicine in Massachusetts have placed themselves on record in the public press. The personal characteristics of many of those present at the hearings have been thus described: [71]

> "What a collection of them there was in the Green-room at first, and afterwards in the large hall of the House of Representatives, to which an adjournment was necessary on account of the crowds! Medical blacklegs of all kinds, deceitful clairvoyants, long-haired spiritualists, necromancers, wizards, witches, seers, magnetic healers, pain charmers, big Indian and negro doctors, abortionists, harpies who excite the fears and prey on the 'indiscretions' of the young of both sexes, who treat venereal diseases with the utmost secrecy and despatch, who have good facilities for providing comfortable board for females suffering from any irregularity or obstruction, who sell pills which they are very particular to caution women when pregnant against using; *et id genus omne.* Some of them looked sleek, well fed and prosperous; others seemed to have come from the very slums of destruction. Most of them had a coarse, animal, degraded look."

(*To be continued.*)

◆

Original Articles.

CASES OF TRAUMATIC HEADACHE.[1]

BY CHARLES F. FOLSOM, M.D.

In studying the various causes of headache, I have grouped together six similar cases due to traumatism, which I report to-day. Others, where the injury was to the nose, are not included, inasmuch as the cause of the symptoms in them was complex.

Case I. C. H., aged seventeen years, with healthy antecedents, strong, well developed and nourished, and sensibly brought up, was referred to me in October, 1890, by Dr. Hasket Derby, who had carefully examined his eyes and found them without defect. Four years previous to my seeing him, he was thrown from a horse and struck by the freshly-shod hoof of another horse, over the upper and middle region of the left parietal bone. There was a large irregular cut in the scalp which bled freely and finally healed by granulation. There was no unconsciousness after the accident and there were no cerebral symptoms at that time.

A year later, he began to have headache now and then, which was not severe, but which, still a year later, had become very bad and more frequent. These headaches began just back of the left eye, a couple of inches anterior to the cicatrix, extended over the temporal region, and finally involved the whole head. They lasted several days and were quite disabling. They were not affected in a causative way by the use of the eyes. The headaches became more and more troublesome until the summer of 1890, when they were almost constant, although the boy was at the time leading an outdoor life on a farm where he was passing his vacation. He made as little as possible of his symptoms, as he was very desirous of returning to school, which he did in October. He was not able to study and was sent back to me by his teacher as being in constant suffering. From his mother, whom I then saw for the first time, I learned that he had been obliged to give up the active occupations and amusements of boyhood, and walked about, and especially up and down stairs, with the greatest care in order to avoid the least jar, which made his head much worse. He could not study or read and there was no let-up to the pain which varied from time to time in degrees of severity. There had never been any convulsions nor vomiting.

Physical examination of the patient was negative, except that over the upper middle part of the left parietal bone there was an irregular cicatrix, quite tender on pressure, about an inch and a quarter long, and three-sixteenths of an inch wide at the widest part. The boy had the general appearance of health, except that his face usually had the expression of pain. He was unnaturally irritable, and disagreeable to himself and to others.

After four years of medical treatment, it did not seem wise to try that any further. I advised that the cicatricial tissue should be cut out and that trephining or further exploration should depend upon the indications — an opinion in which Dr. Weir Mitchell concurred after seeing the patient in consultation.

The operation was performed by Dr. Warren, October 29th, in the presence of Dr. Weir Mitchell, Dr. C. B. Porter and myself, but nothing was found to justify any apprehension of possible serious injury to the brain. There were three small indentations in the external table of the skull and trephining showed some reddening of the dura with adhesions to the adjacent bone. Dr. W. F. Whitney found, on microscopical examination, diffuse hyperostosis of the skull, and interstitial neuritis in the cicatrized tissue.

The patient made a complete recovery, has been able to resume his studies, and has remained entirely well.

Case II. Miss ——, aged twenty years, was seen by me in January, 1891, complaining of persistent dull headache, obstinate constipation which did not yield to ordinary remedies, and of paroxysms of severe pain throughout the head, with mental confusion beginning a few days before menstruation and lasting a week or more.

The patient's health had otherwise been excellent except for debility and some neurasthenic symptoms of three years' duration, which began a few months before the appearance of her headaches, and which had been attributed in part to worry and in part to a life involving some exposure on a cattle ranch in the West, with food not altogether suited to her somewhat exacting needs. She had lost twenty pounds in weight.

The family history was negative.

In July, 1884, the patient was kicked in the head over the upper and posterior portion of the right temporal bone by a well-shod horse. There was a large irregular scalp wound which got filled with sand and gravel. The wound was tied up and healed by granulation. There had been no unconsciousness or cerebral symptoms of any kind. There was no headache of consequence until nearly four years later, in 1888, when she was again thrown from a horse and dragged about fifty feet, being debilitated at the time. She was also generally bruised about the same time in a third accident with a horse. Then severe and persistent headaches began, gradually becoming worse, and being at last completely disabling a few days before menstruation.

---

[1] Read at the meeting of the Association of American Physicians, Washington, D. C., May 29, 1894.

[70] Boston Daily Advertiser, April 18, 1891.

[71] New England Medical Gazette, 1880, xv, 65.

The more or less constant headache was quite moderate in degree and attended with slight mental confusion, which became quite marked at the time of the severe headaches of the menstrual period. There was also a degree of a peculiar motor aphasia at such times with hysterical symptoms, and there were often acts of cerebral automatism and attacks resembling petit mal.

After fourteen months of treatment the general health was restored, the constipation was relieved, and the persistent headache was somewhat better, but the paroxysmal attacks which have been described were not very much improved. There was nothing peculiar in the character of the headaches, which were general all over the head; and there was no tenderness in or near the cicatrix, which was irregular and ragged in shape, an inch and three-quarters long, and at the widest part nearly a quarter of an inch broad. It may be said in passing, that in this case and in the preceding case, the diagnosis had been made of *contre-coup* injury to the brain.

The cicatrix was removed by Dr. Warren in March, 1892, with complete relief to all the symptoms which I have enumerated.

Dr. W. F. Whitney found in the cicatricial tissue marked interstitial neuritis.

CASE III. F. R., aged eleven years, seen November, 1892, in consultation with Dr. V. Y. Bowditch; of neurotic temperament and family history.

In 1886 he was stunned by a fall, striking on a curbstone, with the result of a small scalp wound over the right frontal region about an inch above the supraorbital ridge. In 1888 he was thrown from a small cart over a stone fence and was unconscious for a considerable time. There was a small scalp wound over the superior and posterior portion of the right temporal bone from this accident. In the same year he was partially stunned by being thrown from the rear platform of a street-car. His only serious illness had been intermittent fever in Italy.

Between two and three years after the second injury to the head he began to have persistent headache of slight degree, with frequent paroxysms of intense pain throughout the head. He lost flesh, became very thin and irritable, and had to give up study and reading. He also had frequent attacks of partial loss of consciousness, the precise nature of which I never ascertained. The only one which I saw resembled petit mal and probably was that. The eyes had been examined by an expert and found without defect. Medical treatment had been exhausted.

The two small, faint cicatrices were excised by Dr. Warren, November 23, 1892. The relief from the operation was not immediate, but gradual, and in a month's time the patient was virtually well in every respect. Two months later he was run over by a sled, the runner striking the upper cicatrix, and he was at about the same time accidentally struck a heavy blow over the other scar. There were pain and tenderness over both for three days, and the headaches returned, to be soon relieved by massage, and the patient returned to his school. A short time afterward a new type of headaches appeared which were distinctly periodic and in part yielded to quinine, but which did not absolutely disappear until a re-examination of the eyes and the use of glasses for a trifling astigmatism.

Interstitial neuritis was found in the tissue of one scar by Dr. W. F. Whitney. There was considerable cell infiltration around the perineurium, as in the other cases.

These three cases were reported chiefly from the pathological point of view, and with illustrations of sections under the microscope, by Dr. Warren, at last year's meeting of the American Surgical Association.

CASE IV. Miss ——, aged nineteen years, seen by me in February, 1891.

Family history good, except for recent alcoholism in one of the parents.

At the age of eleven years she struck her head violently against a spike, making a wound through the scalp which left an irregular, ragged cicatrix an inch long just to the right of the median line, and over the posterior portion of the parietal bone. Six years later the patient fell backward from a piazza eight feet high, striking the back of her head on a rock. She was unconscious for some time, and for several months there were pain and tenderness at the seat of the injury. There was no flesh wound.

Very troublesome headaches appeared a few years after the first injury, and were not increased after the second accident. They did not yield to treatment, and were so constant and severe that the patient had to give up school, and finally all mental work. The disability increased, and there had been for a year before I saw her a dull mental state, occasional mild melancholia, cataleptiform attacks and imperative conceptions, with a generally debilitated physical condition.

The patient was well developed; not well nourished; the internal organs and the eyes were free from disease or defect.

After trying medical treatment for four months without much benefit, except to make the physical state one of apparent health, I advised excision of the cicatricial tissue, which was done by Dr. Post, June, 1891. The result was entirely satisfactory in dispelling the headaches and all the morbid nervous and mental symptoms.

CASE V. W., aged thirteen years, was first seen by me in 1884. There was a neurotic tendency in the family, which his parents had tried to counteract by country life and sensible habits of living. The boy was physically strong, well formed, and with the external appearance of physical health.

Somewhere about 1880 to 1882 he had received three severe blows on the head, the precise dates of which could not be learned, in play with other boys. From two there was no indication as to the site of the injury. The third, from the corner edge of a hoe, left a ragged scar a little over an inch long over the upper and superior portion of the right parietal bone. I could not ascertain just when his headaches appeared, as the precise time had been forgotten, but it was some months after the injuries; and when I saw the patient they had become entirely disabling, so that the boy was obliged to give up the common occupations and amusements of his age. He was irritable to the last degree, with very little initiative or interest or power of self-control, timid and apprehensive. He had frequent attacks of loss of consciousness, no one of which I ever saw, but which I supposed to be petit mal. A description of his various nervous and mental morbid symptoms, including a very curious type of topophobia, for the next six years, occupy many pages of my note-books.

Treatment for seven years under the most favorable conditions, the greater part of which was in the country under judicious direction, and away from home, was only disappointing in its results. Although there was some gain, the patient was a young man of twenty years, quite unable to take his part in the world in anything but the simplest vegetative life.

The cicatrized tissue was excised by Dr. Post, June, 1891. The headaches ceased at once, and all the other neurasthenic and mental symptoms almost as soon. The young man entered a large business house, in which he worked hard and has done well.

Case VI. Miss ——, seen in 1882, on account of frequent and severe epileptic convulsions. She was nineteen years of age, well developed, talented, accomplished, with a well-trained mind.

The family history was excellent.

Ten years before, when she was nine years old, she fell backward from a high swing and struck the back of her head violently on the ground. A few weeks later she began to have attacks of petit mal, which, as time went on, became more frequent, and in a few years there were also typical epileptic seizures, which occurred mostly at night or before breakfast in the morning. She had been under the care of the leading specialists in Boston and New York, and had been treated by Dr. Brown-Séquard. None of the treatment did any good, and some made her worse. After exhausting, as she supposed, the regular pharmacopœia, she was taking a proprietary medicine, which, on chemical examination, proved to be chiefly bromides; and while fully bromidized, she had more severe and more frequent attacks of epilepsy than ever before.

She had had for many years — none of the family could say how many — a persistent nagging headache, which had at last made her excessively irritable and difficult to get on with, although she was naturally most amiable.

Nothing abnormal was detected on physical examination. To bodily symmetry there was added a highly-trained, well-developed mind. No cicatrix was found, only a slight local tenderness on hard pressure.

The attacks of petit mal were often from twenty to thirty in twenty-four hours, and the grand mal once in a few weeks. After nine years of treatment the patient was, to all appearances, in a condition of blooming physical health. Very few people knew of her frequent attacks of petit mal, which were mostly in the morning, and of true epilepsy once in two to four months. The headache, chiefly in the back part of the head, persisted, and the patient had become more irritable and self-willed, more difficult to live with, in spite of greatly improved general health.

This patient, by the way, is the only one in my experience who has taken borax for a long period of years with greater benefit than from any other medicine.

The sensitive area, about as large as a silver half-dollar, remained just to the right of the median line and above the occipital protuberance where she struck when she fell, and where a marked unevenness could be felt on the outside of the skull.

It was thought that the conditions might be similar to what was found in the first case reported, and such proved to be the fact. The operation of trephining was done by Dr. Bradford, assisted by Dr. Monks and Dr. Brackett, in September, 1891. There was no distinct indication for opening the dura, and that was not done. The bone removed was quite irregular in thickness, but was, unfortunately, lost on the way to the pathologist.

As a result of the operation, the headaches quite disappeared, the attacks of both kinds have greatly diminished in frequency, and the irritability and impaired self-control are things of the past. The young lady's parents say that life with her is now a constant pleasure, and she herself takes her full part in social life, believing that, as she rather overstates the results, she has had a new life given her.

Observations might be made, and inferences could be drawn, and pathological theories and physiological speculations are possible on these cases, that would be interesting and perhaps instructive. But I have not had time to make them short, and you have not the time for me to make them long.

The symptoms described were evidently reflex and secondary for the most part. So far as they were direct, they were due to more or less extensive alterations in the nerve and to the existence of pressure.

◆

TUMORS OF THE BREAST.

J. COLLINS WARREN, M.D.,
Professor of Surgery in Harvard University.

The following cases are selected for the purpose of illustrating certain points in the diagnosis and treatment of tumors of the breast, and are presented as a contribution to the clinical study of disease of this organ which may prove of interest to the general practitioner.

They emphasize the importance of an early diagnosis and the necessity for the most radical type of surgical operation in cases of malignant disease. In spite of the greatly increased severity of the operation the percentage of mortality is constantly diminishing, owing to the improved technique, not exceeding at present 2%, and convalescence is rapid. There is little doubt also that the percentage of cases of permanent cure of cancer is steadily increasing under the present system of treatment.

MEDULLARY CANCER OF THE BREAST. — REMOVAL OF THE PECTORAL MUSCLES.

S. E., forty-five years old, having good general health, first noticed a lump in the right breast while bathing, on August 1, 1892. There was no pain or tenderness at that time. The breast was examined by Dr. Helen Morton on December 6, 1892, when a tumor of glandular outline was noticed in the right breast and below the nipple. There was no pain. The patient had, however, had some pain like that of writer's cramp in the right arm for two or three years. Menstruation had been more copious for the last two years, the intervals being shorter; the last one being only two weeks long.

The family history of the patient was good, there being but one suspicious case of malignant disease in the family, an aunt having died at about seventy years of age with some abdominal disease thought to be cancer, though no autopsy was made.

I first saw the patient on December 27th, and on examination found a tumor in the outer hemisphere and considerable enlargement of the axillary glands.

The operation was performed on January 1, 1893. It consisted in amputation of the breast and a free dissection of the axilla, together with the removal of the greater portion of the pectoralis major muscle, and the whole of the pectoralis minor muscle. The wound was closed throughout by interrupted sutures, and healed by first intention except at one point, where a small abscess formed around a catgut ligature. The patient left St. Margaret's Hospital for her home two weeks after the operation, and the abscess healed soon after.

The following is the microscopical report of the specimen made by Dr. W. F. Whitney:

> "The tumor of the breast of S. E. (St. Margaret's, January 1, 1892), was a soft medullary nodule, close to the nipple and lying deep in the breast tissue, its lower surface against the fascia, through which, however, it could not be seen to have broken.
>
> "Microscopic examination showed it to be made up of large masses of very large epithelial cells, separated by a little fibrous tissue stroma. The axillary glands were large, but without any distinct nodules of new growth. The microscope showed, even in the smallest, a few scattered large epithelial cells mixed in with those of the glands proper.
>
> "The diagnosis is medullary cancer, with secondary infection of the lymph-glands of the axilla."

The malignant character of the growth in this case, and the involvement of the glands of the axilla necessitating a careful dissection as high as the clavicle, rendered the prognosis extremely unfavorable, and a statement to that effect was made at the time. The patient, however, recovered her health and strength entirely after the operation, was able to visit the World's Fair and enjoy herself the following summer; and the report in answer to frequent inquiries from myself is that there has been no return of the disease up to the present time (May, 1894). The favorable result of the operation in this case would seem to be due in some measure to its radical nature. The necessity of such an operation was forced upon me at the time by the extensive infection of the breast, and the result has been a most encouraging one for cases of this class.

CANCER OF THE BREAST ORIGINATING FROM A CHRONIC MAMMARY TUMOR.

Mrs. F., fifty-one years old, was examined by me in June, 1893. Her father lived to be eighty-nine years of age, and died of cancer in the neighborhood of the eye. Her brother also suffered from a suspicious growth in the eyebrow, which was removed by me several years ago, and has never returned.

Before the patient's marriage, at the age of thirty, she had noticed a small lump in the lower, outer quadrant of the left breast, which had been regarded as a chronic mammary tumor. This had given her no trouble, although she had since passed through several confinements. No change was noticed in the tumor until about February, 1893, when it began to enlarge, and for two weeks before my examination it had involved the skin above it. At the time when I saw it there was a red lump involving the gland, slightly tender and communicating with a nodule in the right lower quadrant of the left breast. Glandular enlargement was felt in the axilla. The patient's general health had been good.

The operation was performed on June 12th, and a careful dissection of the axilla was made, with the removal of the breast, together with the fascia of the pectoralis major muscle. The muscles were, however, undisturbed. The wound was closed throughout by interrupted sutures, no drainage-tube being used, and it healed by first intention, the patient leaving St. Margaret's Hospital on June 30th.

> "The specimen from the case of Mrs. F. showed a prominent nodule involving the skin, of a dark-reddish color, about the size of a small peach. Section through this gave a grayish opaque surface, gradually merging into a more whitish translucent one, in which were numerous irregularly shaped fissure-like openings. This latter portion was quite sharply defined from the rest of the breast tissue.
>
> "Microscopic examination showed the soft growth beneath the skin to be composed of solid masses of epithelial cells separated by relatively narrow bands of fibrous tissue. The rest of the tumor into which this gradually passed was made up of a fibrous-tissue basis in which were portions of gland tissue, some markedly dilated in an irregular manner by in-growths of the connective tissue.
>
> "The axillary glands were enlarged, and presented the same character as the soft growth first described.
>
> "The case is one of a chronic intra-canalicular papillary fibroma, in one part of which a medullary cancer has developed." (W. F. Whitney.)

The patient made a good recovery from the effects of the operation, and was able to visit Chicago during the summer; but in the course of the autumn a cough developed, and the patient's strength slowly and gradually failed. Emaciation set in, and finally an examination about January, 1894, showed the presence of a small nodule in the outer portion of the cicatrix, and a marked dulness over the upper portion of the left lung. From this time on, the patient failed more rapidly, and died in March, 1894.

The origin of cancer from a benign tumor of this nature is undoubtedly rare. The fact, however, that malignant disease may develop from such a growth is a reason for operative interference, even in the mildest forms of this affection. In many cases of chronic mammary tumor appearing in young girls shortly after the period of puberty, I have advised non-interference, and have been able to follow the history of one or two such cases for a number of years, and have found that they have given no trouble whatever. After the experience in the above case, I should feel less disposed to give such advice in the future. Benign tumors of this nature may, however, take on a rapid growth early and assume a comparatively formidable size. Inasmuch as under these circumstances they may develop into a sarcoma attaining sometimes great size, and assuming a very malignant type, it is important that they should be removed without delay, as was done in the two following cases:

ADENO-FIBROMA OF THE BREAST.

Miss H., nineteen years of age, noticed a growth in the right breast in the upper and outer quadrant, in August, 1893. The tumor grew slowly at first, but, during the three months previous to my seeing it, had increased in size more rapidly. There is no history of any such tumors ever having been observed in any member of her family. The case was seen by me first in April, 1893. On examination, a nodular, well-defined growth, about the size of a small orange, was observed in the locality above mentioned. It was freely movable under the skin, but seemed firmly attached to the gland tissue. There was, however, a well-defined outline to the growth. There was no enlargement of the axillary gland.

The operation was performed during the same month, the tumor being dissected from its attachment to the mammary gland without difficulty; and the wound healed by first intention. An examination of the growth, by Dr. W. F. Whitney, showed the tumor to be an intra-canalicular papillary fibroma. Two or three small glands removed from the axilla were found to be simply hyperplastic. In response to a recent inquiry, the patient states that there has been no return of the growth.

The second case of this affection is the following:

Miss J., twenty-two years of age, consulted me in June, 1893, for a tumor of three years' duration in the right breast, in the upper and outer quadrant. The patient was a tall and slender person, but in good general health. There was no family history of any such growth. The case was in all respects similar to the one just reported, and microscopical examination showed the growth to be of the same nature. The wound healed by first intention, and the patient made a rapid recovery from the operation. In the early fall she was married. During the course of the winter she suffered from an attack of the "grip," which was followed by symptoms of pulmonary consumption, from which she died about the first of April, 1894. There had been no return of the tumor, and her breast had given her no trouble or inconvenience of any kind since the operation.

MEDULLARY CANCER OF THE BREAST. — OPERATION, INCLUDING REMOVAL OF THE PECTORAL MUSCLES.

M. F. M., fifty-two years of age, consulted me in March, 1894, for a growth in the upper hemisphere of the breast, which she thought had been growing for about three months. On close questioning, however, the patient remembered that she had occasionally felt a lump during the past year or so, which had subsequently disappeared. There was no history of any cancer in the family. Her general health was good, but she had not been strong, and had suffered from neuralgia in the arms, for which she had been under the treatment of Dr. J. J. Putnam for some time. The breast had given her some discomfort on arranging her dress, early in the autumn, and the presence of a lump was first definitely noticed early in December.

The operation was performed on February 3, 1894. The infiltration of the breast and axillary gland was found to be so extensive that it was thought desirable to remove the greater portion of the pectorales, major and minor. After the removal of these muscles, a nest of these glands forming a nodule the size of a pea was found just beneath the edge of the clavicle and beyond the apex of the axilla. The following is the report of Dr. W. F. Whitney:

> "The specimen from the case of Mrs. M., received on March 3d, consisted of the breast and contents of the axilla.
>
> "On the breast was a nodule the size of an English walnut situated just outside of the nipple, which was not retracted. The section surface of the growth was in general of a uniform grayish, slightly opaque aspect, with numerous yellow opaque dots and lines; the periphery passed into the adjacent fatty and fibrous tissue by an irregularly, slightly-retracting outline.
>
> "Microscopic examination showed the growth to be made of solid masses of relatively large, irregularly-shaped cells, many of them extremely fatty degenerated. Between the masses was a fine vascularized stroma of connective tissue rich in round cells.
>
> "The lymphatic glands from the axilla were enlarged from the size of a pea to that of a cherry, and were infiltrated with a new growth similar in gross appearance and microscopical structure to that of the breast.
>
> "There was a wide margin of sound tissue about the tumor, and no evidence of disease was found in the muscle removed.
>
> "The diagnosis is medullary cancer, with secondary growth in the lymph glands."

The nature of the growth and its extension close to the boundary line of the axillary space make the prognosis of this case (in spite of the radical nature of the operation) an unfavorable one. If there be a long period of immunity or a cure in this case, the fact that glands of considerable size were traced to the edge of the clavicle, would become a point of interest to the surgeon, as indicating that although the disease had made considerable progress up to this point, it need not necessarily have involved the lymphatic region beyond.

In making a diagnosis in the case of a growth in the breast, it is important to remember the earliest symptoms which enabled us to determine the presence of cancer. One of the most important of these — and perhaps the most frequent period in this part of the world — is the age which has been mentioned in the cases above quoted. The most frequent period commonly ascribed to cancer, is between forty and fifty years, but in my experience the most prolific years are from fifty to fifty-five. One point of value is the seat of the disease, which in cancer is more frequent in the upper hemisphere and in the outer hemisphere, the upper and outer quadrant being, therefore, the most frequent of all localities. The retraction of the nipple does not appear to be of much value as a symptom in the early stages of the disease, a time when an accurate diagnosis is of the greatest importance.

(To be continued.)

Clinical Department.

SURGICAL CASES.

REPORTED BY C. L. SCUDDER, M.D.

The following operations were done by the Surgeons of the Staff on duty at the Massachusetts General Hospital on Tuesday, June 12, 1894, before the members of the Massachusetts Medical Society at the Annual Meeting. The operations were performed in Ward E, the abdominal and cerebral ward of the hospital, and in the public operating theatre.

Case I. A man with fæcal fistula. Operation by Dr. M. H. Richardson for closure of the fistula; end-to-end suture of the bowel; gauze drainage. Recovery.

The patient was a man thirty-one years old. Two years ago history of obscure abdominal trouble, which in October, 1893, was relieved by operation, with the immediate establishment of a fæcal fistula. The fistula has been open to both fæces and gas, although the rectum has been functionally active. The sinus leading to the bowel was dissected out; all cicatricial tissue removed from about the bowel; the intestine divided, and the ends united by an interrupted Lembert suture. Throughout the operation there was very great hæmorrhage from the vessels in the cicatricial tissue about the fistula and the very large mesenteric veins. After suturing, a bit of gauze drainage was left projecting from the abdominal wound reaching to the wound in the intestine.

Case II. Male. Recurrent sarcoma of the thigh. Amputation in the upper third of the thigh. Recovery.

The patient, aged thirty-two, entered the hospital in April, with a history of an injury ten weeks previously to the left knee-joint. The region of the knee was greatly swollen and extremely sensitive.

An amputation was done by Dr. M. H. Richardson in the lower third of the thigh April 21, 1894.

Examination of the specimen demonstrated that it was a spindle-celled sarcoma. To-day the patient having recovered from the previous operation, and there being some recurrence in the stump, a reamputation was done in the upper third of the thigh. The bone was found healthy, but there was a general oozing from the stump, so that the permanent dressing was not applied until later in the day, primary dressing being a packing with gauze.

Case III. Woman. Perinephritic abscess. Drainage. Recovery.

The patient, a woman thirty-one years old in July, 1893, had the following symptoms: frequent micturition and foul urine. Five months ago a swelling appeared in the right iliac fossa, accompanied with great loss of flesh and strength.

Examination finds in the lower half of the abdomen, on the right side, extending well into the right loin, a tumor. Fluctuation is obtainable from the right iliac region backward into the loin through the tumor.

Operation by Dr. M. H. Richardson. Incision from the tip of the last rib to the crest of the ilium obliquely towards the iliac crest. An abscess cavity was opened, from which a large amount of foul, thick, greenish pus was removed. A counter-opening was made in the right groin, and the cavity was well douched and drained by tube and gauze.

Case IV. Woman. Epithelial growth of the leg. Amputation at junction of the middle and lower third of the thigh. Recovery.

The patient, a woman fifty years old, had had all her life ulcers of the leg, which had at times entirely healed. At present there is an ulcer in the middle third of the leg, with raised edges, and a base extending deeply to the bone. Microscopical examination by Dr. Whitney proved the ulcers to be malignant.

Operation by Dr. M. H. Richardson. Amputation of the thigh by antero-posterior flaps, about three and a half inches above the joint.

Case V. Double ovariotomy.

The patient, thirty-five years old, and married, has one child five years old. Has been married twelve years, and during the past ten years has had some pain in the left side, together with a constant dragging feeling in the pelvis; leucorrhœa for years; has had recently chills and fever.

Examination finds a woman well-nourished. Vaginal examination finds the cervix and uterus in the middle line. The uterus is slightly retroverted; the left ovary is enlarged; both ovaries are prolapsed and held fixed by adhesions. The uterus is normal in size.

Operation in Trendelenberg position by Dr. F. B. Harrington. Incision in the linea alba. Uterus found retroverted; both ovaries prolapsed. Both ovaries removed; broad ligaments tied off with silk. Uterus was freed from adhesions, and brought up into the abdominal wound, and two silk sutures passed from the fundus of the uterus through the peritoneum and fascia of the interior abdominal wall. Abdominal wound closed.

Case VI. Boy. Stone in the bladder. Litholapaxy. Recovery.

The patient, aged three years, was well until eight months ago, when he began to complain of pain in both groins. Pain is intermittent — worse with micturition and upon running about — sharp in character. The child was treated by Christian scientists for four months without improvement! Pain is increasing in severity and frequency; micturition is frequent; and urine is now passed involuntarily. The child has a long prepuce.

Operation by Dr. F. B. Harrington. A stone was detected by sounding the bladder, and it was crushed by a small-sized lithotrite.

Case VII. Old pelvic abscess. Abdominal section, with removal of the abscess wall by dissection through an abdominal incision.

Patient, a woman thirty-eight years old, came to the hospital with a pelvic abscess May 17, 1894. This abscess was opened anteriorly through the abdominal wall and through the vagina. Drainage by tube through the vaginal opening; this drainage appeared to be insufficient. It was thought wise to reopen the abdominal wound, and to dissect out, if possible, the sac of the abscess. The incision opened the abscess cavity, which was washed out clean, and the edges sutured together, thus preventing the abdominal cavity's infection by the foul abscess; and the section was carried around on either side of the abscess wall until a greater part of the wall was removed. Both Fallopian tubes were found enlarged and full of pus. Both tubes were freed from adhesions and removed. The cavity remaining was drained by iodoform gauze and a glass tube. Patient was in poor condition at end of operation, but has recovered well with no rise of temperature.

Dr. C. B. Porter showed a case of extreme interest and importance:

A fracture of the surgical neck of the humerus, complicated by dislocation of the head beneath the coracoid process of the scapula. The operation for reduction of the dislocated head of the humerus was done fifteen days after the accident.

The shoulder-joint was approached through a U-shaped incision through the deltoid muscle. The head of the bone was found out of the glenoid cavity. A drill-hole in the anterior surface of the head of the humerus was made allowing a blunt steel hook to be inserted into the bone. Traction was made by the hook outward, aided by pressure of the thumb, this reduced the head of the humerus into the glenoid cavity. The wound was closed in the soft parts, a sterile dressing applied, and the arm held fixed by a plaster-of-Paris dressing around the chest and shoulder. In five weeks the apparatus was removed in the day-time, and worn a short time longer at night only. Union was firm in five weeks.

Eight months after the operation: The motion in the dislocated shoulder is about perfect; the arm, the patient reports, is as useful as it was before the operation.

Dr. J. W. Eliot operated upon an acute appendicitis of four days' duration.

The patient had worked the day before the operation, but had much abdominal pain. The temperature was 99°, the pulse was 170. The abdominal wall was rigid, and there was pain in the right iliac fossa upon pressure. By an oblique inguinal incision the gangrenous appendix was found and removed. Pus was found free in the abdominal cavity. A counter-opening was made in the median line. Drainage with tube and gauze was made through both incisions.

Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

NINTH ANNUAL MEETING, WASHINGTON, D. C., MAY 29, 30, 31 AND JUNE 1, 1894.

(Continued from No. 25, p. 622.)

SECOND DAY. — WEDNESDAY.

Dr. Theobald Smith, of Washington, read a paper entitled

MODIFICATION, TEMPORARY AND PERMANENT, OF THE PHYSIOLOGICAL CHARACTER OF BACTERIA IN MIXED CULTURES.

An accidental contamination of a culture of the hog cholera bacillus with *Proteus vulgaris*, both probably inoculated together from the original material, gave rise to a remarkably rapid attenuation of the pathogenic bacteria. The symbiotic growth had lasted about three months before it was discovered. The attenuation showed itself when rabbits were inoculated into the abdomen. A prolonged disease associated with the eruption of pseudo-tubercles took the place of the usual inoculation disease. Subsequent trials with mixed cultures of *P. vulgaris* and hog cholera bacilli yielded the same result. The cultures of the former after repurification failed to destroy rabbits after subcutaneous inoculation.

An unexpected outcome of these observations was the return to a higher level of virulence of the hog cholera bacilli in pure agar cultures in every case. This return did not come at once after *Proteus* had been removed, but appeared in two cases nine months after the culture had been purified and grown on agar continuously.

Another result of these mixed culture experiments was the appearance of a series of varieties of the *Proteus* culture, all descended from one colony originally. Two of these corresponded closely with Hauser's *P. mirabilis* and *P. zeukeri*.

These marked changes in mixed cultures are suggestive when taken into consideration with the life processes of bacteria in the depths of the soil, especially in polluted soil in which the bacterial flora may be presumed to be most abundant and active. The possibility of an ectogenic development of the non-toxic species which act as true disease germs is made plausible and deserves further attention.

The method of mixed cultures may prove useful in obtaining different degrees of virulence of the same organism, so essential in the study of the relation between the host and the parasite, or, in other words, immunity.

Dr. G. M. Sternberg said that a few years ago bacteriologists were disposed to look upon cultures which showed small differences as being of different species. We now know that the colon bacillus, the typhoid bacillus and other organisms undergo various modifications. Liquefying organisms may fail to liquefy; phosphorescent bacteria may after a time fail to produce phosphorescence, and the pigment bacteria may fail to produce their pigment. Starting with pure cultures from the same source, we can get a large number of varieties. It is still to be decided whether any of these varieties do have permanent characters and fail to return to the original type.

Referring to the researches of Dr. Martin, reported by Dr. Ernst, Dr. Sternberg spoke of the pathogenic power of a pseudo-tetanus bacillus which had been cultivated in the soil where the tetanus bacillus had previously been cultivated, and after being propagated through successive tubes, still killed animals with all the symptoms of tetanus. This fact corresponds with the results obtained by Dr. Martin in his inoculations with a particular bacillus obtained from the vaccine lymph. After several generations he still produced a typical vaccine vesicle. Whether his bacillus would continue to do so indefinitely is a matter to be determined by further experiment.

Dr. Wm. H. Welch said it was well to bear in mind that nearly all of the artificial modifications produced by the action of different agencies on bacterial cultures are changes in function, and not morphological changes, and that the present tendency among biologists is to eliminate, so far as possible, in the classification of species, physiological properties. In these observations there is nothing that necessitates our supposing that these changes justify the recognition of anything more than races and varieties, and not of separate species.

Dr. Welch agreed with Dr. Smith as to the remarkable tenacity of the hog-cholera bacillus in its pathogenic properties. This is contrary to the statements of Selander, and of Metchnikoff and others who have worked with the hog-cholera bacillus. Selander claimed to increase the virulence of the hog-cholera bacillus so that it became a germ almost identical with that of ordinary rabbit septicæmia that would kill in twelve to eighteen hours. His work has been gone over repeatedly here, but without the same results. It is quite evident that these foreign observers are working with some different organism.

As to the lesions in the intestines of rabbits which Dr. Smith attributed to the attenuated bacillus, these same lesions have been found occasionally after inoculations with the ordinary hog-cholera bacillus.

The results obtained by Dr. Smith are very suggestive that the conclusions which we draw from experimenting with pure cultures are not exactly applicable to the real conditions as they exist in nature, where the different micro-organisms are associated in various ways.

Dr. Theobald Smith said that he had studied the typhoid-like lesions produced by hog-cholera, and had come to the conclusion that they can only be produced in two ways: either by an attenuation of the germ, or by an increase of the resistance of the animal.

Dr. Meade Bolton, of Baltimore, then read a paper entitled

THE EFFECT OF VARIOUS METALS ON THE GROWTH OF PATHOGENIC BACTERIA.

Some metals seem to leave no influence upon the growth of the bacteria, while others have a more or less marked inhibitory action, as shown by a broader or narrower clear zone around the pieces of metal on plates otherwise crowded with colonies of bacteria.

Just outside the clear zone, whether this is broad or narrow, there is nearly, in every case, a zone of intensified growth where the colonies are thicker than on other parts of the plate.

In the few tests as yet made for this purpose, there was entire absence of living bacteria in the clear zones. Inoculations from the clear zones remained sterile.

In some cases there are three zones around the metals, namely: a clear zone immediately surrounding the metal, a zone of intensified growth, and a second narrower zone where growth was inhibited.

It has been possible to detect in the medium, by chemical reagents, the presence of traces of those metals that exert inhibitory power.

The solution of the metals in the nutrient medium takes place independently of the growth of bacteria, as it is possible to detect the presence of the metals in sterile media in which they have been placed, after they have lain for a few days, at any rate. A discoloration of the medium surrounding the metal often makes a special test unnecessary.

Some metals have a much more powerful inhibitory action than others, as is shown by the broader clear zone. There is also some difference in the different bacteria with one and the same metal.

Some of the metals that have been tested were absolutely pure; others were commercial metals, marked chemically pure, and a few were either impure or alloys.

Dr. W. H. Welch said he was very familiar with the investigations of Dr. Bolton. The most mysterious thing about them is the clear zone outside of the intensified zone. The first clear zone immediately around the metal is unmistakably due to a solution of the metal in the form of oxide or salt. The most probable explanation of the intensified zone is that there is a minimum amount of metal there which is favorable to the growth of the bacteria, whereas the larger amount in the clear zone is a poison to the bacteria, and prevents their growth.

Dr. W. Gilman Thompson, of New York, read a paper entitled

NOTES ON THE OBSERVATION OF MALARIAL ORGANISMS IN CONNECTION WITH ENTERIC FEVER.

The possibility of typhoid and malarial fever manifesting their symptoms at one time in the same individual has afforded a fertile subject for debate for many years, with the result that the belief in the simultaneous action of the two infections has been generally losing advocates. The theory originally advanced by Woodward, that a "typho-malarial" fever exists as a specific and independent disease, has been abandoned by competent clinicians and by Woodward himself, although it is occasionally revived in the South and Southwest, in discussions upon the continued fevers of the South. The belief is almost universal that typhoid fever, as observed in New York, is uncomplicated by malarial infection, and that quinine, except as a tonic in convalescence, is worse than useless in its treatment. For this reason, the cases of the author seen in New York last summer and autumn are of unusual interest.

Case I. The patient, J. McN., male, forty-three years of age, was admitted to the Presbyterian Hospital, August 18, 1893. He had continued fever which lasted for seven weeks, during which time he developed the following symptoms: A genuine typhoid eruption, there being some forty distinct rose spots on the abdomen and chest, which appeared in successive crops; hæmorrhages from the bowels, tympanites, bronchial catarrh, slight albuminuria with granular casts, semi-stupor and delirium, subsultus, great prostration and emaciation, and the facies of the typhoid condition. On the thirteenth day of the illness there was a severe chill, lasting about three-quarters of an hour, and so violent that the patient shook the bed. It was accompanied by a rise of temperature to 106.6° F., but there was no sweating. During the third week two other chills occurred of equal violence. The malarial plasmodium was found in exceptionally large numbers invading the red blood-corpuscles and also independent of them. The hypodermatic administration of quinine reduced the temperature very markedly. No more chills occurred after the beginning of the fourth week, but the use of quinine was continued by the mouth, and the bathing, previously interrupted by the hæmorrhages, was resumed. The patient made a good recovery, and after fifty-five days in the hospital was discharged cured.

Case II. The patient, J. J., an Irish laborer, thirty years old, had a typical case of typhoid fever, and was treated by the cold tub-bathing without medicine, receiving in all thirty baths. The temperature became normal on the thirty-first day, and remained below 99.4° F. for several days, and on the thirty-seventh day suddenly rose to 106° F., and was accompanied by profuse perspiration. There were chills and high fever on the two successive days at the same hour, and malarial organisms in abundance were found in the blood. From the continued giving of quinine the patient had no more chills or fever and in a few days was discharged cured.

Case III. This case was very similar to the preceding one. The patient, after making a good recovery from typhoid fever, was about to be discharged as cured on the forty-first day, when he had a severe chill followed by fever and sweating. The chill was repeated the next afternoon at about the same time, also with increased temperature. Quinine was promptly given and the blood was not examined until the patient had received twenty grains. No malarial organisms were found, but abundant malarial pigment granules were contained in the blood-cells. Under the continued use of quinine, the patient recovered three days later.

While it is unwise to accept the term "typho-malarial" fever as indicating a third form of disease, which is neither typhoid fever nor malarial fever, it cannot be denied that the two latter diseases may co-exist.

Dr. Wm. M. Osler, of Baltimore, thought the first case of Dr Thompson's one of unusual interest, and he knew of no instances in the literature in which the two diseases had been so accurately and carefully described running concurrently. It would, however, be a great mistake to suppose that chills in typhoid fever always indicate malaria, since it is well recognized that they are by no means uncommon, and due to various causes. In the past year at the Johns Hopkins Hospital there have been several instances of typhoid fever with heavy chills in which the malarial parasites were not present. Dr. Osler exhibited a chart of the only case in which a patient was admitted to the hospital with a double infection of malaria and typhoid fever. He entered the hospital October 16th with tertian intermittent fever, the organisms being found in his blood. He was given quinine, and the temperature from the 18th to the 22d remained normal or subnormal. On the night of the 22d the temperature began to rise and did not fall to normal till the sixth week, during which time the patient had a very severe attack of typhoid with not a single feature pointing to any malarial influence. Dr. Osler also related an interesting case in which malaria and pneumonia were concurrent. Quinine caused the parasites to disappear from the blood, but had no influence upon the temperature. These are the only two instances in a series of nearly 300 cases of malaria and 309 cases of typhoid, and with blood examined in all, in which malaria has occurred with another infection.

Dr. F. P. Kinnicut, of New York, said that Dr. Thompson's first case was certainly a distinct double infection. We should, however, be guarded in our conclusions in regard to the frequency of these double infections until we have further observations. It is very possible to mistake a remittent fever for a typhoid, and as an illustration of this Dr. Kinnicut detailed the case of a patient in St. Luke's Hospital where this error had occurred. The practical lesson to be deduced from these cases is that the blood should be examined in every case of fever coming into the hospital wards.

Dr. G. L. Peabody, of New York, called attention to the fact that there are other chills occurring in typhoid fever which are of more importance than malarial chills. He had twice seen severe chills late in typhoid fever which were pyæmic in character, as proved by autopsy. He had seen severe chills followed by rise of temperature in typhoid, which did not affect the subsequent course of the disease, the patients getting well without quinine. It is important that the idea should not be given that typhoid and malaria is a frequent combination. That is a fallacy that prevails largely in the country districts of New York, and in some places every case of typhoid fever is treated as "typho-malarial" fever.

Dr. E. G. Janeway, of New York, said that when a chill comes on in the course of typhoid fever, it is often not necessary to suppose that it is due to the intercurrence of other diseases, for it is due in many cases to treatment by the modern antipyretics. Drop the antipyretics, and the chills disappear.

That the two diseases are at times combined, is proven by the occurrence of both typhoid lesions and pigmentation at autopsy. Dr. Janeway reported a case showing these characteristics. Although malaria and typhoid sometimes coexist, it is not advisable to give the name "typho-malarial" fever to this combination; it should be called typhoid fever with malarial coexistence. Physicians who give the name "typho-malarial" to it, assure the family that it is not typhoid fever, and thus take away the preventive measures for typhoid fever, and the disease has spread in consequence.

Dr. G. M. Sternberg said that Dr. Thompson's first case was a clear case of mixed infection, which, in so pronounced a form, is rather a rare thing. The other cases showed the development of malarial fever during convalescence from typhoid, which is not a very rare occurrence in malarial countries. The cases presented by Dr. Thompson differ from those commonly diagnosed as "typho-malarial" in the Southern States and in other sections of the country. These cases are usually of the comparatively mild character, and do not present distinct malarial paroxysms. The temperature is often quite irregular during the first week, and remittent in character. This leads the doctor to make a diagnosis of malarial fever and to prescribe quinine. In the course of the second week the difference between the morning and evening temperature is not so marked, and he says that the fever has assumed a typhoid type. It has really been typhoid from the outset. The war statistics show that the mortality from the fever diagnosed as typhoid, was very much in excess of that from the form denominated "typho-malarial" fever. If the typho-malarial was a mixed infection, it presents the anomaly of being less fatal than typhoid fever, in other words, the complication modified the severity of the specific fever. It is possible that there is a widely prevalent endemic fever which is specifically distinct from typhoid. If so, it is equally distinct from the malarial fevers, as quinine has no effect in terminating its course. In any case, the name "typho-malarial" is a mistaken one, and can only lead to confusion of ideas.

Dr. J. C. Wilson, of Philadelphia, objected to the use of the term "typho-malarial." This term, so catching, and apparently so proper at the time it was coined, has done much harm and has stood in the way of advancement in the knowledge of fevers. Dr. Thompson's opportune presentation of these cases reopens the whole subject in a most fortunate way. His paper shows how much clearer and how much more definite the work of the medical profession is becoming with our newer and more exact methods of investigation.

Dr. J. H. Musser, of Philadelphia, reported a case of mixed infection or rather of repeated infection. The child, nine years of age, had in the spring of 1893 an attack of intermittent malarial fever, and in the same year had a second attack which yielded to antiperiodic treatment. In December, the child had scarlatina. Four days after the temperature became normal, measles developed in the child. This was followed by otitis. During the course of the otitis, intermittent fever developed which promptly responded to the administration of quinine.

Dr. H. M. Lyman said that he had seen cases in which typhoid fever ran its normal course, terminating apparently, in convalescence; and then there were successive chills, with rise of temperature following. These chills were usually quotidian, but not at any certain hour of the day and not yielding to quinine, being also accompanied by slight jaundice. These cases have been explained by the French observers as due to the migration of the typhoid bacilli and other pathogenic germs from the intestines into the biliary passages, producing angio-cholitis, which is accompanied by chills and a certain amount of jaundice, not yielding to quinine but being far more benefited by local measures addressed to the liver. These cases must be carefully differentiated from the pyæmic cases, some of which are notable and easily recognized before their conclusion.

Dr. W. T. Councilman said that there did not seem to be any special opposition to the growth of other organisms in the body due to the presence of the bacillus of typhoid. He reported in this connection a case interesting from the number of mixed infections. It was a case of typhoid fever which, while in the hospital, was accidentally exposed to diphtheria. The patient died in the third week of typhoid fever. Throat lesions were seen during life. There were marked typhoid lesions in the intestines; there was a typical diphtheritic process in the throat with false membrane. There was an acute endocarditis and a septic embolus in the spleen. There were typhoid bacilli in the spleen and mesentery glands; diphtheria bacilli in pure cultures, in the pharynx and lungs; streptococci in the bronchial and tracheal glands and on the heart valves and in the septic embolus in the spleen. There was also a colon infection in the mesenteric glands, in the liver, and in the lungs along with the diphtheria bacillus.

DR. F. C. SHATTUCK, of Boston, said that some of the inexplicable chills which occurred during convalescence from typhoid fever might be due to phlebitis in the internal and inaccessible veins. The chills and subsequent pyrexia may be very similar to those accompanying phlebitis in superficial veins. The importance of a routine blood-examination is apparent. Phlebitis would be accompanied by leucocytosis.

DR. J. E. REEVES, of Chattanooga, Tenn., said that this fever, which has been described as a mixed fever, is a source of constant confusion to the physicians of the South. The clinical history of the fever called "typho-malarial," is not that of pure typhoid fever, and he thought it possible that there may be a species of fever intermediate between malarial and typhoid fever. In the so-called typho-malarial fever there is no diarrhœa, no epistaxis; there is a fitful rise and fall of temperature, and the course of the disease throughout is different from that of typhoid. The first attack makes the subject more permissible to a second and repeated attacks of the same disease. In typhoid, after recovery, the patient fattens up; in typho-malarial fever, the patient is debilitated, has a sallow appearance and probably does not recover his health for six months.

DR. GEORGE DOCK, of Ann Arbor, thought that the cases reported went but a short way in showing the existence of double infection in any proper sense. In Dr. Thompson's first case, the temperature chart did not show that there was any malarial element in the symptomatology before the chills occurred. In Dr. Osler's case the malarial infection seemed to have no influence at all on the course of typhoid. Dr. Kinyoun, of the Marine-Hospital Service, in 1890, reported patients who had typhoid fever and in whom he also found the malarial organisms. The so-called typho-malarial disease is often asserted to be milder than typhoid alone. From the cases reported to-day this is not shown to be the case. While in Texas, Dr. Dock had made autopsies in six cases, diagnosed as typho-malarial by experienced men, and in all cases the lesions were those of typhoid. He therefore concluded that fatal cases having a supposed malarial aspect, were not uncommon.

Such observations as those of Dr. Thompson ought to be repeated on every case of typhoid, especially in those parts of the country where the term "typho-malarial" is used.

DR. W. G. THOMPSON, said that the object of his paper was to make a contribution to the natural history of the malarial organism, rather than to discuss the wide subject of chills in enteric fever. The cases reported by Dr. Osler, taken in connection with his own, proved that the malarial organism may be present throughout the period of infection of typhoid fever. Just how far the malarial germ influences the action of the typhoid germ is a question which still remains undecided.

Two practical points may be deduced from this discussion. The first is the value of routine examination of the blood for malarial organisms in cases of enteric fever that are at all irregular; the second is, that we should determine the value of quinine in those cases where malarial organisms are present.

DR. THOMAS M. ROTCH, of Boston, read a paper entitled

SOME OF THE CHEMICAL AND BACTERIOLOGICAL CHARACTERISTICS OF MILK.[1]

This paper gives the results of some investigations in cow's milk, as to its behavior with different breeds, and something about its bacteria; also some remarks on the ash of human milk.

DR. F. FORCHHEIMER, of Cincinnati, said that the work of Dr. Rotch is laudable, if only in the direction of telling us what is normal milk. The normal reaction of milk is undoubtedly alkaline. He had long ago given up the idea of correcting the reaction by adding alkalies, because that is only adding another element to already bad milk. A great number of troubles in infants arises from impure milk, and just as the surgeon protects his patients from sepsis, so it is the duty of the physician to protect infants from milk sepsis. Any one who has taken the trouble to centrifugate milk and examine impurities, will come to the conclusion that the best samples of milk in cities are extremely impure and very dangerous. Any one who has ever seen a centrifugate of ten to fifteen gallons of milk, knows that it almost acts as an inhibition upon the desire to drink milk in the future.

DR. THEOBALD SMITH said that the milk might be directly infected from the udder with disease germs other than tuberculosis. In a sample of milk, milked into a sterile bottle with ordinarily clean hands, he had gotten pure cultures of the staphylococcus pyogenes aureus. Referring to the centrifugalizing of milk, he said that the deposits, so far as the morphological elements were concerned, were made up largely of polynuclear leucocytes. In one case where the leucocytes were exceptionally abundant, the milk was found to contain tubercle bacilli; possibly there may be a relation between leucocytosis in milk and tuberculosis.

DR. T. M. ROTCH said that a practical result of the bacteriological examinations was, that where you cannot provide otherwise for properly sterilized milk, you can get practically sterile milk if you take the last half of the milking.

(*To be continued.*)

◆

AMERICAN CLIMATOLOGICAL ASSOCIATION.

ELEVENTH ANNUAL MEETING, WASHINGTON, D. C., MAY 29, 30, 31 AND JUNE 1, 1894.

(Concluded from No. 25, p. 629.)

THIRD DAY. — THURSDAY.

On Thursday, in the absence of the President, **DR. ISAAC HULL PLATT** presided.

DR. LEONARD WEBER, of New York, read a paper on

SOME PATHOLOGICAL CONDITIONS OF THE HEART AND THEIR RELATION TO DIABETIC COMA.

He said that among the sixty cases of diabetes mellitus which he had treated in the course of his practice, he had seen a number die in coma. It is true that the majority of these were the well-known forms of diabetic coma brought about by acid intoxication of the blood, as it is supposed, by acetone and, especially, diacetic acid, but in addition also through the poisonous effects of ptomaines produced by the putrefactive processes so frequently occurring in the alimentary canal of diabetic patients; but quite a number go into collapse through deficient cardiac action, by disease of the heart developing in the course of diabetes, as already pointed out by Frerichs. In these cases there are generally no turbulent symptoms, but syncope followed by cardiac death. They might properly be named collapse-coma, as distinguished from the more frequent forms by blood-poisoning. The causes of neuro-muscular disease of the heart in diabetes are manifold. We have, in the first place, the wear and tear of the heart by a chronic disease producing functional weakness and predisposing it to dilatation and atrophy; fatty overgrowth, and later fatty degeneration in the diabetes of fat persons; the poisonous effects of acetone and diacetic acid upon cardiac nerve and muscle, and in addition those of ptomaines resulting from intestinal putrefactive processes. And arterial sclerosis and chronic nephritis, which are quite often associated with diabetes, also have a baneful influence upon the heart.

---

[1] To be published in full in the Journal.

In the management of diabetes he believes it to be good practice to allow the patient a certain daily amount of carbohydrates as soon as the disease has been gotten under control, and has found this amount to be about three ounces. An absolute meat-diet cannot be maintained very long on account of disturbing digestion and placing the patient in danger of coma.

Every case of diabetes is to be investigated and studied by itself, and the treatment and management adapted to individual requirements. In addition to carefully regulated diet and mode of life, Dr. Weber has prescribed salicylate and bicarbonate of soda (gr. xv each) before meals, or Carlsbad water instead. Where the alkaline treatment did no good, or did not agree with the patient, he has ordered opium in small doses with benefit. In every case he saw good service from the use of massage judiciously applied, and the frequent use of baths. It is by the latter two remedies that the heart is kept fairly strong and active in this disease, which is as yet not curable but manageable.

Dr. Robert H. Babcock, of Chicago, gave

A REPORT OF CASES OF CHRONIC HEART DISEASE TREATED BY THE SCHOTT METHOD OF BATHS AND GYMNASTICS.

The aim of the report was to direct attention to the value of baths and light exercises in cardiac therapeutics, by which it is believed patients suffering with organic heart disease of chronic nature may be more promptly and lastingly improved than by drugs. A statement of the rationale and application of this system was given. As to the baths: "The improvement in the rate and quality of the pulse is an index of the degree of benefit derived by the patient. If not counteracted by exercise, this effect on the pulse will persist for an hour or two subsequently. Changes for the better in the size of the area of cardiac dulness and in the sounds may be noted likewise. This was demonstrated repeatedly last year both on myself by a competent Russian physician, and by myself on others. Careful percussion immediately before and after a bath of eighteen to twenty minutes' duration, showed a demonstrable retraction of the deep limits of cardiac dulness and the heart sounds were improved in strength, the second pulmonary being less accentuated, the second aortic stronger — in short, the abnormal difference between the two sounds before, being appreciably less marked after, the bath. Murmurs that are almost inaudible before become intensified; and, conversely, some loud bruits are lessened in intensity. In short, so far as can be determined by physical examination, these baths appear to lessen the rapidity and increase the force of the heart's contractions, thereby occasioning a better filling of the great arterial system with corresponding depletion of the engorged veins."

The exercises supplement and reinforce the balneologic treatment.

In a detailed report of 19 cases, 13 showed more or less improvement.

Contra-indications: "There can be no doubt of the danger of this form of treatment in degenerative changes of the blood-vessels and myocardium, such as aneurism and advanced arterio-sclerosis, acute softening and great fatty degeneration of the heart."

A NEW AND DISTINGUISHING SIGN OF LATENT ANEURISM OF THE AORTA,

by **Dr. W. C. Glasgow**, St. Louis.

The sign to which Dr. Glasgow referred, is the presence of a systolic sound, or thud, in the brachial artery, synchronous with the systole of the heart. This sound is sometimes accompanied by an arterial murmur. When this sound can be heard, and aortic regurgitation can be excluded, Dr. Glasgow claimed that a positive diagnosis of aneurism can be made, even in the absence of all other signs or symptoms. Dr. Glasgow reported five cases of aneurism in which this arm-sign could be heard. He also exhibited a patient from one of the Washington hospitals who showed this sign.

OZONE IN PHTHISIS, WITH ESPECIAL REFERENCE TO THE PNEUMATIC CABINET,

was the subject of a paper by **Dr. Charles E. Quimby**, of New York.

FOURTH DAY. — FRIDAY.

THE COMPARATIVE RARITY OF PHTHISIS IN THE HIGHLANDS OF PENNSYLVANIA AND THE ADJACENT COUNTIES OF NEW YORK,

by **Dr. Guy Hinsdale**, of Philadelphia, was the first paper read on Friday (**Dr. R. G. Curtin** in the chair).

Attention was called in this paper to the low mortality from consumption in a district falling partly within New York and partly within Pennsylvania, embracing an area of 12,000 square miles. Throughout this region, there is, according to the best available information, a population of over 1,000 persons living to each annual death from phthisis. The maritime district of New York, including West Chester County and Long Island, has a population of only 400 for every annual death from phthisis, while the seven counties of the southern tier, namely, Chautauqua, Cattaraugus, Alleghany, Steuben, Chemung, Tioga and Broome, have an average of 1,091 persons living to each annual death from phthisis. The Highlands of Pennsylvania particularly referred to, embrace the counties of McKean, Potter, Forest, Clarion, Elk, Cameron, Union and Sullivan. This entire region has an elevation of from 1,200 to somewhat over 2,000 feet; it is characterized by extensive forests, a dryer air and lower temperature than prevails at the seaboard or lake shore; and by reason of its distance from the storm tracks of the St. Lawrence Valley and the changing temperature of the seaboard, it is eminently suited for the consumptive. In Pennsylvania, Kane, in McKean County, is very favorably situated, and has acquired considerable reputation as a resort in phthisis and hay-fever. Pneumonia, pleurisy and diphtheria are rare in this locality. The country surrounding Kane is an elevated table-land of 2,000 feet elevation; the water-courses are quite small, and fogs which are common in the deep valleys are not observed in this high plateau or "Big Level," as it is called.

SOME METEOROLOGICAL DATA OF COLORADO.

Dr. Samuel A. Fisk, of Denver, reported as a member of a committee of the Association appointed to collect meteorological data of the resorts of this country. Dr. Fisk exhibited tables giving a comparative study of the elevation, relative and absolute humidity, precipitation, velocity of wind, etc., of eighteen different stations scattered all over the United States. These tables were used mainly to illustrate the Colorado climate. He claimed for Denver (or the region for which it stands) the advantages of elevation, atmospheric dryness, a small annual precipitation, a cool climate, a prevailing mild wind of only moderate velocity, and an open sky.

Hon. Mark W. Harrington, chief of the Weather Bureau, read an exceedingly interesting paper on

SENSIBLE TEMPERATURES,

and exhibited charts in illustration.

In introducing his paper, Professor Harrington said, "The subject is so new that I am obliged to invent some terms to describe it." By "sensible" temperature, he explained, is meant that which is felt at the surface of the skin, especially where the skin is exposed as on the face and hands. To change a definite quantity of water from the liquid to the vapor state requires the utilization of a definite quantity of that form of energy which we call heat. On evaporation, this heat changes to other forms of energy; it is no longer sensible, and a sense of coolness results from its change. Thus is caused a reduction of temperature at the spot where the evaporation takes place; and while the evaporation continues, the surface from which it takes place is cooler than the general air-temperature.

The reduction of temperature caused by evaporation depends on the rapidity with which evaporation takes place, and this, in turn, on the amount of moisture already in the air. In general, when the air is saturated with moisture (that is, when the shade-temperature and dew-point are the same), there is no evaporation, and the reduction is zero. When the air is supersaturated, condensation, the reverse of evaporation, takes place, heat is released, and instead of a reduction we have an addition to the temperature. But when the air is not saturated, a reduction of temperature takes place.

The amount of this reduction will be greatest where the air is driest, least, where the air is moist. In Washington, Philadelphia, or San Francisco, the moisture is abundant, evaporation is relatively small, and hot weather feels hot. On the other hand, at Denver, Santa Fé or Prescott, the moisture is generally scanty, especially in hot weather, and the reduction is great. The most extreme case easily accessible is that of Furnace Creek, Death Valley, Cal. During the observations taken there in the summer of 1891, on five days the maximum temperature reached 122°; the temperatures of evaporation from 74° to 77°. The temperature felt by a person favorably situated was from 45° to 48° lower than that shown by the thermometer in the shade, and was almost cool for a summer afternoon.

It appears that in arid regions, the reduction may make hot weather not only endurable but even agreeable and refreshing.

So far it has been only a question of temperatures in the shade. Temperatures in the sun are always higher, and may be very much higher. On a hot summer afternoon, a temperature of 130° in the direct sun's rays is not rare in any latitude of the United States. Sometimes this temperature reaches 140°, and occasionally it is even higher. The conditions for sensible temperatures already stated do not apply in such cases — in part, it may be because of the failure of sufficient perspiration to give free evaporation; in part, because of the special effects which strong and direct insolation has on organic structures.

To obtain the beneficial effects of the reduction of temperature by evaporation, the shade must be sought, and the direct sun's rays avoided. The effects may be heightened by a natural or artificial breeze or wind; and for parts of the body covered by clothing they may be obtained by adapting the clothing to the free passage of air and moisture.

Dr. Judson Daland, Philadelphia, gave a detailed report of three cases of

BERI-BERI,

with examination of the blood. The greatest interest in these cases surrounds the question of etiology. Beri-beri has been observed in Japan, portions of Africa, and in the East and West Indies, and, as has been shown by Scheube and Baelz, it is an endemic peripheral multiple neuritis. Muira believed it to be due to fish, especially decomposed fish, while others attribute it to rice. These cases tend to bear out Muira's theory. The food of these men was almost exclusively fish and rice. Some of the fish was dried; much was spoiled; the quantity was insufficient. The main facts, as given by Dr. Daland, seem to point conclusively to poisoning by some substance in rice or decomposing fish, probably of the nature of miscarin.

These three cases recovered, as did eight others, sailors in the Brazilian navy, reported by Dr. Gihon.

Unfortunately, the time of the meeting did not allow for the reading in full of the paper of **Dr. Daly** on

SOME PRACTICAL OBSERVATIONS ON SO CALLED MALARIA,

and that of **Dr. W. C. Glasgow** on

PHYSICAL SIGNS OF CELLULAR ŒDEMA OF THE LUNG CONSIDERED IN THEIR RELATION TO THE PATHOLOGICAL CHANGES.

A Bit of Medical Correspondence. — A correspondent of the *Northwestern Lancet* sends the following letter received from a Dakota patient:

May 6th, 1894.

Dear Sar. I will write and tell You how he is he is gust the same and his stomick bloth up and is so hard that he thing that it is gunt buts he is sick over his hole body and it sits up on under his brist but he is gut good opening in frunt and behind.

Recent Literature.

An American Text-Book of Gynecology, Medical and Surgical. For Practitioners and Students. By Henry T. Byford, M.D., J. M. Baldy, M.D., Edwin B. Cragin, M.D., J. H. Etheridge, M.D., William Goodell, M.D., Howard A. Kelly, M.D., Florian Krug, M.D., E. E. Montgomery, M.D., William R. Pryor, M.D., George M. Tuttle, M.D. Edited by J. M. Baldy, M.D., with 360 illustrations in text, and 37 colored and half-tone plates. Philadelphia: W. B. Saunders. 1894.

This is the most notable contribution to gynecological literature that has appeared since the publication of the "American System of Gynecology" in 1887. The high professional standing of the authors and the thorough manner in which they have utilized what has stood the test of time in this branch of medicine, and have given us the latest ideas on the various subjects treated, make it the most complete exponent of gynecology which we have. How long it will hold this position, in view of the rapid strides which are being made especially in this department is another question; until that time it will be looked to as an authoritative statement. Like a system of surgery published by the same firm, though of composite authorship, its various chapters are unsigned and the authors are as a body responsible for the views advanced. While this may have its advantages, yet where there is an editor-in-chief who can see that every part is adequately treated, and conflicting methods are not advocated, we think it is better for each author to accept the responsibility of what he has written. The average reader, especially of a subject where there can honestly be differences of opinion, naturally wishes to know who has made this or that statement, and such knowledge may add or detract from its value.

As a whole, the work has been well done as was to be expected, especial attention has been paid to the rules for and methods of antisepsis, to full descriptions of the technique of operations, including many new ones, and to the modern views of pelvic pathology. But no subject seems to have been neglected though the different parts vary in merit. Sometimes it seems as if the sense of proportionate value had been lost, but this is not strange when the natural bias of many of the writers is taken into consideration. Thus as between operative and non-operative methods of treatment, the former are sometimes, as it seems to us, given undue prominence, and this leads us to say that it is in no sense a text-book or primarily adapted for the student. It is too advanced and technical. But the gynecologist and surgeon and the general practitioner who has any desire to practise diseases of women will find it of practical value.

As we have read it through, there have naturally been statements with which we were not wholly in accord. Some few points have seemed worthy of mention. In Fig. 2 of the frontispiece the vulva is drawn much too high. The opening of the anus would more nearly represent its true position. The chapter on the "technique of gynecological operations" is excellent, though just what is gained by an illustration of a "patient being etherized," or of "washing away permanganate of potash with oxalic-acid solution" we fail to see.

In the chapter on the "examination of the female pelvic organs" too much space is devoted to the uterine elevator. Byford's is the best, but they are both dangerous and useless.

A separate chapter is devoted to "genital tuberculosis," a subject which has been neglected heretofore. It is thoroughly treated, beginning with lupus and following up the whole genital tract. As was to be anticipated, the author's treatment of the subject of inflammatory diseases of the uterus is thoroughly in accord with modern pathological views. The uterus is looked upon as the source of the trouble and as a result of this, they recommend that curettage of the uterus is indicated in every case of acute tubal or peritoneal inflammation where the source of infection has been in the uterus.

The chapter on "distortions and malpositions" is in general very good. We think the authors condemn too strongly the use of stem pessaries in the treatment of dysmenorrhœa associated with anteflexion, and are unwise in advocating the use of a repositor to replace the retro-displaced uterus. If Schücking's operation for a backward displaced uterus is "mentioned merely to condemn it," it is surely unnecessary to illustrate it with two cuts. The chapters on "malignant diseases of the female genitalia," and on "uterine neoplasms," are among the best in the book, and are very valuable to the operator.

In the matter of illustrations and plates the book surpasses anything we have seen. If we made any criticism we would say that some of them are unnecessary, and that except where it is essential to illustrate the point desired, absolutely nude figures are not in good taste. The book is well gotten up, and the letter-press admirable.

Minor Surgery and Bandaging. Including the Treatment of Fractures and Dislocations, Tracheotomy, Intubation of the Larynx, Ligation of Arteries and Amputations. By Henry R. Wharton, M.D., Demonstrator and Lecturer on Surgical Diseases of Children in the University of Pennsylvania, Surgeon to the Presbyterian Hospital, the Methodist-Episcopal Hospital and the Children's Hospital, Consulting Surgeon to the Presbyterian Orphanage. Second edition, thoroughly revised and enlarged, with four hundred and sixteen illustrations. Philadelphia: Lea Brothers & Co. 1893.

This work has quickly reached its second edition, and the author has revised the aseptic and antiseptic method of wound treatment, bringing them up to date; a number of new illustrations have been added. The book is divided into six parts. The first is on bandaging, the second on minor surgery, the third on fractures, the fourth on dislocations, the fifth on ligation of arteries, and the sixth on amputations.

The part on bandaging is illustrated by some beautiful half-tones, which add greatly to the text. A little more attention to detail in the description of some of the operations described would enhance the value of the book. Some of the illustrations are without value, except in so far as they stimulate the imagination. The book, as a whole, though, is one of the best minor surgeries that we possess.

On the authority of the *Hamburger Freisinnige Zeitung*, there were in Prussia last year, 1,200 individuals who died from delirium tremens, and 500 who committed suicide through intemperance.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, JUNE 28, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

ZOLA AND LOURDES.

Zola's new novel, "Lourdes" is said to have been received with furor in Paris. It has been running as a serial through two of the leading daily papers. Though the book is ranked as fiction, the author has evidently pictured the scene in a realistic and on the whole, truthful aspect. The story of the miraculous appearance of the Virgin to Bernadette, a shepherd girl in 1858, and the erection of a great temple and sanitarium at Lourdes over the grotto, the scene of the apparitions; the innumerable pilgrimages of the sick to the spot; and the wonderful tales of sudden cures are familiar to all. The subject, moreover, has been recently reviewed in striking colors in two numbers of the *Revue des deux Mondes*, by Emile Pouvillon, who insists on the reality of alleged miraculous cures.

Zola's tale opens with the description of a crowded train carrying sick pilgrims from Paris to Lourdes. There are patients there who for years have been bedridden; some are in the last stages of consumption; some have frightful lupus sores; some chronic eczematous eruptions; one passenger is at the point of death; one woman is taking her dying baby to be cured at the miraculous grotto; some are paralyzed. Just as the train leaves a certain station, a young girl gets on the car. She tells the story of the miraculous cure accorded to her diseased foot by simply dipping it in the water at Lourdes.

A vivid picture is given of the confusion when the invalids are landed at Lourdes. Hundreds of them are hurriedly conveyed in carriages and litters through the mud and dark to the big hospital until the procession shall be formed.

The hospital is greatly overcrowded. The sisters do their work heroically. At 8 A. M. the procession to the grotto is formed. The long line of invalids afflicted with every conceivable disease makes a horrible contrast to the beauty of the landscape. A priest mounts the stone pulpit and asks the vast congregation to pray for a great miracle, as the body of the man who died on the train is to be immersed in the pool in hopes that life will be restored. The dead man is brought in and immersed amid vociferous supplications. No miracle occurs, and the corpse is taken away. The pool is thronged with sick persons, who eagerly await their turn. The supplications of the bystanders are of an urgent, imploring, sometimes almost of a scolding nature. Cures are demanded, that the honor of the grotto may be maintained, the good name of the importuned vindicated, that unbelievers may be convinced and converted.

So many are bathed in the pool that the water soon becomes filthy beyond description. The water in the pool is only changed twice a day, as the supply is somewhat scanty. No one better than Zola could describe the nastiness of the water, so seldom changed, in which so many persons suffering from cancerous and tubercular affections, purulent sores, ophthalmus, and offensive cutaneous diseases were bathed. "What a home for microbes," exclaims one of Zola's characters; "the present mania for antiseptic precautions receives a fearful blow from such a spectacle! How does it not happen that one nasty disease does not kill all the invalids?"

Zola, in a chapter lately published, describes a visit to the Bureau of Certifications, from which it would seem that there is a good deal lacking in the thoroughness of the methods of verification. The testimony of often unknown and obscure physicians was taken as to the condition of patients when they came for treatment; they were not subjected to a preliminary examination by a competent commission, and when any announced themselves as cured, there was always room for scepticism as to whether they had come to Lourdes with any serious malady, not amenable to cure by some strong psychical influence.

As to the percentage of "cures" effected at Lourdes, Zola estimates it as not more than 1.0 per cent., that is, nine out of every ten coming to Lourdes with faith and great expectations go away unrelieved; cases that expert physicians call clearly incurable are not benefited. As for the miracles occurring at the grotto, he is puzzled, and feels that probably a great mistake has been made somewhere. We conclude by giving a brief citation from the fourth chapter:

> "Pierre began now to comprehend what this all meant — all that was taking place at Lourdes — this extraordinary spectacle at which the world had assisted for years, amid the devoted adoration of some and the mocking laughter of others. Certainly, the whole matter was very badly understood — almost ignored; but a hidden force moved it on — first the suggestion, then the perturbation of anticipation, the fascination of the journey, the prayers and the hymns, a growing exaltation and finally the healing breath, the unknown power that separated itself from the masses in a marked crisis of faith. He even fancied it rather stupid not to believe in these frauds. The facts themselves were very great, but at the same time far more simple. It was not necessary for the fathers of the grotto to condescend to lie — they must only needs add to the confusion to utilize the universal ignorance. They might even confess that all was done in good faith — the unknown doctors who gave the certificates, the comforted invalids who fancied themselves

cured and the enthusiastic witnesses who vowed they had seen. After all this it was evidently impossible to prove whether there had or had not been a miracle. From that moment did not the miracle become an actual fact to the larger number for all those who suffered and for those who had need for hope?"

REVISION IN THE AMERICAN MEDICAL ASSOCIATION.

We call the especial attention of our readers who are interested in the evolution of the American Medical Association to the clear statements in the excellent letter on page 657 of this issue (from our special San Francisco correspondent). One finds therein not only a capital account of this individual meeting, but also a suggestive explanation of the forces at work to effect a modification in the government of the Association. An unavoidable delay gives our readers this letter later than we had hoped, but it is none the less readable on that account, and one sees more accurately after the smoke of the action has cleared away.

MEDICAL NOTES.

The Royal Society of Edinburgh Medal. — The Royal Society of Edinburgh has awarded one of its medals to Prof. T. R. Fraser of Edinburgh University, for his work on strophanthus.

The Decline of the Male Intellect. — Again the senior wrangleship at Cambridge, England, has been obtained by a young woman, who is reported to have had a long lead over her male competitors. Her name is Johnson.

A Medical Centenarian. — Dr. Salmon, of Cambridge, South Wales, is the oldest physician in England. He was one hundred and four years old in May. He has a patient in the same town who is one hundred and five years old.

Bold Advertising. — The following advertisement appears in the *Münchener Medicinische Wochenschrift* of June 5th:

> "To the Public. — I hereby take it upon me to make the welcome announcement to physicians that I have acquired the sole right of manufacturing the Anticonception Wadding Tampons, according to the formula of Dr. ——. See his pamphlet, "The Means to Prevent Conception," p. 29, published by —— & ——, price 1 mark 50 pf. I have them chemically prepared in different-sized packages. With respect and pleasure,
>
> —— ——, *Apothecary and Chemist.*
>
> "Take Notice. — Chemically prepared Anticonception Wadding Tampons. See page 29, etc."

Comment is unnecessary!

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, June 27, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 44, scarlet fever 35, measles 26, typhoid fever 15.

Operations at the Boston City Hospital. — During the visit of the members of the Massachusetts Medical Society to the Boston City Hospital at the recent meeting of the Society, the following operations were performed: an external urethrotomy, an appendicitis, two hysterectomies and a complete removal of the breast and glands of the axilla.

Honorary Degree. — Dr. D. W. Cheever, Emeritus Professor of Surgery in the Harvard Medical School, received the degree of LL.D. from Harvard College at Commencement, June 27th.

Harvard Medical Alumni Association. — The Harvard Medical Alumni Association held its annual meeting and annual dinner, in Boston, on Tuesday, June 26th, at 12 and 1 o'clock. The usual routine business was transacted at the meeting. At the dinner, at which presided most felicitously Dr. James R. Chadwick, Dr. W. W. Keen, of Philadelphia, Dr. Wm. Osler, of the Johns Hopkins University, Dr. W. M. Polk, of New York, and Dr. J. S. Billings, U. S. A., made speeches. A full report of the occasion, which was one of much interest, will be given later.

Harvard Dental Alumni Association. — The Harvard Dental Alumni Association held its twenty-third annual meeting and its annual dinner at the Hotel Thorndike, Boston, Monday evening, June 25th. Dr. Virgil C. Pond, President of the Association, presided; and after the dinner speeches were made by Bishop Lawrence, of Massachusetts, Mr. Thomas, Private Secretary of the Governor of the State, Dr. George B. Shattuck, of the Board of Overseers of Harvard College, and Mr. W. R. Thayer, Editor of the *Harvard Alumni Magazine*. The Association is in a flourishing condition.

The Annual Address in Medicine at Yale University. — The Annual Address in Medicine before the Medical Faculty of Yale University, was given by Dr. William T. Lusk, on Tuesday, June 26th. Dr. Lusk chose as his subject, "The Illustrious Boerhaave." Prof. William H. Carmalt gave a reception to Dr. Lusk in the evening of the same day.

Tufts Medical School Commencement. — At the commencement exercises of Tufts College held on June 20th, the degree of Doctor of Medicine was conferred upon the first class to graduate from the medical school of the college. Seventeen persons were given degrees. An honorary degree of LL.D. was conferred upon J. S. White, of Brooklyn, Dean of the Long Island Hospital Medical School.

The Massachusetts Infant Asylum. — The twenty-seventh annual report of the Massachusetts Infant Asylum, shows a most successful year's work. Of 88 children in the hospital but five died, two of bronchitis in the hospital, and three who were out boarding — one of bronchitis, one of enteritis, and one of convulsions of unknown origin. During the twenty-seven years of its existence the hospital has cared for nearly 3,700 children, with a total mortality of only 468, or less than 13 per cent.

Protests against the Continuance of two Hospitals. — The Committee on Health of the Board of Aldermen of Boston, gave a hearing last week to the remonstrants against the licensing of the Baptist Hospital on Bellevue Street, Longwood, and of the Free Consumptives' Home on Quincy Street, Dorchester. The hospital having withdrawn its petition for a license for a lying-in department, no especial permit is required for the carrying on of a general hospital. The Board, however, has statutory power to prohibit hospitals in any particular portion of the city; and it is this restrictive power which the remonstrants desire the Board to exercise, on the ground that both hospitals are situated on residential streets to the disadvantage of property owners.

NEW YORK.

The Tenement-House Population. — Dr. Roger S. Tracy, Deputy Registrar of Vital Statistics, has just completed the semi-annual census of the tenement-house population of New York, and his report was presented at a meeting of the Board of Health held June 19th. It shows that the total tenement-house population is 1,332,773, and that the total number of tenement-houses is 39,138. Of this number there are 2,346 rear houses, and the population of the latter amounts to 56,130. In the ward which contains the largest tenement-house population (the twelfth) there are 7,702 tenement-houses, with a population of 252,331; and in the ward which contains the smallest (the second), there are 8 tenement-houses, with a population of 175. The total number of children under five years of age residing in tenement-houses in the city, is 180,359.

Small-Pox and Chicken-Pox. — A short time since some cases of eruptive disease occurring at Stapleton, Staten Island, were pronounced by the local health officer to be chicken-pox. Some of the other Staten Island physicians believed these cases to be really small-pox, and with the consent of the health officer, Dr. A. H. Doty, Chief of the Bureau of Contagious Diseases, and other experts from New York, were asked to examine the cases. They unhesitatingly expressed the opinion that the disease was small-pox, and the health officer, although not convinced, promised to take all possible precautions in the way of quarantine and disinfection. The matter having been brought to the attention of the State Board of Health, representatives of that body visited Stapleton on June 20th, and reported that the cases were undoubtedly small-pox, and on the day following, at the request of the State Board, Dr. Bryant, of the New York City Health Department, was sent to Stapleton to take charge of the disinfection of the premises where the cases had occurred, and to direct the vaccination of all persons who had been exposed to the disease.

Trephining for Headache. — At a meeting of the New York County Medical Association held June 18th, Dr. J. Marshall Hawkes presented a patient, a young man, whom he had trephined for persistent localized headache. In Starr's recent work on "Brain Surgery," Dr. Hawkes said it was stated that this operation had been performed but twice for the purpose in question, once in London, and once in New York, by Dr. Robert F. Weir. From early boyhood this patient had suffered intolerably from frontal headache, and though he had consulted a large number of physicians, every remedy that had been tried had utterly failed to give him relief. Thinking that the trouble might possibly be due to eye-strain, Dr. Hawkes first sent him to Dr. H. Knapp, but the latter found that there was no difficulty of this kind. On making an examination of the head, the only abnormality that could be detected was a slight indentation of the bone in the right frontal region. As a last resource, Dr. Hawkes determined to trephine at this spot, and on June 30, 1892, a button of bone, about two-thirds of an inch was removed under strict antiseptic precautions. It was found that in the location named there was a depression of the inner table of the cranial bone, making pressure upon the brain substance, and the button removed was exhibited to the Association. From the time of the operation there had been complete relief from the headache, and as two years had now elapsed, the cure could be pronounced permanent.

Miscellany.

THE FIRST DISPENSARY.

In an account of the development of the Hospital Sunday Fund, the *Lancet* relates the story of the establishment of the first dispensary. "In 1696, an instrument was signed by the President of the Royal College of Physicians, most of the Elects, Senior Fellows and Candidates, declaring that "no method hath been taken to furnish the poor with medicine for their cure at low and reasonable rates," and subscribing sums of money to be "expended in preparing and delivering medicines to the poor at their intrinsic value." Notwithstanding "the vigorous opposition of a few men who thought it their interest to defeat so laudable a design," a dispensary was erected in Warwick Lane "being an apartment in the College set up for the relief of the Sick Poor," and managed for many years with integrity and disinterestedness. It was of this that Dr. Garth wrote:

> "There stands a dome majestic to the sight
> And sumptuous arches bear its oval height;
> A Golden Globe placed high with artful skill
> Seems to the distant sight a Gilded Pill."

JAPANESE GIRLS IN BOXES.

The beauty of Japanese girls is proverbial, and their attractiveness led recently to an attempt to smuggle some of them out of their country to become the slaves of their purchasers.

According to the report of the officers of the Northern Pacific steamer *Tacoma*, just as that vessel left Yokohama on a late trip, a Japanese man came on board with four large boxes, which he said he wished put in the steerage as his luggage. Just as the first box was about to be lowered a rapping and faint cry was heard from one of them, and on opening it a young Japanese girl was found doubled up inside. Each of the other boxes was found to contain a similar Danäe, but all of these three were unconscious. After severe labor two of them were resuscitated, but the third was moribund when discovered and soon died.

On police investigation the responsible agent was not found, but the Japanese woman who had enticed the girls to her house and drugged them was discovered. It is said she has a husband in Portland, Oregon, to whom the girls were consigned.

It had been planned that the steerage passenger should open the boxes after the vessel left the Japanese waters and release the girls, paying any fare which might be required. Three air-holes had been bored in each of the boxes, but these had become almost closed by the bodies of the girls, which were crowded into the coffin-like confines in a cruel manner. Each box was two feet three inches in length, and about eighteen inches in depth and breadth. In each of the boxes was a piece of bread.

◆

Correspondence.

[From our Special Correspondent.]

LETTER FROM SAN FRANCISCO.

THE MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

ATTENDANCE. — WORK IN GENERAL SESSIONS AND IN SECTIONS. — CHANGES IN OFFICERS. — CENTRALIZATION. — REVISION OF THE CONSTITUTION. · THE CODE. — ENTERTAINMENTS AND HOSPITALITIES.

SAN FRANCISCO, June 11, 1894.

THE forty-fifth annual meeting of the American Medical Association has been voted a scientific and a social success. In point of attendance it has exceeded many former meetings held in populous eastern centres, nearly 600 members having been registered in attendance. The greater number of the sections were well organized, those failing to make a good showing being usually in a similar position. Even the section on Oral and Dental Surgery, that had been the despair of its energetic officers, was well attended and had ample material for its consideration. The section on Surgery had been assigned quarters in Memorial Hall which would accommodate 300 persons, but even this was found too small at times, and this interesting section, which had much more material than it could dispose of, was shifted to the hall in which the general sessions were held. The section on Medicine and that on Obstetrics and Diseases of Women were always well attended. In fact, throughout the meeting a genuine and lively interest was taken in the scientific work, which was excellent in character.

Of all the western cities none can surpass San Francisco in the facilities she presents for the entertainment or for the reception of a large gathering, such as the American Medical Association. Her hotel accommodation is of the best, and of that which is strictly first-class there is always plenty to be had. The position which this city has long held as the metropolis of the Pacific Coast has created a demand for all that goes to make up a large city in a more populous region. Her halls are numerous and commodious, and of amusements and points of interest to the visitor there is no lack. The only thing therefore required to make the meeting a success were an ample attendance and efficient preliminary work on the part of the committee of arrangements. The visitors came, and the committee certainly did its work in a most thorough manner.

Twenty-three years is a long time in the life of a man or of an organization. To paraphrase the statement of the Governor of Carolina, "It is a long time between meetings." During this interval the membership derived from the former meeting had died off or dropped out, only a few of the "old guard" remaining, supplemented by additions mainly by application. When, therefore, the Association decided to go to California the chairman of the committee realized that he had a large contract on his hands; and after some consultation with his committee he started East on an educational tour. When fully informed as to the machinery of the meeting, it was next necessary to map out all the detail work and to instruct every one in his particular task. When these facts have been taken into consideration, the committee must certainly be congratulated on the very successful results of its labors. The attendance was good, and indeed more than the most sanguine anticipated, amounting in all to something like 1,200; but it is now certain that more prosperous times would have largely increased these figures.

The phenomenal weather was also an unfavorable factor. At the last moment many who intended to go were afraid to start. Some already under way failed to reach San Francisco in time for the meeting. To crown these uncertainties, it was announced at headquarters that the Association train, with the President and many of the officers, was "stalled" in Colorado, unable to proceed and with some reason to fear that it could not return. This train was ultimately rescued; and the belated travellers, after two days delay, reached California by the southern instead of the northern route. The railroads made the best of the situation, the California company giving the train the right of way in its territory and getting it in five hours ahead of schedule time. "All's well that ends well," and most of the travellers were on hand for the opening of the meeting.

The Palace Hotel, the largest in the city and centrally located, had been selected as headquarters. The registration bureau was located in one of the large halls of the hotel, and in an adjoining hall was the ladies' headquarters, a feature that contributed in no little degree to the pleasure of visitors. Previous to the meeting a ladies' committee had been appointed, whose duty it was to look after visiting ladies and provide for their entertainment. During the entire session members of this committee were on duty at headquarters, and all were made to feel at home. The registration bureau, though hard pressed at times, did effective work and did not break down. It was, during the busy hours, often a little behind; but no flagrant mistakes were made, which is somewhat creditable where all were new to the work. Here, as in every other department, the local committees may be said to have been swamped. The most sanguine had not calculated on so large an attendance, and the friends and relatives accompanying the members were an agreeable though unexpected surprise. While supplies of all kinds had been, as was supposed, liberally provided, fresh requisitions were demanded; and it was even necessary to reprint the entire programme, to provide for new arrivals.

A majority of the visitors found quarters at the Palace, and here also rooms were provided for the committees. The general sessions, all the section meetings and the exhibition were housed in the Odd Fellows' Building. The whole building had been engaged, and was ample for the purposes of the Association. On the ground floor, which was lighted by electricity, a very fair exhibition attracted the attention of the members during their leisure moments in the day. Immediately above was the main hall in which the general sessions were held, and here also the section on Surgery was compelled to seek better accommodations. This had been very tastefully decorated by the local committee, greatly enhancing the effect of the fine hall and materially improving its acoustic properties. Exclusive of committee-rooms there were twelve halls, so that every section was enabled to meet under the same roof. This seemed to give general satisfaction, and while uncommon in the past, should be adopted in every city offering equal facilities. The main hall was well filled at every general session, members and spectators alike anticipating interesting debates.

Dr. Hibberd as a presiding officer earned a well-deserved popularity. His decisions were prompt; his rulings on debatable points, if a trifle arbitrary and at times not strictly parliamentary, were always well received. His unfailing good humor and ready wit invariably carried the large audience with him, and enabled him to quickly discomfit any opposition that might be manifested. Even in the midst of the heated debates on Constitution and Code, his unfailing good humor disarmed the contending factions, and more than anything else contributed to lessen asperities and to promote harmony throughout the entire meeting. His address, a really presidential message, was broad and comprehensive in character, and was well received. In it he outlined the neutral position he proposed to occupy on the question of revision, at the same time pointing out the feasibility of speedily terminating controversy. His recommendations were heartily concurred in by the Association.

Many will regret the resignation of Dr. R. J. Dunglison, who has for seventeen years been Treasurer of the Association. It is said he resigned to anticipate a movement to oust him that was rather prominent at Milwaukee. It was also hinted that he had not come to California, not desiring to be present at his own funeral. It was further rumored, and had even been published, that Dr. W. B. Atkinson's official demise had been discussed; but the ceremony failed to materialize, and the venerable Secretary has entered upon his thirty-first year of office. It appears that all this is part of a policy of centralization that would place the executive officers of the Association in Chicago. This, no doubt, would facilitate the conduct of the *Journal*, but might be regarded with suspicion by a large number of the Association, which fact it would be well to bear in mind.

As a feature of the meeting of 1894 the general addresses were a failure. That in Medicine, by Dr. Hughes, as a literary composition might be commended; but it was abstruse and theoretical, and above all unpardonably long. When will the readers of papers learn that the average audience can only be held attentive by profoundly interesting topics, briefly stated! The remaining addresses in Surgery and in State Medicine were not read, the authors being absent, and the papers also being out of reach. It is true that more interest will attach to an address when delivered by the author, but in his unavoidable absence there is no reason why the meeting should be deprived of so important a paper, which can be read by the Secretary or by a reader of the author's selection. As it happened, the business of the sessions so fully occupied the time that the remaining addresses could only have been read by prolonging the sessions.

The sensational feature of the meeting, and one on which interest concentrated to the exclusion of all else, was the question of revision. The reports of the committees on Constitution had virtually been before the country for twelve months. A proposed Constitution and By-Laws had been submitted at Milwaukee, and it was well known that certain changes were to be made in the Code. At both meetings when these reports were considered, the hall was filled to its utmost capacity, a number of ladies and a fair representation from the medical students being present in the galleries.

Whatever may be said to the contrary, it is quite plain that the revisers of the Constitution have in mind a concentration of power in the hands of a few, with every indication that this control would be self-perpetuating. Without for an instant impugning their motives, it must be plain to any thinking man that such a result will inevitably be reached. The president is an outspoken revisionist; but it is difficult to realize the soundness of his argument, that from the mode of its election, the business committee must be representative. It is quite true that it is representative of the profession, in the sense that its components are representative men or leaders in the profession. It is also true that by virtue of that fact they are leaders in different branches, or specialists, and equally true that there never will be a general practitioner amongst their number and that he would find no place there. The business committee has charge of the scientific work of the meetings, it fulfils its function admirably, but it should not be embarrassed by outside matters. These are the weak points of the proposed Constitution, and they found no favor with the Western men.

It was sought to remedy this defect by two propositions: First, that there should be added to the business committee for the purposes of nomination, a representative from each State and Territory. This, while making a very unwieldy committee, would leave things just where they were, as the voting power by numerical superiority would still rest with the business committee. The second proposition would in a few years decide the whole matter in favor of the revisionists. This is to enable every man who has attended twice as a delegate to have the right to vote in future. The inevitable result of this would be to provide a greatly increasing majority of the voters in the Eastern and Central States, and to leave the West hopelessly out in the cold. It is therefore hardly to be wondered that neither change found much favor with the Western men who were averse to committing suicide on the question of representation. Whatever may be the defects of the Constitution proposed by the minority, it was certainly more in consonance with the feelings of the Pacific Coast States, and it is beyond question that it could have been adopted at this meeting. The management of the subject was, however, bad; the supporters of the minority were unaware of their strength or feared to trust themselves, and the tactics of the opposition were certainly superior. As a result, the matter has been deferred for two years, to come up anew, when decisive action would have given the Association the benefit of a trial of the new Constitution.

On the question of a change in the Code, opinions were even more radically divided. The supporters of a new Code in the great West, and particularly on the Pacific Coast, are few in number. The great mass of the profession desire no change, and are perfectly satisfied with the Code as it is. It can hardly be regarded as a matter of sentiment, but rather as being due to a clearer conception of the honesty and fairness as well as of the ethics of the Code. That no change could be effected at the San Francisco meeting was a foregone conclusion, when the Medical Society of the State of California expressed itself as opposed to any change and instructed its delegates to so record their votes. Several of the local societies had also recorded their vote as opposed to change, and those which had not taken formal action were none the less opposed to iconoclastic measures.

Whatever misconception may exist in the Eastern States on the question of consultations, there is certainly none in the Far West. An irregular practitioner or sectarian physician is recognized as such, his honesty and conscientious practice duly respected, or his dishonest methods properly appreciated. Hence there is no association, except by a very few black sheep, nor has the leaven of commercial greed penetrated very deeply. Outside the question of consultation, there is no point except that concerning the holding of patents by physicians on which there could be much controversy. While there are many who feel that a physician should be allowed, if he so desire, to obtain a patent, the majority certainly believe that the present course is the most respectable and professional.

There was an expression of general satisfaction and hearty good-will to do right when the vote on revision of the Code was taken. It was perfectly within the power of the supporters of the Code to have carried the adoption of the minority report by a large majority; but here, as in the case of the Constitution, affairs were mismanaged, and at times many of the delegates did not know how they were voting. There is, however, a temporary cessation in hostilities, and every one parted in very good humor.

In the matter of entertainments California's hospitality cannot be said to have been at fault. The medical societies, the medical schools, private individuals, and, in fact, the whole profession seemed most fully to appreciate the visit of the Association. In several cities in which the Association has been entertained in recent years it has been customary to solicit contributions from citizens towards an entertainment fund. In this manner large sums have been raised. It was early determined that such methods would not be pursued in California, and the decision was reached to limit subscriptions to medical societies and members of the profession. In spite of hard times a liberal response was made, and the committee found itself with ample funds on hand. During the short period of four days, with only the evenings for pleasure, it was necessary to apportion the time so as to allow all that were desirous of entertaining, an opportunity to do so.

The ladies were not forgotten, special features being arranged for their amusement during the hours devoted to scientific work. Of these the most enjoyable were: a drive through Golden Gate Park, returning by the Presidio and Ocean Beach, and a "tea" at the residence of Mrs. R. A. McLean, that showed the visitors a charming home in the most attractive residence section of the city. On Friday, June 8th, Mr. Adolph Sutro, whose daughter Mrs. G. W. Merritt is a physician, entertained some 300 ladies at lunch. Refreshments were served in a large pavilion (which will be part of the baths) below Sutro Heights and close to the famous Cliff House, which Mr. Sutro is establishing on a stupendous scale.

The general entertainments were as follows: commencing with an informal instrumental concert at the Palace Hotel on Monday evening, the San Francisco County Medical Society opened the festivites on Tuesday with a reception at Pioneer Hall. The whole building, including the State Mining Bureau, was open to the visitors and many relics of early days were to be seen. On Wednesday evening Cooper Medical College kept open house at the college building, corner of Webster and Sacramento Streets. The Lane Hospital adjoining, now almost completed, had been temporarily lighted for this occasion, and the several hundred people inspected everything, from auditorium below to dissecting-room on the fourth floor. On the same evening Dr. W. F. McNutt gave a reception at his residence, 1805 California Street. On Thursday afternoon and during the early evening, Dr. L. C. Lane gave a reception at his residence, corner of Clay and Buchanan Streets. Later in the evening the Association, as a "committee of the whole," visited the Mid-Winter Fair. The evening was fortunately very pleasant, there being very little wind, and the Court of Honor was thronged with the Association, members being found at every turn. This was a special occasion; and after sufficient time had been allowed for a thorough inspection, every one repaired to Festival Hall, where refreshments were served and some short speeches were made by the Director-General M. H. De Young, Dr. R. Beverley Cole and others, not omitting Dr. H. O. Marcy. On Friday evening the Medical Department of the University of California gave a very elegant reception at the Hopkins Art Institute on Nob Hill. This palatial mansion, originally built by Mark Hopkins, one of the famous four who planned and constructed the Central Pacific Railroad, is now, through the munificence of Mr. Edwin F. Searles, of Great Barrington, Mass., the property of the University of California.

Saturday had been reserved for the entertainment by the medical profession of the State of California. This took the form of an excursion on the bay; and at 9 A. M. the steamer *Newark* started with over 1,200 persons on board. All points of interest in the lower bay were visited, then passing the quarantine station, the steamer headed for Mare Island, where about two hours were spent ashore visiting the U. S. Navy Yard and inspecting the hospital and the coast-defence vessel *Monterey*, which with other war-ships was anchored off the yard. The homeward trip was made without incident, though the water was not as smooth as it should be at this time of year.

On all sides are heard words of commendation for Dr. R. H. Plummer and the local committees, whose management has been very successful. On the other hand, Californians are unanimous in expressing the hope that the Association will not wait twenty-three years before it revisits the western shores of its territory.

METEOROLOGICAL RECORD,

For the week ending June 16th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..10	30.07	72	86	59	48	48	48	W.	S.W.	7	11	C.	C.	
M..11	29.99	78	93	62	59	81	70	W.	S.E.	12	8	F.	F.	
T..12	30.08	63	72	54	78	93	85	N.W.	N.E.	3	20	O.	O.	
W..13	30.22	54	58	50	81	71	76	N.E.	S.E.	12	4	O.	C.	
T..14	30.20	65	82	49	53	56	55	W.	S.	7	10	F.	C.	
F..15	30.05	74	88	60	65	58	62	W.	S.W.	10	10	C.	C.	
S..16	29.90	79	92	66	66	66	66	W.	S.W.	8	9	C.	C.	
☞	30.07		81	71			69							

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, June 16, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Scarlet fever.
New York . .	1,891,306	841	368	18.84	14.28	5.76	7.08	2.16
Chicago . . .	1,438,000	—	—	—	—	—	—	—
Philadelphia .	1,115,562	—	—	—	—	—	—	—
Brooklyn . .	978,394	459	208	18.92	11.00	4.84	7.26	.88
St. Louis . . .	560,000	—	—	—	—	—	—	—
Boston . . .	501,107	165	53	10.58	10.58	.61	4.88	3.66
Baltimore . .	500,000	—	—	—	—	—	—	—
Washington .	308,431	157	84	31.36	3.20	24.32	.64	—
Cincinnati . .	305,000	122	45	5.74	.82	1.64	3.28	—
Cleveland . .	290,000	125	—	9.60	28.00	2.40	.80	.80
Pittsburg . .	263,709	—	—	—	—	—	—	—
Milwaukee . .	250,000	—	—	—	—	—	—	—
Nashville . .	87,754	37	11	18.90	8.10	5.40	2.70	—
Charleston . .	65,165	33	12	17.64	—	11.76	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	100,410	28	9	14.28	10.71	10.71	—	—
Fall River . .	92,233	37	18	10.80	13.50	8.10	—	—
Lowell . . .	90,613	23	10	13.05	13.05	8.70	4.35	—
Cambridge . .	79,607	27	10	44.40	7.40	7.40	7.40	14.80
Lynn	65,123	17	1	11.76	5.88	—	—	—
Springfield . .	50,284	20	9	25.00	15.00	—	—	—
Lawrence . .	49,900	19	10	15.78	15.78	15.78	—	—
New Bedford .	47,741	17	5	11.76	—	—	—	5.88
Holyoke . . .	43,348	—	—	—	—	—	—	—
Brockton . .	33,939	6	2	—	16.66	—	—	—
Salem	33,155	10	4	—	—	—	—	—
Haverhill . .	32,925	10	4	—	10.00	—	—	—
Malden . . .	30,209	8	2	12.50	25.00	—	—	12.50
Chelsea . . .	29,806	10	3	20.00	—	—	—	20.00
Fitchburg . .	29,383	5	3	40.00	—	—	20.00	—
Newton . . .	28,837	6	2	16.66	—	16.66	—	—
Gloucester . .	27,293	—	—	—	—	—	—	—
Taunton . . .	26,954	3	0	—	—	—	—	—
Waltham . .	22,058	4	0	—	—	—	—	—
Quincy . . .	19,642	—	—	—	—	—	—	—
Pittsfield . .	18,802	5	2	—	20.00	—	—	—
Everett . . .	16,585	—	—	—	—	—	—	—
Northampton .	16,331	0	1	—	16.66	—	—	—
Newburyport .	14,073	5	2	—	—	—	—	—
Amesbury . .	10,920	1	0	—	—	—	—	—

Deaths reported 2,239; under five years of age 885; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 580, acute lung diseases 263, consumption 211, diarrhœal diseases 136, diphtheria and croup 111, scarlet fever 42, whooping-cough 33, measles 24, typhoid fever 15, cerebro-spinal meningitis 11, malarial fever 8, small-pox 5, erysipelas 5.

From whooping-cough Brooklyn 9, New York and Washington 5 each, Cleveland 4, Springfield 3, Boston and Nashville 2 each, Cincinnati, Fall River and Fitchburg 1 each. From measles Brooklyn 11, New York 9, Cleveland and Springfield 2 each. From typhoid fever New York 4, Washington, Nashville and Charleston 2 each, Boston, Cleveland, New Bedford, North Adams and Marlborough 1 each. From cerebro-spinal meningitis New York 6, Washington 3, Lynn and Marlborough 1 each.

From malarial fever New York 5, Brooklyn 3. From small-pox New York 3, Brooklyn 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending June 9th, the death-rate was 16.9. Deaths reported 3,388: acute diseases of the respiratory organs (London) 236, measles 241, whooping-cough 108, diphtheria 51, scarlet fever 36, fever 33, diarrhœa 28, small-pox (Birmingham 8, London and Manchester 3 each, West Ham 2) 16.

The death-rates ranged from 9.8 in Portsmouth to 25.4 in Liverpool; Birmingham 20.5, Bradford 13.7, Croydon 13.5, Hull 15.9, Leeds 16.6, Leicester 13.5, London 16.8, Manchester 17.1, Newcastle-on-Tyne 18.8, Norwich 13.8, Nottingham 14.0, Plymouth 13.6, Salford 20.8, Sheffield 17.3.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 16, 1894, TO JUNE 22, 1894.

Leave of absence for one month on surgeon's certificate of disability, with permission to apply to the proper authority for an extension of three months, is granted **Major Joseph R. Gibson**, surgeon, Fort Snelling.

The leave of absence on surgeon's certificate of disability granted **Major Joseph R. Gibson**, surgeon, is extended three months on surgeon's certificate of disability.

Leave of absence for one month, on surgeon's certificate of disability, is granted **First-Lieut. Frank T. Meriwether**, assistant surgeon, with permission to leave the limits of the Department.

Major James C. Merrill, surgeon, is relieved from duty in the office of the surgeon-general, to take effect July 1, 1894, and ordered to report in person to the commanding officer Fort Sherman, Idaho, for duty at that station.

Leave of absence for three months, to take effect July 1, 1894, is granted **Major James C. Merrill**, surgeon.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JUNE 23, 1894.

Kite, J. W., passed assistant surgeon. Detached from U. S. S. "Lancaster" and granted three months' leave.

Anzal, E. W., passed assistant surgeon. Detached from U. S. S. "Lancaster" and granted six months' leave.

Streets, T. H., surgeon. Detached from U. S. S. "Alliance" and granted three months' leave.

Urie, J. F., passed assistant surgeon. Ordered to the U. S. S. "New York."

Stephenson, F. B., surgeon. Detached from U. S. S. "Marion" and granted three months' leave.

Kennedy, R. M., passed assistant surgeon. Detached from U. S. S. "Marion" and ordered to Mare Island Navy Yard.

Alfred, A. R., passed assistant surgeon. Detached from U. S. S. "Minnesota" and ordered to the U. S. S. "Pinta."

Guthrie, J. A., assistant surgeon. Detached from the C. S. Str. "Blake" and ordered to the U. S. S. "Minnesota."

Ward, B. R., assistant surgeon. Detached from the U. S. R. S. "Vermont" and ordered to the U. S. C. S. Str. "Blake."

Cook, F. C., assistant surgeon. Detached from instruction at Naval Laboratory and ordered to the "Vermont."

RECENT DEATH.

Charles Edward Briggs, M.D., died in Boston, June 17th, aged sixty-two years. He was a member of the class of 1853 of Harvard College. In August, 1862, he was appointed assistant surgeon of the 24th Massachusetts Volunteers then serving at Newbern, N. C. In November, 1863, he was made surgeon of the 54th Massachusetts Volunteers. He served in the expedition to Charleston in July, 1864, and at Magnolia Cemetery, Savannah, Georgetown and Sumterville. He was mustered out of service in August, 1865. He was a member of the Massachusetts Medical Society from 1856 to 1859, when he moved out of the State.

BOOKS AND PAMHPLETS RECEIVED.

The Treatment of Typhoid Fever. By Elmer Lee, A.M., M.D., Chicago. Reprint. 1894.

Eightieth Annual Report of the Trustees of the Massachusetts General Hospital and McLean Hospital, 1893.

Conservatism in Accidental Surgery. By Edmund J. A. Rogers, M.D., Denver, Colo. Reprint. 1894.

Report of the Commissioner of Education for the Year 1890–91, Vol. I and II. Washington: Government Printing Office. 1894.

Analyses of Twelve Thousand Prescriptions. Compiled by W. Martindale, F.C.S., Joint Author of the Extra Pharmacopœia. London: H. K. Lewis. 1894.

Extra-Uterine Pregnancy Simulated by a Small Tumor of the Ovary; Operation; Recovery. By William H. Morrison, M.D., of Philadelphia. Reprint. 1894.

Ueber den Werth methodischer Hörübungen für Taubstumme und für Fälle von nervöser Taubheit im Allgemeimen. Von Dr. Victor Urbantschitsch. Reprint.

Les Hernies inguinales de l'Enfance. Par le Dr. G. Félizet, chirugien de l'hôpital Tenon (Enfants-Malades). Avec 73 figures dans le texte. Paris: G. Masson. 1894.

Treatment of Typhoid Fever. By D. D. Stewart, M.D., Lecturer on Clinical Medicine in the Jefferson Medical College of Philadelphia, etc. Detroit: George S. Davis. 1893.

Retinitis Albuminuria. History of the Drop-Bottle. Ophthalmia Neonatorum; Contraction of Eyelids; Glaucoma; Grattage for Granular Lids. By L. Webster Fox, M.D., Philadelphia, Pa. Reprints. 1894.

Ripening of Immature Cataracts by Direct Trituration. Subvolution; a New Pterygium Operation. The Spectacle Treatment of Hypermetropia. By Boerne Bettman, M.D., Chicago. Reprint. 1893–94.

The Care and Feeding of Children, a Catechism for the Use of Mothers and Children's Nurses. By L. Emmett Holt, M.D., Professor of Diseases of Children in the New York Polyclinic, etc. New York: D. Appleton & Co. 1894.

An International System of Electro-Therapeutics for Students, General Practitioners and Specialists. By Horatio R. Bigelow, M.D., and thirty-eight Associate Editors. Thoroughly illustrated. Philadelphia: The F. A. Davis Co. 1894.

Fracture of the Skull; Trephining; Retro-Anterograde Amnesia; Recovery; Death One Month Subsequently from other Causes; Autopsy. By Edmund J. A. Rogers, M.D., and J. T. Eskridge, M.D., of Denver, Col. Reprint. 1894.

A System of Legal Medicine. By Allan McLane Hamilton, M.D., Consulting Physician to the Insane Asylums of New York City, etc., and Lawrence Godkin, Esq., of the New York Bar. Illustrated. Volume I. New York: E. B. Treat. 1894.

Diseases of the Skin; An Outline of the Principles and Practice of Dermatology. By Malcolm Morris, Surgeon to the Skin Department, St. Mary's Hospital, London, etc. With eight chromo-lithographs and seventeen wood-cuts. Philadelphia: Lea Brothers & Co. 1894.

Materia Medica, Pharmacology and Therapeutics, Inorganic Substances. By Charles D. F. Phillips, M.D., LL.D., F.R.S. (Edin.), Late Lecturer on Materia Medica and Therapeutics at the Westminster Hospital Medical School, etc. Second edition. London: J. & A. Churchill. 1894.

A Clinical Manual, a Guide to the Practical Examination of the Excretions, Secretions and the Blood, for the Use of Physicians and Students. By Andrew McFarlane, A.B., M.D., Instructor in Neurology and Diseases of the Chest in the Albany Medical College, etc. New York: G. P. Putnam's Sons. 1894.

Essentials of Practice of Pharmacy Arranged in the Form of Questions and Answers, Prepared Especially for Pharmaceutical Students. Second edition, revised. By Lucius E. Sayre, Ph.G., Professor of Pharmacy and Materia Medica of the School of Pharmacy of the University of Kansas. Philadelphia: W. B. Saunders. 1894.

Die Bedeutung der hypnotischen Suggestion als Heilmittel. Gutachten und Heilberichte der hervorragendsten wissenschaftlichen Vertreter des Hypnotismus der Gegenwart. Herausgegeben von Dr. med. J. Grossmann, Redacteur der Zeitschrift für Hypnotismus in Berlin. A. Ausgabe in original text. Berlin: Deutsches Verlagshaus Bouq & Co. 1894.

Essentials of Nervous Diseases and Insanity: their Symptoms and Treatment; a Manual for Students and Practitioners. By John C. Shaw, M.D., Clinical Professor of Diseases of the Mind and Nervous System, Long Island College Hospital Medical School, etc. Second edition, revised, forty-eight original illustrations. Philadelphia: W. B. Saunders. 1894.

Leçons de Thérapeutique. Par Georges Hayem, Professeur de Clinique Médicale a la Faculté de Médecine de Paris, etc. Les Agents Physiques et Naturels, Agents Thermiques — Electricité, Modifications de la Pression Atmosphérique Climats et Eaux Minérales. Avec 130 figures et 1 carte des eaux minérales et stations climatériques. Paris: G. Masson. 1894.

Modification du Taux de l'Urée dans l'Urine: Abaissement chez les Cancéreux, Abaissement dans Certains Maladies non Malignes des Ovaires, Ascension du Taux de l'Urée Après les Opérations Dèductions Pratiques: Diète et Purgation Après les Opérations Mauvais Pronostic du aux Grandes Proportions d'Urée avant les Opérations. Par le docteur Just Championnière, Chirurgien de l'hôpital Saint-Louis. Paris: A. Coccoz, Libraire-Editeur. Reprint. 1893.

THE BOSTON
MEDICAL AND SURGICAL
JOURNAL

GEORGE B. SHATTUCK, M.D., EDITOR
CARROLL EVERETT EDSON, M.D., ASSISTANT EDITOR

VOLUME CXXXI

JULY—DECEMBER, 1894

BOSTON
DAMRELL AND UPHAM
283 WASHINGTON STREET
1894

PRESS OF S. J. PARKHILL & COMPANY,
226 FRANKLIN STREET,
BOSTON.

CONTRIBUTORS TO VOLUME CXXXI.

ABBOTT, SAMUEL W., M.D.
ADAMS, Z. B., M.D.
ARNOLD, H. D., M.D.
AUSTIN, A. E., M.D.
AXTELL, E. R., M.D.
BALCH, FRANKLIN G., M.D.
BEACH, H. H. A., M.D.
BILLINGS, JOHN S., M.D., L.L.D., U. S. A.
BISHOP, E. TRACY, M.D.
BLAKE, CLARENCE J., M.D.
BLAKE, J. B., M.D.
BLAKE, JOHN G., M.D.
BOWDITCH, H. P., M.D.
BOWDITCH, VINCENT Y., M.D.
BOWEN, JOHN T., M.D.
BRADFORD, E. H., M.D.
BROOKS, W. A., M.D.
BUCKINGHAM, E. M., M.D.
BURRAGE, W. L., M.D.
BURRELL, HERBERT L., M.D.
CABOT, RICHARD C., M.D.
CHANNING, WALTER, M.D.
CLARK, F. C., M.D.
CONANT, W. M., M.D.
COOLIDGE, ALGERNON, Jr., M.D.
COUNCILMAN, W. T., M.D.
CUMSTON, C. G., M.D.
CUNNINGHAM, THOS. E., M.D.
CUSHING, E. W., M.D.
CUSHING, H. W., M.D.
CUTLER, ELBRIDGE G., M.D.
DARLING, EUGENE A., M.D.
DAVENPORT, B. F., M.D.
DAVENPORT, F. H., M.D.
DAVIS, EDWARD P., M.D.
DAVIS HENRY G., M.D.
DENNY, FRANCIS P., A.B.
DRAPER, F. W., M.D.
DULLES, CHARLES W., M.D.
DWIGHT, THOMAS, M.D., LL.D.
EDSON, CARROLL EVERETT, M.D.
EDSON, CYRUS, M.D.
ELDRIDGE, STUART, M.D.
ELLIOTT, J. W., M.D.
ERNST, HAROLD C., M.D.
EWALD, C. A., M.D.
FARENHOLT, AMMEN, U. S. A.
FISHER, EDWARD D., M.D.
FISK, SAMUEL A., M.D.
FITZ, REGINALD H., M.D.
FOLSOM, CHARLES F., M.D.
FOSTER, BURNSIDE, M.D.
FOSTER, CHAS. C., M.D.
GALLOUPE, ISAAC F., M.D.
GETCHELL, A. C., M.D.
GIDDINGS, W. P., M.D.
GOLDTHWAIT, JOEL E., M.D.
GOWERS, W. R., M.D.
GRAHAM, DOUGLAS, M.D.
GREEN, CHARLES M., M.D.
HARE, C. H., M.D.
HEWES, H. F.
HILLS, WILLIAM B., M.D.
HODGDON, A. H., M.D.
HOFF, JOHN VAN R., U. S. A.
HOGNER, RICHARD, M.D.
HOLDEN, C. S., M.D.
HOMANS, JOHN, M.D.
HOPKINS, GEO. G., M.D.
HURD, E. P., M.D.
HURD, HENRY M., M.D.
IRISH, J. C., M.D.
JACKSON, HENRY, M.D.
JELLY, GEORGE F., M.D.
JEWETT, M. A., M.D.
JOSLIN, ELLIOTT P., A.B., PH.B.
KEENE, GEO. F., M.D.
KNAPP, PHILIP COOMBS, A.M., M.D.
LANGMAID, S. G., M.D.
LOTHROP, HOWARD A., M.D.
LUND, F. B., M.D.
MALLORY, F. B., M.D.
McCOLLOM, J. H., M.D.
McINTYRE, H. B., M.D.
McVEY, WM. B.
MEAD, J. A., M.D.
MEIGS, JOE F., M.D.
MORRILL, F. GORDON, M.D.
MORSE, JOHN LOVETT, M.D.
MUMFORD, J. G., M.D.
OGDEN, J. BERGEN, M.D.
OSGOOD, FREDK. H., M.R.C.V.S.
OTIS, EDWARD O., M.D.
PAGE, CALVIN G.
PARKER, JOHN M., DR.
PECKHAM, FRANK E., M.D.
PERRY, ARTHUR P., M.D.
PETERS, AUSTIN, DR.
PORTER, P. BRYNBERG, M.D.
POST, ABNER, M.D.
POWERS, CHARLES A., M.D.
PRANDO, P. P.
PUTNAM, J. J., M.D.
REED, WALTER, M.D.
REYNOLDS, EDWARD, M.D.
RICHARDSON, ANNA G., M.D.

RICHARDSON, MAURICE H., M.D.
ROBINSON, BYRON.
ROTCH, T. M., M.D.
RYDER, G., M.D.
SABINE, G. K., M.D.
SCUDDER, CHARLES L., M.D.
SCHAEFER, THEODORE W., M.D.
SEARS, GEO. G., M.D.
SEELYE, R. H., M.D.
SESSIONS, W. R., DR.
SEYMOUR, WM. W., M.D.
SHATTUCK, F. C., M.D.
SHATTUCK, GEORGE B., M.D.
SILKS, J. F. W.
SMITH, H. L., M.D.
SPEAR, EDMAND D., M.D.
STANDISH, MYLES, M.D.
STARBIRD, E. P.
STEPHENSON, F. B., M.D.
STONE, A. K., M.D.
STORER, MALCOLM, M.D.
SWASEY, EDWARD, M.D.
SWIFT, WM. N., M.D.
THOMPSON, J. M., M.D.
THORNDIKE, AUGUSTUS, M.D.
THORNTON, JAMES B., M.D.
TOWNSEND, CHARLES W., M.D.
TROWBRIDGE, E. H., M.D.
TUTTLE, ALBERT H., M.D.
VICKERY, H. F., M.D.
WALCOTT, H. P., M.D.
WALTON, G. L., M.D.
WARREN, J. COLLINS, M.D.
WATSON, FRANCIS S., M.D.
WEEKS, STEPHEN H., M.D.
WHEELER, LEONARD, M.D.
WHITE, JAMES C., M.D.
WHITNEY, W. F., M.D.
WILLIAMS, FRANCIS H., M.D.
WILLIAMS, HAROLD, M.D.
WILLIAMS, HENRY W., M.D.
WINCHESTER, J. F., DR.
WITHINGTON, C. F., M.D.
WOODS, W. M., M.D.
WORCESTER, A., A.M., M.D.
WRIGHT, J. H., M.D.

INDEX TO VOLUME CXXXI.

Abbott, S. W. Radical differences in methods of production and cultivation of vaccine lymph, 259.

Abdominal Surgery. Abdominal drainage, Cushing, E. W., 205, 215; an immediate surgical interference in cases of perforation of the stomach by ulcer, 495; gunshot wound of the spleen and kidney, abdominal section, hemostasis by deep suture, recovery, Tiffany, L. McL., 619; gunshot wounds of the abdomen, lacerating the liver and bowel, Robinson, W. L., 644.

Acne. A case of acne rosacea hypertrophica, with operation, Lund, F. B., 267.

Acker, G. N. A mirror writer, 144.

Adams, D. S. Ununited fractures, 268.

Adams, Z. B. Death supposed to have been caused by violence, 576, 583.

Adenoid vegetations and cleft palate, Coolidge, A., Jr., 163.

Aero-urethroscopy, with a new instrument, 218.

Ainhum, 322.

Alcohol. General considerations on alcoholic cirrhosis of the liver, 470.

Alexander, S. A suggestion as to the removal of adeno-myomatous growths from the prostate, 193.

Allen, G. W. Remarks on the treatment of cystitis, 194.

Allen. Quinine exanthem, 65.

Ambulance. Baron Mundy and the Vienna Ambulance Society, 300.

Amputations. Primary amputations in the traumatisms of civil life, 542.

Anatomy. Recent progress in anatomy, Dwight, T., 561.

Anemia. A study of anemia cases with the aid of the hemometer and blood-counter, Richardson, A. G., Joslin, E. P., and Denny, F. P., 183, 187.

Anesthesia. Notes on anesthesia, vomiting after ether, Blake, J. B., 313; posture in anesthesia accidents, Hare, H. A., 418; the first administration of ether in Paris, and other reminiscences, Williams, H. W., 475.

Anatomy. "Barclay's geese," 46; the range and significance of variation in the human skeleton, Dwight, T., 73, 97.

Angell, E. B. Case of infantile hemiplegia, imbecility and epilepsy; craniotomy, marked improvement, 346.

Animals. Tuberculosis in cattle, Osgood, F. H., 55; the prevalence of bovine tuberculosis, Peters, A., 525, 533; diagnosis and prevention of bovine tuberculosis, Winchester, J. F., 526, 533; sanitary condition of dairy farms, Parker, J. M., 528; the agricultural aspect of tuberculosis, Sessions, W. R., 531, 533; bovine tuberculosis in Massachusetts, 541.

Ankle. Five cases of compound fracture of the ankle-joint, Balch, F. G., 210.

Anthracosis. The influence of politics on pulmonary therapeutics, 175.

Antitoxin treatment of diphtheria, 298; after-effects of antitoxin, 623; antitoxin treatment at Stuttgart, 626.

Appendicitis, with a report of three cases, Beach, H. H. A., 107; appendicitis, report of three cases, Irish, J. C., 109; appendicitis, Mumford, J. G., 110.

Army. Annual report of the Surgeon-General, 593.

Arnold, H. D. Puerperal eclampsia, a report of three cases, 32.

Arsenic. Chronic arsenical poisoning, Hills, W. B., 453, 464, 477.

Asparagus. The action of asparagus on the kidneys, Yeo, B., 46.

Astragalus. Exsection of the astragalus, Burns, R., 270.

Asylums. An indictment of asylum superintendents, 66.

Athletics. The educational aspect of college athletics, Conant, W. M., 381, 393; report of the director of physical training in Boston's public schools, 421.

Austin, A. E. Some observations on tubercular meningitis, 636.

Axtell, E. R. Method of study for medical students and young medical graduates, 79.

Ayres, S. Myxedema treated with sheep's thyroid, 319.

Bacteriology. The bacteriology of eclampsia, Bar and Renon, 21; disease germs in European railroad carriages, Petri, Kolb and Friedrich, 94; a ready culture medium for the gonococcus, Wood, M. W., 123; the bacillus coli communis, Darling, E. A., 479, 511; two cases of gonorrheal rheumatism with specific bacterial organisms in the blood, Hewes, H. F., 515; the microbiology of meningitis, 518.

Balch, F. G. Five cases of compound fracture of the ankle-joint, 210, 214.

Baldy, J. M. Extirpation of the uterus in disease of adnexa, 292.

Balfour. Scientific investigations and the public, 95.

Bar and Renon. The bacteriology of eclampsia, 21.

"Barclay's Geese," 46.

Bartlett, E. J. Potable water, 272.

Baths. Sponge baths and full baths in typhoid, Cabot, R. C., 290.

Baudouin. The American physician as seen by a Frenchman, 200.

Beach, H. H. A. Appendicitis, with a report of three cases, 107.

Bell, A. N. The ground-water supply of Brooklyn, 371.

Bell, J. Two cases of syphilis that have a bearing on the question of the period during which the disease is communicable, 244.

Beri-Beri. Intestinal parasites in beri-beri, Walker, J. H., 449.

Berlin. Letter from Berlin, Ryder, G., 302.

Bibliography. Abrams, A., clinical diagnosis, 90; Army, annual report of the surgeon-general, 593; Bannister, H. M., a practical manual of mental medicine, 469; Bartley, E. H., text-book of medical and pharmaceutical chemistry, 493; Boston City Hospital, annual report, 274; Bouchard, C., lectures on auto-intoxication or self-poisoning in the individual, 420; Brockway, F. J., essentials of physics, arranged in the form of questions and answers, prepared especially for students of medicine, 90; Burdett's hospital and charities annual, 1894, 18; Burk, C. M., the myology of the pigeon, 18; Carpenter, G., congenital affections of the heart, 348; Charcot, clinque des maladies du systéme nerveux, 221; Corning, J. L., pain in its neuro-pathological, diagnostic, medico-legal and neuro-therapeutic relations, 245; Dana, C. L., text-book of nervous diseases, 469; Denison, C., exercise for pulmonary invalids, 221; Devine, W. H., emergency and hygiene notes for the militia, 420; Dietz, W. D., the soldier's first aid handbook, 647; Doty, A. H., a manual of instruction on the principle of prompt aid to the injured, including a chapter on hygiene and the drill regulation for the hospital corps, U. S. A., 349; Downie, J. W., clinical manual for the study of diseases of the throat, 298; Flint, A., a treatise on the principles and practice of medicine, 591; Foster, F. P., an illustrated encyclopedic medical dictionary, 146; Garrigues, H. J., a text-book of the diseases of women, 321; Gleason, E. B., essentials of diseases of the throat and nose, 445; Gould, G. M., an illustrated dictionary of medicine, biology and allied sciences, 194; Gowers, W. R., a manual of diseases of the nervous system, 117; Grandin, E. H., and Jarman, G. W., obstetric surgery, 590; Grossman, J., die Bedeutung der hypnotischen Suggestion als Heilmittel, 349; Hall, F. de H., diseases of the nose and throat, 349; Hamilton, A. McL., a system of legal medicine, 196; Haultain, F. W. N., handbook of obstetric nursing, 445; Hayem, G., leçons de thérapeutique, 445; Heath, C., a manual of minor surgery and bandaging, for the use of house-surgeons, dressers and junior practitioners, 90; Index Medicus, 626; Ingals, E. F., diseases of the chest, throat and nasal cavities, 420; Inglis-Parsons, S., the healing of rodent cancer by electricity, 245; Jackson, E., essentials of refraction and the diseases of the eye, 445; Jones, H. W., practical manual of diseases of women and uterine therapeutics for students and practitioners, 541; Kerr, N., inebriety or narcomania, its etiology, pathology, treatment and jurisprudence, 348; Kimber, D. C., text-book of anatomy and physiology for nurses, 493; Linn, T., where to send patients abroad for water cures and climatic treatment, 298; MacDonald, A., abnormal man, being essays on education and crime and related subjects, with digests of literature and a bibliography, 90; MacEwen, W., atlas of head sections 195, and pyogenic infective diseases of the brain and spinal cord, 195; Maine, first annual report upon the births, marriages, divorces and deaths, 1892, 540; Malcolm, J. D., the physiology of death from traumatic fever; a study of abdominal surgery, 90; Martin, C., the after-treatment of cases of abdominal section, 90; Morris, H., essentials of practice of medicine, 245; Morrow, P. A., system of genito-urinary diseases, syphilology and dermatology, 347; Nancrede, C. B., essentials of anatomy, including the anatomy of the viscera, 146; Phillips, C. D. F., materia medica, pharmacology and therapeutics, inorganic substances, 322; Quain, R., and others, a dictionary of medicine, 591; Rawitz, Lehrbuch der Histologie, 118; Sayre, L. E., essentials of practice of pharmacy, 349, Stevens, A. A., a manual of therapeutics, 420; Strahan, S. A. K., suicide and insanity, a physiological and sociological study, 492; Talbot, E. S., the etiology of osseous deformities of the head, face, jaw and teeth, 348; Thorne, J. F., trephining in its ancient and modern aspects, 541; Trouessart, E. L., antiseptic therapeutics, 195; Tyson, J., manual of physical diagnosis, 349; Vierordt, O., a clinical text-book of medical diagnosis for physicians and students, 90; Will, J. C. O., lectures on genito-urinary diseases, 118; Williams, C. T., äero-therapeutics or the treatment of lung diseases by climate, 322; Withaus, R. A., medical jurisprudence, forensic medicine and toxicology, 540, and essentials of chemistry and toxicology, 621; Wood, G. B., and Bache, F., the dispensatory of the United States, 321.

Bicycle. Woman and the bicycle, 247; the dangers of the bicycle, 353.

Biggs, H. M. A discussion on the prevention of tuberculosis, 441.

Billings, J. S. Hygiene in university education, 125; address before the Harvard Medical Alumni Association, 140.

Biography. Brinton, J. B., 600; Brown-Séquard, 95; Brown, W. E., 124; Browne, J. M., 597; Charcot, 427; Clapp, L. W., 304; Clark, R. D., 176; Dabney, W. C., 304; Danielssen, D. C., 228; Davis, G. W., 356; Douglas, S., 423, 428; Fabbri, C. E. P., 124; Gage, C. P., 628; Goodell, W., 476; Hamilton, A. O., 380; Hannover, A., 124; Helmholtz, 275, 279, 280; Helper, B. F., 328; Holmes, A. R., 500, Holmes, O. W., 375, 380, 423, 449, 473, 499, 584; Huckins, D. T., 96; Hyrtl, J., 96; Ingraham, T. M., 497; Jewett, G., 628; Kitchen, J., 228; Lansdale, P., 228; Lemcke, 380; Lister, J., 599; Little, W. J., 96; Maldonado, J., 304; Manning, J., 600; Miles, A. B., 304; Moran, J. J., 328; Mundy, Baron, 300; Oergel, K. E., 497; Peters, G. A., 596, 600; Pleasonton, Gen., 120; Rake, B. N., 304; Reese, W. W., 476; Rollett, 304; Sanborn, N., 304; Semmelweis, 273; Seymour, W. B., 300; Sims, J. M., 645; Smith, H., 380; Smith, H. S. B., 476; Stone, W. E., 618; Sturges, O., 548; Townsend, G. J., 600; Underwood, M., 356; Wainwright, W. A. M., 328; Warnots, L., 304; Watson, B. C., 476; Wells, H., 596; Whittemore, F. S., 548.

Blake, C. J. Recent progress in otology, 460.

Blake, J. B. Notes on anesthesia, vomiting after ether, 313; a convenient form of ether cone, 617.

Blake, J. G. The decline of the pessary, 285, 291; cases from the uterine ward of the City Hospital, 609, 617.

Bloomingdale Asylum, 198.

Blumenthal. Certain peculiarities of the urine in pertussis, 47.

Bone. A case of osteomalacia, Dock, G., 17.

Booth, J. A. The thyroid theory in Graves's disease; two cases treated by thyroidectomy, 319.

Bose, K. C. Gunja-smoking and the "Pukhys," 250.

Boston. The health of Boston and Philadelphia, 92.

Boston Dispensary, 402

Bourget, P. M. Paul Bourget and American hospitals for the insane, 449.

Bowditch, H. P. Alma Mater, a sonnet by Oliver Wendell Holmes, 451.

Bowditch, V. Y. Three years' experience with sanitarium treatment of pulmonary diseases near Boston, 27, 49.

Bowen, J. T. Recent progress in dermatology, 315, 341.

Bradford, E. H. Sprains and disabled joints, 156, 163.

Bradycardia. A case of bradycardia, Rockwell, A. D., 468.

Bread. Sterilization of bread, 249.

Breast. Tumors of the breast, Warren, J. C., 7; simultaneous appearance of cancer in breast and uterus, Evans, J., 646.

Bridge, N. Cough induced by posture, as a symptom nearly diagnostic of phthisis, 17.

Bright's Disease. Three cases of Bright's disease of different types, Ogden, J. B., 305, 318.

Bronson. A case of symmetrical cutaneous atrophy of the extremities, 65.

Brooklyn. The ground-water supply of Brooklyn, Bell, A. N., 371.

Brown, B. Observations on the action of chloroform on the functions of the human brain and spinal cord, as witnessed in extensive injuries of the cranium and brain, 620.

Brown, C. H. Infantile amyotrophic lateral sclerosis of the family type, 346.

Brown, D. The early diagnosis of Pott's disease of the spine in children, 143.

Brown, F. T. A case of cystitis and pyonephrosis due to colon bacillus, requiring nephrectomy, 244.

Browning, W. Lumbar puncture for the removal of cerebrospinal fluid, 345.

Brown-Sequard. Dr. Brown-Séquard's last illness, 95.

Bryce, P. H. The practical difficulties experienced by officers of health in dealing with cases of diphtheria, 372.

Bryson, J. P. Urine-leakage and stricture formation, 218; the question of surgical interference in tuberculous kidney, 243.

Buckingham, E. M. Imperfectly sterilized milk, 160.

Burrage, W. L. A case of primary tuberculosis of the female bladder diagnosed and treated by Howard Kelly's new method of direct inspection with large endoscopes, 76.

Burrell, H. L., and Cushing, H. W. Recent progress in surgery, 485.

Burns, R. Exsection of the astragalus, 270.

Cabot, R. C. Sponge baths and full baths in typhoid, 290; acute leukemia, 507, 517.

Cafebrin. Cyanosis following the use of "cafebrin," Richardson, M. H., 403.

Caille, A. Tonsillotomy followed by diphtheria and croup, 115.

Cancer. The victims of cancer houses, Shattock, 149; simultaneous appearance of cancer in breast and uterus, Evans, J., 646.

Cantrell. A case of favus of the head and body, 41.

Capdevila, M. Odontalgia in the army of the Argentine Republic, 150.

Carlyle and the medical priesthood, 302.

Carnot. The wound of President Carnot, 119.

Carr, J. W. Starting-points of tuberculous disease in children, 151.

Car sanitation, Conn, G. P., 374.

Cartledge, A. M. Some cases of acute intestinal obstruction, 619.

Carvelle, H. D. W, Pink eye, glaucoma and iritis, errors of refraction, 272.

Chadwick, J. R. Address before the Harvard Medical Alumni Association, 136.

Chancroids. Treatment of urethral chancroids, Clark, F. C., 612.

Channing, W. Tuberculosis in mental disease, 62.

" **Charaka Samhita.**"—Observations on diet, 122.

Charcot. A memorial of Charcot, 427.

Chemistry. The chemical products of the anerobic putrefaction of pancreatic and hepatic tissues and their effects upon the tests for morphine, Vaughan, V. C., 17.

Children. Report on diseases in children, Rotch, T. M., 11; the influence of race, especially the Italian race (on measles), Snow, I. N., 116; a case of congenital rickets, Townsend, C. W., 116; infantile scurvy, especially its differential diagnosis, Fruitnight, J. H., 117; leukemia in infants, Morse, J. L., 133; a case of cyanosis, Northrup, W. T., 142; infantile myxedema, Northrup, W. T., 143; the successful treatment of a case of infantile myxedema with thyroid extract, Mosler, W., 143; acute pyelitis in infancy, Holt, M. E., 143; starting-points of tuberculous disease in children, Carr, J. W., 151; remarks on certain accidents occurring in pulmonary tuberculosis in childhood, 179; infant mortality in London, 226; some mental disorders of childhood and youth, Hurd, H. M., 281; chronic tubercular peritonitis in children, Peckham, F. E., 287; the frequency of middle-ear disease in children, 327; case of infantile hemiplegia, imbecility and epilepsy; craniotomy, marked improvement, Angell, E. B., 346; infantile amyotrophic lateral sclerosis of the family type, Brown, C. H., 346; a study of the eyes of 220 school children in the Worcester city schools, Swasey, E., 408; a case of melena neonatorum, Thornton, J. B., 416; acute infantile arthritis in the hip, Thorndike, A., 432, 440, 456; the mortality among Massachusetts school children, 447.

China. The plague in China, 222.

Chismore, G. Modifications of Bigelow's operation for stone in the bladder, designed to meet cases in which the prostate is enlarged, 191.

Chloroform. The cause of death by chloroform, 226; observations on the action of chloroform on the functions of the human brain and spinal cord, as witnessed in extensive injuries of the cranium and brain, Brown, B., 620.

Cholera. Haffkine's anti-cholera inoculation, 201; some experiences with cholera in Asia, 437; a fatal case of laboratory cholera, 497.

Christopher, W. S. The nutritional element in the causation of neuroses, 142.

Church, J. R. Another case of gun-shot wound of the heart, 544.

Circulatory System. Hemorrhage after operations on the nasal septum, Getchell, A. C., 9; the influence of venous congestion on the spinal reflex centres, Rachford, B. K., 115; a case of cyanosis, Northrop, W. T., 142; a study of anemia cases, with the aid of the hemometer and blood-counter, Richardson, A. G., Joslin, E. P., and Denny, F. P., 183; recent progress in thoracic diseases, Sears, G. G., 186; the use of sedatives in heart disease, Hare, H. A., 418; acute leukemia, Cabot, R. C., 507; another case of gun-shot wound of the heart, Church, J. R., 544; the diagnosis and surgical treatment of cases of embolism and thrombosis of the mesenteric blood-vessels, with reports of cases, Watson, F. S., 552, 563; a report of three cases of embolus of the mesenteric artery, with remarks on the subject, Lothrop, H. A., 557, 564; occlusion of the mesenteric artery, 566; a case of embolism of the abdominal aorta, 567; a few cases illustrative of the diagnostic value of an examination of the blood, Jackson, H., 633, 643; ligation of arteries, Wyeth, J. A., 646.

Clark, F. C. Treatment of urethral chancroids, 612.

Cleveland, G. President Cleveland recommends a National Board of Health, 597.

Climate. Climatic therapeutics in the treatment of pulmonary tuberculosis, 51; some meteorological data, Fisk, S. A., 253.

Clinic. A model surgical clinic, 203.

Clover. Red clover, 216.

Cold as an etiological factor in diseases of the skin, Corlett, 42.

Commercialization of medicine, or the physician as tradesman, Schaeffer, T. W., 501; the physician as tradesman, 519.

Conant, W. M. The educational aspect of college athletics, 381, 393.

Congenital constipation, Huber, F., 115.

Conn, G. P. Car sanitation, 374.

Constipation. Congenital constipation, Huber, F., 115.

Contagion. The prevention of contagious disease, 146.

Coolidge, A., Jr. Deformities of the septal cartilages, 158, 166; adenoid vegetations and cleft palate, 163.

Corlett. Cold as an etiological factor in diseases of the skin, 42.

Cough induced by posture as a symptom nearly diagnostic of phthisis, Bridge, N., 17.

Councilman, W. T. Lesions of the intestinal canal, 84; pathological specimens, 241.

Cremation. The sanitary disposal of the garbage and refuse of cities, 171.

Cripps, H. Dangers of the long rectal tube, 278.

Crothers, T. D. The influence of inebriety upon public health, 373.

Cumston, C. G. Remarks on certain accidents occurring in pulmonary tuberculosis in childhood, 179; the treatment of the so-called incurable purulent pleurisies by the siphon, 502, 516; note on the bromide of ethyl, 613, 618.

Cunningham, T. E. Hydramnion with hydrocephalus, requiring craniotomy, 580.

Cushing, E. W. Abdominal drainage, 205, 215.

Cutaneous System. Thyroid feeding in diseases of the skin, Jackson, G. T., 40; folliculitis decalvans, Fox, 41; a case of favus of the head and body, Cantrell, 41; cold as an etiological factor in diseases of the skin, Corlett, 42; adeno-carcinoma of the skin starting in the sweat glands, Fordyce, 64; contagiousness of molluscum contagiosum, Stelwagon, 64; harlequin fetus, Sherwell, 64; the protozoa-like bodies of herpes zoster, Hartwell, 64; rare dermatoses, White, J. C., 64; quinine exanthem, Allen, 65; a case of symmetrical cutaneous atrophy of the extremities, Bronson, 65; the relation of impetigo herpetiformis to pemphigus vegetans, Zeisler, 65; protozoa dermatitis, Gilchrist, 66; a case of acne rosacea hypertrophica, with operation, Lund, F. B., 267; recent progress in dermatology, Bowen, J. T., 315, 341; ainhum, 322: the thyroid treatment of skin diseases, 323; the contagiousness and control of leprosy, White, J. C., 405.

Cutler, E. G. Two unusual cases of malaria, one of remittent fever followed by death, the other a marked intermittent, successfully treated, 237, 239.

Cyanosis. A case of cyanosis, Northrup, W. T., 142.

Dana, C. L. A study of the temperature in cerebral apoplexy, 15; cerebral hemorrhage, its cause and premonitory symptoms, 344.

Darling, E. A. The bacillus coli communis, 479, 511.

Davenport, B. F. Report upon food, drugs and articles of domestic use, 212.

Davenport, F. H. The ultimate results of the treatment of retro-displacements by pessaries, 297; recent progress in gynecology, 366.

Davis, E. P. Symphyseotomy for the relative indication, with complications, 182; fatal nausea and vomiting of pregnancy, 295.

Davis, H. G. Congenital dislocations of the hip, 523.

Death. Death due to the inhalation of vomitus in a strong and healthy child aged three and a half years, Prescott, 190; death from acute purulent peritonitis, due to sepsis caused by tapping the sac of a scrotal hernia, Prescott, 191.

Decomposition. The chemistry of decomposition, Robinson, F. C., 170.

DeMay, C. F. A bug story, 425.

Dercum, F. X., and Keen, W. W. Two cases of ingravescent cerebral hemorrhage treated by ligation of the common carotid artery, 347.

Diabetes. A new departure in connection with diabetes; Dr. Pavy's Croonian lectures, 197; a case of diabetes insipidus, Fisk, S. A., 415; pancreatic diabetes, 592.

Digestive System. Gastro-enteric rheumatism, Lyman, H. W., 17; lesions of the intestinal canal, Councilman, W. T., 84; appendicitis, with a report of three cases, Beach, H. H. A., 107; appendicitis, report of three cases, Irish, J. C., 109; appendicitis, Mumford, J. G., 110; congenital constipation, Huber, F., 115; report of committee on nomenclature of diseases of the mouth and gastro-enteric tract, Rotch, T. M., 143; the treatment of hemorrhoids by clamp and cautery, Foster, B. B., 168; a new departure in connection with diabetes; Dr. Pavy's Croonian lectures, 197; cancer of the sigmoid flexure, perforation of the cancerous ulcer, death, autopsy, Lund, F. B., 211, 217; stomatitis neurotica chronica, Jacobi, A., 249; dangers of the long rectal tube, Cripps, H., 278; chronic tubercular peritonitis in children, Peckham, F. E., 287; fatal vomiting without discoverable cause, Vickery, H. F., 314, 317; merycism, Hammond, W. A., 347; a case of diabetes insipidus, Fisk, S. A., 415; a case of melena neonatorum, Thornton, J. B., 416; an abnormally located cecum, Farenholt, A., 427; the surgery of the stomach, 446; intestinal parasites in beri-beri, Walker, J. H., 449; the bacillus coli communis, Darling, E. A., 479; on immediate surgical interference in cases of perforation of the stomach by ulcer, Michaux, 495; a case of perityphlitic abscess in a child four years old, in which the appendix was not the cause of the abscess, recovery, Homans, J., 580; some cases of acute intestinal obstruction, Cartledge, A. M., 619; acute peritonitis, Douglas, R., 645.

Digitalis in pneumonia, 172.

Diphtheria. The harm done by certain local modes of treatment in diphtheria; treatment of nasal diphtheria, 91; tonsillotomy followed by diphtheria and croup, Caille, A., 115; antitoxin treatment of diphtheria, 298; serum therapy in diphtheria, Roux, 325; studies in the pathology of diphtheria, Wright, J. H., 329, 357; some clinical features of the bacteriology of diphtheria, Welch, 354; the management of epidemics of diphtheria in rural districts, Hodgetts, C. A., 372; the practical difficulties experienced by officers of health in dealing with cases of diphtheria, Bryce, P. H., 372; the antitoxin of diphtheria, 496; the new treatment for diphtheria, Ewald, C. A., 521; the prevention of diphtheria, Williams, F. H., 546; the antitoxin treatment of diphtheria at the Trousseau Hospital, Morrill, F. G., 547; diphtheria antitoxin in New York, 569; safeguards and guarantees for diphtheria antitoxin, 598; a few cases of diphtheria treated with antitoxin, Williams, F. H., 607; after-effects of antitoxin, 622; antitoxin treatment at Stuttgart, 626.

Djamboe, 227.

Dock, G. A case of osteomalacia, 17.

Douglas, R. Acute peritonitis, 645.

Dudley, E. C. Myomectomy considered as a substitute for hysterectomy, 295.

Dulles, C. W. Notes on fractures of the humerus at the elbow-joint, 208, 221; hydrophobia statistics desired, 303.

Dwight, T. The range and significance of variation in the human skeleton, 73, 97; recent progress in anatomy, 561.

Ear. The frequency of middle-ear disease in children, 327; a new instrument for the extraction of foreign bodies from the ear, Eldredge, S., 439; recent progress in otology, Blake, C. J., 460; a disordered peripheral space organ, Spear, E. D., 532.

Edes, R. T. A new method for making palatable and digestible milk, 226.

Editorials. An international medical language, 18; suicide in the Prussian army, 19; notification of infectious diseases, 19; small-pox in Massachusetts; a review of its prevalence, 42; an indictment of asylum superintendents, 66; the Eighth International Congress of Hygiene and Demography, 68; the harm done by certain local modes of treatment in diphtheria; treatment of nasal diphtheria, 91; the health of Boston and Philadelphia, 92; Indian Medical Congress, 92; legislation relating to medical matters in Massachusetts, 118; the wound of President Carnot, 119; the prevention of contagious diseases, 146; Graham bread, 147; the sanitary disposal of the garbage and refuse of cities, 171; digitalis in pneumonia, 172; a new departure in connection with diabetes; Dr. Pavy's Croonian lectures, 197; the Bloomingdale Asylum, 198; the plague in China, 222; small-pox in the sweat-shops of Chicago, 222; immoral massage, 223; the hypodermic injection of mercurials in the treatment of syphilis, 246; red clover, 246; woman and the bicycle, 247; annual report of the Boston City Hospital, 274; is our race degenerating? 274; death of Professor von Helmholtz, 275; the antitoxin treatment of diphtheria, 298; Baron Mundy and the Vienna ambulance society, 300; ainhum, 322; the thyroid treatment of skin diseases, 323; statistics of renal surgery, 350; suicide in New York, 351; Oliver Wendell Holmes, 375; the surgery and physiology of the spleen, 399; special hospitals for consumptives, 400; report of the director of physical training in Boston's public schools, 421; the surgery of the stomach, 446; the mortality among Massachusetts school children, 447; general considerations on alcoholic cirrhosis of the liver, 470; death from hydrophobia, with unusual features, 471; Flechsig's opium-bromide treatment of epilepsy, 494; on immediate surgical interference in cases of perforation of the stomach by ulcer, 495; resurrection after electrocution, 495; the antitoxin of diphtheria, 496; the microbiology of meningitis, 518; a dangerous knock-out blow, 519; the physician as tradesman, 519; bovine tuberculosis in Massachusetts, 541; primary amputations in the traumatisms of civil life, 542; football at Springfield, 543; occlusion of the mesenteric artery, 566; a case of embolism of the abdominal aorta, 567; football, 568; diphtheria antitoxin in New York, 569; pancreatic diabetes, 592; annual report of the Surgeon-General, 593; instruction in therapeutics; physician's prescriptions, 594; trephining for tuberculous meningitis, 622; after-effects of antitoxin, 623; the need of a registration law in Maine, 623; Annus Medicus MDCCCXCIV, 648.

Education. The association of American medical colleges, 21; the study of pathology in Germany, Mallory, F. B., 22, 123; method of study for medical students and young medical graduates, Axtell, E. R., 79; Harvard Medical Alumni Association, 113; hygiene in university education, Billings, J. S., 125; increased clinical features of the University of Pennsylvania Medical School, 378; the educational aspect of college athletics, Conant, W. M., 381, 393; report of the director of physical training in Boston's public schools, 421; reminiscences of the Harvard Medical School in 1846, Galloupe, I. F., 426.

Effertz. A case of hysteria, 490.

Ehrmann. Henna, 47.

Elbow. Notes on fractures of the humerus at the elbow-joint, Dulles, C. W., 208, 221; position in the treatment of elbow-joint fractures, Smith, H. L., 386, 398, 411.

Eldridge, S. A new instrument for the extraction of foreign bodies from the ear, 439.

Electric accidents. First aid in electric accidents, 353.

Electrocution. Resurrection after electrocution, 495.

Elliot, J. W. An impacted gall-stone removed by opening the common duct, the wound in the duct being closed by suture, 83, 85.

Emergency Hospital. Is the Emergency Hospital a charitable institution? 523.

Empyema. Lyons, W. H. A., 270.

Engelmann, G. J. History of vaginal extirpation of the uterus, 645.

Epilepsy. Flechsig's opium-bromide treatment of epilepsy, 494.

Ethics. The code question from the point of view of the general practitioner, Robinson, D. A., 169.

Ethyl. Note on the bromide of ethyl, Cumston, C. G., 613, 618.

Etiquette. Medical etiquette among the ancients, 149.

Evans, J. Simultaneous appearance of cancer in breast and uterus, 646.

Ewald, C. A. Berlin letter; the new treatment for diphtheria, 521.

Extracts. The successful treatment of a case of infantile myxedema with thyroid extract, Mosler, W., 143; myxedema treated with sheep's thyroid, Ayres, S., 319.

Eye. Pink eye, glaucoma and iritis, errors of refraction, Carvelle, H. D. W., 272; recurrent oculo-motor paralysis, Knapp, P. C., 308, 321; a study of the eyes of 220 school children in the Worcester city schools, Swasey, E., 408; recent progress in ophthalmology, Standish, M., 641.

Farenholt, A. An abnormally located cecum, 427.

Farlow, J. W. Removal of the larynx, 163.

Farms. Sanitary condition of dairy farms, Parker, J. M., 528.

Fisher, E. D. Thrombosis of the central arteries, 491.

Fisk, S. A. Some meteorological data, 253; a case of diabetes insipidus, 415.

Fitz, R. H. The legislative control of medical practice, 1, 25.

Flechsig's opium-bromide treatment of epilepsy, 494.

Food. An aid to the sterilization of milk in artificial infant feeding, Seibert, A., 117; "Charaka-Samhita."—Observations on diet, 122; Graham bread, 147; imperfectly sterilized milk, Buckingham, E. M., 160; food, drugs and articles of domestic use, report on, Davenport, B. F., 212; a new method for making palatable and digestible milk, Edes, R. T., 226; sterilization of bread, 249.

Foot. The anterior transverse arch of the foot, its obliteration as a cause of metatarsalgia, Goldthwait, J. E., 233, exsection of the astragalus, Burns, R., 270.

Football. The attractions of football for intellectual men, Richards, E. L., 354; football at Springfield, 543; a Frenchman's impressions of football, 570.

Fordyce. Adeno-carcinoma of the skin starting in the sweat-glands, 64.

Formento, F. The prevention of the spread of yellow fever, 374.

Foster, B. Marriage of syphilitics, statistics desired, 327.

Foster, B. B. The treatment of hemorrhoids by clamps and cautery, 168.

Foster, C. C. Treatment of congenital dislocation of the hip, 547.

Fox. Folliculitis decalvans, 41.

Fractures. Notes on fractures of the humerus at the elbow-joint, Dulles, C. W., 208, 221; five cases of compound fracture of the ankle-joint, Balch, F. G., 210, 214; ununited fractures, Adams, D. S., 268; position in the treatment of elbow-joint fractures, Smith, H. L., 386, 398.

Fruitnight, J. H. Infantile scurvy, especially its differential diagnosis, 117.

Fuller, E. M. Typhoid fever, with some new notions regarding its treatment, 168.

Galloupe, I. F. Reminiscences of the Harvard Medical School in 1846, 426; reminiscences of the Harvard Medical School in the year 1846, 626.

Gall-Stones. An impacted gall-stone removed by opening the common duct, the wound in the duct being closed by sutures, Elliot, J. W., 83, 85; gall-stones, Richardson, M. H., 440.

Galvanic Current. Experimental investigations on the physical and chemical action of the galvanic current upon the living organisms, Jacobi, G. W., and Schwyzer, F., 320.

Garbage. The sanitary disposal of the garbage and refuse of cities, 171; the disposal of garbage and refuse, Hering, K., 374.

Gauvreau, E. The culture and collection of vaccine lymph, 373.

Generative System. The mild character and diminished prevalence of syphilis and the infrequency of visceral syphilis, Musser, J. H., 15; recent progress in genito urinary surgery, Watson, F. S., 37; an ovarian cyst simulating a strangulated umbilical hernia, Hopkins, G. G., 84; ichthyol in gynecology, Storer, M., 104; an ovarian dermoid that discharged through the bladder for three years before operation and cure, Hare, C. H., 135, 144; malignant disease of the uterus, Trowbridge, E. H., 177; a summary of the history and present position of the operation of castration for hypertrophy of the prostate, White, J. W., 192; urine leakage and stricture formation, Bryson, J. P., 218; the possibility of overcoming permanent stricture of the deep urethra without resort to external urethrotomy, White, J. B., 219; a plea for the excision of the initial lesion, King, E. E., 220; epithelioma of the penis, Martin, E., 220; inflammation of the seminal vesicles, Taylor, R. W., 242; a mixed malignant growth of the testis, Taylor, R. W., 244; the decline of the pessary, Blake, J. G., 285; some cases of retroversion, Washburn, G. H., 291; extirpation of the uterus in disease of adnexa, Baldy, J. M., 292; hysterectomy in bilateral disease of the appendages, Baldy, J. M., 292; the abuse of trachelorraphy, Pryor, W. R., 294; myomectomy considered as a substitute for hysterectomy, Dudley, E. C., 295; retro-peritoneal and intra-ligamentous tumors of the uterus and adnexa, Wathen, W. H., 295, proper position of recent surgical methods in the treatment of uterine fibroids, Lusk, W. T., 296; rupture of the uterus, palliative *versus* surgical treatment, 296; palliative treatment of rupture of the uterus, McLean, M., 296; the influence of laceration of the perineum on the uterus, and the operation for its repair, Wylie, W. G., 297; the ultimate results of the treatment of retro-displacements by pessaries, Davenport, F. H., 297; total extirpation of the uterus by a new method, Tuttle, A. H., 389; ablation of ovaries and tubes for hystero-epilepsy, with entire relief from symptoms since operation, Meigs, J. V., 392; some observations on chronic vesiculitis, with report of four cases, Thompson, J. M., 435; a case of fibro-cystic disease of both ovaries, total extirpation of the tumor and uterus, recovery, Hogner, R., 485; cases from the uterine ward of the City Hospital, Blake, J. G., 609, 617; a review of a summer's work in the gynecological service of the Boston City Hospital, Starbird, E. P., 613, 618; gonorrhea in women, Holmes, J. B. S., 618; history of vaginal extirpation of the uterus, Engelmann, G. J., 645; simultaneous appearance of cancer in breast and uterus, Evans, J., 646; seven cases of varicocele treated by incision, ligation and shortening of the scrotum, Parker, W. E., 646; fibroid tumor of the uterus, with suppurative ovary discharging per rectum, Hall, R. B., 646; the removal of an intra-uterine fibroid tumor by morcellement, without hemorrhage, Nash, H. W., 647.

Getchell, A. C. Hemorrhage after operations on the nasal septum, 9.

Giddings, W. P. Surgical demands in country practice, 131.

Gilchrist. Protozoa dermatitis, 66.

Goldthwait, J. E. The anterior transverse arch of the foot, its obliteration as a cause of metatarsalgia, 233.

Gonorrhea in women, Holmes, J. B. S., 618.

Gordon, S. C. Cases of abdominal section, 170.

Gorilla. The roaring-box humana, Bishop, E. T., 523.

Graham bread, 147.

Graham, D. The effects of warm douches, massage and friction upon the expansion of the lungs, 559.

Green, C. M. A physician's services gratefully remembered, 227; rupture of the uterus, palliative *versus* surgical treatment, 296.

Griffith, J. D. Innocuous transportation of the dead, 372.

Griffith, J. P. C. Tetany in America, 14.

Guignabert. Treatment of tuberculous peritonitis, 226.

Gunja-smoking in the " Pukhys," Bose, K. C., 250.

Gynecology. Recent progress in gynecology, Davenport, F. H., 366.

Haffkine. Anti-cholera inoculations, 201.

"Hail Horrors!" 70.

Hall, R. B. Fibroid tumor of the uterus, with suppurative ovary discharging per rectum, 646.

Hammond, W. A. Merycism, 347.

Hankin, E. H. The holy well at Mecca, 70.

Hare, C. H. An ovarian dermoid that discharged through the bladder for three years before operation and cure, 135, 144.

Hare, H. A. Posture in anesthesia accidents; the use of sedatives in heart disease; the efficiency of ichthyol on impaired tissues, 418.

Hartzell. The protozoa-like bodies of herpes zoster, 64.

Harvard Medical Alumni Association, 113.

Hedley, W. S. First aid in electric accidents, 353.

Hemorrhoids. The treatment of hemorrhoids by clamp and cautery, Foster, B. B., 168.

Henna. Ehrmann, 47.

Hering, R. The disposal of garbage and refuse, 374.

Hewes, H. F. Two cases of gonorrheal rheumatism, with specific bacterial organisms in the blood, 515.

Hills, W. B. Chronic arsenical poisoning, an analysis of 260 specimens of urine, 453, 474, 477; on the occurrence of lead in city drinking-waters, 632.

Hingston, W. H. Stone in the bladder, choice of operation, 218.

Hinsdale, G., and Taylor, J. M. Crossed knee-jerk, 320.

Hip. Lateral traction in hip-disease, Page, C. G., 263; acute infantile arthritis in the hip, Thorndike, A., 432, 440, 456; congenital dislocations of the hip, Davis, H. G., 523; treatment of congenital dislocation of the hip, Foster, C. C., 547.

Hodgdon, A. H. Comments on a case of homicide, 363, 370.

Hodgetts, C. A. The management of epidemics of diphtheria in rural districts, 372.

Hoff, J. v. R. The military medical officer in peace and war, 549, 573, 601.

Hogner, R. A case of fibro-cystic disease of both ovaries, total extirpation of the tumor and uterus, recovery, 485.

Holden, C. S. Suicide or homicide, a case for medico-legal diagnosis, 364, 370.

Holmes, J. B. S. Gonorrhea in women, 618.

Holmes, O. W. Memoir, 375; an unpublished poem, 377; bibliography of his writings, 379; medical tributes to Dr. Holmes, 423, 449; Alma Mater, 451; memorial meeting, 584.

Holt, M. E. Acute pyelitis in infancy, 143.

Homans, John. A case of perityphlitic abscess in a child four years old, in which the appendix was not the cause of the abscess, recovery, 580.

Hopkins, G. O. An ovarian cyst simulating a strangulated umbilical hernia, 84.

Hoyt, J. E. Puerperal sepsis, 268.

Huber, F. Congenital constipation, 115.

Humbert, King of Italy. King Humbert and the cholera epidemic at Naples, 425.

Hurd, E. P. Was it murder or suicide, 577, 584.

Hurd, H. M. Some mental disorders of childhood and youth, 281.

Hydrophobia. Hydrophobia statistics desired, Dulles, C. W., 303; death from hydrophobia, with unusual features, 471.

Hygiene, Health and Boards of Health. Hygiene in university education, Billings, J. S., 125; the prevention of contagious disease, 146; hygienic notes made on a short journey through Italy in 1894, Nuttall, G. F., 371; the cart before the horse, Lee, 371; water-supply of Montreal, Johnston, W., 371; the ground water-supply of Brooklyn, Bell, A. N., 371; report of the special committee on pollution of water-supplies, Smart, C., 371; the management of epidemics of diphtheria in rural districts, Hodgetts, C. A., 372; the practical difficulties experienced by officers of health in dealing with cases of diphtheria, Bryce, P. H., 372; vaccination as a preventive of contagious diseases, Laberge, J. E., 372; innocuous transportation of the dead, Griffith, J. D., 372; address before the American Public Health Association, LaChapelle, E. P., 372; the culture and collection of vaccine lymph, Gauvreau, E., 373; the restriction and prevention of tuberculosis, Wordin, N. E., 373; consumptives should not marry, Paquin, P., 373; segregation of consumptives in arid regions, Sewall, 373; the quarantine station and the methods employed at Grosse Isle, below Quebec, Montizambert, F., 373; the influence of inebriety upon public health, Crothers, T. D., 373; vaccine and vaccination, Walsh, R., 373; the prevention of the spread of yellow fever, Formento, F., 374; the disposal of garbage and refuse, Hering, R., 374; car sanitation, Conn, G. P., 374; Jersey City water, 425; President Cleveland recommends a National Board of Health, 597.

Hypnosis. The first recorded death in hypnosis, 474.

Ichthyol. Ichthyol in gynecology, Storer, M., 104; the efficacy of ichthyol in inflamed tissues, Hare, H. A., 418.

Index Medicus, 626.

Indians. The medicine-men among the Crow Indians, 483.

Indian Medical Congress, 92.

Inebriety. The influence of inebriety upon public health, Crothers, T. D., 373.

Infant mortality in London, 226.

Infectious Diseases. Notification of infectious diseases, 19.

Influenza. The nature of influenza, Stewart, 251.

Instruments and Apparatus. The decline of the pessary, Blake, J. G.; 285, 291; neurological percussion hammer, Krauss, W. C., 320; the improved high tension coil, Rockwell, A. D., 469; a convenient form of ether cone, Blake, J. B., 617.

Irish, J. C. Appendicitis, report of three cases, 109.

Jackson, G. T. Thyroid feeding in diseases of the skin, 40.

Jackson, H. A few cases illustrative of the diagnostic value of an examination of the blood, 633, 643.

Jacobi, A. Stomatitis neurotica chronica, 249.

Jacobi, G. W., and Schwyzer, F. Experimental investigations on the physical and chemical action of the galvanic current upon the living organism, 320.

Japan. Status and pay of Japanese army surgeons, 571.

Jaw. A dangerous knock-out blow, 519; the dangers in sparring from blows upon the jaw, Walton, G. L., 545.

Jelly, G. F. A case of mental shock, 629, 643.

Jersey City water, 425.

Jewett, M. A. Some experiences with Asiatic cholera in Asia, 437.

Johnson, J. T. Hydro-pyonephrosis; successful removal of a forty-pound tumor of the kidney, 621.

Johnston, G. B. Movable kidney, 644.

Johnston, W. Water-supply of Montreal, 371.

Journals. An appeal to the *British Medical Journal* and the *Lancet*, 473.

Keen, W. W. Address before the Harvard Medical Alumni Association, 138.

Keene, G. F. "Mens sana in corpore sano," 335.

Kidneys. A case of movable kidney, Scudder, C. L., 217; statistics of renal surgery, 350.

King, E. E. A plea for the excision of the initial lesion, 220.

Knapp, P. C. Spinal concussion, traumatic spinal sclerosis, 4, 30; recurrent oculo-motor paralysis, 308, 321.

Knee. White swelling of the knee, Scudder, C. L., 101.

Knock-out Blow. A dangerous knock-out blow, 519; physiology of the knock-out blow, Seymour, W. W., 599.

Kollock, C. Annual Address before the Southern Surgical and Gynecological Association, 620.

Korea. Letter from Korea, Stephenson, F. B., 175.

Krauss, W. C. Neurological percussion hammer, 320.

Krug, F. Hysterectomy in bilateral disease of the appendages, 292.

Laberge, J. E. Vaccination as a preventive of contagious diseases, 372.

LaChapelle, E. P. Address before the American Public Health Association, 372.

Langmaid, S. W. The treatment of laryngeal phthisis, 59.

Language. An international medical language, 18.

Laparotomy. What shall we do with tender and painful stumps after laparotomy? Robinson, B., 365.

Larynx. The treatment of laryngeal phthisis, Langmaid, S. W., 59; removal of the larynx, Farlow, J. W., 163.

Lawrie. The cause of death from chloroform, 226.

Lead. Lead palsy in children, with a report of three cases, Sinkler, W., 14.

Lee. The cart before the horse, 371.

Legal Medicine. What cases shall the medical examiner "view"? Mead, J. A., 362, 369; comments on a case of homicide, Hodgdon, A. H., 363, 370; suicide or homicide? a case for medico-legal diagnosis, Holden, C. S., 364, 370; chemical importance of the ptomaines or cadaveric alkaloids in medico-legal analysis, McVey, W. B., 458; death supposed to have been caused by violence, Adams, Z. B., 576, 583; was it murder or suicide? 577, 584.

Legislation. The legislative control of medical practice, Fitz, R. H., 1, 25; legislation relating to medical matters in Massachusetts, 118.

Leprosy. The contagiousness and control of leprosy, White, J. C., 405.

Leukemia. Leukemia in infants, Morse, J. L., 133; acute leukemia, Cabot, R. C., 507, 517.

Lingua Geographica, 46.

Lip. Fairly extensive causes of upper lip excision; freedom from recurrence at end of three years, Powers, C. A., 640.

Lister, J. Testimonial to Sir Joseph Lister, 599.

Liver. A case of acute yellow atrophy of the liver; a case of rapid sarcomatosis, Shattuck, F. C., 82; general considerations on alcoholic cirrhosis of the liver, 470.

London. Infant mortality in London, 226.

Lothrop, H. A. A report of three cases of embolus of the mesenteric artery, with remarks on the subject, 557, 564.

Lund, F. B. Cancer of the sigmoid flexure, perforation of the cancerous ulcer, death, autopsy, 211, 217; a case of acne rosacea hypertrophica, with operation, 267.

Lusk, W. T. Proper position of recent surgical methods in the treatment of uterine fibroids, 296.

Lyman, H. M. Gastro-enteric rheumatism, 17.
Lyons, W. H. A. Empyema, 270.
McCollom, J. H. The protective power of vaccination, 229.
McIntire, H. B. A case of cystic disease of the kidney, 185.
McLean, M. Palliative treatment of rupture of the uterus, 296.
McVey, W. B. Chemical importance of the ptomaines or cadaveric alkaloids in medico-legal analysis, 458.
Maine Insane Asylum, report of the visitors, 169.
Malaria. Two unusual cases of malaria, one of remittent fever followed by death, the other a marked intermittent, successfully treated, Cutler, E. G., 237, 239; the temperature as a guide in the administration of quinine in malaria, Williams, F. H., 478.
Mallory, F. B. The study of pathology in Germany, 22, 123.
Mann, M. D. Inflammation of the ureters from a medical standpoint, 297.
Marcy, H. O. Pathological specimens, 564.
Martin, E. Epithelioma of the penis, 220.
Martindale. Analysis of twelve thousand prescriptions, 71.
Massage. Massage in the Society Islands, 202; immoral massage, 223; the effects of warm douches, massage and friction upon the expansion of the lungs, Graham, D., 559.
Materia Medica and Therapeutics. Henna, Ehrmann, 47; ichthyol in gynecology, Storer, M., 104; digitalis in pneumonia, 173; djamboe, 227; the hypodermic injection of mercurials in the treatment of syphilis, 246; red clover, 246; gunja-smoking and the "Pukhys," 250; antitoxin treatment of diphtheria, 298; the use of sedatives in heart disease, Hare, H. A., 418; the efficacy of ichthyol in inflamed tissues, Hare, H. A., 418; the temperature as a guide in the administration of quinine in malaria, Williams, F. H., 478; the antitoxin of diphtheria, 496; report on therapeutics, Williams, F. H., 581; instruction in therapeutics: physician's prescriptions, 594; a few cases of diphtheria treated with antitoxin, Williams, F. H., 607; note on the bromide of ethyl, Cumston, C. G., 613, 618; report on therapeutics, Williams, F. H., 615.
Mead, J. A. What cases shall the medical examiner "view?" 362, 369.
Measles. A case of malignant measles, Wilson, J. C., 116.
Mecca. The holy well at Mecca, 70.
Medical Examiner. What cases shall the medical examiner "view?" Mead, J. A., 362, 369.
Medical profession and socialism, Oliver, T., 202.
Meigs, J. V. Ablation of ovaries and tubes for hystero-epilepsy, with entire relief from symptoms since operation, 392.
"**Mens** sana in corpore sano," Keene, G. F., 335.
Merycism. Hammond, W. A., 347.
Meteorology. Some meteorological data, Fisk, S. A., 253.
Michaux. On immediate surgical interference in cases of perforation of the stomach by ulcer, 495.
Military medical officer in peace and war, Hoff, J. v. R., 549, 573, 601.
Milk. An aid to the sterilization of milk in artificial infant-feeding, Seibert, A., 117; imperfectly sterilized milk, Buckingham, E. M., 160; a new method of making palatable and digestible milk, 226.
Mills, C. K., and Zimmer, J. Circumscribed softening of the pons, and in the same case of the internal capsule, caudatum and lenticula, 344.
Mind. Tuberculosis in mental disease, Channing, W., 62; an indictment of asylum superintendents, 66; some mental disorders of childhood and youth, Hurd, H. M., 281; "mens sana in corpore sano," Keene, G. F., 335; the treatment of convalescence and the after-care of the insane, Stedman, H. R., 345; case of infantile hemiplegia, imbecility and epilepsy; craniotomy, marked improvement, Angell, E. B., 346; M. Paul Bourget and American hospitals for the insane, 449; a case of mental shock, Jelly, G. F., 629, 643.
Mirror writer, Acker, G. N., 144.
"**Model** surgical clinic," 355.
Montizambert, F. The quarantine station and the methods employed at Grosse Isle, below Quebec, 573.
Montreal. Water-supply of Montreal, Johnston, W., 371.
Morrill, F. G. The antitoxin treatment of diphtheria at the Trousseau Hospital, 547.
Morse, J. L. Leukemia in infants, 133.
Mortality among Massachusetts school children, 447.
Morton, W. J. A new neuroglia stain, 320.
Mosler, W. The successful treatment of a case of myxedema with thyroid extract, 143.
Mumford, J. G. Appendicitis, 110.
Musser, J. H. The mild character and diminished prevalence of syphilis and the infrequency of visceral syphilis, 15.
Mxyedema. Infantile myxedema, Northrup, W. T., 143; the successful treatment of a case of infantile myxedema with thyroid extract, Mosler, W., 143; myxedema treated with sheep's thyroid, Ayres, S., 319; the thyroid treatment of skin diseases, 323.
Nash, H. M. The removal of an intra-uterine fibroid tumor by morcellement without hemorrhage, 647.
Negro as a hospital interne, 70.
Nervous System. Spinal concussion, traumatic spinal sclerosis, Knapp, P. C., 5, 30; tetany in America, Griffith, J. P. C, 14; lead palsy in children, with a report of three cases, Sinkler, W., 14; a study of the temperature in cerebral apoplexy, Dana, C. L., 15; bacteriology of eclampsia, Bar and Renon, 21; puerperal eclampsia, a report of three cases, Arnold, H. D., 32; the influence of venous congestion on the spinal reflex centres, Rachford, B. K., 115; the nutritional element in the causation of neuroses, Christopher, W. S., 142; stomatitis neurotica chronica, Jacobi, A., 249; recurrent oculo-motor paralysis, Knapp, P. C., 308, 321; neurological percussion hammer, Krauss, W. C., 320; a new neuroglia stain, Morton, W. J., 320; crossed knee-jerk, Hinsdale, G., and Taylor, J. M., 320; circumscribed softening of the pons, and in the same case of the internal capsule, caudatum and lenticula, Mills, C. K., and Zimmer, J., 344; lesion of thalamus, death from intestinal hemorrhage, Sinkler, W., 344; cerebral hemorrhage, its cause and premonitory symptoms, Dana, C. L., 344; lumbar puncture for the removal of cerebro-spinal fluid, Browning, W., 345; case of infantile hemiplegia, imbecility and epilepsy; craniotomy, marked improvement, Angell, E. B., 346; infantile amyotrophic lateral sclerosis of the family type, Brown, C. H., 346; two cases of ingravescent cerebral hemorrhage treated by ligation of the common carotid artery, Dercum, F. X., and Keen, W. W., 347; merycism, Hammond, W. A., 347; a case of hystero-epilepsy in a man, Thornton, J. B., 416; removal of the gasserian ganglion for facial neuralgia, Richardson, M. H., and Walton, G. L., 429; a case of spina bifida, Seelye, R. H., 438; sarcoma of the sciatic nerve, exsection of nerve and suture, Richardson, M. H., 440; a case of tabes, with homonymous hemianopsia, Peterson, F., 468; a case of paralysis agitans with tremor, Peterson, F., 468; a case of bradycardia, Rockwell, A. D., 468; the improved high tension coil, Rockwell, A. D., 469; death from hydrophobia, with unusual features, 471; a case of hysteria, Effertz, 490; thrombosis of the central arteries, Fisher, E. D., 491; hemorrhagic necrosis of the spinal cord, Fisher, E. D., 491; Flechsig's opium-bromide treatment of epilepsy, 494; the microbiology of meningitis, 518; observations on the action of chloroform on the functions of the human brain and spinal cord, as witnessed in extensive injuries of the cranium and brain, Brown, B., 620; trephining for tuberculous meningitis 622; some observations on tubercular meningitis, Austin, A. E., 636.
Nevus. A severe case of nevus which was only cured by the use of galvano-puncture, Nicolson, W. P., 620.
Nicolson, W. P. A severe case of nevus, which was only cured by the use of galvano-puncture, 620.
Noble, C. P. Symphyseotomy *versus* the induction of premature labor, 298.
Noble, G. H. A case of carcinoma of the parturient uterus, removed three days after confinement, recovery, 645.
Nomenclature. Report of committee on nomenclature of diseases of the mouth and gastro-enteric tract, Rotch, T. M., 143.
Northrup, W. T. A case of cyanosis, 142; infantile myxedema, 143.
Nose. Hemorrhage after operations on the nasal septum, Getchell, A. C., 9; deformities of the septal cartilage, Coolidge, A., Jr., 158, 166.
Nutritional element in the causation of neuroses, Christopher, W. S., 142.
Nuttall, G. F. Hygienic notes made on a short journey through Italy in 1894, 371.
Obstetrics. Recent progress in obstetrics, Reynolds, E., 111.
Ogden, J. B. Three cases of Bright's disease of different types, 305, 318.
Oldtown. Oldtown gynecological reminiscences, 497; a word from Oldertown, 523.
Oliver, T. The medical profession and socialism, 202.
O'Neil, J. B. A successful case of symphyseotomy, 170.
Orthopraxy. The early diagnosis of Pott's disease of the spine in children, Brown, D., 143; lateral traction in hip-disease, Page, C. G., 263.
Osgood, F. H. Tuberculosis in cattle, 55.
Osler, W. Address before the Harvard Medical Alumni Association, 139.
Osteomalacia. A case of osteomalacia, Dock, G., 17.
Otis, E. O. Climatic therapeutics in the treatment of pulmonary tuberculosis, 51.
Page, C. G. Lateral traction in hip-disease, 263.
Palate. Adenoid vegetations and cleft palate, Coolidge, A., Jr., 163.
Palmer, H. B. Puerperal eclampsia, 168.
Paquin, P. Consumptives should not marry, 373.
Parker, J. M. Sanitary condition of dairy farms, 528.
Parker, W. E. Memorial Address on Dr. Warren Stone, 618; seven cases of varicocele treated by incision, ligation and shortening of the scrotum, 646.
Pathology. The study of pathology in Germany, Mallory, F. B., 22, 123.
Peckham, F. E. Chronic tubercular peritonitis in children, 287.
Perineum. The influence of laceration of the perineum on the uterus, and the operation for its repair, Wylie, W. G., 297; operation for complete perineal laceration, Price, J., 620.
Peritonitis. Acute peritonitis, Douglas, R., 645.
Pertussis. Certain peculiarities of the urine in pertussis, Blumenthal, 47.
Pessary. The decline of the pessary, Blake, J. G., 285, 291.
Peters, A. The prevalence of bovine tuberculosis, 525.
Peterson, F. Exophthalmic goitre treated by thyroidectomy, 319; a case of tabes, with homonymous hemianopsia, 468; a case of paralysis agitans, with tremor, 468.
Petri, Kolb and Friedrich. Disease germs in European railroad carriages, 94.
Philadelphia. The health of Boston and Philadelphia, 92.
Phthisis. Experimental phthisis in rabbits with the formation of cavities, a demonstration, Prudden, T. M., 16; cough induced by posture as a symptom nearly diagnostic of phthisis, Bridge, N., 17; the treatment of laryngeal phthisis, Langmaid, S. W., 59; home treatment of phthisis, Sabine, G. K., 61; special hospitals for consumptives, 400.
Physician. The American physician as seen by a Frenchman, Baudouin, 200.
Plague. Plague in China, 222; the origin of the plague in China, 450.
Pneumonia. Digitalis in pneumonia, 172.
Poisons. Lead palsy in children, with a report of three cases, Sinkler, W., 14; the chemical products of the anerobic putrefaction of pancreatic and hepatic tissues and their effects upon the tests for morphine, Vaughan, V. C., 17; the malicious use of snake-poison, 450; chronic arsenical poisoning, Hills, W. B., 453.
Polk, W. M. Address before the Harvard Medical Alumni Association, 140.
Pott's Disease. The early diagnosis of Pott's disease of the spine in children, Brown, D., 143.
Powers, C. A. Fairly extensive cancer of upper lip excision, freedom from recurrence at end of three years, 640.
Practice of Medicine. The legislative control of medical practice, Fitz, R. H., 1, 25; legislation relating to medical matters in Massachusetts, 118; the specialist and the general practitioner, Duhring, L. A., 201.
Prando, P. P. The medicine men among the Crow Indians, 483.
Pregnancy, affections connected with. Puerperal eclampsia,

a report of three cases, Arnold, H. D., 32; recent progress in obstetrics, Reynolds, Edward, 111; the frequency of puerperal sepsis in Massachusetts, its diagnosis and efficient treatment, Reynolds, E., 153; puerperal eclampsia, Palmer, H. B., 168; four pregnancies in a woman with double uterus and vagina. Way, G. W., 169; a successful case of symphyseotomy, O'Neil, J. B., 170; cases of abdominal section, Gordon, S. C., 170; symphyseotomy for the relative indication, with complications, Davis, E. P., 182; puerperal sepsis, Hoyt, J. E., 268; laceration of the cervix uteri, Stillings, F. A., 271; a case of accidental concealed hemorrhage, Reynolds, E., 289, 292; the management of face presentations, Reynolds, E., 293; fatal nausea and vomiting of pregnancy, Wathen, E. P., 295; rupture of the uterus, palliative *versus* surgical treatment, Green, C. M., 296; palliative treatment of rupture of the uterus, McLean, M., 296; symphyseotomy *versus* the induction of premature labor, Noble, C. P., 298; hydramnion with hydrocephalus, requiring craniotomy, Cunningham, T. E., 580; a case of symphyseotomy, Wheeler, L., 639; a case of carcinoma of the parturient uterus, removed three days after confinement, recovery, Noble, G. H., 645.

Prescott. A case of death due to the inhalation of vomitus in a strong and healthy child aged three and a half years, 190; a case of death from acute, purulent peritonitis due to sepsis caused by tapping the sac of a scrotal hernia, 191.

Price, J. Operation for complete perineal laceration, 620.

Prudden, T. M. Experimental phthisis in rabbits, with the formation of cavities, a demonstration, 16.

Pryor, W. R. The abuse of trachelorraphy, 294.

Ptomaines. Chemical importance of the ptomaines or cadaveric alkaloids in medico-legal analysis, McVey, W. B., 458.

Puerperal Sepsis. The frequency of puerperal sepsis in Massachusetts, its diagnosis and efficient treatment, Reynolds, E., 153.,

Quinine exanthem, Allen, 65.

Race. Is our race degenerating? 274.

Rachford, B. K. The influence of venous congestion on the spinal reflex centres, 115.

Recent Progress. Diseases of children, Rotch, T. M., 11; obstetrics, Reynolds, E., 111; thoracic diseases, Sears, G. G., 186; food, drugs and articles of domestic use, Davenport, B. F., 212; dermatology, Bowen, J. T., 315, 341; gynecology, Davenport, F. H., 366; otology, Blake, C. J., 460; surgery, Burrell, H. L., and Cushing, H. W., 485; anatomy, Dwight, T., 561; therapeutics, Williams, F. H., 581; therapeutics, Williams, F. H., 615; ophthalmology, Standish, M., 641.

Rectal Tube. Dangers of the long rectal tube, Cripps, H., 278.

Registration. The need of a registration law in Maine, 623.

Remuneration. The physician's remuneration as seen by a lawyer, 94.

Respiratory System. Experimental phthisis in rabbits, with the formation of cavities, a demonstration, Prudden, T. M., 16; cough induced by posture, as a symptom nearly diagnostic of phthisis, Bridge, N., 17; three years' experience with sanitarium treatment of pulmonary diseases near Boston, Bowditch, V. Y., 27, 49; climatic therapeutics in the treatment of pulmonary tuberculosis, Otis, E. O., 51; home treatment of phthisis, Sabine, G. K., 61; remarks on tuberculosis, Shattuck, F. C., 63; removal of the larynx, Farlow, J. W., 163; digitalis in pneumonia, 172; the influence of politics on pulmonary therapeutics, 175; remarks on certain accidents occurring in pulmonary tuberculosis in childhood, Cumston, C. G., 179; recent progress in thoracic diseases, Sears, G. G., 186; the nature of influenza, Stewart, 251; empyema, Lyons, W. H. A., 270; the treatment of the so-called incurable purulent pleurisies by the siphon, Cumston, C. G., 502; the effects of warm douches, massage and friction upon the expansion of the lungs, Graham, D., 559.

Reynolds, E. Recent progress in obstetrics, 111; the frequency of puerperal sepsis in Massachusetts; its diagnosis and efficient treatment, 153; a case of accidental concealed hemorrhage, 289, 292; the management of face presentations, 293.

Rheumatism. Gastro-enteric rheumatism, Lyman, H. M., 17.

Richards, E. L. Attraction of football for intellectual men, 354.

Richardson, A. G., Joslin, E. P., and Denny, F. P. A study of anemia cases with the aid of the hemometer and blood-counter, 183, 187.

Richardson, M. H. Cyanosis following the use of "cafebrin," 403; gall-stones, 440; sarcoma of the sciatic nerve, resection of nerve and suture, 440.

Richardson, M. H., and Walton, G. L. Removal of the Gasserian ganglion for facial neuralgia, successful case, 429.

Rickets. The influence of race, especially the Italian race, Wilson, J. C., 116; a case of congenital rickets, Townsend, C. W., 116.

Robinson, B. What shall we do with tender and painful stumps after laparotomy? 365.

Robinson, D. A. The code question from the standpoint of the general practitioner, 169.

Robinson, F. C. The chemistry of decomposition, 170.

Robinson, W. L. Gunshot wounds of the abdomen, lacerating the liver and bowel, 644.

Rockwell, A. D. A case of bradycardia, 468; the improved high tension coil, 469.

Rotch, T. M. Report on diseases in children, 11; report of committee on nomenclature of diseases of the mouth and of the gastroenteric tract, 443.

Roux. Serum therapy in diphtheria, 325.

Russia. The mortality among Russian physicians, 571.

Ryder, G. Letter from Berlin, 302.

Sabine, G. K. Home treatment of phthisis, 61.

Sachs, B. Address before the American Neurological Association, 318.

Saline Injections. The subcutaneous injection of saline fluid in collapse from cholera morbus, Williams, H., 340.

Sanitarium. Three years' experience with sanitarium treatment of pulmonary diseases near Boston, Bowditch, V. Y., 27, 49.

Schaefer, T. W. The commercialization of medicine, or the physician as tradesman, 501.

Scientific investigations and the public, Balfour, 95.

Scudder, C. L. White swelling of the knee, 101; a case of movable kidney, 217.

Scurvy. Infantile scurvy, especially its differential diagnosis, Fruitnight, J. H., 117.

Sears, G. G. Recent progress in thoracic diseases, 186.

Seelye, R. H. A case of spina bifida, 438.

Seibert, A. An aid to the sterilization of milk in artificial infant-feeding, 117.

Serum therapy in diphtheria, Roux, 325.

Sessions, W. R. The agricultural aspect of tuberculosis, 531, 533.

Sewall. Segregation of consumptives in arid regions, 373.

Seymour, W. W. Physiology of the knock-out blow, 599.

Shattock. The victims of cancer houses, 149.

Shattuck, F. C. Some remarks on the significance of albumin and casts, especially in those past middle life, 16; remarks on tuberculosis, 63; a case of acute yellow atrophy of the liver; a case of rapid sarcomatosis, 82; some points in the modern treatment of typhoid fever, 604.

Shattuck, G. B. Remarks before the Harvard Medical Alumni Association, 142.

Sherwell. Harlequin fetus, 64.

Shorthand in medicine, 175.

Sinkler, W. Lead palsy in children, with a report of three cases, 14; lesion of thalamus, death from intestinal hemorrhage, 344.

Skeleton. The range and significance of variation in the human skeleton, Dwight, T., 73, 97.

"**Sleeping Sickness**" of West Africa, 278.

Small-Pox. Small-pox in Massachusetts, a review of its prevalence, 42; small-pox in the sweat-shops of Chicago, 222.

Smart, C. Report of the special committee on pollution of water-supplies, 371.

Smith, H. L. Position in the treatment of elbow-joint fractures, an experimental study, 386, 398, 411.

Snake Poison. The malicious use of snake poison, 450.

Snow, I. N. The influence of race (on rickets) especially the Italian race, 116.

Societies. American Dermatological Association, 40, 64; American Gynecological Society, 292; American Neurological Association, 318, 344; American Pediatric Society, 115, 142; American Public Health Association, 371; American Association of Genito-Urinary Surgeons, 191, 218, 242; Association of American Medical Colleges, 21; Association of American Physicians, 14; Boston Medical Library Association, 584; Boston Society for Medical Improvement, 163, 393, 441; Boston Society for Medical Observation, 144, 464, 643; College of Physicians of Philadelphia, 221; Harvard Medical Alumni Association, 113, 136, 570; Indian Medical Congress, 92; International Congress of Hygiene and Demography, 68, 273; Maine Medical Association, 168; Massachusetts Medical Society, 417; Massachusetts Medico-Legal Society, 369, 583; Massachusetts Veterinary Association, 533; New Hampshire Medical Society, 268; New York County Medical Association, 418; New York Neurological Society, 468, 490; New York State Medical Association, 441; Obstetrical Society of Boston, 291, 617; Southern Surgical and Gynecological Association, 618, 644; Suffolk District Medical Society, 84, 187, 214, 239, 317, 398, 516, 563.

Souchon, E. Reminiscences of Dr. J. Marion Sims in Paris, 645.

Spear, E. D. A disordered peripheral space-organ, 532.

Specialist and the general practitioner, Duhring, L. A., 201.

Spina bifida, Seelye, R. H., 438.

Spine. Spinal concussion, traumatic spinal sclerosis, Knapp, P. C., 4, 30; the early diagnosis of Pott's disease of the spine in children, Brown, D., 143.

Spleen. The physiology of the spleen, Vulpius, 150; the surgery and physiology of the spleen, 399.

Sprains and disabled joints, Bradford, E. H., 156, 163.

Standish, M. Recent progress in ophthalmology, 641.

Starbird, E. P. A review of a summer's work in the gynecological service of the Boston City Hospital, 613.

Stedman, H. R. The treatment of convalescence and the after-care of the insane, 345.

Stein, A. W. Exfoliation of the mucous and sub-mucous coats of the bladder, preceded by renal and vesical calculus, 219.

Stelwagon. Contagiousness of molluscum contagiosum, 64.

Stephenson, F. B. Letter from Korea, 175.

Sterilization. Sterilization of bread, 249; the Waltham Hospital sterilizer, 342.

Stewart. The nature of influenza, 251.

Stillings, S. A. Laceration of the cervix uteri, 271.

Stomach. The surgery of the stomach, 446.

Stomatitis neurotica chronica, Jacobi, A., 249.

Storer, M. Ichthyol in gynecology, 104.

Stumps. What shall we do with tender and painful stumps after laparotomy, Robinson, B., 365.

Suicide. Suicide in Prussian army, 19; suicide in New York, 351.

Surgery. Surgical demands in country practice, Giddings, W. P., 131; recent progress in surgery, Burrell, H. L., and Cushing, H. W., 485.

Swasey, E. A study of the eyes of 220 school children in the Worcester city schools, 408.

Swift, W. N. The technique of vaccination, 257.

Symphyseotomy for the relative indication, with complications, Davis, E. P., 182; a case of symphyseotomy, Wheeler, L., 639.

Syphilis. The mild character and diminished prevalence of syphilis, and the infrequency of visceral syphilis, Musser, J. H., 15; a plea for the excision of the initial lesion, King, E. E., 220; two cases of syphilis that have a bearing on the question of the period during which the disease is communicable, Bell, J., 244; the hypodermic injection of mercurials in the treatment of syphilis, 246; marriage of syphilitics, statistics desired, Foster, B., 327.

Taylor, R. W. Inflammation of the seminal vesicles, 242; a mixed malignant growth of the testis, 244.

Teeth. Odontalgia in the army of the Argentine Republic, 150.

Temperature. A study of the temperature in cerebral apoplexy, Dana, C. L., 15.

Tetany in America, Griffith, J. P. C., 14.

Thompson, J. W. Some observations on chronic vesiculitis, with report of four cases, 435.

Thorndike, A. Acute infantile arthritis in the hip, 432, 440, 456.

Thornton, J. B. A case of melena neonatorum and a case of hystero-epilepsy in a man, 416.

Thyroid. Thyroid feeding in diseases of the skin, Jackson, G. T., 40; myxedema treated by sheep's thyroid, Ayres, S., 319: the thyroid theory in Graves's disease, two cases treated by thyroidectomy, 319; exophthalmic goitre treated by thyroidectomy, Peterson, F., 319; the thyroid treatment of skin diseases, 323.

Tiffany, L. McL. Gunshot wound of the spleen and kidney, abdominal section, hemostasis by deep suture, recovery, 619.

Tongue. Lingua geographica, 46.

Tonsils. Tonsillotomy followed by diphtheria and croup, Caille, A., 115.

Townsend, C. W. A case of congenital rickets, 116.

Tradition. The medical profession and tradition, 597.

Trowbridge, E. H. Malignant disease of the uterus, 177.

Trudeau, G. L. A report of the ultimate results obtained in experimental eye tuberculosis by tuberculin treatment and anti-tubercular inoculation, 16.

Tuberculosis. Experimental phthisis in rabbits with the formation of cavities, a demonstration, Prudden, T. M., 16; a report of the ultimate results obtained in experimental eye tuberculosis by tuberculin treatment and anti-tubercular inoculation, Trudeau, G. L., 16; climatic therapeutics in the treatment of pulmonary tuberculosis, Otis, E. O., 51; tuberculosis in cattle, Osgood, F. H., 55; the treatment of laryngeal phthisis, Langmaid, S. W., 59; home treatment of phthisis, Sabine, G. K., 61; tuberculosis in mental disease, Channing, W., 62; remarks on tuberculosis, Shattuck, F. C., 63; a case of primary tuberculosis of the female bladder diagnosed and treated by Howard Kelly's new method of direct inspection with large endoscopes, Burrage, W. L., 76; remarks on certain accidents occurring in pulmonary tuberculosis in children, Cumston, C. G., 179; treatment of tuberculous peritonitis, Guignabert, 226; chronic tubercular peritonitis in children, Peckham, F. E., 287; the restriction and prevention of tuberculosis, Wordin, N. E., 373; consumptives should not marry, Paquin, P., 373; segregation of consumptives in arid regions, Sewall, 373; special hospitals for consumptives, 400; discussion on tuberculosis, Briggs, H. M., and others, 441; the control of bovine tuberculosis, 449; the prevalence of bovine tuberculosis, Peters, A., 525, 533; diagnosis and prevention of bovine tuberculosis, Winchester, J. F., 526, 533; the agricultural aspect of tuberculosis, Sessions, W. R., 531, 533; bovine tuberculosis in Massachusetts, 541; some observations on tubercular meningitis, Austin, A. E., 636.

Tuttle, A. H. Total extirpation of the uterus by a new method, 389.

Typhoid Fever. Typhoid statistics, 150; typhoid fever with some new notions regarding its treatment, Fuller, E. M., 168; sponge baths and full baths in typhoid, Cabot, R. C., 290; some points in the modern treatment of typhoid fever, Shattuck, F. C., 604.

Urinary System. The mild character and diminished prevalence of syphilis and the infrequency of visceral syphilis, Musser, J. H., 15; some remarks on the significance of albumin and casts, especially in those past middle life, Shattuck, F. C., 16; recent progress in genito-urinary surgery, Watson, F. S,, 37; the action of asparagus on the kidney, Yeo, B., 46; certain peculiarities of the urine in pertussis, Blumenthal, 47; a case of pulmonary tuberculosis of the female bladder, diagnosed and treated by Howard Kelly's new method of direct inspection with large endoscopes, Burrage, W. L., 76; acute pyelitis in infancy, Holt, M. E., 143; cases illustrating some of the more unusual causes of urinary retention, Watson, F. S., 161; a unique case of urinary calculi, Weeks, S. H., 169; a case of cystic disease of the kidney, McIntire, H. B., 185; modifications of Bigelow's operation for stone in the bladder, designed to meet cases in which the prostate is enlarged, Chismore, G., 191; a suggestion as to the removal of adeno-myomatous growths from the prostate, Alexander, S., 193; report of some cases of rupture of the urethra, Watson, F. S., 194; remarks on the treatment of cystitis, Allen, G. W., 194; a new departure in connection with diabetes; Dr. Pavy's Croonian lectures, 197; a case of movable kidney, Scudder, C. L., 217; aero-urethroscopy, with a new instrument, Otis, W. K., 218; stone in the bladder, choice of operation, Hingston, W. H., 218; urine-leakage and stricture formation, Bryson, J. P., 218, exfoliation of the mucous and sub-mucous coats of the bladder, preceded by renal and vesical calculus, Stein, A. W., 219; a unique case of renal calculi, Weeks, S. H., 235; the question of surgical interference in tuberculous kidney, Bryson, J. P., 243; a case of cystitis and pyonephrosis due to colon bacillus, requiring nephrectomy, Brown, F. T., 244; inflammation of the ureters from a medical standpoint, Mann, M. D., 297; three cases of Bright's disease of different types, Ogden, J. B., 305, 318; statistics of renal surgery, 350; a case of diabetes insipidus, Fisk, S. A., 415; hydro-pyonephrosis; successful removal of a forty-pound tumor of the kidney, Johnson, J. T., 621; movable kidney, Johnston, G. B., 644.

Vaccination. The protective power of vaccination, McCollom, J. H., 229; the technique of vaccination, Swift, W. N., 257; radical differences in methods of production and cultivation of vaccine lymph, Abbott, S. W., 259; vaccination as a preventive of contagious diseases, Laberge, J. E., 372; the culture and collection of vaccine lymph, Gauvreau, E., 373; vaccine and vaccination, Walsh, R., 373.

Van Giesen, J. Hemorrhagic necrosis of the spinal cord, 491.

Vaughan, V. C. The chemical products of the anerobic putrefaction of pancreatic and hepatic tissues, and their effects upon the tests for morphine, 17.

Vickery, H. F. Fatal vomiting without discoverable cause, 314, 317.

Vomiting. Fatal vomiting without discoverable cause, Vickery, H. F., 314, 317.

Vulpins. The physiology of the spleen, 150.

Walker, J. H. Intestinal parasites in beri-beri, 449.

Walsh, R. Vaccine and vaccination, 373.

Warren, J. C. Tumors of the breast, 7.

Washburn, G. H. Some cases of retroversion, 291.

Water. Potable water, Bartlett, E. J., 272; water-supply of Montreal, Johnston, W., 371; the ground water-supply of Brooklyn, Bell, A. N., 371; report of the special committee on pollution of water-supplies, Smart, C., 371; Jersey City water, 425; on the occurrence of lead in city drinking-waters, Hills, W. B., 632.

Wathen, W. H. Retro-peritoneal and intra-ligamentous tumors of the uterus and adnexa, 295.

Watson, F. S. Recent progress in genito-urinary surgery, 37; cases illustrating some of the more unusual causes of urinary retention, 161; report of some cases of rupture of the urethra, 194: the diagnosis and surgical treatment of cases of embolism and thrombosis of the mesenteric blood-vessels with reports of cases, 552, 563.

Way, G. W. Four pregnancies in a woman with double uterus and vagina, 169.

Weeks, S. H. Unique case of urinary calculi, 169, 235.

Welch. Some clinical features of the bacteriology of diphtheria, 354.

Wheeler, L. A case of symphyseotomy, 639.

White, J. B. The possibility of overcoming permanent stricture of the deep urethra without resort to external urethrotomy, 219.

White, J. C. Rare dermatoses, 64; the contagiousness and control of leprosy, 405.

White, J. W. A summary of the history and present position of the operation of castration for hypertrophy of the prostate, 192.

Whooping-cough. Certain peculiarities of the urine in pertussis, Blumenthal, 47.

Williams, F. H. The temperature as a guide in the administration of quinine in malaria, 478; the prevention of diphtheria, 546; report on therapeutics, 581; a few cases of diphtheria treated with antitoxin, 607; report on therapeutics, 615.

Williams, H. The subcutaneous injection of saline fluid in collapse from cholera morbus, 340.

Williams, H. W. Death of Professor Baron Heinrich von Helmholtz, 279; the first administration of ether in Paris and other reminiscences, 475.

Wilson, J. C. A case of malignant measles, 116.

Winchester, J. F. Diagnosis and prevention of bovine tuberculosis, 526, 533.

Withington, C. F. An old-time book of an old-time doctor, 627.

Wood, M. W. A ready culture medium for the gonococcus, 123.

Worcester, A. The Waltham Hospital sterilizer, 342.

Wordin, N. E. The restriction and prevention of tuberculosis, 373.

Wright, J. H. Studies in the pathology of diphtheria, 329, 357.

Wyeth, J. A. Ligation of arteries, 646.

Wylie, W. G. The influence of laceration of the perineum on the uterus, and the operation for its repair, 297.

Yellow Fever. The prevention of the spread of yellow fever, Formento, F., 374.

Yeo, B. The action of asparagus on the kidneys, 46.

Zeisler. The relation of impetigo herpetiformis to pemphigus vegetans, 65.

Address.

THE LEGISLATIVE CONTROL OF MEDICAL PRACTICE.[1]

BY REGINALD H. FITZ, M.D., BOSTON.

(Continued from Vol. cxxx, No. 26, p. 641.)

EMINENT and able counsel have been repeatedly employed to represent the opposition. The means by which counsel may be procured, and attendance at the hearings ensured, is suggested in the circular of which a copy is herewith given. It is headed by the names of "Prof. J. Rodes Buchanan, M.D., Pres., San Francisco, Cal., and J. Winfield Scott, Sec'y, Boston, Mass., Publishers and Gratuitous Distributors of Literature devoted to Public Health, Constitutional Liberty and Reform Practice."

The document contains in a seal or device the words, "National Constitutional Liberty League, Boston, Mass., Incorporated October 30, 1888." It reads as follows :

BOSTON, MASS., 1894.

DEAR FRIEND OF FREEDOM AND JUSTICE : — A critical emergency is upon us. Liberty and life are trembling in the balance. The urgency of the legislative situation impels to a third and final appeal. A hearing on one of the three threatened bills has actually been appointed and adjourned because we were unprepared — had not sufficient funds to secure a competent attorney. The bill prohibits, absolutely, the practice of all save M.D.'s. Only by the strictest economy, pinching here and skimping there, can we conduct triumphant State campaigns upon a paltry $5,000 or $6,000. A successful political campaign, covering identical territory, and effecting similar results, costs five or six times as much. Think of it! The hearing set for the 21st, and less than one-half the necessary amount guaranteed! Unless the recipients of this call, respond promptly and generously the would-be remonstrants must suffer the second hearing to go by default also, and the medical monopolists allowed to win an easy victory. The few who have heretofore subscribed thousands annually, feeling they have already contributed more than their share, are this year giving only hundreds. This deficiency can easily be made good by numerous small contributions of $60 and $120 payable in monthly instalments of $5 or $10. True, times are hard, but they will be harder still for progressive practitioners if either of the three bills pass, as they surely will unless a common fund and common fight prevents. Will you contribute a small percentage of your monthly income towards the defence of your own rights and those of your patients, or supinely surrender your entire practice to your rivals? They are politically prepared and financially equipped for a struggle worthy of a better cause. If those who have NOT responded to our former appeal will now do so as promptly and generously as those who HAVE, we will realize a sufficient sum to conduct a successful campaign. Pardon us if we repeat:

Precious time is swiftly passing. Prompt action is urgent — indispensible — imperative. Delay is dangerous. Don't eat or sleep until you have sent in your pledge and started the twin petitions. We URGE you with all the earnestness and emphasis possible, to promptly return one of the enclosed Free-Will Offering forms signed for the largest sum you can possibly pay monthly during 1894. Unless immediate responses encourage the undertaking you will not be called upon for any part of the pledge. Won't you contribute cash or pledge monthly payments for a full year AT ONCE? We urge — we beg you to come forthwith to the rescue with Pledges and PETITIONS. Let us not surrender without a struggle. As so very much depends upon YOUR response we earnestly hope you will do your very best and persuade others to do likewise. Remember that in ten years our National League has conducted over twenty campaigns in various States and never been beaten. And we will win this year too, if ample munitions are supplied. Yours for liberty and justice,

J. WINFIELD SCOTT, Sec'y.

On the back of this document is printed :

RALLY TO THE RESCUE.

Attend the hearing Wednesday and cast your voice and influence for liberty and justice. Let every one opposed to medical monopoly prove it by their presence. Bring your friends with you. COME EARLY.

Accompanying this remarkable document were the two forms mentioned, one in black, the other in blue ink. A copy of the latter is here given :

No. $60.00. 1894.

FREE WILL OFFERING.

In consideration of the praiseworthy past educational services and reformatory efforts of the NATIONAL CONSTITUTIONAL LIBERTY LEAGUE, and in encouragement of its proposed vigorous campaign against medical legislation in Massachusetts this year, we herewith remit $, and hereby and cheerfully agree to pay each month during 1894 to J. WINFIELD SCOTT, Sec'y, at Room 30, 383 Washington St., Boston, Mass., the sum of Five Dollars.

Name,
Complete address,

The statement of previous efforts is substantiated by the following extract from the closing argument of Charles E. Gross, Esq., before the Judiciary Committee of the Connecticut Legislature in 1893 :[72]

Before the first hearing, Mr. Chairman, a circular was sent broadcast through this State in certain lines of medical practice. . . . Let me continue the circular :

NATIONAL CONSTITUTIONAL LIBERTY LEAGUE,
INCORPORATED, OCT 30, 1888. BOSTON, MASS.
PUBLISHERS AND DISTRIBUTORS OF MEDICAL LIBERTY LITERATURE.

BOSTON, MASS., 1893.

Dear Friend of Freedom: — I am reliably informed that a monstrous medical law is likely to be enacted by your Legislature.

"Forewarned is Forearmed." We beseech you to bestir yourself instantly and incessantly in behalf of constitutional liberty, until this medical monopoly measure is overwhelmingly defeated by a righteously indignant populace. If you would profit by our years of successful experience, and desire our coöperation, begin the circulation of the accompanying remonstrance forthwith. When you have secured from one to five hundred influential signatures, with addresses and occupation, copy the addresses complete and send to us. Then mail the remonstrance to your Representative or Senator.

Equipped with our league literature, the majority of them could, and would (with secret exultation), defeat the proposed medical bill with neatness and dispatch. Therefore it is of the utmost importance that your Senator and Representative be thus immediately supplied with the medical liberty literature described by the enclosed circular.

Kindly keep us constantly advised of what you are doing and the progress of the bill.

Yours for constitutional liberty,

J. WINFIELD SCOTT, Sec'y.

. . . .

AN INVITATION.

P. S. — Since dictating this letter we have suggested, and influential citizens secured, the postponement of the hearing until Wednesday, March 8th, in the Superior Court room.

It is of the utmost importance that citizens who have been cured by other than "regular" M.D.'s attend the hearing and testify regarding their treatment.

It is equally important that those who would maintain their constitutional liberty of choice of physician or healer personally appear to signify their determination to defend this inherent and inalienable right.

We earnestly hope that you will attend, and persuade as many others as possible to go, thus by your presence casting your personal, moral influence in behalf of freedom and justice. Write us at once at Hartford, Conn., if you can come, and tell us how large a delegation you can probably muster. As you value your medical liberty, we beseech you not to neglect the important duties outlined herein. Remember that health and happiness, and human life, depend upon the defeat of this medically monopolistic measure. Dare to do your duty. J. W. S.

---

[1] The Annual Discourse before the Massachusetts Medical Society delivered June 13, 1894.

[72] Proceedings of the Connecticut Medical Society, 1893, 286.

A Thunderbolt of Captivating Eloquence and Sublime Oratory.

(*In Press.*)

Mr. Joseph L. Barbour's unanswerable argument, March 8, 1893, against medical legislation, before the Legislative Judiciary Committee of Connecticut, was a matchless masterpiece. It rightfully elicited round after round of irrepressible applause. The widespread distribution of this powerful, persuasive plea for the people will kill the bill and endear their champion to the hearts of every medical liberty-loving citizen.

Every legislator, and every citizen whose influence is desirable at the State House, should be supplied. Regular retail price, 25 cents.

Procure and distribute all you can, and persuade every one else to do likewise.

. . . .

Then follows another:

Doctor: – One more word of warning!

If you were as familiar as I am, after years of court and legislative experience in nearly every State, with the cunningly devised tricks and traps of allopaths to ensnare and subjugate homœopaths and eclectics, I believe you would look before you leap into the ingenious and inquitous snare set by the Connecticut medical bill.

Are you ready for this?

If not, and you can't come to the hearing March 21st to protest, write us at once (at 152 Allyn Street, Hartford, Conn.) a letter denouncing the medical bill, and I will have it read before the committee.

Also write your members of the Legislature forthwith that you hope they will oppose the bill by voice and vote.

Sincerely yours for constitutional liberty,
J. Winfield Scott, Secretary.

Next came this:

An Open Letter.

Dear Devotee of Constitutional Liberty: The quarrel of the M.D.'s before the Judiciary Committee at Hartford, Wednesday, March 8th, wastefully consumed all the time, save that so admirably improved by the splendid speech of Joseph L. Barbour in behalf of medical liberty. The people themselves are to be heard by the same committee, Tuesday afternoon, March 21st.

We are told your presence and influence will aid the cause of medical liberty Come.

In the meantime it is of the utmost importance that remonstrances be immediately circulated and extensively signed by influential citizens, and promptly placed in the hands of local representatives and Senators, together with our $1.00 package of medical liberty literature.

We earnestly hope that you will attend and persuade as many others as possible to go, thus by your presence casting your personal moral influence in behalf of freedom and justice. As you value your medical liberty, we beseech you not to neglect the important duties outlined herein. Remember that health and happiness and human life depend upon the defeat of this medically monopolistic measure. Dare to do your duty.

J. Winfield Scott, Secretary.

P. S. After the hearing a decidedly necessary and important conference to consider WHAT TO DO NEXT has been called to meet at 152 Allyn Street, at 7.30 sharp. Every so-called "irregular" practitioner should arrange to attend and help devise further plans for the defeat of the bill and for future protection should it pass. J. W. S.

Now coming down a little later:

Publishers and Distributors of Medical Liberty Literature.

Boston, Mass., 1893.

Dear Co-worker: — At the hearing at Hartford, March 21st, the quacks who are clamoring for "protection" accused the so-called irregulars of malpractice, and the hearing was adjourned to afford them an opportunity to prove it.

It is evident this battle must be carried through the Senate and House. The doctors are, and have been, lobbying the Legislature for some time.

Tuesday evening's conference, to consider what to do next, adjourned to meet Monday evening, March 27th, at 7.45 o'clock, with Mr. Patterson, Room 22, "the Goodwin."

Every progressive practitioner is vitally concerned, and should attend without fail. Address until further notice,

J. Winfield Scott, Secretary,
152 Allyn Street, Hartford, Conn.

The last circular is as follows:

National Constitutional Liberty League,
Incorporated Oct. 30, 1888. Boston, Mass
Professor J. Rhodes Buchanan, M.D., President.
J. Winfield Scott, 383 Washington St.,
Boston, Mass., Secretary.

Boston, Mass., 1893.

Dear Devotee of Constitutional Liberty: - The next page explains the origin and utility of "Allopathic Czar Parties." They are potent and popular educational entertainments — admirable first steps towards a Local Liberty League — leading to a Chatauqua-like course of studious reading. We appeal to you to send stamps for one or more copies of "Allopathic Czars" and invite a score of neighbors in to enjoy the fun. At the close, when every one is in a rollicking good humor and full of enthusiasm, appoint another meeting and take a five or ten cent collection for our entire League Library: price only $1.00 — less than cost.

Hoping to hear favorably and frequently from you, we remain yours for health, humanity and constitutional liberty.

Earnestly yours,
J. Winfield Scott, Secretary.

The following statement[78] concerning the source of opposition to medical legislation in Georgia may be interesting. It seems that in November, 1892, the preliminary steps were taken leading to the preparation of a bill which was submitted to the legislature then in session. It passed the Senate by a vote of thirty-five to nine. The opposition was aided by a lawyer hired to oppose this bill by a noted itinerant practitioner of Boston. It is, furthermore, an open secret that the services at the State House of an eminent lawyer conspicuously opposed to one of the proposed bills were paid for by a person whose name is to be found in the Boston Directory among the physicians of Boston, not designated as belonging to any of the incorporated medical societies.

With your permission, attention will now be directed to what may be regarded as the essentials of a law regulating the practice of medicine, and to what extent they are present in the Massachusetts law now before the legislature. It should not be forgotten that it is largely owing to the efforts of a Fellow of the Massachusetts Medical Society, Dr. Edwin B. Harvey, of Westboro', that the progress of this bill has been promoted.

That the State may properly control the practice of medicine in the interest of the public, it is desirable that the laws should be so constructed that their provisions may be carried out in the simplest and most direct way possible. The title of the act is not an important feature if the purpose is clear, and whether physicians are licensed, registered or regulated, is less essential than that they should be duly qualified by intelligence, education and morals. The necessary degree of intelligence and education must vary with the intellectual development of the people at the time; and it is useless to make the standard so high as to be beyond the reach of a considerable minority, or so low that the majority consider it worthless. Neither should the law become a dead letter, and no legislation at all is better than laws forgotten or not enforced.

The State must assign the duty of regulating medical practice to trustworthy citizens, properly qualified. These are necessarily physicians, although they in turn may be supervised by a smaller board, as that of the Regents in New York, the Medical Council of Pennsylvania, or the State Board of Health in Connecticut. It is unwise, and, in most States impracticable, to place this authority in the hands of any single medical society, owing to the fact that all incorporated

---

[78] Atlanta Medical and Surgical Journal, 1893, x, 129.

State societies are equal in the eyes of the law, and each is of so much influence as to antagonize the limitation of control to the other.

In Alabama and in North Carolina alone has it been found possible to entrust this power to a single State society. In the former, in 1890, Dr. Cochran, of the Board of Censors, says:[74] "We have a very few homœopathic practitioners in Alabama; but a considerable number of doctors, who, graduated in eclectic schools, have availed themselves of the advantages we have to offer them, and have become good working members of our organization." In North Carolina, the law making it the duty of the State Medical Society to examine and license all practitioners of medicine and surgery was passed in 1858–9, at a time when but little opposition from other sources was likely to have existed. In 1880, as a result of the law, there was a very small number of irregular practitioners in the State.

The experience of the vast majority of the States of the Union is in favor of the appointment of the controlling board by the Governor of the State. It has been urged that this will tend to make the position political and partisan. This effect may be modified in some measure by providing that at least one member shall be annually changed. In some States it is provided that appointments shall be made from nominees of incorporated State societies. Medical societies, however, are not free from the possibilities of partisanship. Certainly, medical appointments in the State of Massachusetts by its Governor and Council have rarely been open to the charges of personal or political favoritism prevailing over conspicuous merit.

A more important question relates to the transfer of the control to the State Board of Health or to an especial board. The former exercises this authority in comparatively few of the States, although with conspicuous success in Illinois. State Boards of Health, however, are not exclusively medical boards. Questions which come before them are of so various a character that lawyers, engineers, merchants and mechanics, as well as physicians, are needed in their deliberations. The regulation of medical practice relates solely to qualifications, of which physicians are the best competent to judge; and the question of determining these qualifications would, in the end, necessarily be assigned to the medical members of the board. These members should be especially adapted to the purpose, and might be unfitted for the general duties of Boards of Health.

They should be selected as intelligent, educated, fair-minded, honest and upright representatives of the entire profession. They should be practitioners and not teachers, that there should be no possibility of the suggestion of favoritism in the treatment of an especial set of applicants. The members of the board should have been in practice for a number of years, that their inquiries into the qualification of the applicant might be based less on theoretical than on practical knowledge. They should be representatives of different sections of the State, that the interests of the public in the remote villages might be equally protected with those in the most populous cities. The experience of the various States is largely in favor of the establishment of a Board of Examiners independent of the Board of Health.

The question which next presents itself relates to the composition of the board with reference to the representation of the incorporated State medical societies. Shall these be represented in a single conjoint board, or shall there be as many independent boards as there are incorporated societies? From the ease with which corporations are formed in the various States under a general law, the question practically resolves itself into the representation of the three societies with the largest memberships.

If a single board is established it should have an equal or a proportionate representation of the regular physicians, the homœopathic and eclectic physicians. The establishment of a single board is objected to by some of the regular physicians, especially the older members of the profession, on the ground that it compels them to approve the licenses of homœopathists and eclectics, whom they have already opposed in every possible way as undeserving the confidence of the community. It, furthermore, makes the homœopathists and eclectics judges of the qualifications of students of the regular schools, and permits the former to combine in opposition to their license, which would destroy the advantages to be derived from the regulation of medical practice.

The homœopathists object to a conjoint board, if formed on proportionate representation, since such an apportionment would give a majority representation of regular physicians, and partisan zeal, favoritism and illiberality would result, with a tendency to diminish the number of homœopathic students. This view is advocated by Dr. H. M. Davenport,[75] who gives as an illustration the experience in Canada, where, of 1,230 licenses given in eighteen years, only 19 were given to homœopathists. He also adds that in Minnesota, in 1888, where a single board exists with a homœopathic minority, only one-fifth of the homœopathic applicants for registration "were allowed to pass." On the contrary, one of the homœopathic members of the Examining Board of that State "spoke very highly of the Minnesota law and its workings, and said he was entirely satisfied with the way the remainder of the Board conducted the examination, and with the fair way in which he was treated and allowed to conduct his examination. He considered a common Board of Medical Examiners as the best."[76] The feeling here expressed can hardly be considered to prevail among homœopathic physicians, and the argument of H. M. Paine before the Judiciary Committee of the New Hampshire[77] legislature perhaps more nearly represents their views. The latter are expressed[78] editorially as follows:

> "On general principles it is a good thing to make a strong stand against medical examining boards, provided we have the strength to resist the demand for the establishment of such boards; if we have not, then it will be good politics to acquiesce to the demands, and to insist that there shall be created separate and distinct examining boards for the homœopathic profession. Under no consideration should we ever be led to accept the single board plan. . . . The greatest danger of the single board rests in the fact that a large number of students will prefer to graduate from institutions in sympathy with the majority of the examiners."

The objection to a triple board is to be found in the probability of separate standards of proficiency, which would diminish the value of the license. Candidates rejected by one board might seek for a license from a set of examiners less exacting in their demands, unless prevented by law. The license thus obtained would be as valid as if secured by more exacting methods. If it is replied that a supervising board might be established, as in New York and in Pennsylvania, it may be said that it makes the machinery of licensing too cumbersome in requiring four boards where one would answer.

---

[74] Page 312.

[75] North American Journal of Hom., 1889, iv, 306.

[76] North-Western Lancet, 1891, xi, 7.

[77] Hahnemannian Monthly, 1891, xxvi, 281

[78] Ibid, 409.

A single examining board has the advantages of simplicity, uniformity of standard, and freedom from partiality. Although appointments to it might be made which would result in friction, quarrels and dissension, the benefits to arise as regards the public are such that this method of carrying out the designs of the law should first be tried. None need serve upon it who are unwilling to act from the best of motives. And as harmony prevails in many medical boards thus constituted, in various sections of the country, equal success may be anticipated from future attempts. One safeguard should be insisted upon, either exclude the subjects of materia medica and therapeutics from examination, or make the representatives of the several schools the sole judges of the qualifications in these subjects, the applicant having the choice of the various sets of questions prepared.

It should be the duty of the Board of Examiners to consider and decide upon the qualifications of the candidates, and to grant a license to practise to the successful candidates.

What shall be these qualifications? The custom in the various States, as we have already seen, differs widely. In some, the possession of a satisfactory diploma of graduation from a medical school or institution incorporated with the privilege of granting diplomas, suffices. In others an examination is necessary. In some, a satisfactory diploma is necessary that the candidate may be examined; in others, the examination is the sole test of the qualifications. If the diploma is to be regarded as satisfactory, it must be inspected and verified. The definition of what is a satisfactory diploma must rest with the board, and what is satisfactory in one State may prove to be the reverse in another.

In the earlier days of legislative action the diploma of a regularly chartered medical school, or the certificate of a chartered licensing body as a State, county or district medical society, was regarded as satisfactory evidence of a sufficient degree of education. This led to the infamous traffic in American diplomas throughout this country and in various parts of the world, which became a national disgrace, and from which the country even now has not wholly recovered. Rival medical schools of low grade were legally incorporated, especially in the Western States, with all the rights and privileges of the best schools. Such favorable terms were offered to students that it became possible to be graduated in the course of a few months without any especial preparation. Courses of lectures were made short and examinations easy, students even being informed in advance of the questions to be asked. This corrupt sale of diplomas reached such a degree in Pennsylvania that, in 1872, a committee of the legislature investigated the subject and found that for a long time diplomas had been sold, in many instances to persons without any medical or scientific attainments whatever. An instance is given where a diploma was made out for an infant two years old at a charge of $200.00. An itinerant exhibited on street corners, and wherever he went, three diplomas from as many medical colleges in the United States.[79] John Buchanan, of Philadelphia, was the ringleader in this business. He obtained control of the charters of extinct schools, got new charters, and advertised extensively the sale of his diplomas. The courts were obliged to sustain their legality, but finally he was exposed through a reporter of the *Philadelphia Record*, to whom he sold, under various fictitious names, eight diplomas, several conferring the degree of M.D., one that of D.D., another that of D.C.L., and still another that of LL.D.[80]

The Illinois Board of Health was most instrumental in putting an end to this traffic in fraudulent diplomas. In 1880 it refused to accept as evidence of qualification the diplomas of twelve legally chartered medical colleges. In 1884 [81] it showed the nature of the traffic in diplomas in Massachusetts. This State enacted a general law in 1874 [82] providing that corporations might be formed by voluntary association for "any educational, charitable and religious purposes, for the prosecution of any antiquarian, literary, scientific, medical, artistic, monumental, or musical purposes, etc." Several medical schools were formed under this statute, the most famous of which was the Boston Bellevue Medical College, incorporated May 25, 1880. It was charged with illegally issuing or selling its diplomas. Its officers were arrested on the accusation of using the United States mails for illegal purposes. They pleaded in defence that they were empowered by the laws of Massachusetts to issue diplomas and confer degrees without any restriction as to the course of study or professional attainments. The United States Commissioner held the plea to be valid and dismissed the defendants. Within a fortnight "the American University of Boston" was incorporated. A few weeks later the "First Medical College of the American Health Society" was added to the medical schools of Boston. When the attention of the legislature was called to this abuse of the law it prohibited corporations organized for medical purposes under this statute from conferring degrees, or issuing diplomas or certificates conferring degrees unless specially authorized by the legislature so to do.[83] But the names of the Boston Bellevue Medical College, the American University of Boston, and the First Medical College of the American Health Society, are still to be found among the legally incorporated institutions of Massachusetts.

The importance of the inspection of diplomas is thus apparent that fraudulent diplomas may be excluded. Some of the low-grade schools have improved their facilities for giving instruction and their requirements for graduation to such an extent that the diploma after a certain date is satisfactory evidence of qualification, whereas those given in years before such a date are unsatisfactory. Not only should the diploma be acceptable, but it must also be verified. Diplomas have been lost, sold and stolen, and have been cancelled or counterfeited. It has, therefore, been found necessary for verification, that the candidate presenting a diploma as to his qualification for a license, should make an affidavit, before a person authorized to administer oaths, that the diploma is genuine, not given for money alone, nor cancelled, that the applicant is the person therein named and the lawful possessor, that it was procured in the regular course of medical instruction, without fraud or misrepresentation, from a medical school or institution legally incorporated at the time of its bestowal to grant medical degrees, having a full body of medical teachers, actually and in good faith engaged in the business of medical education, and during a definite period of time.

---

[79] Sibbert: Trans. Med. Soc. Penn., 1880, xiii, 1, 53.
[80] New York Med. Record, 1890, xxxvii, 377.
[81] Report Illinois State Board of Health, 1884, vi, 9.
[82] Statutes, 1874, ch. 375, sec. 2.
[83] Statutes, 1683, ch. 208.

(*To be continued.*)

◆

Original Articles.

SPINAL CONCUSSION. — TRAUMATIC SPINAL SCLEROSIS.[1]

BY PHILIP COOMBS KNAPP, A.M., M.D.,
Clinical Instructor in Diseases of the Nervous System, Harvard Medical School; Physician for Diseases of the Nervous System, Boston City Hospital.

To speak to-day of spinal concussion is proof either of ignorance or of heresy. I have perhaps examined the literature of the subject with enough care to absolve me from the charge of ignorance, but I cannot avoid the other charge. I do not, however, intend to maintain the thesis of "spinal concussion" in the strictest sense. In that sense it may be defined as a condition in which paraplegia follows injury, where the cord has sustained no gross lesion, and where the trouble may be referred to molecular changes in the finer nerve elements leading to loss of function. We cannot admit to-day that impairment of function is not attended with structural change in the cord. The brilliant demonstrations of Hodge at the meeting of the American Physiological Association in 1891, added to his previous work and the experiments of Korybutt-Daskiewicz, have taught us that even ordinary fatigue is attended with visible changes in the ganglion cells. Hence all our old notions as to functional disease must be abandoned.

The thesis which I wish to maintain is that after injuries which do not give rise to fractures or dislocation of the vertebræ, direct crushing of the cord, spinal hemorrhage, etc., we may have affections limited chiefly to the spinal cord, of insidious onset, and of grave prognosis. Hence I have chosen the old term of spinal concussion as a title for this paper, rather because it was a more striking protest against some modern views than because it was absolutely correct.

In former times it was unnecessary to maintain such a thesis as this. Everything was regarded as spinal concussion. To-day many maintain that the spinal cord counts for nothing in the so-called "traumatic neuroses." The cerebral origin of many symptoms is generally accepted. The French go still farther, and seem inclined to ascribe to all the symptoms a psychical origin, and they will speak only of "traumatic hysteria." Others still claim that most of the symptoms are due not to injury but to litigation. Furthermore, various symptoms which were once thought indicative of spinal disease, pain and stiffness in the back, difficulty of locomotion, and the like, have been found to be due to strain of the spinal muscles and ligaments and to be no indication of disease of the cord.

While on the one hand clinicians have differentiated many distinct affections among the "traumatic neuroses," and have shown that lesions of the spinal cord have little if any connection with them, anatomists and surgeons have sought to prove that injury can seldom if ever produce disturbances in the cord, unless it be so great as to exert absolute crushing force upon the spinal column.

Among the prominent supporters of this opinion was Watson, who collected a mass of anatomical, experimental and clinical data in support of his claim. It will be well to examine his facts and arguments with considerable care, in order to decide how thoroughly he has established his position.

Watson[2] advanced certain *a priori* arguments to show that injury to the cord, without injury elsewhere, is unlikely. These are familiar and have a certain force. "The points to which attention should be especially directed," he says, "are: (1) the protection afforded to the cord by the vertebral column; (2) the spinal cord and its coverings do not nearly fill the vertebral canal; (3) they are at no point adherent to or in contact with it; (4) the bony wall is everywhere cushioned with connective or adipose tissue, etc.; (5) the remaining intervening space between the bone and cord is filled with spinal fluid; (6) every vertebral nerve is so placed as to act as a most efficient stay, thus preventing any swaying or other motion. The relative points for consideration between the spinal cord and brain are: (1) the difference in the weight of these organs; (2) the contact of the membranes of the brain with the skull, etc." I may add in passing that Watson found the average weight of the dogs he used for experiment to be 20.17 pounds; the average weight of their brains was 2.32 ounces, and of their cords, 182.1 grains. In man the average weight of the cord is between twenty-five and thirty grammes; the brain weight is relatively much greater than in the dog, about 0.02 of the body weight instead of 0.007.

In addition to these arguments Walton[3] has shown that if the spinous processes of the vertebræ be struck the tendency is for the force of the blow to be transmitted through the arches of the vertebræ to the bodies, instead of being carried in any way to the cord itself.

These arguments, of course, have their value, but *a priori* arguments are not scientific proof, and they demand further evidence before they can be accepted.

In this connection it may be said that a somewhat similar series of arguments might be brought forward to prove that it was impossible to have a traumatic lesion of the lung without injury to the chest wall. The lung is a spongy, elastic body, easily compressible, and moving freely within a strong, elastic cage. It is difficult to conceive how any external force could injure it, unless the force were so great as to crush the chest wall. Nevertheless, a man came under my observation a year or two ago who fell with a mass of snow from a roof, striking the ground about thirty feet below. At the autopsy Dr. Councilman found the thorax intact, but there was an extensive rupture of one lung.

Watson performed certain experiments to show that the spinal cord is but little exposed to injury. These experiments were performed upon dogs, and consisted in dropping the animals from a height of twenty-five feet, the dogs being so hoppled that in the great majority of the cases the blow was delivered on the nates. 141 animals were experimented on. He found not infrequently lesions of other organs produced by the injury which gave rise to serious and sometimes fatal symptoms. With regard to the nervous system, he draws from his experiments the following conclusions:

---

[1] Read before the Boston Medico-Psychological Association, January 21, 1894.

[2] B. A. Watson: An Experimental Study of Lesions arising from Severe Concussions, Philadelphia, 1890.

[3] G. L. Walton: Contribution to the Study of the Traumatic Neuro-Psychoses, Journal of Nervous and Mental Disease, July, 1890.

"(1) Concussive accidents never produce pathological changes in the spinal cord except when great force has been applied to the spinal column, and these cases are generally, if not always, complicated with a fracture of the body of a vertebra, dislocation of the same, rupture or stretching of vertebral ligaments, or severe lesions in other parts of the body which terminate quickly in death.

"(2) The symptoms indicative of these morbid conditions are immediately developed, rarely become intensified by reason of morbid changes occurring in the spinal-cord — exceptional cases being limited to fractures and dislocations, or those in which a slow hemorrhage occurs, causing pressure on the cord.

"(3) It is frequently very difficult to diagnosticate stretching of the vertebral ligaments on the living subject, and there are ample reasons for believing that this lesion is frequently overlooked in post-mortem examinations."

Let us now turn to Watson's experiments and examine them with some care. Out of the 141 we must at once throw out 36 where no satisfactory autopsy was made. In 59 cases the nervous system is reported to be normal. In 50 there were changes of some sort, 32 of these occurring without any lesion of the vertebral column or its ligaments. In these thirty-two cases we find such changes as hyperæmia of the cord, punctate hemorrhages into the cord, a granular appearance of sections with indistinctness of the nerve fibres and difficulty in making out the axis cylinders and the like. In some of these cases the animals exhibited no symptoms in the few days during which they were kept alive. Watson apparently regarded such changes as insignificant, for in a subsequent communication[4] he said: "Does it not seem absurd to attribute to a single punctate hemorrhage, or even a half-dozen of these little pathological lesions, the power of exciting a disorganizing process in *a healthy spinal-cord* which may ultimately produce the death of the patient?" To any one with a rudimentary knowledge of the pathology of the nervous system such changes are not insignificant, and are more marked than those we find in certain fatal affections, such as Landry's paralysis. In fact it seems clear that Watson's first conclusion is in no way supported by his own experiments.

In regard to the second conclusion Watson has still further elaborated his position in the paper just quoted. "The question will now be naturally asked with reference to these cases: Would they not have developed inflammatory changes at a later period? I have not before me the data which would justify me in positively asserting that this result *was absolutely impossible;* but I can aver that, in all these experiments, one hundred and forty-one, there is not *a single* case which *warrants giving an affirmative answer.*" It may be added that in these one hundred and forty-one experiments there is not a single case which warrants giving any answer at all to the question. Out of the fifty cases in which there were lesions in the central nervous system only two were kept alive beyond ten days, one of these was put to death in eleven, the other in twenty days. Out of the fifty-nine cases where the nervous system was called normal, only six were kept alive beyond ten days, and the one who was kept alive longest was killed in eighteen days. In five cases where the animals were kept alive for a period of several months there is no record of any microscopical examination, and such examinations as were made, were "so remotely connected with the traumatism as to possess no interest!" Further comment seems unnecessary.

Let us now turn to another series of experiments having a similar end in view. Schmaus[5] has experimented on rabbits by placing a bit of wood over the spine and giving it repeated blows with a hammer. In this way the concussion is of course less general. No injury whatever to the spinal canal was produced, but the animals showed various spinal symptoms, and on microscopical examination he found a fine granular degeneration of the ganglion cells, and changes in the nerve fibres, consisting of swelling and enlargement of the axis cylinders, and he also found foci of softening and fascicular degeneration. Hyperæmia and hemorrhage he considers to be secondary and to be without influence on the process. In some cases he found beginning gliosis. The degeneration of fibres was under the place where concussion was applied, and was most marked in the lateral columns. He classifies the changes as simple necrosis of a part of the nervous elements, the interstitial tissue being intact; necrosis of the nervous elements with destruction of the interstitial tissue, and gliosis. Similar changes are found in man, and he reports cases to which I will return later. I will here cite his conclusions:

"(1) There is a direct traumatic necrosis of fibres; here belong the cases with positive anatomical lesions.

"(2) More fibres have died than we can recognize; thus are explained the cases with marked clinical symptoms and slight anatomical changes.

"(3) The fibres may be merely fatigued. Thus are explained the rapidly fatal cases with negative lesions, and the cases that recover.

"(4) The fatigue of fibres may in addition go on to their death (necrobiosis or morbid disposition with accidental new factors or indirect action). Cases with gradual beginning and positive anatomical lesions.

"(5) Gliosis. Termination in tumor formation."

Schmaus's experiments thus seem to show pretty clearly that injury may give rise to distinct changes in the spinal cord, sometimes of gradual onset. That such changes may give rise to spinal symptoms and may be of the gravest significance is apparent.

Let us now turn to a field to which Watson paid little attention and see whether clinical experience can support the result of experiment. Watson[6] stated that "concussion of the brain and spinal cord is always attended with immediate symptoms. Concussion of the brain and spinal cord without immediate symptoms is a mere hypothesis, a myth, and has no real existence." "The mere assumption that serious results frequently arise from wholly unimportant injuries *is*

---

[4] B. A. Watson: The Relation of Concussion of the Brain and Spinal Cord to Inflammatory and other Morbid Conditions of these Organs, Journal of the American Medical Association, July 18, 1891.

[5] H. Schmaus: Beiträge zur Pathologischen Anatomie der Rückenmark-erschütterung, Archiv für path. Anat. und Physiologie und für klin. Medicin, cxxii, 326, 470, 1890.

[6] B. A. Watson: The Diagnosis of Traumatic Lesions in the Cerebro-Spinal Axis, and the Detection of Malingering referred to this Centre, Medical News, June 6, 1891.

not sustained by clinical observations or experimental investigations." "*There is not sufficient proof to justify the conclusion* that any case of traumatic myelitis, or meningo-myelitis, has ever had its origin from molecular disturbances or any pathological lesion which was invisible to the naked eye in an otherwise healthy spinal cord or its membranes." His experimental investigations, as we have seen, hardly warrant such statements. Let us see how the clinical observations correspond.

Let us turn first to a class of cases which have been pretty thoroughly studied, the cases of traumatic lumbago or "railway back." A healthy man received a blow in the small of the back by falling on the corner of a box. After that he had numbness and prickling in the legs, weakness of the legs, and pain in the back. The muscles of the back were rigid and tender, and motion increased the pain. The movements of the legs were rather weak and the knee-jerks a little exaggerated.

Another man fell down stairs striking his back. He had much pain and tenderness over the lumbar muscles, the pain being increased on moving. The left leg was weaker; there was constant desire to micturate and apparently a little dribbling after micturition. The sexual power was lost for some time.

Such cases might be multiplied, but they are familiar to all. Page[7] has given an interpretation. There is a pseudo-paralysis, the pain in all movements being so great that the patient is really afraid to move at all. Micturition may be interfered with from the lack of the natural support of the lumbar muscles, from nervous excitement, or from the difficulty of passing water in bed. The "strange feeling of weakness in the legs" he thinks due to the strain.

Now, although I am ready to admit with Page the probability that these symptoms may all be explained on the hypothesis of a muscular strain, I do not think that in the present state of our knowledge we can say definitely that such symptoms (weakness of the legs, paræsthesiæ, exaggerated knee-jerks, disturbances of micturition, etc.), can not be due to disturbances in the cord itself.

In this traumatic lumbago or "railway back" we have a twisting and stretching of the fibres of the mass of muscles and fasciæ in the lumbar region. Any force that will injure these tough, resistant fibres must inevitably do harm to the less resistant nerve fibres in the same region. Peripheral neuritis, as I[8] showed some years ago, is not uncommon as a complication in these cases. Changes in the cord may be associated with peripheral neuritis, as Pal[9] shows in his recent monograph on the subject. Furthermore, if there be also a stretching of the nerve this stretching may have an effect on the cord.[10]

Page admits the possibility, in rare cases, of arthritis of the vertebral articulations, which Watson thinks of slight importance. We know how obstinate an arthritis a comparatively slight injury will cause in the knee or shoulder, and there are certain possibilities not only of chronic arthritis in the vertebral articulations, but also of extension of inflammation into the canal. The evidence of this has not yet been produced, but the possibility exists.

The spinal cord receives its main supply of blood from arteries which go off from the intercostal and lumbar arteries and enter the vertebral canal through the intervertebral foramina. A severe twisting or stretching of the soft parts about these vessels may give rise to disturbances which can affect the blood-supply of the cord.

(To be continued.)

◆

TUMORS OF THE BREAST.

BY J. COLLINS WARREN, M.D.,

Professor of Surgery in Harvard University.

(Concluded from Vol. cxxx, No. 26, p. 645.)

CHRONIC LOBULAR MASTITIS.

THE following case is quoted as a contrast to those which have preceded: Mrs. K., twenty-seven years old, married, applied to me recently for an opinion upon a growth in the breast concerning the nature of which she was very anxious. Her only child is fourteen months old, and she first noticed a lump in the breast when the child was one week old. She did not think anything about it at that time, and continued to nurse the child for about three months, and so far as she remembers the growth disappeared. About two months before she consulted me she began to have pain in the lower inner quadrant of the left breast without having sustained any injury beyond the strain of carrying the baby, who was ill, during the previous month. She then noticed that the growth was there, and had somewhat increased in size. When seen by me for the first time on January 5, 1894, the lump was about the size of a plum, but firmly attached to the glandular tissue. The age of the patient and the seat of the growth (in the inner and lower quadrant of the breast) were both points in favor of a non-malignant growth. There was a small gland in the axilla, but it was soft and freely movable. There was no retraction of the nipple. There was no dimpling of the skin over the seat of the tumor. These points, and the fact of the existence of pregnancy and confinement at a not remote period, favored the diagnosis of a lobular mastitis. The patient reported herself a second time on February 15th, when the lump had diminished somewhat in size. On March 8th, a third examination showed that the lump had divided into two unequal portions, and there had been a very considerable diminution in its size since the first examination, and the patient departed, promising to report if any further development took place. Not having heard from her since, I feel confirmed in the opinion that this was nothing but a simple inflammatory mass. This case is reported as a type of several observed in young married women, in which the growths have subsequently disappeared.

CHRONIC MASTITIS, WITH FORMATION OF CYSTS.

Many cases of this affection occur at the period of life when malignant disease is most frequently noticed. A differential diagnosis is, therefore, of great importance, and in many cases it is almost impossible to determine by an ordinary examination the exact nature of the tumor.

In the present case, the patient, an unmarried lady, forty-three years of age, consulted an able physician in

---

[7] H. W. Page: Railway Injuries, Philadelphia, 1891.

[8] P. C. Knapp: Nervous Affections following Injury, Boston Medical and Surgical Journal, November 1, 8, 1888.

[9] J. Pal: Ueber multiple Neuritis, Vienna, 1891.

[10] P. Tarnowski: Alterations de la moelle épinière causées par l'élongation du nerf sciatique, Archives de Neurologie, July, 1885.

Paris for a tumor which had suddenly appeared, with some pain, in the left breast. The opinion was expressed that it might be malignant, and that the breast should be removed at once. The patient decided, therefore, to return home immediately, and, in spite of the difficulties of travel caused by the cholera scare, succeeded in arriving home promptly.

Following is a brief account of her previous history:

In November, 1875, she found a lump in the lower left side of the left breast, near the surface, about an inch and a half long, and as thick as the little finger. Her physician stated that it was outside the breast proper and nearly unattached. For two years or more she applied iodine ointment, which slightly decreased the size, and afterwards it continued to decrease without treatment. Her physician examined the breast every year or two until 1888. In one of the early years she felt, suddenly, a sharp, darting pain, reappearing a few days later; but, with this exception, she had neither uneasiness or aching sensations.

In August, 1890, she noticed that the left breast seemed slightly larger than the other, but so slightly that she thought it imaginary, the lump being evidently smaller. About January, 1892, a difference in size between the two breasts was perceptible; and in August, 1892, she suddenly found in the upper hemisphere of the left breast a large lump. The next day a sharp pain darted up and down the left side, as has already been stated.

One sister of her mother died of cancer of the breast, one of cancer of the liver, and one of internal tumor. She states that she has received four blows on the left breast — two soon after the discovery of the first lump and directly upon it, and two in recent years upon the nipple. I advised a preliminary microscopic examination of the breast, and found that the principal growth was a cyst, the walls of which contained glandular tissue, but no cancer.

Owing to the extensive infiltration of the breast, together with the family history, an operation for the removal of the breast was advised, and was performed September 26, 1892. There being some enlarged glands in the axilla, it was decided to remove these also. The wound healed by first intention, and the convalescence of the patient was uneventful.

The following is the account of the microscopic examination of the tumor by Dr. W. F. Whitney:

> "The tumor of the breast in the case of Miss B showed a diffused fibrous mass, in which were cysts with smooth walls of varying size. There was no sharp line between the growth and the breast tissue.
>
> "Microscopic examination showed the structure to be fibrous tissue in which were gland acini, in which could be seen small portions in all stages of dilatation, and evidently the cause of the large cysts seen with the unaided eye. There were a few slightly enlarged lymph glands, which under the microscope showed similar hyperplasia.
>
> "The diagnosis is diffused fibrous mastitis, with retention cysts and hyperplastic lymph glands."

By some observers, the presence of multiple cysts of this nature is regarded as indicative of a new formation of gland tissue. If such were the case, these specimens would represent one type of cystic adenoma. The specimen corresponds very closely to the condition described as such by Schimmelbusch.

An examination of the scar eighteen months after the operation showed no signs of a return of the disease, and the patient reports her general health excellent.

DOUBLE AMPUTATION OF THE BREAST FOR CANCER.

A simultaneous occurrence of cancer in both breasts is a very rare disease. In my own experience I have never before had occasion to perform this operation.

The following are the notes of the case:

Mrs. E., forty-two years of age, is a slender, yet active appearing woman, and has always done a great deal of work. She has had no children. There is no history of any cancer in the family. Has enjoyed good health up to the time of present illness.

She first noticed a lump in the right breast in July, 1892. The growth was situated in the lower outer quadrant. There was no perceptible change in the condition of the breast until about a month before I saw her, in June, 1893, when a general enlargement of the breast took place, the lump remaining about the same size as before. About six weeks before I saw her, a lump was first noticed in the left breast above the nipple. There was no history of any blow, or any cause for either of these growths. There was a retraction of the nipple on both sides, that on the left side drawing in with the appearance of the growth, as the right had done previously. Both of the growths in the breast appeared to be ill-defined, particularly that on the left; and, owing to the simultaneous presence of disease in both breasts it was deemed best to remove a fragment for microscopical examination. A piece was removed with the punch, and proved to be malignant. Removal of both breasts was accordingly advised, and the operation was performed on June 8, 1893. The operation on each side was practically the same, the coverings of the breast and gland being freely removed, and the dissection being continued into the axilla, glands on both sides being found present. No portion of the pectoral muscle was removed, as it was deemed advisable not to make the operation on either side too extensive.

The operation lasted about one hour, and the patient was in good condition at the end of that time. The operation was performed with strict aseptic precautions, and no antiseptic fluid was used, the wound being sponged with dry sterilized gauze. There was a slight shock that evening, the temperature falling to 98°. The amount of febrile reaction was slight, the temperature reaching 100.8° on the third evening, and returning to normal on the fifth day, when the catamenia appeared. The stitches were all removed on the ninth day, the union being complete throughout. No drainage-tubes were used. The patient returned to her home from St. Margaret's Hospital on the eighteenth day.

The following is the report of the examination of the breast by Dr. W. F. Whitney:

> "In the right breast there was a dense retracting nodule in the midst of the breast tissue. This was marked by yellow opaque lines and dots, and the outline was irregularly marked off on the surrounding fat tissue. The axillary glands were enlarged, and very firm and dense, and replaced by a new growth. In the left breast was a similar condition, only less advanced, and the glands were much smaller.
>
> "Microscopic examination showed in both a similar condition, namely, a dense fibrous network, the meshes of which were filled with small epithelial cells.
>
> "The diagnosis is scirrhous cancer."

The patient remained in good health during the summer, but a nodule appeared in the cicatrix of the right breast in the autumn, and was removed with cocaine. Symptoms of chronic bronchitis slowly developed, and the patient died in March, 1894, evidently from a generalization of the cancerous disease.

EARLY REMOVAL OF THE BREAST FOR CANCER.

The importance of an early diagnosis of malignant disease of the breast has long been insisted upon by all writers.

The following case is, therefore, reported as an example of an effort to operate as early in the history of the case as possible:

Mrs. H., fifty years of age, has been more or less of an invalid for several years. Has not yet had the change of life. Her family history is not good, her mother having died of cancer of the breast. As a young woman she was warned by her physician to be on the lookout for the appearance of a growth in the breast at a certain period of life. About a month previous to the appearance of the nodule she had noticed a new pain in the left breast, beginning at the spot where the tumor subsequently appeared, and crossing the breast diagonally. On March 21, 1893, she discovered a lump that was not noticeable on the 17th. The growth was, therefore, presumably of very short duration. It appeared to increase slowly from this date, gradually becoming more painful, until April 9th, when I first saw the patient.

On examination, a small lump was discovered near the inner margin of the upper inner quadrant. It was ill-defined, but did not appear to be much larger than a lima bean. No nodule was found in any other part of the breast or in the axilla. An exploratory operation was made on April 11th. Cocaine having been injected hypodermically, a small fragment was removed with the punch, and the diagnosis of cancer was made. On April 18th an operation for the removal of the breast was performed, and a clean dissection of the axilla was made at the same time. The fascia of the pectoral muscle was dissected away, but the muscle itself was allowed to remain intact. The wound was united throughout by sutures, no drainage-tubes being used, and healed by first intention, the patient returning to her home from St. Margaret's Hospital about three weeks after the operation.

> "A microscopic examination of the tumor by Dr. Whitney showed a small dense nodule in the periphery, with an irregular retracting outline and small minute yellow points and lines on the surface. There was a second nodule, similar in character, in the midst of the breast tissue and near the nipple. The breast tissue in general was firm and fibrous.
>
> "Microscopic examination showed the growth to be made up of solid masses of epithelial cells separated by a dense fibrous-tissue network. There were a few slightly enlarged axillary glands in which occasional epithelial cells were to be found.
>
> "The diagnosis was scirrhous cancer, with commencing implication of the lymph glands.
>
> "The diagnosis of typical carcinoma was confirmed by Dr. W. T. Councilman."

The points of interest in this case appear to be the early recognition of the presence of a growth in the breast by the patient and the establishment of a diagnosis of cancer, with prompt operation.

Notwithstanding the fact that an early operation was performed upon the breast containing a tumor no larger than a bean, the presence of cancer was revealed not only in other portions of the breast, but minute deposits were found already in the axillary glands. Such an observation as this emphasizes the importance of the complete dissection of the axilla in every operation for malignant disease of the breast.

An examination of the patient twelve months after the operation showed that as yet there has been no sign of a return of the disease.

In a previous paper on this subject, some cases were reported which had enjoyed an immunity from cancer after amputation of the breast.[2] The subsequent history of these cases is as follows:

Mrs. B., patient of Dr. Leslie, of Amesbury, was operated upon for extensive carcinoma of breast and axilla, July 9, 1885. Dr. Leslie informed me of her death, about one year ago, of pneumonia. There had been no sign of a return of the disease.

Miss B. was operated upon for scirrhous cancer of the breast, December, 1884. The patient was married October 15, 1888, after an engagement of seven years' standing. She has reported to me from time to time since, and there has been no return of the disease.

Miss J. was operated upon in June, 1884. There was a small cancerous nodule in a scirrhous breast, and no involvement of the axilla. Dr. M. D. Clarke informed me recently of her death from apoplexy, at which time no trace of a return of the disease was observed.

Grace M. was operated upon in 1882, for colloid cancer of the breast. The breast alone was removed. A nodule the size of a hen's egg was removed in 1888 from the axilla. Within a few weeks she has been seen by me in perfect health, with no sign of a return of the disease.

Mrs. C. was operated upon, in 1887, for scirrhous cancer of the breast. There was an extensive infiltration of the glands of the axilla. She writes in March, 1894, "my general health continues very good indeed, and there is still not the slightest indication that there will ever be any return of the trouble."

◆

HEMORRHAGE AFTER OPERATIONS ON THE NASAL SEPTUM.

BY A. C. GETCHELL, M.D., WORCESTER, MASS.,
Surgeon to the Throat and Nose Department of the Worcester City Hospital and Washburn Memorial Hospital.

Troublesome hemorrhage after operations on the nasal septum must be very uncommon. The books I have been able to consult make but slight note of such complication. Ingals does not speak of it. Sajous regards it as of no consequence. McBride says nothing about it; neither do Watson, Schech or Voltolini. Seiler says it can always be controlled by placing borated cotton on the spot for a few hours. "The hemorrhage is sometimes considerable, but rarely alarming" (Browne). "Surgical nasal hemorrhage, especially from the septum, is significant only as a temporary mask to the field of operation" (Jarvis in "Burnett's System"). "In no case have I had serious annoyance from hemorrhage" (Bosworth). "Occasionally the nose may need plugging" (MacDonald).

For literature on the subject I have carefully looked over the catalogue of the Surgeon-General's Library and the files of the "Index Medicus," and can find only a case reported by Dr. A. H. Smith, of New York, in the *Archives of Laryngology*, 1883, iv, p. 132.

This paper is based upon this case, three of my own bearing upon the question of hemorrhage following operations upon the anterior part of the septum, and one upon the posterior part.

The nasal septum gets its arterial supply from the two terminal branches of the spheno-maxillary portion of the internal maxillary artery. Posteriorly the artery of the septum passes obliquely downwards and forwards and anastomoses with the ascending branch of the descending palatine which comes up into the nose through the anterior palatine canal of the superior maxillary bone. Both these vessels are of small size, and I can find no mention of any abnormality of either.

---

[2] Boston Medical and Surgical Journal, April 11, 1889.

Case of Dr. Smith. E. N., aged about sixty-three, presented himself at the hospital clinic November, 1882, with obstruction of the left nostril, occasioned in part by a sharp horizontal ridge projecting from the cartilaginous portion of the septum. The apex of this ridge was removed with a bistoury, leaving a cut surface about four lines long by less than a line in breadth. The operation was accompanied by a profuse flow of blood, the stream as it left the nostril being as large as the shank of a laryngeal mirror. This continued for some minutes without abatement, when it was arrested by pressing cotton loaded with dry tannin upon the bleeding surface. During the following night the bleeding recurred, and was controlled by plugging the nose posteriorly and anteriorly. The plugs were removed after forty-eight hours, and soon after the bleeding recurred with great severity, requiring a repetition of the procedure, which controlled the bleeding for some hours; but later the blood forced its way past the plug, and was stopped by injecting persulphate of iron. Dr. Smith adds: "When I saw the patient six days after the operation, his lips were bloodless, and his face had the tallowy appearance indicative of severe hemorrhage. That so much blood should be lost from so small a surface would indicate that a vessel of considerable size must have traversed the ridge, reaching nearly to the crest, a very unusual occurrence.

The following four cases occurred in my own practice:

Case I. R. D., aged forty-six, railroad conductor. A large, rather fleshy man. His general health has always been good, that is, he has never been kept from work. Has a good relish for his food and digests it fairly well. But he has for some time had some dyspnœa on exertion, and has never been able to get a life insurance. The symptoms referable to his nose and throat were inability to breathe through the left side of the nose, coughing and choking at night, catarrh, hoarseness amounting often during the winter to aphonia. There was very marked thickening of the cartilaginous septum, the result, according to the patient's statement, of an injury early in life, quite occluding the opening and causing a deformity apparent from the outside. The uvula was very much elongated, and there was a chronic inflammation of the larynx so severe that the cords could not be differentiated by color from the other parts. The mucous membrane of the entire tract was inflamed and spotted with dirty brown crusts. Examination of the heart showed area of dulness not appreciably altered. The first sound was weak, and the second accentuated, especially over the lower sternal area. Rhythm regular, pulse 120. The urine was normal as to reaction, specific gravity, and the absence of albumin and sugar. The sediment contained an abundance of the crystals of the phosphate of lime.

In the course of his treatment the excessive tissue in the uvula was removed with scissors without any inconvenience as to pain or bleeding, and much to the relief of some of his symptoms. It was deemed advisable to remove the obstructing cartilage in the nose, which was done at a subsequent time. Cocaine was used. The piece was removed entirely by the knife, somewhat to my surprise, as I usually have found some bone in these growths. The cut surface was about half an inch in either diameter. The bleeding was exceedingly profuse; indeed, the blood ran in a steady, rapid stream, and looking into the nose an artery of considerable size was seen spurting in the upper part of the wound. It was with a good deal of difficulty that the bleeding was checked, and only after the loss of a large amount of blood. In a very short time, however, it recurred as badly as ever, and all efforts to stop it were unavailing until the nose was solidly plugged, posteriorly and anteriorly. Even then the blood forced its way past the plugs, and was finally stopped by firm pressure from the outside. From the time of the operation till the bleeding was finally stopped, fully three hours elapsed, a good deal of this time being taken up by keeping direct pressure upon the bleeding surface, the only way in which the bleeding could be stopped even temporarily. The plugs were removed after thirty-six hours, and the subsequent history of the case was uneventful.

Case II. Miss A. D., aged nineteen, had a small projection from her septum in its anterior part. I had previously, within a month, removed enlarged faucial tonsils with no unusual hemorrhage. The bleeding that followed the very slight operation on the septum was very profuse and exceedingly difficult to control.

Case III. L. L., a farmer boy, aged twenty. This patient had a ridge running along the right side of the septum which was causing trouble enough to justify its removal. When I cut into the spur at its anterior extremity, I opened an artery that pumped very markedly. But there was very little hemorrhage at the time of the operation. Later in the day the bleeding troubled him some, but it was annoying only.

Case IV. Miss A. T., aged about twenty-seven, teacher. About four P. M. I removed with a saw a bony spur from the posterior part of the septum. There was no unusual hemorrhage at the time. At six she returned with the report that she had been bleeding freely for a short time. Blood was passing down the throat in considerable quantities. Both nasal cavities were full of clots, which were washed out. After ineffectual attempts to stop the bleeding, with the aid of a gum-elastic catheter I drew a plug into the posterior nares. Before this was secured there was a gush of blood into the throat and the plug was found washed into the mouth. I then gave ergot and inserted a tampon soaked with persulphate of iron into the nose wedging it against the sawn part, and, as the patient had lost a good deal of blood, placed her in a semi-recumbent position with an ice-bag over her nose. The bleeding stopped. The loss of blood affected the patient's health for some time. About two months later I again operated in the same place with a burr, with no untoward results.

The artery opened in Case III was undoubtedly the ascending terminal of the descending palatine. Although I did not detect any pulsation in Case II (I did not look for it), it is fair to infer that there was a vessel of unusual size; else why should the patient have bled so? She had no hemorrhagic diathesis, as is shown by the previous tonsillotomy. In Case I, it may be that the altered nutritive conditions occasioned by the injury, and the increased amount of tissue deposited about the part, had made a larger blood-supply necessary, and accordingly there resulted enlargement of the vessels. Furthermore, both in this case and that reported by Dr. Smith, it may be stated with positiveness that the blood-vessels had become atheromatous and consequently would not contract.

In both these cases the artery which was opened must have been an enlarged terminal of the ascending branch of the descending palatine. This artery may be of quite appreciable size as it enters the nose, as is shown by Case III, where for a time there was distinct spurting. This case is not by any means a rare one in my experience; indeed, it is a type of a class. But the hemorrhage is very exceptionally, even annoying, because the artery contracts and bleeding ceases soon of its own accord.

If the supposition be true that the vessel divided in Case I was the terminal of the descending palatine, one would expect to have found two bleeding points — one in the upper, another in the lower part of the wound; and that I am inclined to think was the case. But as the blood accumulated so very rapidly in the lower part of the nose, I could not demonstrate it to my own satisfaction or that of Dr. Homer Gage, who saw the case with me.

These considerations are of value in deciding upon operative procedures in adults. It is well recognized that disturbances of the upper air-passages affect different parts at different ages. In children and young adults it is the nose and upper throat that are affected by ordinary cold, while in older people the parts below the nose suffer. That obstructed nasal cavities are responsible for these conditions is also true, and the advisability of early restoring the nose to a normal condition is certainly well recognized. If these abnormal conditions are allowed to persist, distinct pathological changes take place in the naso-pharynx and throat which are more or less permanent in character. On the other hand, growths which would be troublesome in early life cease to be so later. It is not an uncommon experience to be consulted by elderly people for throat troubles and find spurs and other obstruction within the nose. Such patients have no disagreeable symptoms referable to the nose, but will recall that they did have earlier in life. The nose has adapted itself to the abnormal conditions, is doing its work fairly well, and as the mischief to the lower respiratory passages has already been done, the amount of good to be accomplished by intra-nasal surgery is questionable, especially in view of such accidents as this paper describes.

In Case I, however, the issue well justified the operation and would in a similar case justify operation. This was not one of the cases so common where a spur has encroached on a turbinated body which has adapted itself to the abnormal conditions and leaves some room, but the obstruction was in front of the turbinated body and blocked the nose as effectually at all times, as would a plug of cotton in the nostril. It also made cleansing of that side of the nose impossible, and after the removal of the growth, a large mass of blackish, friable matter was dislodged from the lower meatus. This extended around the curve of the lower turbinated body and had evidently been a long time within the nose, and must have contributed not a little to the diseased condition of the nose and throat. Furthermore, the removal of the growth permitted nose breathing nights, which was followed by a very considerable improvement of the patient's condition.

CONCLUSIONS.

(1) Operations upon the nasal septum may be followed by hemorrhage sufficient to very materially affect the health of the patient.

(2) The artery of the anterior (cartilaginous) septum may lie near the surface, be of considerable size, and if atheromatous may cause serious hemorrhage.

(3) Operations upon the nasal septum in adults should be advised only after carefully considering the good to be accomplished and the possible risks incurred.

◆

Medical Progress.

REPORT ON DISEASES IN CHILDREN.

BY T. M. ROTCH, M.D.

At a Meeting of the New York Academy of Medicine February 15, 1894,[1] Dr. William P. Northrup made the following communication:

SCORBUTUS IN INFANCY.

Pediatrists have recently learned to recognize newly a disease, and believe that they have saved a few lives in recognizing it. It is for the purpose of making the knowledge of this disease more general that the Section on Pediatrics comes before the Academy to-night. Sailors used to have scurvy before they took lime-juice to sea; but do children and infants now have it? You will hear speakers here this evening say that it has been observed in New York, Boston, Cincinnati, Philadelphia and elsewhere. It was reported in Germany in 1873. In 1878 Dr. Cheadle reported three cases. No cases were recorded in the United States until 1891. Northrup had then reported eleven cases before the American Pediatric Society. One of these cases died, and the pathological findings proved of great value. Scurvy is a disease dependent upon the prolonged use of improper food or absence of fresh food. Its most characteristic symptoms are spongy gums and a tendency to hemorrhages. Notably these hemorrhages are subperiosteal collections of blood about the femora and other long bones, escaped blood into and beneath the skin forming petechiæ, and ecchymoses into the gums and membranes of the mouth, intestines, and pelvis of the kidney. The following combinations of symptoms appeared in several cases: spongy gums and swollen thighs; swelling of both thighs, gums spongy and bleeding; "black eyes," bloody passages, anæmia; spongy gums, swollen thighs, petechiæ, demonstrated subperiosteal hemorrhages.

Most cases have been attributed to persistent feeding of the infant on prepared infant foods and condensed milk. Even a small proportion of cow's milk and breast milk, according to some observers, are not sufficient to protect against this peculiar form of malnutrition. It occurs most among the rich, where strict regimen which has persistently excluded fresh food and fruit juices has been carried out. Among the poor, where the children received mixed food from the table, and consequently fresh food, they escape scurvy but suffer from rhachitis. The age most subject to the typical disease is the second year of life. The most typical symptoms are swollen and painful joints and spongy gums; the treatment, orange-juice and other fresh fruits, with proper diet. The disease is supposed to be a distinct entity, though it is often associated with rickets. It was formerly believed to be so closely associated with it as to deserve the name of acute rhachitis.

---

[1] Annals of Gynæcology and Pediatry, March, 1894.

Dr. Henry Ling Taylor read a paper entitled,

SCORBUTIC PSEUDO-PARALYSIS.

This term was chosen to emphasize a condition frequently occurring in infantile scurvy as illustrated by the following cases: The patient, eleven and a half months old, had been fed exclusively on condensed milk, and was brought from the South for some supposed spinal affection. Local symptoms developed as follows: weakness in sitting up, later inability to sit up; inability to move the limbs and later the trunk; a tender swelling over the right thigh; spongy and bleeding gums; swelling about one eye; purplish spots; and a swelling about the right ankle. The nutrition became impaired, and she became sensitive to the slightest touch or movement. When first seen by the writer the condition was critical. Temperature was 105.5° F. She refused to nurse, and screamed loudly at every touch. She had eight teeth, around which the gums were swollen and spongy and ulcerated. The legs were motionless, the toes and ankles could be moved; the reflexes were normal; the spine was rigid and somewhat bent; there were no symptoms of rhachitis. The child was put at once on Pasteurized milk, and received the juice of an orange and two teaspoonfuls of raw beef-juice daily. No drugs were administered. The little sufferer began to gain at once; the symptoms disappeared one after the other; and in two weeks the spine was flexible and straight, and the legs were moved freely. The recovery was permanent. The parents reported that another child of a neighbor, thirteen months old, fed upon the same diet, developed painful swelling of the joints, spongy and bleeding gums, and died of exhaustion.

The pseudo-paralysis is one of the most striking of the lower limb symptoms in these cases; the trunk and upper extremities may also be affected. All observers have noted such symptoms. This is due to local hemorrhagic lesions, but essential paralysis cannot be assumed. This may be due to the blood and serous infiltration into and between the muscles. Contraction of the muscles on their tender periosteal attachments would be instinctively avoided. Where joint irritation exists there would be local reflex muscular rigidity, which would also operate to prevent motion. This pseudo-paralysis is distinct from other paralytic affections, being distinguished by the accompanying symptoms of scorbutus, normal knee-jerks, and by its speedy subsidence on anti-scorbutic diet.

Dr. Louis Starr, of Philadelphia, said that Dr. Northrup's paper on "Scorbutus in Infancy," read before the American Pediatric Society in September, 1892, was the first attempt by an American to establish the distinct position of that disease, and to explain its origin and treatment. Before this paper appeared, he had seen four cases, one of which died. The autopsy findings corresponded exactly with those observed by Dr. Northrup. Since that time he had seen nine cases. In few diseases were the various symptoms so constant in their grouping. The conditions in these cases were as follows:

(1) Immobility, excessive tenderness, and a varying degree of swelling of the lower limbs. The swelling was most marked in the neighborhood of the joints, the skin being tense and often livid in color, but not pitting on pressure.

(2) A purplish discoloration of the gums, which were also often spongy, swollen, and bled readily. These features were entirely absent when no teeth had been cut, and when but few teeth had appeared, were absolutely limited to the gums surrounding them. There had been complete and rapid recovery under anti-scorbutic treatment.

Each of these cases occurred in the best surroundings, and was traced to improper feeding, usually some baby food. Three cases were apparently due to alterations produced in ill combined milk mixtures by sterilization. The symptoms subsided upon stopping the sterilization, without otherwise changing the food. A typical case was reported in a child of eight months, in which the symptoms consisted of spongy and bleeding gums, pain in and immobility of the legs, and some swelling in the knee- and ankle-joints. Recovery followed regulation of the diet with the administration of a teaspoonful of orange-juice and the same quantity of raw beef-juice three times a day. This was ordinarily the treatment used in all cases. Olive oil rubbed into the limbs brought some relief to the tenderness and assisted the nutrition. Some preparations of iron were administered in some cases.

Dr. T. M. Rotch, of Boston, wrote that the first really good work done in this country on scorbutus was by Dr. Northrup, and the credit should be awarded to him. He reported thirty cases of scurvy. In some of his cases scurvy seemed to have been superadded to an original rhachitis. The scurvy rapidly recovered, while the rhachitis took the usual slow course. He doubted if there was such a thing as acute rhachitis, and said that in his experience scorbutus was most commonly met with in the last quarter of the first year.

Dr. F. Forchheimer, of Cincinnati, wrote, in answer to questions, as follows:

(1) Diagnosis rests upon the hemorrhagic nature of the symptoms. I believe all the forms classed under the head of purpura, peliosis, and scorbutus to be the same, that is, scurvy.

(2) Hemorrhages that are diagnostic occur under the skin and in the mucous membranes.

(3) Hemorrhages that occur under the skin, and the peculiar condition of the mouth, may exist together or alone. It is difficult to estimate properly the value of the mouth symptoms in cases where there are no teeth. When teeth are present, it may be mistaken for ulcerative stomatitis; but therapeutic experiment will decide the question in a very short time.

(4) Diagnosis rests upon the following symptoms: Pain in the joints of the extremities, spots in the skin, and condition of the mouth.

(5) I believe scurvy to be a collection of symptoms, the cause or causes of which are unknown. It seems from present knowledge to be some chemical change, probably hæmic.

(6) The symptoms disappear very rapidly under treatment. The joint symptoms begin to improve in a few days; then the mouth, then the spots, lastly, the anæmia.

(7) The most successful treatment has been orange-juice, lemon-juice, and good milk. I cannot refrain from laying stress upon the aid to diagnosis which is found in treatment.

Dr. A. D. Blackader, of Montreal, said he had seen no cases of scorbutus in this country, and inquiry among prominent men of large medical experience in Montreal showed that they had either not seen scorbutus or had failed to recognize it.

Dr. F. Lockwood, of Baltimore, had seen no case since the one which was reported in Dr. Northrup's paper in 1891. He said his dispensary cases were nearly all colored. Rhachitis was common. They did not receive artificial foods but ate whatever the table afforded.

Dr. W. D. Booker, of Baltimore, wrote that he had been on the lookout for scorbutus in infants since the publication of Dr. Northrup's paper, but had not seen a case.

Dr. J. Lewis Smith said that although rhachitis was common in dispensary practice, scurvy was very rare. As he had seen it, the symptoms had been those already described. The gums were not affected before the teeth were present. Anæmia was almost constantly present and a condition of failing health usually preceded that of actual scurvy. In older children he had noticed a peculiar state of mental depression. Death usually resulted from prostration.

Dr. A. Jacobi said that he had recognized scurvy before Dr. Northrup's paper appeared, but he now believed that he had overlooked many cases. In former years he had frequently made a diagnosis of acute rhachitis. Most of such cases were undoubtedly scorbutus. They were not infrequent. He had seen them most frequently in winter. They developed almost exclusively among well-to-do-people, among children who are artificially fed. A long-continued and exclusive diet of sterilized milk might probably cause the disease. The gums, in his opinion, did not furnish an absolute evidence of scorbutus, although they were, as a rule, affected. He had seen a marked case with teeth in which the gums were not spongy, and another child of six months with no teeth with spongy and bleeding gums.

Scorbutus is, without question, a disease by itself. It has been diagnosticated as acute rhachitis, as rheumatism, as trauma when a single joint is affected, and as ulcerative stomatitis. In treatment, dietetic management is most important. Fruit-juice is a valuable agent, and should be given. Animal food should also be given, but milk is the most important element. It should rarely be given alone, but in connection with one of the cereals. He usually dilutes it with barley water. Phosphorus is an excellent addition to the treatment, especially when rhachitis is present. The official elixir should be given in doses of ten to fifteen minims three times a day.

Dr. L. Emmett Holt had investigated thoroughly the effect of sterilized milk in producing scurvy. In three great institutions, the New York Infant Asylum, Nursery and Child's Hospital, and Babies' Hospital, but one case of scurvy has developed for five years. This case had a diet of malted milk. Most of the children were fed exclusively on sterilized milk. Sterilized milk is too valuable a food to be thoughtlessly set aside because one or two cases out of the many thousands who have taken it developed scurvy. As to the season, he has seen more cases in summer. As a rule, malnutrition precedes the attack, but he has seen one patient who was taking Mellin's food rapidly develop a severe attack in the most perfect health.

As to diagnosis, one case had been considered sarcoma of the knee. The swelling was immense, and the child died. One had been treated for acute osteitis of the knee, a plaster splint having been worn for some time. Three had been considered rheumatism, and one infantile paralysis. He had studied the effect of Mellin's food in six recent cases of scurvy. One child had taken five ounces a day for eight months; another, a bottle every two days for six weeks. With a single exception his cases have all been private ones, and with a single exception all had been from the country. They did not develop in institutions, because, during recent years, the feeding of children in institutions had been rational, far better, in fact, than that of the ordinary child outside. Scurvy is a dietetic disease, and must be cured by diet. A simple change of diet produces rapid and often brilliant cure.

Dr. W. L. Carr said that scurvy is rare in dispensary and hospital practice. In his cases diarrhœa had usually preceded the development of the disease. In one patient, nine months old, lacto-preparata had been the food. The case had been mistaken for one of rheumatism. The case was markedly rhachitic; the upper and lower extremities had both been involved, but improvement was first noticed in the arms. The swelling was most common over the upper third of the thigh.

Dr. F. M. Crandall reported a case which had been fed on Nestle's food, Mellin's food, and for six weeks almost exclusively on prepared barley. Spongy and bleeding gums, swelling of the right knee, and great pain when moved or handled were the prominent symptoms. The use of orange-juice, with a diet of modified milk and beef-juice was followed by rapid and complete recovery.

Dr. J. H. Fruitnight reported five cases, four of them ranging in age from eleven to twenty months. All were in private practice and artificially fed.

Dr. Max Einhorn, from recent laboratory experiments, believed that the disease might be due to a certain chemical change in the blood

Dr. Joseph E. Winters said that the worst case he had seen was fed exclusively on an infant food. Recovery on a milk diet alone had been rapid and complete. He uses sterilized milk, and does not believe that complete sterilization, if not carried beyond twenty minutes, will produce scurvy.

Dr. Northup said that the chief object of the meeting was to bring out varied experiences, and to secure data which would establish the condition as a distinct disease of childhood. It was clearly proved that it developed almost exclusively among private patients, and in an overwhelming proportion of cases among those fed on a proprietary food. No one food was an especial offender, except as it was especially advertised and largely used. The most popular food would show the greatest number of cases of scurvy. If it were popular enough, it would obtain a monopoly on the disease. The pictures of the blooming infants reared on these foods were attractive, but the proprietors failed to publish pictures of the scurvy cases.

TWO MILLION PEOPLE TOO MANY. — Rev. Dr. Paxton, of New York, is reported to have said that there were two million more people on the earth than there is room for, or need of. Having thus calculated the excess, he states that the only remedy is war or plague — either of which he thinks would be a blessing, if it would only clear off this crowded sphere. It is not stated whether the gentleman himself is one of the two million extras or of the desirable inhabitants.

Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

NINTH ANNUAL MEETING, WASHINGTON, D. C., MAY 29, 30, 31 AND JUNE 1, 1894.

(Concluded from Vol. cxxx, No. 26, p. 650.)

THIRD DAY. — THURSDAY.

DR. J. P. CROZER GRIFFITH, of Philadelphia, read a paper upon

TETANY IN AMERICA.

Dr. Griffith reported five cases of tetany of varying types, some of them continuous, approaching or including the carpo-pedal spasms of some authors; some of them paroxysmal in nature. The cases show that those authors are probably correct who include all these forms under one general heading, "Tetany." All gradations seem to exist between the mildest and the severest cases. Certainly, with our present knowledge, we are unable to make any sharp distinctions.

He then followed with a review of the cases of tetany which have been reported in America. The history of these cases seems to uphold the views stated.

DR. W. G. THOMPSON exhibited the photograph of a case of tetany, which he saw a year ago in a man about thirty-five years of age. The disease lasted about six weeks, and there was absolutely nothing to be determined in regard to its probable cause. The spasms were very general, affecting all the muscles of the body, and they included those of the face in a very marked degree, as was shown by the photograph.

DR. E. G. JANEWAY reported two cases of tetany, which he had seen in connection with typhoid fever. The first case was a lady of about thirty years of age, who had a very severe attack of typhoid fever. During the mid-period of the disease, tetany came on in the muscles of the arms and legs, some of those of the back, and also those in the jaws, making the matter of feeding a subject of extreme difficulty. The tetanic condition lasted about two weeks, but was severe for only ten days. It made a complication of extreme gravity, and suggested to some who saw her the possibility of meningitis from the stiffness of the back and neck. The stiffness of the arms and hands gave the clue to tetany, and relieved the anxiety of the physicians.

DR. A. JACOBI, of New York, asked Dr. Griffith if he had said that laryngismus stridulus must be a very rare symptom in America because there were so few reports.

DR. GRIFFITH: Because of the few reports, and because I and others with whom I have talked rarely meet with it.

DR. JACOBI said that it was his experience and that of a number of physicians with whose practice he was acquainted, both dispensary and other practice, that laryngismus stridulus was quite frequent. He thought that there were so few reports because it was such a common disease. In the course of every winter he saw, at least, a dozen cases of well-marked laryngismus stridulus.

DR. C. G. STOCKTON, of Buffalo, reported a case of tetany in a child four years old. The child was under his care because it was passing a very small amount of urine, and developed carpo-pedal spasm which continued almost steadily for two months. At times, there was almost complete suppression of urine. The child had general œdema, and it was supposed that it had a cystic kidney. The child now, two and one-half years later, is practically restored to health, and the kidney disturbance must have been a functional one.

DR. J. J. PUTNAM said that tetany was a rare disease in America. At the Massachusetts Hospital, some 1,200 cases of nervous diseases were treated annually; and yet he could recall only two typical cases in adults, and a few instances of the carpo-pedal contractions in infants.

DR. WM. OSLER spoke of a case of tetany occurring in pregnancy, and recurring on six successive occasions. The tetany came on about the sixth month.

DR. JAMES STUART, of Montreal, said there appeared to be a tendency among the speakers to classify all cases of tonic spasm, not attended by loss of consciousness, as cases of tetany. The genuine tetany described by Trousseau and Weiss is certainly a distinct affection from the majority of cases which had been described by those who had spoken. The tetany which is frequently epidemic in Vienna and in some parts of France is an entirely distinct affection from carpo-pedal contraction. The word tetany as used at present embraces a vast majority of different troubles, and is something like "chorea," which is a general term to signify a great number of different spasms.

DR. J. P. C. GRIFFITH said that the experience of Philadelphia physicians in regard to the frequency of laryngismus stridulus was contrary to that of Dr. Jacobi. He had talked with members of the American Pediatrical Society, and they had said that they saw few cases of it.

Dr. Stewart's view of tetany was the one which he held when he commenced his paper; but the more he looked into it, the more impossible he found it to make a sharp distinction between one and the other varieties. After all, perhaps tetany is a condition and not a disease — a symptom, a certain expression of the nervous system, like eclampsia, for instance.

DR. WHARTON SINKLER, of Philadelphia, then read a paper entitled

LEAD PALSY IN CHILDREN; WITH A REPORT OF THREE CASES.

Lead palsy in children, he says, is a rare disease, although there is no apparent reason why children should not be affected as readily as adults. But few cases of this kind can be found in literature. The symptoms dependent upon disease of the nervous system due to lead poisoning, are motor and sensory. The most common of these is paralysis of the extensor muscles of the forearm. In children, however, it is a noteworthy fact that the paralysis is more liable to affect the lower extremities than the upper. There are but two cases reported in which sensory disturbances have been met with in children. Lead palsy in children very closely resembles poliomyelitis anterior, and is probably often mistaken for this disease; and this may account for the small number of cases of lead palsy in children which have been recorded. Dr. Sinkler reported three children in one family suffering from this affection, the disease being traceable to white-lead for painting, which was kept in the house. The pathology of lead-poisoning in children is generally considered as consisting in changes in the peripheral nerves; and these changes are very closely allied to those met with in the ordinary form of multiple neuritis. There is good reason to believe, however, that in many cases of lead paralysis, the symptoms are due primarily to the direct action of the lead upon the muscles. It is also probable that chronic lead-poisoning may produce typical changes in the anterior horns of the spinal cord, and thus give rise to a poliomyelitis.

Dr. J. J. Putnam said that Dr. Sinkler's cases confirmed very strikingly the interesting fact that in children the legs are affected quite as early as the arms, and at times earlier. He referred to the experimental researches of Dr. Stieglitz, of New York, on lead paralysis in dogs, produced by continuously giving small quantities of lead. He found distinct focal changes in the spinal cord, foci of degeneration in different parts of the cord, and as much in the lumbar region as in the cervical region.

Dr. A. Jacobi spoke of two cases of lead paralysis in children in which the arms and feet and legs were equally affected. One was that of a boy who ate the paint from his father's fence; and another was a baby which had been treated for extensive eczema of the face and head with lead ointment, and would put his fingers in his mouth after picking his cheek.

Dr. M. Allen Starr related two cases of lead palsy in children which he had watched in St. Mary's Hospital. They were sister and brother, the children of a painter. The paralysis began in the feet, and later extended to the hands, the reverse of the ordinary lead paralysis. The little girl died, and an autopsy was obtained. The spinal cord was carefully examined, and found normal. The peripheral nerves were all affected in the distal portion of the extremities. The main trunks of the nerves, the sciatic and the brachial plexes, were apparently normal. The degenerative changes in the peripheral nerves were very well marked.

Dr. J. H. Musser, of Philadelphia, read a paper on

THE MILD CHARACTER AND DIMINISHED PREVALENCE OF SYPHILIS AND THE INFREQUENCY OF VISCERAL SYPHILIS.

The paper attempted to prove, first, that syphilis of the present day is of mild type and is infrequent compared to a period of twenty years ago. Is it (1) because the community is becoming immune, (2) because the virus is less active, or (3) because of the change in the habits of cleanliness of the public? Second, the infrequency of visceral syphilis is considered. Syphilitic disease of the lungs, liver and kidneys is extremely rare. Are we warranted in the belief, therefore, that this infection is the cause of so-called nervous syphilis or of nervous diseases due to syphilis?

Dr. E. G. Janeway thought it would be a mistake if we should overlook syphilis as a factor in the production of disease. He believed that syphilis was a strong factor in the development of locomotor ataxia and still stronger in general paresis. Quite a number of general practitioners fail to take syphilis into consideration as a producer of internal disease. It is not so very infrequently that syphilis is present when it is not thought to exist and it occasions symptoms which simulate phthisis. He related four cases of this character where the patient failed to improve at health resorts but improved in the City of New York upon anti-syphilitic treatment. Syphilis undoubtedly stands very strongly as an etiological factor in the development of aneurisms.

Dr. H. M. Lyman said that his own investigations with regard to the prevalence and severity of syphilis at the present time were quite in accord with those expressed by the paper. In the Sandwich Islands and other islands of the Pacific where syphilis was introduced during the last century, and where its ravages were of the most terrible character, the syphilitic manifestations are different at the present time from what they formerly were, and the disease has assumed a very much milder and more tractable form. Where a population is becoming more stable in its constitution and more civilized in its character, the virulence of syphilis is diminishing. The tendency of syphilis is to diminution in the virulence of its primary and secondary manifestations; yet the later manifestations of the disease, such as tabes and paretic dementia, which are most closely related to syphilis, if not an actual manifestation of late forms of syphilis, are exceedingly apparent.

Dr. I. E. Atkinson said that from an observation of only thirty years it could hardly be accepted that syphilis is declining. All will admit that it is not so severe a disease as it was when it first became prevalent at the end of the fifteenth century, but there are so many circumstances that may interfere with statistics based upon the records of a single hospital, that we must be careful in drawing conclusions from them. So far from looking upon syphilis as a disease that tends to become insignificant in a small space of time, he is still in the habit of seeing in the hospital wards grave syphilitic disease and patients with grave nervous and visceral disease due to this infection. The claim that syphilis is a disease that is becoming milder within the observation of the present generation should be taken with a considerable degree of allowance.

Dr. Abner Post, of Boston, said that he had been attracted by the title of the paper because it indicated an experience which was entirely foreign to his own. He constantly saw more and more syphilis, and graver and graver cases. Possibly his position as a teacher of syphilis directs such cases to him. Possibly if the statistics of the whole city of Philadelphia could be taken into consideration, it would be found that cases of primary syphilis had disappeared from one hospital and had increased in numbers at others. He had heard cases of diphtheria divided into three classes: first, those in which the cases were so mild that under any treatment or no treatment they would get well; a second class in which the cases were fatal from the very beginning; and the third or largest class which was severe but in which treatment showed itself of value. It occurred to him that syphilis might be divided in somewhat the same way. He thought that it would be possible for any one to see a long list of cases of the first character in which syphilis was mild, and the physician might form his opinion that this disease was an extremely mild one. For a long series of years he saw such a class of cases, but latterly he had been in the way of seeing the cases that had gone to the bad in spite of treatment. It seems impossible that syphilis should be dying out in this country considering the way we cultivate the disease. In his own locality there is absolutely no control exercised.

A STUDY OF THE TEMPERATURE IN CEREBRAL APOPLEXY.

In this paper **Dr. C. L. Dana** discussed the effect of cerebral hemorrhage and acute softenings upon

(1) The general bodily temperature.

(2) In causing unilateral rise.

(3) The comparative effect of the two processes in causing temperature disturbance.

(4) The question of the localization of lesion in reference to temperature.

He endeavored to show that hemorrhages cause elevation of temperature, and more on the affected side. That softenings do not cause any elevation; that all apoplectic temperatures are low and have no diurnal variations; that temperatures above 103° are evidence of complications (pneumonia); that lesions of the thalamus may cause a high temperature; that a close study of temperature helps greatly in diagnosis and prognosis of the apoplexy.

Dr. J. J. Putnam expressed his appreciation of Dr. Dana's valuable contribution, and spoke of one case of his own where there was undoubted hemorrhage and in which the temperature went up much higher on the affected side than on the opposite side.

Dr. F. C. Shattuck read a paper entitled

SOME REMARKS ON THE SIGNIFICANCE OF ALBUMIN AND CASTS, ESPECIALLY IN THOSE PAST MIDDLE LIFE.[1]

Dr. I. N. Danforth, of Chicago, said that his own observations had closely followed those of Dr. Shattuck for several years past. Twenty years ago a patient came to him who had albuminuria and casts. He told him that he had Bright's disease, and had not long to live, and that he had better make arrangements for a change of worlds. That man is still alive and as well as he was then, and attending to his vocation. Dr. Danforth has come to regard transitory albuminuria of slight amount as a small matter, and the presence of casts — provided they are small, symmetrical, hyaline casts — as not necessarily involving any special danger. He insists, however, that the character of the casts determines the real condition of the kidney, and that a study of the structure of the casts requires a great deal more observation.

Dr. T. M. Prudden read a paper on

EXPERIMENTAL PHTHISIS IN RABBITS, WITH THE FORMATION OF CAVITIES: A DEMONSTRATION.

Attention has for some time been turned to the concurrent infection of the lungs in pulmonary tuberculosis with other germs, such as the streptococcus pyogenes, micrococcus lanceolatus, staphylococcus pyogenes, and so forth. Sufficient data are at hand to justify the conviction that this secondary infection often plays an important rôle in determining the symptoms and lesions of pulmonary tuberculosis. As a part of a series of studies on this subject, the author undertook to find out, among other things, the effects in rabbits — already the subjects of an extensive experimental pulmonary tuberculosis — of intra-pulmonary injections, through the trachea, of beef-tea cultures of the streptococcus pyogenes.

The streptococcus pyogenes alone introduced through the trachea into the lungs of healthy rabbits usually induces a slight, temporary, localized bronchitis and a moderate proliferation of vesicular epithelium. These small inflammatory foci usually soon disappear without serious interference with the health of the animal. The tubercle bacillus alone, introduced in considerable quantity, through the trachea of healthy rabbits, is capable of causing large areas of tubercular consolidation of the lungs, with varying amounts of cheesy degeneration. This experimental lesion of the rabbit's lung, caused by the tubercle bacillus alone, is closely similar to certain phases of cheesy pneumonia or acute phthisis, as we see it in man, save that in the animal lesion, cavities are not apt to form. Having established the separate effects upon the rabbit's lung of the streptococcus and of the tubercle bacillus, Dr. Prudden introduced the streptococcus into the lungs already the seat of extensive tubercular lesions. The result of this secondary concurrent infection was not, as had been deemed possible or probable, an increased amount of exudative pneumonia, nor a hastening of the death of the animals, but a more or less extensive formation of cavities in the affected portions of the lungs. This formation of cavities occurred in eight out of nine lungs subjected to the conditions of this experiment, whereas in only one lung out of eleven did cavities form under the influence of the tubercle bacillus alone.

Dr. Prudden's demonstration consisted in the exhibition of photographs of the lungs of these rabbits, both with the simple and the mixed infection, and of some of the lungs themselves. These specimens show conclusively that pulmonary phthisis — cavities and all — can be experimentally induced in the lower animals.

Dr. G. L. Trudeau read

A REPORT OF THE ULTIMATE RESULTS OBTAINED IN EXPERIMENTAL EYE TUBERCULOSIS BY TUBERCULIN TREATMENT AND ANTI-TUBERCULAR INOCULATION.

In the great majority of cases, the tubercular process which has been apparently cured in the rabbit's eye by tuberculin treatment, slowly relapses. This tendency to relapse may show itself as soon as the injections are no longer capable of producing reaction in the eye, or an apparent cure having taken place. The process may remain arrested and the eyes well for months before the tendency to relapse manifests itself. The inhibitory influence exercised by the treatment on the more chronic forms of this type of tuberculosis seems demonstrated, though in most cases only temporary.

Protective inoculation, by means of graded doses of living avian bacilli, gives results more satisfactory, and which seem more permanent. Relapses, it is true, do occur in a fair majority of cases, but, even in these, the inhibitory influence of the preventive treatment is manifest. In some, the disease runs a chronic course, and, even when the eyes are ultimately entirely destroyed, this does not occur until many months after it has taken place in the controls. In other of the relapsing cases, the inhibitory influence of the preventive inoculation is frequently so marked, that the disease progresses almost imperceptibly, and is characterized by long periods of complete arrest. In a fair proportion of animals, however, the eyes recover completely from the tubercular inoculation, and the degree of persistence of this apparent immunity is shown by the fact that inoculation six months later in the sound eye may follow the same typical course as in the first instance, and the second eye, also, be completely restored.

Though dangerous to the animal's life, and uncertain in its protective effects, a study of anti-tubercular inoculation indicates that the reaction of living tissues to tubercular inoculation can be modified artificially, and thus the production of a relative, and in a few cases an apparently complete, artificial immunity is a possibility.

---

[1] See p. 613 (Vol. cxxx) of the Journal.

Photographs illustrating these points, and taken a year after the virulent inoculation, accompanied the paper.

Dr. Norman Bridge, Los Angeles, Cal., read a paper on

COUGH INDUCED BY POSTURE, AS A SYMPTOM NEARLY DIAGNOSTIC OF PHTHISIS.

Probably in more than nine-tenths of all cases of pulmonary tuberculosis, and of other diseases similarly localized and inducing fluid products, at some time in the course of them, cough is to some degree, slight or extreme, produced or aggravated by posture of the patient, and especially by the horizontal posture on the diseased side, when maintained from a few minutes to an hour. Cough is rarely so produced in any other disease whatsoever. In phthisis, especially early in the cases, the cough is increased or produced by recumbency on the side affected, provided the side is only moderately involved, and the lesion is somewhat circumscribed in character. If the disease involves the whole of the lung, the patient often coughs less when he lies on that side. The symptom under consideration is doubtless produced by the flow of mucopus into healthy bronchial tubes of lessening diameter, and the force of gravity produces this in most cases where the secretions are fluid and where the patient lies for any length of time on the affected side. Recumbency on the opposite side favors the flow of the secretions toward larger and larger tubes, where the mucous surfaces are less sensitive and more accustomed to such irritations, and so cough is not provoked till relatively large masses of phlegm have accumulated. This symptom of cough induced by posture has a large measure of diagnostic value; and in cases that cannot be examined physically, it will be found a consideration of first importance in helping to determine the presence of tuberculosis and the location of it.

FOURTH DAY. — FRIDAY.

Dr. Victor C. Vaughan, of Ann Arbor, read a paper entitled

THE CHEMICAL PRODUCTS OF THE ANÆROBIC PUTREFACTION OF PANCREATIC AND HEPATIC TISSUES, AND THEIR EFFECTS UPON THE TESTS FOR MORPHINE.

The chemical products of putrefaction are modified by the conditions under which the process proceeds. There are always present, during life, in the upper part of the small intestines, certain anærobic germs which produce indol and its derivatives. When the host dies, these germs do not necessarily cease to exist. They can grow, multiply and produce their special products only in the absence of air. Pancreatic and hepatic tissues allowed to decompose in the absence of air, contain chemical substances which can be extracted by the methods of Dragendorff, and which give many tests similar to those given by morphine.

Dr. H. M. Lyman read a paper on

GASTRO-ENTERIC RHEUMATISM.

Characterized by symptoms as definite as those of articular rheumatism, it occurs among neurotic, arthritic, senile, or prematurely aged people. It belongs to the erratic and neuralgic variety of rheumatism. Its pathology is as indefinite as that of chronic neuromuscular rheumatism in general. The treatment consists in providing warmth and dryness of the surroundings of the patient; hepatic and renal elimination; nutritious and easily-digested food; warm baths and abundant exercise.

Dr. J. H. Musser questioned the propriety of the term "gastro-enteric rheumatism." He thought the use of new terms should as far as possible be deprecated. The disorder is not a local affection of the stomach alone, but part of a general morbid process in the gouty subject, and the term which indicates this general process should continue to be used.

Dr. J. E. Graham, of Toronto, thought that the term "rheumatism" should be limited to the acute infectious process which we call acute rheumatism, and should not be applied to the class of cases described by Dr. Lyman.

Dr. Victor C. Vaughan said we used the word "rheumatism" to cover a great variety of things, and that doubtless many pains in the stomach and intestines, differing in origin, would come under Dr. Lyman's description. He thought a distinction should be made between the pains caused by a uric-acid condition and those caused by something else. This distinction could be made by an examination of the blood and the determination of the polynuclear cells in the blood.

We were formerly taught that uric acid is a product of imperfect oxidation, and if the oxidation went on more completely urea would be formed. With the light now before us, we can say that urea and uric acid are in no way concerned one with the other; that uric acid is not a product of imperfect oxidation, the complete product of which would be urea.

Dr. I. T. Dana, of Portland, said that the term "rheumatism" represents at present a conglomerate pathological mass, but the time will come, perhaps shortly, when this term will be applied only to the ordinary form of articular rheumatism attended with a liability to implication of the heart, and the terms rheumatic neuralgia, rheumatic dyspepsia, etc., will pass away. We would gain a good deal if we would limit the use of the term "rheumatism" to the articular inflammations, and give to the other forms of disease which are now often grouped under the head of "rheumatism," individual and new names.

Dr. Lyman said he was quite in accord with the remarks of Dr. Dana regarding the complexity of the diseases known as "rheumatism," and in writing his paper he was bothered to know what title to assign to it. He simply wished in his paper to call attention to the clinical aspects of a complexus of symptoms which are as clearly defined as articular rheumatism or any of the polymorphous disorders now readily classed under the term "rheumatism."

Dr. George Dock, of Ann Arbor, read a paper on

A CASE OF OSTEOMALACIA.

He reported the case of a woman aged twenty-five years, a native and resident of Michigan, who had a marked case of osteomalacia. The case was probably, though not distinctly, of puerperal origin. The case lasted three or four years, with marked symptoms for two and a half years, and was characterized by the common subjective symptoms and softening, spontaneous fracture, and deformity of the bones, and excretion by the kidneys of large quantities of lime salts (renal colic). Treatment had no influence on the disease (lime, phosphates, etc.).

The post-mortem changes were very marked, and did not throw any light on the pathology of the disease (microscopic and histological specimens were shown).

He referred briefly to all the cases hitherto reported in the United States, which, excluding three of doubtful diagnosis, are very few, and do not add materially to our knowledge of the disease.

The following papers were read by title: "Stomatitis Neurotica," by A Jacobi; "A Case of Mitral Stenosis, with great Hypertrophy of the Right Ventricle: Death from Hæmoptysis," by A. McPhedran; "A Case of Calculous Pyelitis, with Invasion by the Bacillus Lactis Ærogenes," by J. H. Musser.

President Fitz called the attention of the Association to the fact that seventy per cent. of the members had been present, making this the best attended meeting in the history of the organization.

The election of officers resulted as follows: President, Wm. Osler; Vice-President, A. Jacobi; Recorder, I. Minis Hays; Treasurer, W. W. Johnston; Secretary, H. Hun; Member of Council, J. E. Graham.

The following new members were elected: H. M. Biggs, New York; E. G. Cutler, Boston; F. H. Williams, Boston; M. H. Fussell, Philadelphia; G. Adami, Montreal; B. K. Rachford, Cincinnati.

The Association then adjourned.

Recent Literature.

Burdett's Hospital and Charities Annual, 1894. Edited by Henry C. Burdett, author of "Hospitals and Asylums of the World," etc. London: The Scientific Press (Limited). New York: C. Scribner's Sons.

This excellent annual gains in size and in completeness each year as it comes to us. It deserves length of life and usefulness in proportion to the zeal and labor expended upon it by its projector. The information it gives is naturally more detailed and thorough for the institutions with which it deals in Great Britain and Ireland.

The American section occupies thirty-eight of the five hundred and twenty-two pages; these pages are divided between sub-sections on hospitals, hospitals for the insane, and nurse training-schools. Among the Boston charities, it seems to us that the Lying-in Hospital and the Children's Hospital are sufficiently important, exemplary and active institutions to merit a little fuller notice than is given of them.

The Myology of the Pigeon. By Charles M. Burk, M.D., Instructor in Zoölogy in the University of Pennsylvania. Philadelphia. 1893.

This is a short account of the muscles of the pigeon for students of zoölogy. It is simple and well fitted for its purpose. There are several illustrations. It is well printed.

According to the testimony of one of the witnesses before the Lexow Committee, there are about ten thousand opium smokers in New York.

THE BOSTON
Medical and Surgical Journal.

THURSDAY, JULY 5, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico; $6.56 per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to
DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

AN INTERNATIONAL MEDICAL LANGUAGE.

The International Medical Congress has now become one of the established institutions of our modern civilization. The advantages accruing to medicine and surgery from these yearly meetings of representative physicians from all parts of the civilized world are so great that the Congress will be continued despite the inconveniences attending the presentation of papers, and the consequent discussion in three or four different languages.

These disadvantages were especially felt at the last Medical Congress held in Rome, where French, German, English and Italian were official. Representatives from all those nationalities and from America were allowed to speak in their own language; but the embarrassment and discomfiture can easily be conceived of those who knew only one language, and especially of the unfortunate reader of a paper in English who could not understand a word of the criticisms offered by the French, German or Italian members of the Congress. It was a Babel of tongues, the Italian naturally being the language most used, a language of which not one in ten of the visitors from abroad knew a word.

The desirability of an international medical language is obvious, but what language shall be selected? The time was when Latin was the universal language of medicine and of science: and a hundred years ago the difficulty would easily have been settled in favor of the linguistic medium in which Cicero and Virgil wrote. But alas! Latin is not now taught as it was a hundred years ago, for the reason that in the education of our youths it has been superseded by other modern studies deemed of more importance; nor will the so-called *dead languages* ever again occupy at the universities three-fourths of the time of undergraduates between the ages of sixteen and twenty-one. Moreover, Latin is not sufficiently wieldy and flexible a tongue for verbal use, and its vocabulary would be found poor in the technical terms of our everyday life.

Much more might be said in favor of Greek. It is not a dead language, but "living, flexible, and perfectly adapted to all the needs of human intercourse." It is a language easily acquired; as easily, according to Dr. Rose, as French or Spanish, and certainly much more easily than German.[1] "The literary Greek of to-day," says this writer, "is identical with the Attic dialect in orthography, almost also in form; there is, in fact, more difference between the Greek of Herodotus and the Greek of Zenophon than there is between the Greek of the latter and the Greek of to-day."

Dr. Rose makes an earnest plea for the restoration of Greek to the important place which it once occupied in the curriculum of studies at universities, but he insists that Greek should be taught not as a dead, but as a living, language, by professors competent to teach it as it is spoken and written in Attica to-day; a person so instructed will easily have the Greek of Zenophon and Plato at his command. He believes that the introduction of the living Greek into our schools "would be of no less significance than the work of the humanists at the end of the Middle Ages," and longs to see the day "when the Greek language shall became the property of all scholars of all civilized nations, in such a manner that it shall serve as their medium of intercourse."

All this is, doubtless, an iridescent Utopian dream. The consent of the faculties of our leading medical schools to make a knowledge of colloquial Greek essential to matriculation can never be obtained, nor will more than a very small modicum of our medical graduates ever take the time to go to Greece in order to learn the language as it is spoken and written to-day. Greece is too far away, and this insignificant nation is still too little in touch with modern thought and modern learning; has too little in which to interest medical men who go abroad for their improvement, and who naturally prefer spending a year at Vienna and Berlin, with the splendid hospital advantages and the opportunities to learn German, to spending a year or more at Athens studying modern Greek literature and the classics.

We opine, therefore, that in the near future when the absolute necessity of some common international language shall come to be recognized, it will not be modern Greek that will be adopted, but perhaps either English or German — more probably English, which is becoming more and more the leading language of the civilized world.

◆

SUICIDE IN THE PRUSSIAN ARMY.

The natural and general increase of suicide accompanying advancing civilization has been frequently noted. In Prussia, between the years 1871 and 1875, 1.2 persons out of every 10,000 committed suicide; while in 1891 the proportion rose to 2.1. In this respect Germany is ahead of all European States, showing the last two years a ratio of 2.71 to each 10,000 inhabitants. Denmark has 2.58; Switzerland, 2.30; Spain, 0.35. It is not a little surprising that so impulsive and passionate a people as the Spanish should be so little given to suicide, when they are so ready to do violence to others. In Germany, the highest ratio is found in Saxony and its dependencies; the percentage is larger among Protestants than Catholics, and least among the Jews. Contrary to what might be expected, there are fewer suicides in winter than in summer, June having annually the largest number.

The Austrian and German armies suffer the most in this respect. Between 1876 and 1890, the Fourth Army Corps lost 9.13 men per thousand from suicide; and the lowest rate which was found, in the Seventeenth Corps, was as high as 2.27 per thousand.

The same territorial and mensual conditions influence the military suicide as the civil. The largest number of suicides of under-officers occurs in August; of the one-year recruits, in March and August. There is especial disposition to suicide in regiments stationed in large cities, where the life of the unmarried rank and file favors the tendency to self-destruction. Marriage appears to be a great protection.

The causes leading to suicide in the army which are especially active, and less often found in civil life, are fear of punishment, injured sense of honor or wounded pride. Junior officers supply by far the larger number; and the first, second and third years of service show a ratio of 3, 1.5 and 1. The reference of suicide in the army to excessive or unjust discipline is not warranted by facts, although the military service brings to bear many influences which are wanting in civil life upon men of the same age, and which would supposedly lessen the rate of suicide. Nevertheless, the appalling number of young men who take their own lives each year suggests that some cause is operative which should be made the subject of serious consideration in estimating the effect of such large standing armies upon the material and moral welfare of a nation.

◆

NOTIFICATION OF INFECTIOUS DISEASES.

The practice of notification of all infectious diseases to the sanitary authorities is of quite recent date, so far as England is concerned, the laws upon this point bearing date 1889. When the Act was passed, considerable difference of opinion prevailed as to whether such notification should be compulsory. The old notion still survived that people had a prescriptive right to keep any outbreak of infectious disease in their own household a profound secret from their neighbors; that they were entitled to pass the infection along if it suited their purpose to do so; that any notification of the disease by a medical man was tantamount to a breach of confidence; and that the result of insisting on notification would be, that the head of a household, when any of his family were attacked by an infectious disorder, would decline to call in a physician to attend to them.

---

[1] Medical Record, April 24, 1894, page 392.

In commenting further upon this subject, the *Local Government Chronicle* says, in a recent issue:

"In view of the extent to which these Old World opinions lingered on, Mr. Ritchie was no doubt right, in 1889, when he made his Act an adoptive one. He trusted to the common-sense of the community, and believed that the prejudice against publicity in such a matter as this would in practice soon be overcome. That he was not over-sanguine in this confidence has been abundantly proved by the extent to which his Act has been adopted throughout the country. Successive Annual Reports of the Local Government Board have shown that the area to which it extends has increased so rapidly that the minority, which have not cared to adopt it, has dwindled to the most insignificant proportions. The last published figures, which are those for the 31st of March, 1893, prove that the notification principle was in force in districts with an aggregate population, according to the census of 1891, of 25,112,958 out of a total population of 29,001,018. We know of no case in which an adoptive Act has been adopted to anything approaching this extent. Apathy and negligence might have been expected to prevent a far greater minority of the community than this from adopting any Act, however desirable it might be that it should be adopted unanimously. The question which arises in this case is, whether when the country as a whole has pronounced unmistakably in favor of a measure which has for its object the prevention of the spread of infectious disease, the small majority of districts in which the local authorities have not as yet realized the necessity of adopting it, should be allowed to remain outside the Act. If the opinion of the majority is to prevail in this as in other legislation, they ought clearly not to be allowed to remain in their present position. On the other hand, it is undoubtedly the case that a law popularly adopted is more popular than a compulsory law. And with all our sympathy with the objects aimed at by the authors of this Bill, we are disposed to think that in the interests of the notification principle, the best course to take is to leave matters as they are. Every year the opponents of the Act find themselves in a smaller and smaller minority. Is it desirable to do anything which can give them a pretext for declaring that they have any grievance of which they can complain?"

◆

MEDICAL NOTES.

The Plague at Hong Kong. — The decline in the plague at Hong Kong after the heavy showers a fortnight ago proved to be but temporary, and the disease is now more rampant than before, and has appeared in several new districts. The death-rate is at present over a hundred each day. More than seventy-five thousand persons have left the city during the last few weeks.

The Medical Features of Carnot's Funeral. — During the progress of the funeral of President Carnot, in Paris, on July 1st, there were over five hundred persons taken to various hospitals by the ambulance service. Many were cases of sunstroke owing to the intense heat, and others were the usual minor accidents and prostrations accompanying such great crowds as were then gathered in the streets.

American Public Health Association. — The Twenty-second Annual Meeting of the American Public Health Association will be held at Montreal, Canada, on September 25 to 28, 1894, under the presidency of Dr. E. P. Lachapelle of Montreal.

The Medical School of Columbia College. — It is announced that, beginning with the academic year 1894 to 1895, the work required of students who are candidates for the degree of M.D. will cover four years of study according to the curriculum set forth. This extension of the course does not affect students who have already matriculated and attended a session.

Dr. William T. Lusk given the Degree of LL.D. — At the Commencement Exercises at Yale University last week the degree of Doctor of Laws was conferred upon Dr. William T. Lusk of New York.

Appointment at the Medico-Chirurgical College of Philadelphia. — The following appointments have been made to the Faculty of the Medico-Chirurgical College of Philadelphia. Dr. Isaac Ott, professor of physiology; Dr. William E. Hughes, professor of clinical medicine; Dr. Albert E. Roussel, assistant professor of practice and of clinical medicine; Dr. Charles W. Burr, professor of nervous diseases; Dr. William C. Hollopeter, professor of children's diseases; Dr. Arthur H. Cleveland, professor of laryngology; Dr. Edward B. Gleason, lecturer in otology, and Dr. William Blair Stewart, lecturer in therapeutics.

Honorary Members of the Berlin Obstetrical and Gynecological Society. — Dr. T. Gaillard Thomas and Dr. T. A. Emmett, of New York, and Dr. Theophilus Parvin, of Philadelphia, have been chosen honorary members of the Berlin Obstetrical and Gynecological Society.

The Croonian Lectures. — The Croonian Lectures before the Royal College of Physicians have just been given by Dr. Pavy, F.R.S., upon "A New Departure in Connection with Diabetes."

The German Commission on Anæsthesia. — At the Twenty-third Congress of the German Surgical Association it was voted to continue the general investigation into the statistics of anæsthetics which the Society has been engaged in for the last four years. Reports are desired until the 15th of March, 1895. Consideration of the following points is especially urged: Specification of the time of observation, of the anæsthetic used and the number of times exhibited; reason for administration; apparatus used; duration of unusually prolonged narcosis; amount of material used; the concomitant use of other drugs, as morphia, and the amount; undesirable phenomena or sequelæ.

The Holy Coat of Treves. — The Bishop of Treves has published a book recounting eleven miraculous cures effected during the exposition of the Holy Coat in that city in 1891. As the attendance at Treves was many thousands, the percentage of recoveries is certainly not large. An example of the eleven cases is quoted by the *Medical Record:* A child named Wecker, who, according to a certificate signed by Dr. Koeller, of Berlin, was suffering from intestinal tuberculosis, was taken to Treves and allowed to touch the relic, and was then pronounced cured. Drs. Koeller and Schultze, of Berlin, certify that the boy is now in good health. The bishop holds that the boy could not have been cured by natural means, and that therefore his present condition of health is evidence that a miracle has taken place.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the six days ending at noon, July 3, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 21, scarlet fever 24, measles 16, typhoid fever 2.

The Massachusetts State Board of Registration of Physicians and Surgeons. — The Governor has made the following appointments for the first Board of Registration under the new Medical Practice Law: E. J. Forster, of Boston, for seven years; W. P. Bowers, of Clinton, for four years; D. B. Whittier, of Fitchburg, for five years; A. C. Walker, of Greenfield, for one year; S. H. Blodgett, of Cambridge, for three years; C. Edwin Miles, of Boston, for two years; A. L. Chase, of Randolph, for six years. Drs. Forster, Bowers and Walker are members of the Massachusetts Medical Society; Drs. Whittier and Blodgett are members of the Massachusetts Homœopathic Society; and Drs. Miles and Chase, of the Massachusetts Eclectic Society.

The Board of Health and Tuberculosis. — The Board of Health of Boston has issued a small circular on which is reprinted the recommendations of the State Board of Health concerning tuberculosis, with the following endorsement: "The Boston Board of Health heartily endorses and adopts the above circular of advice from the State Board of Health, and earnestly recommends its consideration and use by the physicians and inhabitants of Boston."

Re-elected Overseer of Harvard University. — Dr. Samuel A. Green was re-elected to the Board of Overseers of Harvard University on Commencement. With the exception of the years from 1880 to 1882, Dr. Green has served as Overseer continuously since 1869.

Harvard Medical School. — The graduating class of the Harvard Medical School this year contained one hundred and twenty-seven men, and was the largest class ever graduated.

Small-Pox in Connecticut. — Small-pox is prevalent in Litchfield County, Conn., some fifteen cases being at present under quarantine supervision in the three towns of Kent, Alder City and Macedonia.

NEW YORK.

A Death from Hydrophobia. — A case of death from hydrophobia has occurred at the Pasteur Institute; but the patient was already in a hopeless condition at the time he was admitted. Mr. Walter E. Orcutt, a hotel keeper of Northampton, Mass, was bitten on the wrist by a pet dog on May 23d, and although the wound was very slight, he took the precaution of having it cauterized. It healed perfectly, and he thought no more about the matter until June 23d, when he was seized with alarming symptoms, and was at once brought to the Pasteur Institute in New York. His friends were assured by the physician in charge, Dr. Labadie (Dr. Gibier's assistant), that no treatment would now be of any avail, and he died on June 26th. In this instance, the more violent manifestations of rabies were in a great measure lacking, but the patient rapidly succumbed to paralysis of the nervous centres.

Miscellany.

THE BACTERIOLOGY OF ECLAMPSIA.

Another disease or condition may soon be classed bacteriological. At a recent meeting of the Paris Society of Biology, MM. Bar and Renon reported the result of a bacteriological examination of the livers of three women who died of eclampsia. The examinations were made immediately after death. In the first case, fragments of the liver gave colonies of staphylococcus aureus and albus. The autopsy showed, however, a vegetative mitral endocarditis, which was also found infested by staphylococci. In the two other cases cultures from the liver remained sterile, the liver presenting, as in the first case, only the usual lesions of eclampsia. The conclusion drawn from these cases by the gentlemen was, that eclampsia might perhaps be the result of a generalized infection as well as a simple non-microbic toxæmia.

◆

THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

At a meeting held in San Francisco, Cal., June 7, 1894, the following resolutions were adopted by the Association:

Resolved, That colleges, members of this Association, shall require of all matriculates an examination as follows:

(1) An English composition in the handwriting of the applicant of not less than two hundred words; said composition to include construction, punctuation and spelling.

(2) Arithmetic, Fundamental Rules, Common and Decimal Fractions and Ratio and Proportion.

(3) Algebra – through Quadratics.

(4) Physics — Elementary – Gage.

(5) Latin — An amount equal to one year's study, as indicated in Harkness Latin reader.

[The above resolution does not apply to students exempt from the entrance examination, as per Sec. 2, Art. III.]

Resolved, That the following classes of students be recognized as entitled to apply for advanced standing in colleges members of this body:

(*a*) Such graduates of recognized colleges and universities as have completed the prescribed courses in Chemistry and Biology therein.

(*b*) Graduates and matriculates of colleges of Homeopathy.

(*c*) Graduates and matriculates of colleges of Eclectic medicine.

(*d*) Graduates and matriculates of colleges of Dentistry requiring two or more courses of lectures before conferring the degree of D.D.S.

(*e*) Graduates and matriculates of colleges of Pharmacy.

(*f*) Graduates and matriculates of colleges of Veterinary medicine.

[It is provided, however, that the above class of students be required to comply with the provisions of the entrance examination and to prove their fitness to advanced standing by an individual examination upon each branch below the class he or she may desire to enter.]

Resolved, That students graduating in 1899 or subsequent classes be required to pursue the study of medicine four years and to have attended four annual courses of lectures of not less than six months' duration each.

◆

Correspondence.

[Special Correspondence.]

THE STUDY OF PATHOLOGY IN GERMANY.[1]

FREIBURG IN BADEN. — STRASBURG. — THE AMERICAN AND GERMAN MEDICAL STUDENT. — THE AMERICAN AND GERMAN GRADUATE IN MEDICINE. — CLINICAL AUTOPSIES.

HEIDELBERG, June 3, 1894,

FREIBURG IN BADEN.

MR. EDITOR: — The hospitals and medical buildings at Freiburg in Baden are grouped conveniently together on the northern edge of the town. In one large block, containing tastefully arranged grounds and flower gardens, are the separate buildings of the Anatomical and Pathological Departments. The Pathological Institute is a three-story building of moderate size, which is already proving too small to accommodate the number of students in attendance. The upper story is at present occupied by the Department of Hygiene (including Bacteriology) but is soon to be vacated. Then Professor Ziegler intends to have a special assistant to take charge of the bacteriological work in connection with the autopsies, so as not to be obliged to depend, as heretofore, on the Hygienic Department. He is of the opinion that pathologists will not devote so much attention personally to bacteriology in the future as in the past, owing to the amount of time it requires, but will have special assistants who under their direction will attend to that branch of pathological work.

Each floor of the institute is divided lengthwise by a hall. On the first floor to the front are Professor Ziegler's two large, private working-rooms, and two occupied by the second assistant, who devotes one of them to his special class in the pathology of the nervous system. On the other side of the hall is a small lecture-room capable of seating at the most eighty men. Above, on the second floor, is a long room, capable of accommodating sixty to seventy men, which is devoted to Pathological Histology and to the demonstrations. The front half of this floor contains three rooms, one occupied by the first assistant, Professor von Kahlden, who has also, I believe, another room on the first floor, and a second in which at present four Russians are engaged in special pathological work. They are graduates in medicine, of whom three are sent abroad each year by the Russian government. They receive about $1,750 a year for two years, and are allowed to go where they will and study what they will during that period. Their future success, however, depends somewhat on what they accomplish during that time. The middle and largest room is capable of accommodating about fifteen men. For the most part they are students working at theses, or graduates doing special work. There is also a room in the building occupied by several Italians, one of whom has been at work in the laboratory a year and a half.

Ziegler's teaching consists of five lectures a week of three-fourths of an hour each, of three demonstrations (including instruction in the making of autopsies) of one to two hours each, and of two exercises in pathological histology of two hours each (the latter course for half a year only). As a lecturer he speaks without notes, clearly, directly and earnestly. He is at his best, perhaps, in his histological class. Students are not, as a rule, admitted to this course until they have attended at least the lectures on general pathology. They are taught the various methods of preparing and mounting specimens; but, in order to cover a large amount of ground, stained preparations are often given, six or eight at an exercise. When the specimens are mounted, Professor Ziegler explains one of them, and draws on the blackboard with colored chalks the important features, while the class follows the description with their own preparation under the microscope. A few minutes are then devoted to passing around among the students to clear up or explain any points not understood. Then the next specimen is taken up in the same manner. At the demonstrations the students have the same seats, with microscopes before them. The pathological material is described, and then passed around for inspection. Important specimens, however, are carried around by the assistants, who point out to each student what is of interest. After the demonstration if there is no autopsy, Ziegler has passed to each student a mounted preparation of one of the important but rarer forms of lesions, such as cicatrix of brain, anterior polymyelitis, syringomyelia, syphilitic osteitis, etc., of which it would be impossible to give the class specimens each year. He then describes and draws the preparation, as in the histological class while the students follow him with the microscopical slides before them. About sixty mounted preparations of a lesion are required for his class. In all he has over thirty thousand microscopical preparations, of which a large number can be used for class purposes.

The autopsy-room is in a small connecting building back of the Pathological Institute. The amphitheatre is insufficient to seat all who come. Clinical autopsies take place here on all important cases. At the appointed time the medical or surgical professor, accompanied by his assistants, comes with his class; and Professor Ziegler makes the autopsy before them, dictating his report as he proceeds, and showing the specimens (with additional explanatory remarks if necessary) to the class. The clinical professor occasionally asks a question, but otherwise is not heard. Ordinarily a clinical autopsy lasts about an hour.

Inasmuch as the medical students in Germany cannot take the examination in pathology until the end of all their medical studies, and are able to see the post-mortem examination of every fatal case that they have followed clinically, it must result in a broader and more intimate knowledge of pathology and in a higher appreciation of its importance, for it is looked to to solve all that is obscure or doubtful during life, and to render such cases clearer and better understood in the future. The clinical autopsy thus forms a great bond between the practical and the scientific sides of medicines, and serves to keep up the interest of the student in the subject of pathology until the end of his medical studies.

The summer semester is the more popular in Freiburg. The number of students in pathology is then about sixty. Ziegler lectures on general pathology, and takes charge of the class in pathological histology. During the winter semester the attendance is about forty. Ziegler then lectures on special pathological anatomy, while von Kahlden gives the instruction in pathological histology, covering the same ground that was gone over in the summer semester. Throughout the year von Khalden lectures once a week on some subject in special pathology. The number of autopsies is annually over four hundred.

STRASBURG.

The Pathological Institute in Strasburg occupies half of a very large polygonal building surrounding an open court adorned with plants and shrubs. There is abundant room for every purpose. The lecture-room is used in common with the Anatomical Department, which occupies the other half of the building. One's first impression on entering the clinical autopsy-room is that it contains a patent arrangement for drying towels. Professor von Recklinghausen is eminently practical and original in his ideas and methods, and this room is of his own designing. In the centre under a large skylight, is a revolving autopsy-table of marble: surrounding the table and leaving just room enough for comfortable working rises a tier of four or five narrow, circular platforms, each fifty centimetres higher that the one below it and fifty centimetres farther away from the table. Attached to the front of each platform are iron rods supporting a railing at a convenient height to lean against when standing. Numerous towels lie across or are tied to the railings, for use after examination of the organs passed around. The object aimed at was to bring the greatest number into the closest possible range with the case under examination. It is said that a hundred men can be accommodated (all standing of course) in this amphitheatre which is about twenty-three feet in diameter. Two seats with writing-desks are provided in the first row for the two writers of the autopsy report, one copy of which is for the hospital, the other for the pathological department. In an adjoining room are three tables for the ordinary autopsies.

---

[1] See Letter from Prague, Vol. cxxx, p. 77, January 18, 1894.

In the course in pathological histology no sections or stained preparations are ever given out. The students receive pieces of hardened tissue, from which they make razor sections: these are stained in alum carmine, and mounted in the usual manner. They are also encouraged to harden tissues and examine for themselves; for this purpose a large room is set aside where each may have a desk and work when he wishes. At the demonstrations the students are taught to examine scrapings and sections of the fresh organs. Von Recklinghausen is enthusiastic in this kind of work, and devotes considerably more than the allotted time to it.

This so-called practical method of teaching pathological histology has to some extent certain advantages, but it neglects all the advance made in the last twenty years in histological technique. It is most applicable in small classes where considerable personal attention can be given to each student. It is based more or less on the assumption that each student is to become his own diagnostician with no other instruments in his possession than a razor, alcohol and alum carmine. Its possibilities should be taught. But the much broader field of pathological histology as an actual demonstration under the most favorable conditions of perfection of section and staining, of the various lesions described in general and special pathological anatomy, and as the best aid to the thorough understanding of them, is to a large extent overlooked.

The number of students in pathology at Strasburg during the summer semester, the more popular term, is about eighty. The number of autopsies averages over eight hundred a year. A number of large, well-lighted rooms are available for special students. The museum is very large and abounds in interesting specimens.

It is interesting to compare the

AMERICAN AND GERMAN MEDICAL STUDENT.

The latter after about nine years of hard drill in the gymnasium, which covers most of the ground of the American preparatory school and college, is ready at the age of about nineteen years to enter the university, the most democratic institution of the Old World, for every professor and private docent is wholly independent, and may give such instruction as he will. The German State system of universities has many advantages over the independent institutions in our own country. The requirements of all are the same, and they are run interchangeably, so that the students form a vast floating population in the university towns. They can hear the best men in the various subjects or in the same subject. They can spend their winters in the large cities like Berlin and Vienna, and their summers in towns like Heidelberg or Freiburg, where the surrounding mountains and forests offer opportunities for delightful tramps. Thus they see more of the world and obtain broader views than they can from living in one place all the time, for no one university can get the best men in every subject. They can also elect the university at which they will take their examinations.

THE AMERICAN AND GERMAN GRADUATE IN MEDICINE.

Doctors of Medicine in Germany are, as a body, better educated than our men at home. They have all been through the gymnasium, and have spent at least five years in the study of medicine. They are ready to enter practice (if they do not go into hospital work) at about the age of twenty-four. Our men at home who have been through Harvard College and then four years in the Medical School have undoubtedly received a broader training than the men here, but they are not ready to enter practice until about the age of twenty-seven.

The reason our college men enter the Medical School about four years later (at the age of twenty-three) than the men here is probably due in part to the following causes: They cover more ground than is gone over in the gymnasium. Their education previous to entering college has consumed more time than was necessary. American independence shows itself at a disadvantage at present in her educational institutions. There is a lack of harmony and of uniformity between them, even between the colleges and universities. Each has its own ideas, aims and standards. The public schools especially are run with too little reference to the requirements of the higher educational institutions of the country. They seek to furnish in themselves a complete education of a certain degree. The desire or the possibility of attending college is often realized for the first time when this early education is nearly completed, and valuable time has been lost in learning what was unnecessary for this or that college, and more time must be spent in getting up the extra work required.

The proposition is being at present agitated in Germany of allowing students who are going into medicine to study French, English and the natural sciences in the gymnasium, instead of the classics as heretofore, a step similar to the broader one already taken at Harvard.

Of the four and a half to five years that a German student spends in the study of medicine the first two years are devoted to six subjects — chemistry, physics, botany, zoölogy, anatomy and physiology. That leaves three years for the rest of his medical education, the same length of time devoted in the Harvard Medical School to the same branches, namely, pathology, clinical medicine, etc. It is proposed, however, to make the course for M.D. in the German universities six years instead of five (the last year to be devoted to practical work), in order to raise the age of the medical graduates.

With regard to the study of medicine the German universities possess the great advantage that both the universities and the hospitals are State institutions. Consequently, the medical department and the hospital are very closely identified, and work in perfect harmony. The visiting staff of the hospital are the clinical instructors of the medical school. The Pathological Institute likewise stands in the closest relationship to the hospital. indeed, forms a very important part of it. Its duty is to solve all problems that are doubtful clinically, to correct errors of diagnosis, and to render clear the cause and nature of every diseased process, so that it may be treated intelligently. The pathological department of a hospital thus conducted becomes of inestimable advantage, alike to the patients and to those whose mission it is to heal them.

CLINICAL AUTOPSIES.

The introduction of clinical autopsies as a regular feature of the pathological teaching at home would undoubtedly tend to broaden the student's knowledge both of pathology and of clinical medicine and surgery. The examination in these subjects should then, however, all be put off until the time of graduation. Unfortunately this plan is not entirely feasible, owing to the independent condition of the various institutions. Very truly yours, F. B. Mallory, M.D.

METEOROLOGICAL RECORD,

For the week ending June 23d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:–

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S..17	29.86	84	95	72	64	46	55	W.	S.W.	10	9	O.	F.	
M..18	29.98	79	90	68	68	68	68	S.W.	S.W.	5	16	C.	C.	
T..19	30.06	75	83	67	86	86	86	S.W.	S.	12	14	O.	O.	
W .20	30.01	74	80	68	86	86	86	S.W.	S.	10	8	O.	C.	
T . 21	30.06	74	83	65	66	84	75	W.	S W.	9	5	C.	C.	.33
F..22	27.97	77	88	66	70	70	70	N W.	S.W.	6	12	C.	C.	
S..23	29.94	83	94	72	62	54	58	W.	W.	14	9	C.	O.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JUNE 23, 1894

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Scarlet fever.
New York	1,956,000	835	381	22.86	11.52	10.20	7.08	2.16
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,139,457	517	232	22.22	4.75	14.25	4.37	.95
Brooklyn	1,043,000	441	198	21.85	11.27	9.20	6.90	1.15
St. Louis	540,800	—	—	—	—	—	—	—
Boston	501,107	230	74	12.47	6.96	2.16	2.88	1.20
Baltimore	500,000	—	—	—	—	—	—	—
Washington	308,431	170	97	35.99	5.31	24.78	2.36	—
Cincinnati	305,000	133	59	19.44	5.18	8.88	3.70	—
Cleveland	290,000	119	66	24.08	15.48	8.60	1.72	1.72
Pittsburg	272,000	118	74	48.95	10.20	30.60	3.40	.85
Milwaukee	250,000	—	—	—	—	—	—	—
Nashville	87,754	31	9	12.92	3.23	9.69	3.23	—
Charleston	65,165	38	19	7.89	—	2.63	—	2.63
Portland	40,000	—	—	—	—	—	—	—
Worcester	100,412	15	12	6.66	13.33	—	6.66	—
Fall River	92,236	46	30	23.87	15.19	13.02	2.17	—
Lowell	90,608	30	15	6.66	6.66	3.33	3.33	—
Cambridge	79,611	39	16	28.16	10.24	10.24	—	—
Lynn	65,124	15	—	33.33	6.66	13.33	—	—
Springfield	50,[illegible]85	19	[illegible]	15.78	15.78	—	10.52	—
Lawrence	49,902	15	8	46.66	6.66	33.33	—	—
New Bedford	47,714	19	6	—	15.78	—	—	—
Holyoke	43,348	—	—	—	—	—	—	—
Brockton	35,939	4	1	—	—	—	—	—
Salem	33,155	7	2	28.56	—	—	28.56	—
Haverhill	32,925	5	2	-	—	—	—	—
Malden	30,209	12	3	8.33	16.66	—	8.33	—
Chelsea	29,806	8	3	25.00	—	—	—	12.50
Fitchburg	29,383	5	1	—	20.00	—	—	—
Newton	28,837	2	1	—	—	—	—	—
Gloucester	27,293	—	—	—	—	—	—	—
Taunton	26,[illegible]51	5	0	20.00	—	—	20.00	—
Waltham	22,058	5	0	—	20.00	—	—	—
Quincy	19,642	—	—	—	—	—	—	—
Pittsfield	18,802	3	1	—	—	—	—	—
Everett	16,585	8	4	—	—	—	—	—
Northampton	16,331	3	1	33.33	—	—	—	—
Newburyport	14,073	7	2	14.28	—	—	—	14.28
Amesbury	10,920	3	1	—	33.33	—	—	—

Deaths reported 2,954: under five years of age 1,340; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 764, diarrhœal diseases 335, consumption 309, acute lung diseases 270, diphtheria and croup 249, scarlet fever 46, whooping-cough 45, measles 30, typhoid fever 25, cerebro-spinal meningitis 17, erysipelas 10, malarial fever 4, small-pox 3.

From whooping-cough Washington and Pittsburg 7 each, Philadelphia 6, Cleveland 4, New York, Cincinnati and Fall River 3 each, Boston 2, Cambridge, Lynn, Springfield, North Adams and Marlborough 1 each. From measles New York and Brooklyn 9 each, Cleveland 8, Philadelphia 2, Pittsburg and Northampton 1 each. From typhoid fever Washington 7, Philadelphia 5, Pittsburg 3, Cincinnati 2, Brooklyn, Boston, Cleveland, Charleston and Lynn 1 each. From cerebro-spinal meningitis New York 5, Cincinnati, Somerville and Lawrence 2 each, Washington, Cleveland, Fall River, Lynn, Chelsea and Marlborough 1 each. From erysipelas Pittsburg 3, New York, Brooklyn and Cincinnati 2 each, Philadelphia 1. From small-pox Brooklyn 2, New York 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending June 16th, the death-rate was 15.9. Deaths reported 3,183: acute diseases of the respiratory organs (London) 184, measles 188, whooping-cough 90, diphtheria 60, scarlet fever 35, diarrhœa 31, fever 26, small-pox (Manchester 6, Birmingham 5) 11.

The death-rates ranged from 10.2 in Leicester to 22.1 in Wolverhampton; Birmingham 12.8, Bolton 17.2, Brighton 14.9, Croydon 12.1, Hull 13.2, Leeds 15.6, Liverpool 20.1, London 16.0, Manchester 16.5, Nottingham 20.5, Portsmouth 12.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 23, 1894, TO JUNE 29, 1894.

MAJOR GEORGE H. TORNEY, surgeon, is relieved from duty as attending surgeon and examiner of recruits at Philadelphia, Pa., and will report in person to the superintendent, U. S. Military Academy, West Point, N. Y., for duty at that post, relieving MAJOR PHILIP F. HARVEY, surgeon, who, after being thus relieved, will report to the commanding officer, Plattsburg Barracks, N. Y., for duty at that post.

FIRST-LIEUT. CHARLES WILLCOX, assistant surgeon, relieved from duty at Angel Island, Cal., and ordered to Presidio of San Francisco, Cal., for duty, relieving FIRST-LIEUT. HARLAN E. MC VAY, assistant surgeon.

FIRST-LIEUT. MCVAY, on being thus relieved, ordered to Alcatraz Island, Cal., for duty, relieving CAPTAIN OGDEN RAFFERTY, assistant surgeon.

CAPTAIN RAFFERTY, on being thus relieved, ordered to Benicia Barracks, Cal., for duty, relieving MAJOR JOSEPH B. GIRARD, surgeon.

MAJOR GIRARD, on being thus relieved, ordered to duty at Presidio of San Francisco, Cal.

LIEUT.-COL. JOHNSON V. D. MIDDLETON, deputy surgeon-general, is relieved from duty at the Presidio of San Francisco, Cal., and will report to the commanding general, Department of California, for duty as medical director of that Department, relieving LIEUT.-COL. ALBERT HARTSUFF, deputy surgeon-general.

LIEUT.-COL. HARTSUFF, on being thus relieved, will report in person to the commanding general, Department of the Missouri, for duty as medical director of that Department.

Leave of absence for two months, to take effect upon the return of MAJOR CALVIN DEWITT, surgeon, to Fort Leavenworth, Kansas, is granted FIRST-LIEUT. WILLIAM F. LIPPITT, JR., assistant surgeon.

Leave of absence for one month, to take effect on or about July 1, 1894, is granted CAPTAIN GUY L. EDIE, assistant surgeon.

PROMOTIONS.

LIEUT.-COL. JOSEPH P. WRIGHT, deputy surgeon-general, to be assistant surgeon-general with the rank of Colonel, May 16, 1894.

MAJOR ALFRED A. WOODHULL, surgeon, to be deputy surgeon-general with the rank of Lieut-Colonel, May 16, 1894.

MAJOR JOHN S. BILLINGS, surgeon, to be deputy surgeon-general with the rank of Lieut-Colonel, June 6, 1894.

CAPTAIN WILLIAM R HALL, assistant surgeon, to be surgeon with the rank of Major, May 16, 1894.

CAPTAIN GEORGE H. TORNEY, assistant surgeon, to be surgeon with the rank of Major, June 6, 1894.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOUR WEEKS ENDING JUNE 23, 1894.

GLENNAN, A. H., passed assistant surgeon. Granted leave of absence for five days. June 18, 1894.

WOODWARD, R. M., passed assistant surgeon. To proceed to Cleveland, O., for duty. June 11, 1894.

WERTENBAKER, C. P., passed assistant surgeon. To proceed to Reedy Island Quarantine for special temporary duty. June 12, 1894.

STEWARD, W. J. S., assistant surgeon. Granted leave of absence for thirteen days. May 29, 1894.

PROCHAZKA, EMIL, assistant surgeon. To proceed to New York, N. Y., for duty. June 11, 1894.

THOMAS, A. R., assistant surgeon. To proceed to St. Louis, Mo., for duty.

RECENT DEATHS.

GERRITT JAMES BRADT, M.D., M.M.S.S., of Lowell, died at North Chelmsford, July 1, 1894, aged forty-five years.

DR. WILLIAM G. AUSTIN, died June 12th, in New Orleans, aged eighty years. He was superintendent of the Charity Hospital in New Orleans before the war and had charge during the terrible yellow fever epidemics of 1867 and 1868.

Address.

THE LEGISLATIVE CONTROL OF MEDICAL PRACTICE.[1]

BY REGINALD H. FITZ, M.D., BOSTON.

(Concluded from No. 1, p. 5.)

The law would be simpler, fairer and easier of execution, if, as in twelve States, an examination were made the sole test of the applicant's intellectual and educational qualifications. Such a uniform test relieves the law from the charge of class-legislation, and permits the standard to be raised or lowered in accordance with the educational development or the social needs of the State concerned. The examination should be elementary and practical, both oral and written, with demonstrations when feasible, and should be designed to elicit rather the minimum than the maximum of requirement. Only licensed physicians should serve the State, and a higher order of fitness should be demanded from them than from those who serve the individual only. The latter may be satisfied with an assurance of therapeutic knowledge, the former may believe that this exists provided the other qualifications are present. The State should, therefore, require a certain knowledge of anatomy, physiology, chemistry, pathology, surgery, obstetrics and the diagnosis and treatment of disease before granting the license. The highest attainment of medical knowledge will always be demanded by the universities which are the chariest of the reputation of their degrees. A lower standard suffices for the State medical society desirous of including within its ranks all the intelligent, educated and moral physicians of the State. The last must recognize the existence of two classes of practitioners, the licensed and the unlicensed. The former, alone, should be authorized to perform all public services, the latter may be permitted to treat the sick on condition that it shows, in advance, a knowledge of contagious diseases and the means of preventing their spread.

The examinations should be of a semi-public character, best accomplished by the preservation for a limited time of the questions and their answers. Such documents will give the best evidence of the fairness or unfairness of the examiners, and will show the scope. It would be well for some of them to be published from time to time, that the public may be informed of the effect of the law. This is done in Virginia and Minnesota, and a few of the questions and answers are here given. The following are from Virginia:[84]

> "Give general and descriptive anatomy of the stomach. It is the organ where the food is digested; it is a very extensive organ."
>
> "Describe or define a cell. It is a place of confinement."
>
> "The normal temperature of the human body is from 112° to 140°, and the average respirations are 70 per minute."
>
> "The technical name of rhubarb is columbo."
>
> "The dose of antipyrin for a child five years old is fifteen grains every three hours, and that of morphia hypodermically for a child of the same age would be one-fourth of a grain, and if that doesn't give relief I would give one-half grain."
>
> "Phymosis is the result of old age. To the question of the diagnosis of the dislocation of the head of the femur on the dorsum of the ilium, it is replied, "Don't know much about the diagnosis, but the treatment is amputation."
>
> "The symptoms of œdema of the glottis are that the patient feels husky and has a sore throat. I would amputate it if necessary. I would do the operation within three or four months if it was a bad case."
>
> "Extra-uterine pregnancy may be a fungoid growth or tumor, fibroid in its character, or any extra growth in the utrous would be call extra-uterine pregnancy."
>
> "A breech presentation may be known by the sense of touch, the buttox being different in formation from the cranium. The anus is different from the mouth, absence of tongue and nose. Get your finger in the inguinal region soon as possible and assist your patient by ferm but gental tention."
>
> "The best way to facilitate the expulsion of the placenta is to let the woman get up and walk about the room, allowing five minutes to elapse after delivery before requiring her to get up and walk."

In Minnesota the following answers were given:[85]

> "The scrofulous diathesis is known by a peculiar greasy exudation from the axilla or inside of the thighs, possibly behind the ears; has a sour, fetid, strong smelling odor."
>
> "Symptoms of cardiac dilatation — a dull pain at pit of stomach, and a feeling of water in the bowels, ematiation, anema, loss of flesh. Treatment, put patient on a milk diet, and give rectal onema of pepsonical food, and a nerve tonic to tone up the system."
>
> "Treatment of neuralgia — if the part is swollen up such as the cheak may apply a worm poultice, paint the part over with iodine."
>
> "Locomotor ataxia — hear all the lesions or pathology changes is situated in the forth ventricle of the brain, and a slight pathological chage in the peduncles of the seberlium (I am rattled if that ain't right)."
>
> . . . .
>
> "Placenta prævia (this is a retaining of the placenta structures after the delivery of child; and a part of the placenta), all is to be done in this case is to introduce the hand or a instrument and remove any of the membranes that is left or curet the utris."
>
> "Symptoms of typhoid fever — the patient has a tongue heavily fured putrid offensive; head feels scattered about."

The candidate who has passed a successful examination receives a certificate to this effect — the license — which is recorded in the office of the board of examiners and should be registered elsewhere, that the names of the legally qualified physicians may be readily found. The place of registration varies in the different States. In many the County Clerk is the registering officer, in others the Clerk of the Superior Court, or of the District Court has charge of the register. In South Dakota it is kept in the Registry of Deeds, while in Alabama the Judge of Probate is the officer of registration. The importance of such registration is illustrated by the experience of North Carolina in 1891, in which year many physicians remained unregistered, of such influence and standing in the community as to defy the law with impunity.

The examining board should have the power of refusing or revoking licenses for cause, and should be able to subpœna witnesses, hear testimony and decide. Any appeal from the decision should be made to the Governor. The cause for such revoke or refusal of the license should be criminal, unprofessional, dishonorable or disgraceful conduct. Instances of unprofessional conduct are to be found in untruthful or improbable advertisements of promised treatment, deceiving the public; advertising methods or medicines regulating menstruation or re-establishing suppressed menses.

---

[1] The Annual Discourse before the Massachusetts Medical Society delivered June 12, 1894.

[84] Coll. and Clir. Record, 1893, xi, 8. Journal Am. Med. Association, 1891, xvi, 108

[85] North-Western Lancet, 1891, xi, 139.

That the law may be enforced it is necessary that there should be a penalty for evading its provisions, and officers to bring charges against the law-breakers. The penalty varies in the United States from $10.00 to $500.00 fine, or imprisonment from ten days to a year, or it may be both fine and imprisonment. A severer penalty should be enforced for repeated offences. The severest penalties are inflicted for filing or attempting to file the certificate of another or for false or forged evidence; the crime is then regarded as felony, punishable as forgery.

It has been found difficult to enforce the laws in many States, since some examining boards object to being both accusers and judges. Physicians are usually unwilling, and prosecuting officers refuse to bring charges, unless it is made their duty. In certain States any person may sue and recover for evasion of the law. In Wyoming it is the duty of the police, sheriff or constable. It should be made the duty of the examining board to bring charges before the proper officials. This responsibility will be so grave as not to be lightly undertaken, and should only be assumed in such instances as the public will approve.

All recent legislation has been found impossible without first harmonizing the most powerful antagonists. The State makes no distinction between the various incorporated medical societies, and will not legislate at the suggestion of the one if the others oppose. Regulars, homeopathists and eclectics, and all practitioners possessing a diploma or license to practise, must therefore be united in their approval of the provisions of the bill. The law must not exclude from practice those who have been employed for a period of years, and who during this time have had equal rights with members of the incorporated societies. Its prohibitory provisions should not be enforced until a sufficient lapse of time to allow registration to be accomplished, and examinations to be held throughout the State. Permission to register should thus be allowed to all practitioners with or without diplomas or certificates at the time of the enactment of the bill, or to those only who have been in continuous practice for one or more years. The limit most frequently assigned is ten or more years. After the enactment of the bill all practitioners of medicine should register within a limit of time, from six months to a year, or be subject to the penalty.

The law should define what is meant by the practice of medicine, this having been found necessary both in avoiding ignorant opposition to its acceptance, and in securing the enforcement of its provisions. The following definition appears in the law of Georgia:

> "To practise medicine means to suggest, recommend, prescribe, or direct, for the use of any person, any drug, medicine, appliance, apparatus, or other agency, whether material or not material, for the cure, relief, or palliation of any ailment or disease of mind or body, or for the cure or relief of any wound, fracture, or other bodily injury, or any deformity, after having received or with the intent of receiving therefor, either directly or indirectly, any bonus, gift, or compensation."

In Minnesota, "appending 'M.D.,' or 'M.B.,' to name, or prescribing, directing or recommending for use [of any person] any drug or medicine or other agency for the treatment, care or relief of any wound, fracture or bodily injury, infirmity, or disease, is regarded as practising medicine."

The following persons should be exempt from the action of the law: medical officers of the army and navy of the United States, or of its Marine-Hospital service; legally qualified physicians or surgeons called from other States to attend patients in the State concerned, or to consult with the physicians caring for them; members of the resident staff of any legally incorporated hospital or asylum; medical students under the direct supervision of their medical teachers; midwives attending cases of confinement; nurses in their legal occupation; dentists, exclusively practising dentistry; manufacturers or dealers in artificial eyes, limbs, orthopedic instruments, or trusses or like apparatus for the use of the sick or infirm; pharmacists or apothecaries dispensing or selling medicines or medical appliances; sellers of mineral waters, or of patent or proprietary medicines in the regular course of trade; gratuitous advisers in cases of emergency; domestic prescribers; persons giving advice in regions where there is no licensed physician within ten miles.

The Connecticut law of 1893 also exempts chiropodists or clairvoyants not using in practice drugs, medicines or poisons, persons practising massage or Swedish movements, sun-cure, mind-cure, magnetic healing, or Christian science, and persons not using or prescribing in their treatment of mankind, drugs, poisons, medicine, chemicals or nostrums.

To what extent does the proposed Massachusetts law comply with these essentials?

The board of registration is composed of seven members, of whom not more than three shall be at any one time members of any one chartered State Medical Society, and it is appointed by the Governor and Council. This action is fair to all, and the appointment lies in the hands of the executive of the people.

All practitioners of medicine graduated from legally chartered medical colleges or universities having power to confer degrees in medicine, and every practitioner of medicine in this State continuously for three years previous to the passage of the act, shall be entitled to registration upon the payment of a fee of one dollar, and must be registered by January 1, 1895. This section is fair to the majority of the irregular practitioners, whose legal status up to the enactment of the bill is equal to that of the medical graduates of incorporated schools and universities. It gives them no privileges not already possessed. Any person not entitled to registration as aforesaid may pass an elementary and practical examination wholly or in part in writing, embracing the subjects of surgery, physiology, pathology, obstetrics and the practice of medicine, and sufficiently strict to test his or her qualifications as a practitioner of medicine. Such an examination would permit any competent and trustworthy practitioner, who had been in practice for less than three years, to be registered even if possessed of no degree. A person who can show that he knows how to practise surgery, obstetrics and medicine should not be debarred by lacking a degree. He may not be the wisest, most skilful and moral physician, but he is likely to do no harm to the people at large.

Although certificates may be revoked for criminal cause, the original bill permitted them to be revoked for any cause satisfactory to every member of the board. The bill has been distinctly weakened by this amendment, since the public may be injured by unprofessional, disgraceful and dishonorable conduct on the part of the practitioner, as well as by that of a criminal nature.

The provision to make it the duty of the board to investigate all complaints of disregard, non-compliance or violation of the provisions of this act, and to bring all such cases to the notice of the proper prosecuting officers, is eminently judicious. It would have been more efficient had the board been allowed to subpœna witnesses.

The committee's bill required that after 1894 all applicants for registration should be examined. This section has been weakened by exempting the graduates of legally chartered medical colleges and universities of the Commonwealth. The standard may be much higher for their degree, but the State makes them privileged by practically granting them the power of license. There should be no confounding of the license and the degree, and the chartered medical colleges or universities should be the first to request the elimination of this clause.

Section 10 is defective in that it allows the registered physician or surgeon to append to the name the letters "M.D.," whether the degree has been received or not, and punishes the unregistered M.D., who has earned the title, by a fine if he does not register. The physician or surgeon is defined as one who advertises or holds himself out as such by appending the letters M.D. or using the title of doctor, meaning thereby doctor of medicine. But the law gives no definition of the practitioner of medicine for whose registration it is intended to provide.

The chief weakness of the law is the amendment to the committee's bill, which permits any one to practise medicine without an examination, provided such person does not make use of the title doctor or the letters M.D., meaning thereby doctor of medicine.

These are the practitioners who should be controlled — not because they harm the individual, for if he desires them that is his privilege, but because the ignorance of such persons is a constant source of danger to the entire community. If they are to be allowed to practise, and they are welcomed by some, the protection of all demands that they should show, by examination, a familiarity with the means of recognizing the contagious diseases, and of so treating them that they may not promote the spread of small-pox and diphtheria, of measles, scarlet fever and the like.

The law is a safeguard to the community to a certain extent. It represents essentially a return to the conditions which prevailed when the State assigned the duty of licensing physicians to the Massachusetts Medical Society. It enables a discrimination to be made between registered and unregistered practitioners, those of some education and those of no education; a distinction which will increase in value to the public in the course of time. If it has no other merit it provides for the appointment of State officials to execute the law, and thus offers a constant, impartial and efficient means of recommending to the legislature any necessary amendments in the future. It is of no value to the Massachusetts Medical Society, which has no need of it. Her standard will always be the loftier, however high that of the State may be raised. To be a member of the Massachusetts Medical Society will continue to represent association on terms of equality with the most intelligent, the best educated and the most honorable physicians of the State.

Of 545 cases of morphinomania in France recently studied by Lacassagne, 289 occurred in physicians.

Original Articles.

THREE YEARS' EXPERIENCE WITH SANITARIUM TREATMENT OF PULMONARY DISEASES NEAR BOSTON.[1]

BY VINCENT Y. BOWDITCH, M.D.,

Assistant Visiting Physician at the Boston City Hospital; Assistant in Clinical Medicine at the Harvard Medical School.

In presenting to you the results of treatment of pulmonary diseases in the last three years at the Sharon Sanitarium in Sharon, Mass, near Boston, I do not claim anything strikingly original; but the results obtained thus far are, I feel, of sufficient interest and importance for me to ask your attention for a short time, with the hope of convincing others that similar methods adapted under like conditions, may bring forth equally good, even better, results than these.

Some of you may remember that about four years ago, at a meeting of this Society, I mentioned the fact that, through the generosity of wealthy people interested in the scheme, Dr. R. W. Lovett and I had the intention of erecting a small sanitarium for the treatment of people of very limited means (the most difficult class to reach) who were ***just beginning*** to show signs of tubercular disease of the lungs, and who from lack of means are unable to seek distant health resorts. In that paper I briefly mentioned the various sanitaria now well known to the whole profession, namely, Gœrbersdorf in Silesia, Falkenstein near Frankfort-on-the-Main, Dr. von Ruck's in Asheville, N. C., Dr. Trudeau's at Saranac in the Adirondacks, the Bellevue and Glockner Sanataria at Colorado Springs, and others in California.

All of these institutions are more or less remote from our great cities, and are situated in climates which in themselves are considered favorable for consumptives; the exception possibly being Falkenstein in Germany, which is not many miles from Frankfort-on-the-Main, yet this institution has the advantage of being at a considerable altitude (about 1,500 feet above sea-level), and is intended for the wealthier classes.

The Sharon Sanitarium has these distinctive features, and so far as I know is the only one in this country which combines the following conditions, namely, that it is within easy access of Boston, situated in our New England climate, which is notoriously unfavorable for consumptives, at an altitude of about 400 feet only, and is intended for the use of people of very limited means, like teachers, shop-girls, etc., not for the wealthier classes, and is supported chiefly by public subscriptions.

Our friend and late member of this Association, Dr. Paul Kretschmar, four or five years ago in two or three papers, strongly urged the establishment of these institutions in the vicinity of our great cities in properly selected healthy regions; and had not his labors been cut short by death, I do not doubt that before this some establishment similar to that now in Sharon would have been founded near Brooklyn and New York.[2]

It goes almost without saying, and yet it is a point I especially wish to emphasize, that I have never hoped to obtain such results as are shown by the removal of consumptive patients to more healthful climates than can be found in New England. Such a claim would be foolish in the extreme, but I have been confident that much more could be accomplished than by the usual methods employed in the above-mentioned cases. I am sure there is not a physician before me to-day who, time after time when finding symptoms of incipient pulmonary disease in some excellent young man or woman, has not had the disheartening question come to him, "What can I do to help this patient with little or no money at his or her disposal?" We all know the usual result in such cases. Routine treatment of cod-liver oil, cough syrups, advice to get into the open air, to eat good food, etc., with the knowledge that in the vast majority of cases it means a slow and steady going down-hill of the patient. We know, too, what the result is usually of advising patients to go out into the country to live in the ordinary cheap American boarding-house, with draughty, poorly-warmed rooms and badly-cooked food. Improvement may come for the time, but usually the same result follows sooner or later. In such cases I have felt for several years if I only had some place in the country comparatively near, under my control, where people could be under medical supervision with proper hygienic and dietetic treatment that a good deal more could be done than heretofore to reduce the death-rate from consumption among my poorer patients.

---

[1] Read at the meeting of American Climatological Association at Washington, D. C., May 30, 1894.

[2] Since beginning to write this paper I have been gratified to hear that a similar project has been started in New York under the guidance of our *confrères*, Drs. A. L. Loomis and Charles E. Quimby.

The Sharon Sanitarium is a large wooden building situated on a high gravelly knoll which slopes towards the south, and is sheltered on the north, west and east by heavy pine woods. It was built especially for the purpose, and can accommodate at present only nine women patients, but in the future the directors hope to obtain sufficient funds to erect cottages near the present building for the accommodation of both sexes.

It is so constructed as to obtain as much fresh air and sun-light as possible by means of numerous windows and open fireplaces in every room.

Each patient has her own special bedroom. Broad piazzas enable the inmates to be much of the time out of doors, even in the coldest weather, either walking or lying well wrapped up in reclining-chairs.

The interior walls are painted not papered, the floors are of hard wood, both being frequently wiped or mopped with damp cloths, and are never dusted or swept. Rugs, and no fixed carpets, are used.

The strictest rules are made for the destruction of the sputa. Large cuspidores filled with damp sawdust are on the lower floor, and the contents destroyed by fire. The "Sanitas paper cups" are used at the bed-side; and when upon the grounds each patient is provided with a rubber pouch filled with a roll of Japanese paper, which is destroyed also by fire upon the patient's return to the house.

In short, every precaution is taken to prevent possible infection from the chief source of danger, according to our present knowledge, the dried sputa.

Inasmuch as I believe that my hopes have been justified by the results thus far obtained, although the work has been of necessity, up to the present, somewhat limited, I present the following facts for your judgment:

Since the opening of the sanitarium on February 9, 1891, 51 patients have been received, the comparatively small number being due to the prolonged stay necessary in such cases.

Three patients did not remain long enough to receive treatment, and are therefore not considered.

Of the remaining 48, eight proved to be cases of bronchitis, and were discharged "well."

Of the 40 cases classed as various forms of phthisis, 10 have been discharged as "arrested cases," that is, where cough and expectoration have ceased and the physical symptoms have either disappeared or else have shown the usual signs of a cessation of active processes.

In no case have I used the term "cured," although in the majority of the arrested cases, as far as outward appearances are concerned, the term would have been justifiable; yet the treacherous nature of the disease demands perhaps a longer interval of time before we are justified in using the more absolute term. Several of the patients, however, have been away from Sharon more than a year and a half, and we continue to get the most excellent accounts of their health.

Of these 10 "arrested cases," two upon entrance showed signs and gave histories of trouble dating back at least a year or two, and were not what could be classed as strictly "incipient cases." Both lungs were involved in the first of these cases, the disease being more of the fibroid variety. The right lung in the other case was affected with a rather advanced catarrhal form of phthisis. The former, a more advanced case than I now accept at the sanitarium when possible to avoid it, left after a stay of a few months with an almost entire lack of abnormal symptoms (that is, absence of cough, sputa and fever), feeling "stronger than for nine years previously," and remained in this condition until about a year ago when an unfortunate combination of events, namely, swallowing by mistake a dose of ammonia, the presence of two tape-worms, and a severe attack of *la grippe* so reduced her strength and renewed the old trouble that she applied again for entrance this winter with an access of pulmonary trouble which was only partially relieved by a short stay at the sanitarium.

The other case left Sharon against advice soon after the cough and expectoration were gone, and resumed, unfortunately, her previous laborious occupation of teaching. She remained, however, in about the same condition for over a year, when she suddenly died after a short illness of two or three days, the nature of which I could not learn from her physician; but she had continued her teaching up to that time, and had seemed in fairly good condition until shortly before her death.

Of the other eight "arrested cases" I have the most excellent accounts, with one exception. She has not communicated with me or her other physician, Dr. J. E. Goldthwait, for over a year, but at last accounts was feeling well; and inasmuch as she promised faithfully to let us know if anything should go wrong, we have reason to believe she is doing well, although we have lost sight of her for the present.

All of these cases have been away from the sanitarium more than a year; most of them nearly two years, with one exception. She was discharged last autumn, and is now living in the country, whence she writes most enthusiastically of her "perfect health," "better than ever in my life before."

The details of these cases I shall print with my paper, but forbear to read them now, owing to lack of time and for fear of wearying you.

In only three of these cases were bacilli found in the sputa, and possibly the results may be challenged in consequence. In reply, I can only say that experience has shown us that for months we may examine the sputa in vain to find bacilli, when the physical signs give us the strongest evidence of phthisical disease, and the absence of bacilli is no proof of the absence of incipient tubercular trouble. On the contrary, in all of these cases many or all of the symptoms which we recognize as those of incipient pulmonary tuberculosis were present, namely, hemoptysis, cough, sputa, loss of flesh, fever, night-sweats, malaise, variation in the percussion note, respiratory murmur, etc., — symptoms in themselves of vastly greater clinical significance to my mind than the mere absence or even presence of bacilli.

Of the 13 cases recorded as "much improved" (by which is meant a marked increase in general strength, weight, marked diminution or cessation of cough and expectoration with decided improvement in the physical signs), one (No. 33) is soon to leave as an "arrested case," all signs having disappeared, the patient being fat and well after a stay of nearly two years. One (No. 31) who had marked signs at the base of the right lung, will also probably leave this summer with few or no abnormal symptoms after two years' stay. One (No. 49) with hemoptysis and slight signs in the right lung, gained 28 pounds in nine months; is the picture of health and strength; and if all continues favorably, will be discharged this summer. One (No. 42) who entered January, 1893, with a diffuse bronchitis in addition to incipient trouble at the apex of the left lung, has long since shown little or no sign of pulmonary disease, but has been a great sufferer from uterine disease and obliged to undergo a severe surgical operation, and is now at the Vincent Memorial Hospital in Boston for that purpose. One (No. 50) who entered for hemoptysis, cough, etc., with slight signs in the right lung, gained 14½ pounds in four and a half months, the cough and expectoration diminished greatly and the general condition greatly improved. Having been offered a home in the foot hills of California with an aunt, the patient is now there with a good prospect of recovery. One (No. 29) sent by Dr. F. I. Knight, having been nursed through several violent hemoptyses during which she nearly died, after a stay of four months and a half, left the sanitarium bright and strong, with marked diminution of all signs; was married, and went to live in Boerne, Texas, where she steadily improved, but died lately from puerperal fever.

The foregoing six cases, and three others, were "incipient cases," while others of those who were "much improved" were in more or less advanced stages of disease.

Bacilli were found in all but two of these cases (Nos. 31 and 33). Both of these cases, however, have had evidences of pulmonary disease such as hemoptysis, cough with sputa, malaise, a loss of flesh, more or less fever, night-sweats, etc., and in one (No. 31) marked signs at the base of one lung persisted for months.

Of the six classed as "improved," that is, in whom there was some slight amelioration of abnormal symptoms temporarily, four (Nos. 12, 16, 39 and 51) were well advanced cases, and two (Nos. 43 and 46) were incipient cases, who for various reasons failed to obtain much benefit from their stay and left Sharon.

Bacilli were found in the sputa of these six cases in varying quantities.

Of the eleven cases classed as "not improved," seven were in far advanced stages of the disease (severe cough, marked emaciation, cavity formation, etc.); two had well-marked disease; and two were "incipient cases," who went rapidly down-hill in spite of all treatment, and left Sharon after a stay of a few months.

In all of these, except four, bacilli were present in the sputa; and in the cases where they were not found, other evidences of marked pulmonary disease were present.

In looking over these records, then, I think we may feel justified in holding the views already expressed, namely, that a great deal more can be done than hitherto in the neighborhood of our great cities in harsh climates for this most unfortunate class of patients.

Again I say that, in comparing the results with those obtained in more healthful climates, the percentage of those who are benefited is, of course, much smaller in the former than in the latter case; but that is no reason for hindering our efforts to improve present conditions for those who cannot go so far from home.

The fact that present results, moreover, have been accomplished under somewhat adverse circumstances has its encouraging side; and we feel confident that the experiment is but a stepping-stone to better and more far-reaching results, which can be obtained chiefly through larger funds, which will surely come as the institution becomes more widely known.

ADVANTAGES OF SANITARIUM TREATMENT.

This is an important point, and one upon which I wish to dwell a little.

There is among the community a perfectly natural dislike at first thought towards the idea of bringing a number of consumptive patients together under one roof, as it were. Even among physicians we find this prejudice existing; and before the Sharon Sanitarium was opened it was one of the chief objections in my own mind, so much so that when making visits to celebrated sanitaria both in this country and in Europe, it was one of my first questions, "What effect do you notice from the proximity of the patients to each other?" In every case I found the objection proved to be practically *nil*.

Doubtless, to one casually visiting a sanitarium where all stages of the disease are received, the effect is at first most sad and depressing; but it has been almost the universal experience of those who have had charge of these institutions that, although there may be a certain amount of depression at first, it wears off in a comparatively short time, especially where symptoms of improvement appear. Certainly I can add my testimony to this fact.

On the other hand, the advantage to be obtained from keeping patients under medical control for a longer or shorter period, as contrasted with the haphazard methods of sending them into the country, or even to distant health resorts to live in hotels or boarding-houses, to follow out their own inclinations, — the advantages of the former method, I say, are such that only the most prejudiced observer could deny them.

The ideal way, doubtless, would be for each patient to select his own health resort, away from all invalids, and to keep himself under the sole control of a special physician; but how many of the thousands afflicted with this disease have the means to adopt such measures?

Under sanitarium treatment, unfavorable symptoms can be watched more carefully and prompt measures taken to check them. The regular methods to which the patients become accustomed are also especially beneficial in their life after discharge; and at Sharon constant endeavors are made to secure other modes of self-support than those in which the trouble began.

It has been the endeavor of the management to receive only such cases as are showing the very earliest symptoms of phthisis, although the rule was infringed in several cases at first, before the sanitarium was well known; then, too, others have entered at the recommendation of physicians who have not realized the full extent of the trouble, and rather extensive disease has been found.

If patients do not improve after a stay of several weeks, or run rapidly down-hill, it is always understood among the friends that other measures must be adopted, the reason for this rule being that we do not pretend to make it a hospital for very sick patients, which would defeat the very purpose for which the sanitarium was founded.[3]

METHODS OF TREATMENT.

Hitherto the almost daily visits of efficient medical assistants at the sanitarium has been a marked factor in obtaining any favorable results; but the constant supervision of a competent resident physician is what we now desire. This I believe to be a necessity for the best results.

The chief aim at the sanitarium always has been to teach the patients that fresh air and good food are essential for recovery. Judicious exercise, according to the capacity of each patient, is enforced. At first only exercise on the piazza is allowed, until the strength of the patient is tested, and especially if there is a hemorrhagic tendency. Gradually the patient is allowed to take longer walks, and finally is advised to ascend the hills slowly, the injunction always being given to *stop before the point of fatigue is reached.* Rest in the open air, even in the coldest days of winter, is a marked feature of the treatment, the patient being wrapped in blankets and allowed to remain for hours in a sheltered portion of the piazza in the sunshine. Drugs are avoided as much as possible, unless it be some tonic to increase the appetite, an aid to digestion, or some simple cough-syrup.

The daily or tri-weekly use of the pneumatic cabinet I regard as a most invaluable adjunct in the treatment of all these cases, chiefly from the calisthenic effect upon the chest. I have never seen serious deleterious effects from its judicious use; but, on the contrary, its power of increasing the amount of expansion and of improving the shape of the chest is very marked. Frequently some soothing vapor is used as an inhalation in connection with it when bronchitis is marked, but this is done as a means of alleviation only. As to the germicidal effect of any vapor within the lungs I have no faith.

Finally, in addition to the cabinet treatment, the patients are taught to take deep inspirations and to hold the breath, expelling it again as far as possible, frequently through the day, a method to which too little attention is paid generally in the treatment of any pulmonary disease.

Tuberculin has never been used at Sharon. My experience with several patients at the Carney Hospital, in Boston, just before the sanitarium was opened, when the excitement over tuberculin was at its height, made me decide that I should try other methods at Sharon until further experiments had been made by Koch himself. I have been much interested in the accounts given of late by Drs. Trudeau and von Ruck of their recent experiments with tuberculin; but although impressed always by what comes from such sources, I do not yet feel wholly convinced of the efficacy of even the modified methods of using this remedy.

(To be continued.)

* * *

SPINAL CONCUSSION. — TRAUMATIC SPINAL SCLEROSIS.[1]

BY PHILIP COOMBS KNAPP, A.M., M.D.,

Clinical Instructor in Diseases of the Nervous System, Harvard Medical School; Physician for Diseases of the Nervous System, Boston City Hospital.

(Concluded from No. 1, p. 7.)

We see then that, even in a simple traumatic lumbago, there are various ways in which the cord may become involved, and that certain symptoms may perhaps be due to disturbance of the cord. At least, we cannot say definitely that such a thing is impossible.

This reasoning, however, is somewhat hypothetical, and neither side of the controversy can, as yet, be absolutely proven.

Certain cases have come under my observation which apparently are due to injury, yet the symptoms have developed slowly and the symptoms are undoubtedly due to changes in the cord.

Thos. C., thirty-nine, single, a butler, presented himself at the City Hospital on the 25th of January, 1893. His family history was good, an uncle and an aunt living to be well past ninety. He himself had always been well. He had never used tobacco or alcohol to excess, and he denied not only any venereal disease, but any exposure to venereal infection. Four years before, in the winter, he was helping a very heavy woman down a long flight of steps, when he slipped and slid down a dozen or fourteen steps on his back with the woman on top of him. He felt much temporary discomfort, but he soon recovered, and paid little attention to his accident until the following spring when he began to have pains in his legs and chilly sensations and darting pains in his body. He never felt quite the same as before his fall, however. The feet became numb and he felt as if something were tied about his waist. After numbness and pain in the legs they began to grow weak. Later on the urine began to trouble him, he had some trouble in passing it, and later he could not retain it, there was constant dribbling. He found it very hard to walk without a cane or to go down stairs. The arms for a time were sore and painful. He slept poorly, he had some headache and vertigo, the memory was poor, he could not

---

[3] Dr. S. E. Solly, in his paper on "Climate," in Vol. I of "Hare's System of Therapeutics," gives some elaborate and interesting tables of statistics, the one which bears upon this special point being as follows:

Comparison between Open Resorts (that is, hotels, boarding-houses in health resorts), and Sanitariums in Low Climates.

	No. of cases.	Per cent. cured.	Per cent. benefited.
All stages of disease.			
Open resorts in low climates .	1,724	6	46
Sanitariums	2,443	13	27½
First stage of disease.			
Open resorts in low climates .	625	5	45
Sanitariums	89	31½	45

[1] Read before the Boston Medico-Psychological Association, January 21, 1894.

see to read quite so well unless he used glasses. The appetite was fair, the bowels somewhat costive.

The man was well-developed and nourished. He walked with difficulty, taking short, unsteady steps, and dragging his feet. The right pupil was irregular in shape and somewhat larger than the left; both reacted readily to light and accommodation. The field of vision, as tested by the fingers, was not contracted. The hands and arms were strong and their movements were not ataxic. The sensibility to pain, touch, and temperature was everywhere good. There was some tenderness of the calves. The legs were weak, especially the left, abduction and extension being most impaired. There was a distinct tonic spasm of the quadriceps. On standing with the eyes closed he swayed very much and fell backwards. The skin reflexes were normal, the knee-jerks were much exaggerated, and there was ankle clonus in the right leg. There was no speech defect and no sign of mental impairment. Examination of the chest and back was negative.

The second case which I wish to report, John O'K., is also a butler, aged thirty-three and married. His previous history is not very important. Twenty years ago he had rheumatic fever from which he made a good recovery. Seven years ago he had a sore on the penis coming on three or four days after intercourse with his wife; a year later he contracted a similar sore under like conditions; and a year after that a third sore. He denies any secondary symptoms, and the sores healed promptly. It may be that one of these sores was syphilitic, but the evidence is certainly unsatisfactory.

He came under my observation in March, 1892. In September, 1891, he was helping to carry a tub of ice upstairs, when his foot slipped and he fell over the tub, the edge of the tub striking his right flank and abdomen from the crest of the ilium round to the navel. It knocked his breath out for a minute or two, but he got his wind again in a few minutes and continued his work. He kept at work for a week, but the pain in the abdomen became so bad that he had to give up, and for five or six weeks he did nothing until he entered the hospital.

In the hospital he complained much of abdominal pain. He vomited constantly; his right leg was paralyzed, his left leg was weak, and there was anæsthesia on the anterior portion of the left leg below the knee. The knee-jerks were increased. He also had incontinence of urine and feces. Ten days after he entered the hospital he could move the right leg a little, but he complained of cramps in it. In another week he had gained still more. He could then move the right leg feebly in all directions, and the sensibility had returned in the left leg; but either his sensory conduction or the mental process was slow, for he responded to the test very slowly. The rectal sensibility was imperfect. He often thought he had passed feces when he had not. He could hold his water a little better, but there was incontinence as soon as the amount of urine reached an ounce. The vomiting ceased, and he gradually improved, until he could sit up and walk about. He had fair control of the legs, and his knee-jerks were reported as normal.

After a stay of about five weeks in the hospital he was discharged at his own request, and since then he had been an out-patient, and his condition had been gradually growing worse. He complained when I first saw him of pain in the right side going down the outer side of the right leg. For a week he had had some pain in the shoulders. The right leg was weak and numb, and the left leg was also growing weak. They both felt very shaky when he walked. The urinary symptoms persisted; at times it was very hard to make water, at times there was dribbling after passing it, and at times the demand was so imperative that he would wet himself before he could get to the closet. The bowels remained obstinately constipated.

Beyond these symptoms there was little else of importance. He had no headache, he slept fairly, his mind was clear, his memory good, and, except for the "physiological melancholia" which was to be expected considering his long illness and the gloomy outlook before him, there were no cerebral symptoms. When talking with him once he began to shed tears, but that, under the circumstances, can hardly be considered as evidence of great emotional instability. The vomiting had ceased, and his appetite was fair.

He was well developed, but rather pale and thin, and his expression was somewhat sad. The left eye had a cataract, the vision in the right eye was poor, $\frac{3}{30}$. The movements of the pupils and eyes and the visual field were normal. The sensibility of the upper part of the body was normal. There was a slight tremor of the hands, increased on voluntary movements and their strength was below the average, the grip being 22 Kg. Examination of the chest revealed nothing remarkable; the pulse was 84, soft and full. The back was held stiff, and it was kept stiff on bending, and all movements were slow, causing pain in the back and right flank. There was some tenderness of the lumbar muscles, especially on the right, and still greater tenderness over the right flank, where pressure caused an increase in the pulse-rate. The vertebral column showed nothing remarkable.

The gait was slow, stiff, and unsteady, and he limped on the right leg, which he favored distinctly, saying that it caused pain to put much weight on it. Both legs were distinctly weak, especially the right leg, all movements being affected. He could stoop and raise himself on the left leg, flexing the leg at the knee, but he could not do this on the right. He felt a light touch everywhere on the legs, and the pain and temperature senses were not much altered, but all forms of sensation seemed to him less distinct on the outer side of the right leg. Fifteen centimetres above the upper border of the patella the right leg was two centimetres smaller than the left, but the electrical reactions were unaffected. The sense of motion and the sense of position were normal. The knee-jerks were exaggerated, the right being most marked; there was front tap contraction and a tendency to patellar clonus in the right leg but not in the left. There was no ankle clonus and the skin reflexes were normal. He swayed distinctly with the eyes closed.

The question of simulation in these two cases may be at once excluded. In neither case was there any question of damages, both were poor men dependent on their own exertions for their support, and both came to the hospital in the hope of obtaining relief. The symptoms point distinctly to some disturbance of the spinal cord — the paresis and spastic condition of the legs, the bladder symptoms, the sensory disturbances, the girdle-feeling, the inability to stand with the eyes shut, and the exaggerated reflexes, together with the absence of any striking cerebral symptoms and of any degenerative reactions make this clear.

The influence of trauma in the first case may be disputed, but it certainly cannot be denied, since the man never felt quite the same after it up to the time of the development of more serious symptoms. In the second case the symptoms may be referred definitely to the trauma.

In both cases syphilis must be regarded as extremely doubtful; the absolute denial in the first case, and the very doubtful nature of the sores in the second, render it highly improbable. In the second case, also, antisyphilitic remedies were of no avail.

Pantzer [11] has reported a case with somewhat similar symptoms, associated with fracture and displacement of the laminæ, relieved completely by laminectomy. In the absence of any discoverable vertebral changes such a condition seems improbable in these cases.

The very gradual onset of the symptoms in the first case renders the diagnosis of spinal meningeal hemorrhage most improbable. The partial recovery and the greater severity of the earlier symptoms in the second case might suggest a hemorrhage, but we must bear in mind that the symptoms did not develop for over a week and that there were no pronounced root symptoms or symptoms of a focal lesion of the cord, and no sudden pain or muscular spasm. In both cases the symptoms suggest changes in the pyramidal tracts, and I am inclined to the belief that in both we have to do with a degenerative process in the cord itself. In the absence of more definite data, however, support for that belief must be sought in the record of other cases.

Schmaus, in the paper to which I have already referred, and in a subsequent communication,[12] reports certain cases where the autopsies showed changes similar to those produced experimentally in rabbits, foci of softening, swelling and degeneration of axis cylinders, degeneration of ganglion cells, fascicular degeneration, especially in the lateral tract and not secondary to other lesions, occasionally gliosis. In one case there was a hemorrhage which was apparently of recent date and was regarded as secondary to the softening. In the majority of cases the vertebral canal was intact. These changes in the lateral columns recall the degeneration found in the same region by Edes [13] ten years ago. In a previous paper [14] I have cited further evidence bearing upon this point.

Gowers [15] reports a case which, according to Watson, must be a myth. "A lady was severely shaken in a railway collison. She seemed, immediately after the accident, to have suffered no injury, but in a few days paraplegia developed, and from its consequences she died six weeks after the accident. Throughout the dorsal region of the cord I found indications of subacute myelitis, chiefly in the white columns, varying in its extent in different regions, but in most parts considerable in the pyramidal tracts."

Gowers thinks that "in the face of such a case as this, it is superfluous to discuss the question whether or not the cord can suffer concussion." The evidence seems clear from such cases that we may have changes in the cord, without hemorrhage, fracture or direct crushing, of gradual onset and producing grave results. I have omitted to cite cases presenting the symptoms of ordinary acute myelitis, coming on soon after an injury, where no evidence of fracture or crush of the cord can be obtained.

There is yet another class of cases which Page and Watson ignore, yet where, according to all the knowledge we have of nervous pathology we must hold that the injury has given rise to changes of the most gradual and insidious onset, which begin with the most minute alterations, probably not much greater than those found by Hodge in fatigued cells, where the symptoms do not develop until long after the injury, and where the progress is gradual yet persistent to a fatal termination. I refer to the cases of tabes and spinal progressive muscular atrophy of traumatic origin. Both are, of course, rare, but trauma may be the sole discoverable cause of tabes according to Erb, and traumatic muscular atrophy is probably more common. Not long ago I reported [16] a case of progressive spinal muscular atrophy which gradually developed after a fall on the elbow. There may have been some neuritis at first; at any rate the arm was very painful, but the atrophy extended and bulbar symptoms finally developed. Such cases prove conclusively that the cord may be affected by injury where there is no gross lesion at the time and where the symptoms are not of immediate onset.

Finally, we have the cases which Page and Watson accept, where there is spinal hemorrhage, fracture of the vertebræ, crushing of the cord, etc., which I need not cite.

From the evidence thus collected it becomes clear that the position taken by Watson and Page is untenable. There are cases where the symptoms are in large part if not entirely due to disturbances of the spinal cord, and where the cerebral and psychical factors may be eliminated. Changes occur in the cord from injury where there is no fracture or dislocation of the vertebræ, no crushing of the cord, no spinal hemorrhage, and where the vertebral canal is intact. Such changes, furthermore, may be of gradual onset, and symptoms may not develop for some time after the injury. As we know that severe cases occur with marked lesions in the cord, post-mortem, it is only fair to suppose that milder cases may also occur where there are less marked lesions in the cord which either recover or persist, causing partial disability without a fatal termination.

PUERPERAL ECLAMPSIA: A REPORT OF THREE CASES.

BY H. D. ARNOLD, M.D., ROXBURY, MASS.

Of the three cases reported in this paper, the first occurred in my private practice, and the other two at the Boston Lying-in Hospital during my service as house-officer. I am indebted to Dr. C. M. Green, in whose service these two cases occurred, for permission to report them, thus adding materially to the interest of the paper.

All three of the patients were primiparæ. The first case is one of post-partum eclampsia, with recovery. The second case is one of ante-partem eclampsia occurring about the end of the sixth month of pregnancy.

---

[11] H. O. Pantzer: Two Cases of Laminectomy, New York Medical Journal, August 26, 1893.

[12] H. Schmaus: Zur Casnistik und Pathologischen Anatomie der Rückenmarks erschülterung, Archiv für klin. Chirurgie, xiii, 112, 1891.

[13] R. T. Edes: The somewhat frequent Occurrence of Degeneration of the Postero-lateral Columns of the Spinal Cord in so-called Spinal Concussion, Boston Medical and Surgical Journal, September 21, 1882.

[14] P. C. Knapp: Art. cit.

[15] Gowers: A Manual of Diseases of the Nervous System, 2d ed., i, 591.

[16] P. C. Knapp: Hereditary and Traumatic Motor Tabes, Boston Medical and Surgical Journal, October 1, 1891.

Labor came on without interference, and the child was born alive, but lived only a few minutes, as it was premature. The mother made a good recovery. In the third case the patient was in labor when brought to the hospital. She had had sixteen convulsions already, and was in a very weak condition. A living child was delivered after the twentieth convulsion, and survived; but the mother died later, having had twenty-four convulsions in all. The chief interest in these cases centres in the treatment, which will be reported in detail.

In discussing the treatment of a disease like puerperal eclampsia, about the nature of which divergent views are held by the profession, it seems important that the view of the physician treating a case should be clearly understood. The more generally accepted view is that the eclampsia is due to the failure of the kidneys to perform their function. Owing to this failure, there remains in the circulation some substance, otherwise eliminated, which acts as a poison — its manifestations coming through the nervous system. Pregnancy is in some way the cause of this failure of elimination by the kidneys. Thus much is common to all views of eclampsia, except for those rarer cases (if they exist) where eclampsia is due to reflex irritation. If such cases do exist, and the kidneys are fulfilling their whole function of elimination, it would be conducive to clear reasoning to have these rare cases set apart in a class by themselves, so as not to obscure the consideration of the common form of eclampsia.

When we come to the question of the nature of this substance which acts as a poison, and of the way in which pregnancy causes renal inadequacy, we touch the points on which authorities differ. The view that the substance which acts as a poison is a normal product of the cell-life of the individual, perhaps some form of leucomaine, and that in a healthy person it is only the adequate elimination by the kidneys which prevents the constant accumulation of this poison, seems to me the most probable hypothesis in view of recent investigations. In like manner it seems probable that the pregnant uterus affects the kidneys through pressure upon the ureters. But these views do not carry in my mind the same weight as the fact of the existence of some poisonous substance in the blood as a cause of the convulsions. That is the essential fact, from a clinical standpoint. Puerperal eclampsia is a toxæmia. What the poison is, and how it gets there, are matters of minor importance compared with the problem of getting rid of it. I emphasize this, because I think in some cases too much attention in treatment is paid to the uterus and kidneys, and the treatment of the general condition is not prompt or energetic enough. The removal of the child may give no immediate relief where such relief is necessary, and the woman may die before we get her kidneys into working order if we depend chiefly upon them for elimination.

How shall we get rid of the poison? Obviously we must in some way secure its elimination from the body. In some cases this may be accomplished through the ordinary channel of the kidneys; but usually we must call in the skin and gastro-intestinal tract as auxillaries, and often we must depend entirely on this vicarious elimination, and leave the kidneys entirely out of our calculations. Could we estimate accurately the amount of poison to be eliminated and the exact condition of the secretory function of the kidneys, I believe we should divide our cases of eclampsia into classes, and treat the different classes quite differently. A very mild case of post-partum eclampsia presents a different problem from that of a severe case of ante-partum eclampsia. In the former case, the original cause of the trouble (the child in the womb) has disappeared. The kidneys are freed from obstruction and will shortly resume their function fully. Let us suppose that the kidneys are very slightly affected, there is an accumution of only a small amount of poison in the blood, the patient is easily susceptible and her nervous system has lost a good deal of its resistant power through a tedious labor. She has a mild convulsion, as a result of slight poisoning. Such a case may be successfully treated by using a sedative to render the nervous system less susceptible to the effect of the poison and waiting for nature to eliminate the poison by the rapidly improving action of the kidneys. The difficulty lies in the recognition of just such a case; and the first case reported in this paper shows that we must always be ready to change our tactics completely and push vigorous treatment if necessary. As a general rule, it is not wise to place much reliance on the kidneys in the immediate treatment of eclampsia. The safer plan is to supplement the action of the kidneys with more or less diaphoresis and catharsis, according to the severity of the case, and always to be ready to act temporarily as if the woman had no kidneys. I believe that the successful treatment of eclampsia depends more upon an intelligent understanding of the severity of the case than upon the adoption of any routine treatment, however good it may be.

Other questions of treatment arise, and important ones, too, but it is not necessary to discuss them at this point. In seeking to emphasize one or two aspects of the treatment, I do not wish to be understood as underestimating the importance of other measures. My object is not to give an exhaustive discussion of the treatment, but rather to explain the line of treatment which is common to the following cases.

Case I. Primipara, married, eighteen years of age. Post-partum eclampsia after a labor at full term.

When first seen by me she was in labor, with the os about the size of a silver dollar. This was at 3 P. M., September 1, 1892. She had had irregular pains all day. The labor was uneventful, except that the first stage was tedious and the patient showed a very nervous temperament. Labor ended at 2.15 A. M., September 2d, by the birth of a female child weighing seven pounds.

Eleven hours later I called again. The patient was apparently all right. She had not slept, however, although she had had little sleep for forty-eight hours. She complained of headache and was rather restless, but this was not unexpected on account of her temperament. About two hours previous to my visit she passed nearly a pint of urine. It was high-colored, but otherwise apparently normal. During the labor she had passed a satisfactory amount of urine. She was given a dose of bromide of sodium before I left, and the nurse had orders to repeat it if she did not sleep.

An hour later I was summoned on account of a convulsion. This occurred twelve hours after delivery. I was prepared for a nervous explosion of some kind. With a nervous temperament there were family troubles and reasons why the child was very unwelcome. She had taken a violent dislike to it, was opposed to nursing it, and was greatly disturbed by the urging of the family and nurse that she should nurse it. Shortly before the convulsion she had complained of pain in the abdomen, but it had been over the uterus and not in the epigastrium, and she was quickly relieved by hot applications. There had been no other symptoms except the headache and nervousness before mentioned.

At the time of my arrival she was fully conscious and was quiet. Her mind was perfectly clear. The convulsion was of very short duration, and the description which I obtained was not characteristic of any particular form. There was no œdema of legs or feet. She said she had worn during the latter part of pregnancy the same shoes as usual without discomfort. She was the picture of health, and could remember no sickness.

I decided that the convulsion was probably hysterical in character, on account of the secretion of urine and the absence of of confirmatory evidence of eclampsia, and felt so sure of it that I did not catheterize her for a specimen of urine, fearing that she might get too much worked up by so doing. Subsequent events proved that I was wrong. However, it may be remarked in passing, to show that my view was not unreasonable, that about a week later (when eclampsia was out of the question) she had an hysterical attack not unlike this but more violent, and that she continued to be excited and verged on mania for two days. The patient was given another dose of bromide, and was soon asleep.

The second convulsion occurred at 6.50 P. M., four hours after the first. She awoke from a quiet sleep, and passed almost immediately into this convulsion. She was catheterized, and more than half a pint of urine was obtained — the secretion of seven hours. It was darker in color than that passed at noon, and contained an abundance of albumin. Recognizing the seriousness of the case, I advised a consultation and Dr. Clement responded to the call.

It was thought that this would be a favorable case to treat by the subcutaneous injection of morphine to check the convulsions. The convulsions had been rather mild. The patient quickly regained consciousness, and was perfectly clear mentally between the attacks. She had secreted one and one half pints of urine in sixteen hours, and it seemed probable that the kidneys would quickly resume their normal excretion. The skin was moist, and it seemed sufficient to favor perspiration by blankets and heaters. In addition, she was to have elaterium to favor the action of the bowels. The prognosis seemed, on the whole, favorable.

8 P. M., September 2d. Morphine, gr. ¼, subcutaneous injection. She soon fell into a deep sleep.

9.30 P. M. Third convulsion. I was not present, but arrived shortly afterwards. She passed into this convulsion from a deep sleep due to morphine, without waking. This convulsion was much more severe than the previous ones and lasted longer. I found her at 9.45 extremely drowsy from the morphine, not easily roused, and with pupils well contracted.

9.50 P. M. Elaterium, gr. ⅕.

10.30 P. M. Elaterium, gr. ⅕. The effect of the morphine is not quite so profound and she was given a subcutaneous injection of morphine, one-eighth of a grain. This produced complete narcosis. Pulse 84.

12 midnight. Fourth convulsion. She passed into this from deep narcosis. This was the first of the convulsions which I witnessed. It lasted eight minutes. The movements were not excessively violent. The nurse said it was longer than the last one, but not so violent. It was probably modified by the morphine. The recovery from this convulsion was decidedly slower than before. The pulse during the convulsion was 96. The temperature in axilla immediately afterwards was 99.4°.

12.30 A. M., September 3d. Elaterium, gr. ⅖. She could be aroused to swallow with the greatest difficulty, and probably could take nothing more for some while, as the stupor was increasing. She was catheterized, and four ounces of dark urine were obtained — secreted in five hours. The situation was now grave in the extreme. Convulsions had continued in spite of the morphine — in fact, they came oftener. The interval between the first two convulsions was four hours, the next interval was three hours and the last interval two and one-half hours. The succeeding stupor was becoming more marked, and with the aid of morphine threatened to be continuous. The amount of urine secreted was diminishing instead of increasing, and was of a worse character. The skin had become dry and harsh. The patient's countenance had changed decidedly for the worse. I left to get a reliable croton oil and some fresh pilocarpine for subcutaneous use.

1.30 A. M. Pilocarpine, gr. ⅕, by subcutaneous injection. Five minutes later she vomited a small amount of green, watery vomitus. At 1.40 she was sweating profusely. Fresh heaters and blankets were applied.

1.40 A. M. Croton oil, two drops in some olive oil, on the tongue. In five minutes there was more green, watery vomitus.

2.10 A. M. Croton oil repeated. Vomited immediately.

2.30 A. M. This was the time when another convulsion was due, if it came after the same interval as the last one. I could not help feeling anxious, although the patient was coming out from her stupor somewhat, and her countenance looked decidedly better.

2.35 A. M. Pilocarpine, gr. ⅒, by subcutaneous injection. She was still perspiring, but not freely. In five minutes there was profuse perspiration; and between this and 3 A. M. she vomited several times profusely.

3.40 A. M. Owing to the elimination by perspiration and vomiting, patient had improved so much that she could be roused to swallow. She was given elaterium, gr. ⅖.

5.20 A. M. First dejection. This was thin, fecal, and moderate in amount. This was seven and one-half hours since a cathartic was first given. During this time she took six-fifths of a grain of elaterium, which was apparently retained, and two doses of croton oil, which were vomited.

At 5.45 she vomited copiously. Three dejections followed before 8 o'clock, and two more before 10.30 A. M. This made six dejections.

The patient was now entirely conscious and her mind clear and bright. She had no memory of the night. There was no headache. Her pulse was good. Four ounces of urine were drawn by catheter. This was the secretion of ten hours, and it showed that the kidneys were of little use as yet.

Patient was ordered thirty grains of compound jalap powder at 12, and at 1 P. M. cream-of-tartar water, ad. lib. Her diet was plain milk. At 3 P. M. there was another dejection. By this time threatening symptoms had set in again. She was getting decidedly dull and had a severe headache. Evidently the elimination of the poison was not keeping abreast of its formation.

3.30 P. M. Elaterium, gr. ⅕. She continued the cream-of-tartar water in large amounts. She was now given ten grains of chloral hydrate to guard against convulsions. This was repeated at 4.30 and 6.15 P. M. Still her headache grew worse.

At 4 and 5 P. M. she had dejections. At 5.45 P. M. she was given one-fifth of a grain of elaterium. Four dejections followed before 8 P. M. She also passed a few ounces of urine, with one dejection. About five ounces of urine were drawn by catheter at 8 P. M., which was of a lighter color and showed evident improvement in the action of the kidneys.

Notwithstanding this her headache grew worse and worse. She was restless in spite of the chloral, and she could not sleep. Her skin had been moist and she was perspiring at 5.30 P. M., but her skin was now getting dry and harsh again. Pulse 84. Symptoms grew worse until 9 P. M. She was then given one-tenth of a grain of pilocarpine subcutaneously. This was followed by vomiting and profuse perspiration. A dejection followed at 10 P. M. and 1 A. M. Elaterium was given, in the dose of one-fifth of a grain, at 2, 5 and 7.15 A. M. There were three dejections between 6 and 9 A. M.

It was now the morning of the second day after the convulsions. She was again clear in her mind. There was no headache. Pulse 96. Temperature normal. The kidneys were acting much better. The urine was lighter colored and was passed in fair amounts. The amount was not accurately determined, for part was passed with her dejections.

From this time on there was steady improvement through convalescence. The bowels were kept freely open for two or three days, by compound jalap powder. Acetate of potash was substituted for cream-of-tartar water as a diuretic. The urine improved steadily. After a few days there was only a trace of albumin, and on the twentieth day after confinement, the albumin had entirely disappeared.

The feature of this case which is to me of most interest is the threatened recurrence of the eclampsia on the second night after complete relief for some hours during the day. This was apparently due to the slowness of the kidneys in resuming their functions and the failure of elimination to keep pace with the continued formation of the poison in the system. I felt obliged to use pilocarpine again and to resort to brisk purging. The pilocarpine at no time in the case caused salivation to any degree nor any accumulation of secretion in the bronchi.

Case II. Primipara, married, twenty-two years of age. Ante-partum eclampsia between the sixth and seventh month of pregnancy. This patient entered the Boston Lying-in Hospital February 12, 1890.

For two weeks previous to this she had had headaches. Two days before her entrance to the hospital she complained of a severe, shooting pain in the epigastrium and the right iliac region. There was considerable nausea, but no vomiting. She complained of a "sick headache." On the day before entrance to the hospital there was a good deal of vomiting and retching. During these two days she was under a physician's care, and was treated symptomatically for vomiting, pain, etc.

Between midnight and seven o'clock in the morning of the day she came to the hospital she had four convulsions. The doctor saw her first at 7.45 A. M. She was partially unconscious, but could be roused if spoken to sharply. Four ounces of urine drawn by catheter showed a large amount of albumin. Convulsions occurred at 8.20 and 9 o'clock. Ether was administered. Later she was brought to the hospital in a hack, lightly etherized. She was admitted about 11.30 A. M., February 12th.

At that time she was unconscious, and could not be thoroughly aroused. She was restless, resisted any interference, and needed restraint. There was some œdema of the feet, slight œdema of the face, but none of the hands. Patient could not swallow. Nine ounces of urine were obtained by catheter. Albumin was present in abundance — more than one per cent. The sediment showed numerous casts of all kinds, blood-globules and renal epithelium.

Dr. C. M. Green was sent for. It was decided not to attempt to bring on labor. Labor had not begun. For the mother, a forced labor would be detrimental, and delivery did not promise immediate relief. As for the child, its chances were almost too small to consider. There was just a possibility that labor might not come on if the patient were let alone. If labor came on itself the child might be born alive, but its chances of surviving would be exceedingly poor. In a forced labor it would probably be still-born. No good and a probable harm would attend an attempt to bring on labor. It was decided to rely entirely on vicarious elimination through the skin and bowels.

1.10 P. M., February 12th. Croton oil: three drops were given in olive oil by rectum, as the patient could not swallow.

1.15 P. M. Pilocarpine: subcutaneous injection of one-quarter of a grain. Profuse perspiration in five minutes. There was marked temporary salivation. Blankets and heaters were applied, and a profuse perspiration lasted more than an hour. Perspiration lasted to a less degree for a longer time, and the pilocarpine was not repeated until the end of two and one-half hours.

1.30 P. M. A severe, typical convulsion. Ether was applied, but did not shorten the attack.

2.10 P. M. Croton oil: two drops were placed on the tongue, diluted with olive oil. One hour had now elapsed since the croton oil was given by rectum.

2.25 P. M. Turpentine enema, without result.

3.10 P. M. Chloral: thirty grains by rectum, as patient is very restless. The pulse is 120, of good strength, but not full or bounding.

3.30 P. M. Profuse vomiting of greenish, watery material.

3.45 P. M. Pilocarpine: subcutaneous injection of one-sixth of a grain. It is two hours and a half since the first injection, and the skin is not very moist.

5 P. M. Croton oil: three drops by rectum.

5.30 P. M. Catheterized. Only one ounce of urine was obtained, of the same character as before.

5.45 P. M. Her condition had improved enough for her to be able to swallow. Elaterium, gr. ⅕, by mouth.

6.30 P. M. Turpentine enema.

7 P. M. A large, loose, watery dejection. This was six hours from the beginning of treatment.

7.15 P. M. Pilocarpine: one-sixth of a grain subcutaneously. It was now three and one-half hours since the last injection, and it was desired to continue the elimination by the skin for some time yet. Between this time and eight the next morning the patient took forty ounces of cream-of-tartar water and about half a pint of milk. To the milk was added two drachms of brandy every two hours after 8 P. M., as the pulse was weak.

8 P. M. Turpentine enema, without result.

10 P. M. Elaterium, gr. $\frac{1}{5}$. This was repeated at 11 P. M., at midnight and at 1 A. M.

12.30 A. M., February 13th. A turpentine enema gave a small dejection. One ounce of urine, drawn by catheter, had a better color, and contained only one-half per cent. of albumin. The kidneys have secreted only about an ounce of urine in seven hours.

At midnight the patient was found to be in labor, with the os dilated to about half-an-inch in diameter.

4.30 A. M. Profuse vomiting began, and lasted at intervals for one and one-half hours.

4.30 A. M. Large watery dejection.

5 A. M. Large watery dejection.

Patient had now (5 A. M.) been under treatment for sixteen hours. Her condition was much improved. She was still unconscious, but was quiet, and breathed quietly and easily. Her countenance looked much better. Pulse was 100 and of good strength. Drugs were given for twelve hours.

Labor progressed easily during the day, and the child was born at 4.40 P. M. It was alive, but was premature, and lived only a short time.

In the meantime (at 8.30 A. M.) nine ounces of urine (secreted in eight hours) were drawn, showing one-fourth to one-half per cent. of albumin and a sediment with fewer casts and blood-globules. A number of loose dejections occurred during the day.

In the evening she began to pass urine in bed involuntarily. At 10 P. M. she could answer questions in a semi-intelligent manner when aroused.

The next morning, February 14th, she was entirely conscious. Steady improvement followed. She was discharged on the fifteenth day after entrance to the hospital. She was well, except for a slight trace of albumin in the urine. The urine contained no casts.

Summary. — The child and the uterus were left entirely to nature. A quiet, easy labor gave a living child, which died because it was so premature (about six and a half months). Entire dependence was placed upon vicarious elimination. The patient was too restless to take a hot-air bath if it had been desired.

Elimination was obtained first through the skin by the aid of pilocarpine. The first dose was one quarter of a grain, followed in two and one-half hours by one-sixth of a grain, and again in three and one-half hours by one-sixth of a grain. In all, the action of pilocarpine was continued about nine hours. Vomiting aided in elimination at the end of two and one-half hours.

At the end of four and one-half hours she could swallow, and was given one-fifth of a grain of elaterium. She had previously had croton oil twice by rectum and once by mouth, and had had two enemata. The first dejection occurred at the end of six hours. The second, a small one, at the end of eleven and one-half hours, after four-fifths of a grain of elaterium and an enema. The third and fourth dejections were copious ones. They came fifteen and one-half and sixteen hours after treatment began, but were undoubtedly due to the elaterium given between 10 P. M. and 1 A. M. — that is, from six to four hours previously. In all, one grain of elaterium was used, besides croton oil and enemata.

There were six convulsions before entrance to the hospital and one afterwards, seven in all.

Case III. Primipara, single, nineteen years of age. She was at full term, but whether the convulsions preceded the onset of labor or not is not known. She was admitted to the Boston Lying-in Hospital March 29, 1890.

The first convulsion occurred about 5.30 on that morning. She recovered consciousness, and had a second convulsion about 6 A. M. She was never fully conscious after this. Before reaching the hospital at 2.45 P. M. she had had sixteen convulsions.

At the time of her arrival she was unconscious; her breathing was deep, but not stertorous; her pulse was 144 and weak; the abdomen was in size that of full term; and the os was half dilated.

The seventeenth convulsion followed while preparations were being made to catheterize her. The pulse ran up to 210 during the convulsion. Ether was applied immediately as soon as the convulsion began. No urine was obtained; the bladder was empty, and it was not known when she passed urine last. The ether was continued, and I immediately set about the manual dilatation of the os. Dr. Green had been notified by the telephone in the meantime.

3.02 P. M. Eighteenth convulsion. Pulse 200.

3.08 P. M. Nineteenth convulsion. Pulse 200.

3.12 P. M. The os is fully dilated. Pulse 168.

3.14 P. M. Twentieth convulsion, during which the membranes ruptured.

3.18 P. M. Forceps were applied by Dr. Green, who had arrived a few minutes before.

3.25 P. M. The child was delivered. This was forty minutes from the time the carriage reached the hospital door. The child gasped, and was finally coaxed into living, after twenty convulsions.

The woman's pulse was 180 after the birth of the child, and 210 after the delivery of the placenta.

3.40 P. M. Hot-air bath. As the pulse was 210 and weak, she was given subcutaneously six syringefuls of brandy. The pulse improved.

3.55 P. M. Croton oil: two drops in oil on the tongue.

4.10 P. M. Pilocarpine, gr. $\frac{1}{10}$, subcutaneously. The reason for this was that the hot-air bath alone had not caused any perspiration after being in working order for twenty minutes. The dangers of using pilocarpine with the patient in such poor condition were fully recognized. At the same time her condition demanded speedy and effectual relief even by desperate measures. Under the dose of one-tenth of a grain of pilocarpine and the heat, the perspiration was profuse in less than five minutes. There had been some œdema of the lungs at the time of her entrance to hospital. This was somewhat increased by the pilocarpine and there was some salivation, but both disappeared in a short time. The pulse was not materially affected in rate or strength, running from 180 to 200.

The twenty-first convulsion occurred about the same time that the pilocarpine was given, 4.10 P. M. It was a short and slight one. The twenty-second convulsion at 4.40 P. M., however, was a severe one. The pulse became weaker and the subcutaneous stimulation, which had been given from to time of brandy and digitalis, was increased. Patient rallied; and at 5 P. M.

was breathing easier, had a better pulse and was still perspiring freely.

5.25 P. M. Twenty-third convulsion.

6 P. M. Twenty-fourth convulsion.

The pulse again became very weak, rate 180. It rallied, however, under stimulation; and the condition improved enough so that she could swallow at 7.25 P. M. She was given one-fifth of a grain of elaterium. She also took a little brandy by mouth. The improvement was short, however, and she began to fail. By 8.30 P. M. she failed to respond to stimulants, and died at 9.35 P. M., March 29th. The baby lived and did well.

This case was almost hopeless from the beginning of our care at the hospital. She had had sixteen convulsions previously, and four followed in the next half-hour before delivery could be accomplished. The pulse ranged from 144 to 160 at the start, running up to 210 during a convulsion; and it was weak. There was some pulmonary œdema. And yet the patient rallied enough to be able to swallow. This is rather more surprising than that she died; and it is also interesting that the child was still alive and survived after twenty convulsions.

The cases here reported are too few in number to be in themselves the basis of any general conclusions regarding treatment. A number of interesting questions might be raised which would involve a general discussion of treatment, but that is not the object of this paper. Vicarious elimination is the feature common to all three cases; and I wish to speak of one or two points in this connection. I was surprised at the difficulty experienced in producing catharsis, and at the length of time which elapsed before the bowels moved. Elimination by the bowels is very valuable, but is not immediately available as a rule.

Elimination by the skin is, as a rule, more quickly obtained. For this purpose I prefer the hot pack to the hot-air bath. This is often enough. If, however, the perspiration does not come quickly enough or in large enough quantities, What shall we do? Shall we use pilocarpine? It was used in all three of these cases — with marked benefit in the first two cases, and it seemed to me to be of some aid in the third. In the last case I am quite confident it did no harm; and I feel that if the same line of treatment could have been begun two hours earlier, we could have saved the mother's life, but she came to the hospital too late.

Professor Hirst, in "Hare's System of Practical Therapeutics," Vol III, p. 870, says: "Pilocarpine seemed at one time an ideal remedy to secure diaphoresis in eclamptic cases, but it has lately fallen into well-deserved disrepute. It much increases the danger of pulmonary œdema and is too profound a depressant. It is no longer employed by experienced and educated obstetricians." And three pages later he adds: "Pilocarpine is simply mentioned to be condemned."

It seems to me that this condemnation is rather too severe. I do not advocate pilocarpine in all cases, and I should try to get along without it if suitable action of the skin could be obtained by a hot pack. But I think it still has a place in the treatment of eclampsia. If, as in the first case reported in this paper, I felt the case urgently demanded a profuse perspiration as soon as possible, then I think I should be justified in using pilocarpine in a suitable dose. It is, of course, a powerful depressant, but so are other drugs which are advocated for eclampsia, such as veratrum viride, chloral in large doses, and chloroform (for convulsions). If used intelligently and in small enough dose, I believe there need be no serious pulmonary œdema or depression of the heart. Combined with moist heat externally a small dose works admirably. The function of pilocarpine is only a temporary one, to bridge over the period until elimination by some other channel than the skin has been established.

Medical Progress.

RECENT PROGRESS IN GENITO-URINARY SURGERY.

BY FRANCIS S. WATSON, M.D.

CASTRATION FOR THE TREATMENT OF HYPERTROPHY OF THE PROSTATE.

At the third triennial meeting of the Congress of American Physicians and Surgeons, before the Section of the American Association of Genito-Urinary Surgeons, May 30, 1894, Prof. J. Wm. White, of Philadelphia, read an interesting paper on this subject. Professor White had already published[1] the results of his observations upon the effect of castration on the prostates of dogs, in which it was shown that atrophy of the prostate followed the operation invariably and within very short periods of time, and recalled to notice the suggestive facts that the prostates of eunuchs are known to be small; and that Gruber and Caviale, when operating by lateral lithotomy for stone, had noticed that the prostate of a patient who had been previously castrated, was very small. He also referred to the supposed analogy between the prostate and the uterus, and to the effects of oöphorectomy upon the latter. In this first communication he made the suggestion that castration might be in the future successfully applied to the treatment of prostatic hypertrophy, to produce a diminution in the size of the organ.

In his paper, read as stated on May 30th, White urged definitely that castration be tried in appropriate cases with the view of bringing about atrophy of the enlarged prostate, and adduced the four successful results already obtained, in support of his proposition.

Of these four cases two were operated on by Frederik Ramm, of Christiania;[2] the first operation being in 1893 (April), and the second case on January 17, 1894. The third case was operated upon by a surgeon in Los Angeles, Cal. The fourth was a case of Dr. Fremont Smith's, in St. Augustine, Fla., in 1894.[3]

In all of these cases marked atrophy of the prostate, attended with entire relief of all distressing urinary symptoms, followed castration within a short time; and the patients all recovered a satisfactory degree of health.

Ramm's conclusions with regard to the matter are as follows:

(1) The prostate is a sexual organ.

(2) It develops with or after puberty.

(3) It retains its infantile size in cases of malformation of the sexual organs.

(4) It shrinks in adults after castration.

(5) This diminution in size begins at once after castration, and continues as time passes.

---

[1] Annals of Surgery, 1893, vol. xviii.

[2] Reported in the Centralblatt für Chirurgie, April 28, 1894, no. 17.

[3] Reported in the Annals of Surgery for July, vol. xx, no. 1.

(5) The operation can be utilized in cases of urinary obstruction due to prostatic hypertrophy.

THE EFFECTS OF CHLOROFORM AND ETHER ON THE KIDNEYS.

Wanderlich reports his observations on the effect of chloroform and ether anæsthesia on the kidneys in 125 patients.[4]

There were five whose urines contained albumin previous to anæsthetization. These patients were etherized, in three there was an increase of albumin following the anæsthesia.

There were 13 cases in which albumin appeared for the first time in the urine after anæsthesia. Of these six were chloroformed and six etherized; and to one a mixed anæsthetic was administered. The albumin appeared in small quantities only, and disappeared in from one to three days.

Casts were present in 37 non-albuminous urines before the administration of an anæsthetic. (Alber's observations, previously recorded, showed hyaline casts to be present in 30.9 per cent. of non-albuminous urines of men, granular casts in 1.8 per cent., and epithelial casts in 1.8 per cent.)

Wanderlich found casts in the urines of 24.6 per cent. of patients after etherization, these urines having been free from albumin and casts previous to etherization. After chloroform, casts were present in 34.8 per cent of the patients' urines which had been free from albumin or casts previous to the anæsthetic. These effects of the anæsthetics were found to be true of children as well as adults.

Wanderlich's conclusions are as follows: (1) An already existing albuminuria is often increased by ether, not by chloroform, anæsthesia; (2) Albuminuria may be produced by ether and chloroform — more often by the latter; (3) Casts appear oftener after chloroform than after ether anæsthesia.

These observations confirm those of Rindskopp, of Berlin, published in the *Deutsche Medicinishe Wochenschrift*, No. 40, 1893.

TRAUMATIC RUPTURE OF THE URETER, ETC.

Herbert W. Page (Cantab), F.R.C.S.,[5] begins an interesting article upon this subject with the report of a case, as follows:

September 24, 1892, a boy, five years of age, was knocked down by a light vehicle, the wheel of which passed over his abdomen. Within the next two days blood was seen in the urine on three different occasions — once in the form of a small clot, twice in small quantities mixed with the urine. There was tenderness over the cecum. Evening temperature 102°. There was no external sign of injury. The bowels were emptied by an enema. The tenderness disappeared, and the temperature fell to normal; the urine was thereafter normal also. There was no evidence of any trouble for twenty days. The temperature then rose to 100°, three days later to 103°. Abdominal tenderness disappeared as before; and a well-defined swelling developed in the right iliac fossa, and gradually increased in size.

The urine remained normal (the daily quantities, however, were not noted).

The temperature continued at 103° for the next three days, and respiratory movements were impaired.

On October 27th, thirty-six days after the injury, the abdomen was opened in the right linea semilunaris, over the swelling. Clear serous fluid flowed from the peritoneal cavity; and at once a soft fluctuating tumor, of the size of a large orange, bulged forward into the wound. This was incised; and forty ounces of fluid, containing some colorless clots of fibrin, were collected from it. This fluid contained urinary constituents (about one-half of the bulk of the fluid was reported to be urine). The right kidney was to all appearance normal, and no rent was found in the upper portion of the ureter, which was all that was exposed. The cyst was sutured to the abdominal wound and drained.

Daily measurements of the quantity of urine from the bladder showed that it rarely exceeded six ounces; it was acid; the specific gravity was 1.025; it was free from albumen and blood.

Three days after the operation the dressings were saturated with a fluid having a distinctly urinous odor, and which proved on examination to be urine. The patient did well for a few days, and then began to fail.

About four weeks after the first operation, nephrectomy was performed, through the original incision. The pelvis of the right kidney was distended and filled with purulent urine, and the kidney itself was greatly enlarged. The upper part of the ureter and the pelvis of the kidney were found to be intact. The remaining part of the ureter was not dissected out; and the assumption that it was ruptured somewhere below that portion is based on conjecture, to support which the author quotes these cases:

"Haviland[6] reports a case of 'Obliteration of a ureter: abscess-like dilatation of calyces of kidney.' The patient had received an injury to the back five years before his death; and the above condition of ureter and kidney was assumed to have resulted from an injury to the ureter at time of accident.

"Pye Smith[7] reports a case of 'Stricture of the ureter and dilatation of the kidney, apparently of traumatic origin.'

"Mr. Poland[8] reports the case of a pregnant woman who died six days after being crushed in a railway accident. The right ureter was found torn across, just below the pelvis of the kidney.

"Soller[9] describes a case of constricted ureter, with dilation above the joint of narrowing, in a man who nine years before received a severe blow over the left renal region, which was assumed to have been caused by the injury.

"Dr. S. Coull McKenzie[10] reports the case of a cooly who died twenty-four hours after being crushed between two heavy trucks. There was no external evidence of injury. At the autopsy two small ruptures of the right ureter were found; the abdominal cavity contained two pints of blood mixed with urine; there was a general peritonitis, due to the extravasation of this fluid through the ruptures of the ureter; there were no bones broken."

The author then proceeds to the consideration of the possibility of rupture of the ureter, from an anatomical standpoint, and quotes Cabot[11] with regard to the relation of the peritoneum to the ureters, and especially with reference to the observation made by Cabot, namely, that the ureter is adherent to the peritoneum near the point at which the peritoneum is adherent to the spinal column. He also mentions the observations of Tuffier,[12] which shows that if the ureter is torn from its position in the cadaver, it always ruptures at this point.

---

[4] Beitrage zur Klinischer Chirurgie, Band xi, Heft 2, 1894.

[5] Annals of Surgery, May, 1894, p. 513.

[6] Transactions of Pathological Society of London, vol. x.

[7] Op. cit., vol. xxiii, 1872, p. 159.

[8] Guy's Hospital Reports, vol. xiv, 1868, p. 85.

[9] Lyon Medical, 1880, t. xxxv, p. 333.

[10] Medico-Legal Experience in Calcutta, p. 98, E. and S. Livingstone, Edinburgh, 1891.

[11] American Journal of the Medical Sciences, January, 1892, vol. ciii, p. 43, et seq.

The author continues by saying that whatever may be the mechanism of the rupture, he considers that there is ample evidence that the ureter may be ruptured by violence done to the abdominal wall.

He then passes on to the consideration of further clinical observations and means of treatment of this injury as follows:

Stanley [13] reports the case of a boy, nine years old, who received a severe injury of the lower part of the abdomen. There resulted pain, ecchymosis and extensive subcutaneous suppuration. The pus was evacuated by puncture near the left sacro-iliac symphysis. Six weeks later a swelling appeared on the right side of the belly, reaching from the diaphragm to Poupart's ligament. This swelling was aspirated, and found to contain urine.

Mr. Barker's case.[14] A child, three years and eight months old, was run over by a hansom and bruised on the right side of the abdomen. No serious symptoms developed, and the patient was discharged from the hospital fifteen days later. Four days afterward he returned, and a fluctuating swelling was seen in the abdomen. Aspiration showed the swelling to contain urine.

Mr. Godlee's case.[15] A girl, aged four, was run over by a cab twenty-four hours previous to admission to the hospital. There were pain, tenderness and considerable bruising in the left lumbar region and inguinal regions. A fortnight later tension was noticed in this locality. Soon afterward a large fluctuating tumor appeared in this place. Twenty-three days after the injury the swelling was aspirated, and a large quantity of urine withdrawn from it.

Mr. Allingham's case.[16] A boy, sixteen years old, received a blow on the abdomen. Here the symptoms were much more urgent, and a swelling on the left side of the abdomen was explored on the sixth day.

In this case Allingham opened the abdomen, and found a sausage-shaped tumor extending from the kidney down into the pelvis in the course of the ureter. The pelvis of the kidney was not distended. He punctured the tumor from the loin, and evacuated more than a pint of turbid urine. The abdominal wound healed rapidly. Drainage through the loin was maintained for six days; and in less than a month the patient was discharged well.

In Godlee's and Barker's cases nephrectomy was resorted to successfully after drainage had failed to effect a cure.[17]

The characteristic symptom of the injury is, according to the author, the *tardy* appearance of an abdominal tumor containing urine in the course of one or the other ureter. He advises drainage through the loin as in Allingham's case, and a subsequent nephrectomy of the kidney on the side of the injured ureter, in event of failure of drainage to cure.

A list of twenty authors and their writings on this subject is appended to Mr. Page's article. The writings extend from 1844 to the present time.

NEPHRITIS IN ITS SURGICAL ASPECTS.

Under the above title, Dr. E. L. Keyes [18] read an important paper before the Congress of American Physicians and Surgeons on May 31, 1894, at Washington. He considered only that form of pyelo-nephritis commonly called surgical kidney. He passes in review briefly the progressive demonstration of the etiological relation between microbic infection and renal suppuration, which he expresses tersely thus: "In the urinary tract, no microbes, no suppuration."

The methods of microbic invasion are summarized thus:

(1) By propagation along the mucous membrane by damage done to the deep ureteral membrane. (Tubercle, cancer, stone, bruising, violence, erotic excitement, gonorrhœa, gouty congestion, enlarged prostate or spontaneously.)

(2) Introduction by the surgeon on his instruments.

(3) Bursting into the urinary tract of some extraneous focus of suppuration.

(4) Transmission through the unbroken tissues from a neighboring focus of suppuration. (The bacterium commune may emigrate from the intestine to the bladder.)

(5) By descent from the blood through the kidney, rarely.

The three factors which have been shown experimentally to be the agents in preparing suitable soil for effective microbic infection of the kidney are "over-distention, congestion and trauma."

The author next compares these experimental conclusions with clinical experience, and finds that they harmonize.

The following deductions are drawn from the review of the clinical data: (1) To use reasonable care in exploring a healthy bladder or in passing any instrument into it; (2) to use greater care if there be traumatism from stone, tumor, stricture, especially if the powers of the individual be weakened by age or disease; (3) to exercise every known precaution in exploring and manipulating instrumentally cases of dilated bladder in a fibriotic with enlarged ureters and damaged kidneys.

Prophylaxis is next considered. This is best obtained by avoidance of traumatism and asepsis. The latter is best secured by using metal instruments (catheters, etc.), sterilizing them by heat. Hollow instruments are to be boiled after use and cleansed with alcohol.

The author considers the avoidance of all injury by instruments more important than minute asepsis. Previous to operating in the lower urinary tract, he recommends flushing out the urethra and bladder with a solution of salicylic acid (salicylic acid eight grains, to alcohol one ounce; add this to one pint of hot water), followed by a solution of bichloride of mercury (after the anæsthetic has been administered), and after the operation to flush out with a nitrate of-silver solution, 1 in 1,000.

Then follows a series of bacteriological experiments with reference to the germicidal power of various substances ordinarily used with a view to disinfect or to render aseptic the urinary tract, when administered by the mouth or used locally.

---

[12] On rupture of the kidney and ureter: Archives Générales de Medicine, 1889, vol. xx, p. 356.

[13] Medico-Chirurgical Transactions, vol. xxvii, p. 11, 1844.

[14] Lancet, 1885, vol. i, p. 95.

[15] Clinical Society Transactions, vol. xx, p. 219.

[16] British Medical Journal, 1891, vol. i, p. 699.

[17] The author fails to record in any of these cases the discovery, or failure to discover, actually, the point of rupture of the ureter. The existence of a rupture of the ureter in Stanley's case seems by no means certain; in the others it seems highly probable.

[18] American Journal of the Medical Sciences, June, 1894, p. 613

The conclusions arrived at from the author's study of the subject from all sides — experimental, clinical and bacteriological — are summarized thus:

(1) Healthy urine is sterile.

(2) Purulent urine is always microbic.

(3) Microbic infection takes place from within the body by a number of methods in the course of disease. It is often brought about by instrumental manœuvres on the part of the surgeon.

(4) A healthy organism and vigorous bladder may cope successfully with microbic invasion, and rid itself spontaneously, or with a little aid, of all damage arising therefrom, showing little or no inflammatory response.

(5) A suitable condition of the patient's soil is essential to the propagation and perpetuation of inflammatory phenomena upon the urinary tract after microbic invasion.

(6) This condition, intensified by traumatism and physical weakness, notably of the degenerative variety, is most intense when there is vesical distention with atony, and when the other ureters are dilated and the kidneys involved in the changes incident to tension below; namely, atrophy and sclerosis above, with or without surface catarrh.

(7) Under these circumstances, surgical pyelonephritis is most likely to declare itself as a result of microbic infection from below — occasionally from above, in the course of suppurative disease or after operative interference.

(8) Asepsis, antisepsis and sterilization of urine are ends to be attained in genito-urinary surgery, but, like all other greatest goods, not yet attained in greatest perfection. Much, however, can be done by local means in a prophylactic and curative way, little by internal medication, and possibly as much or more than by any other means, by flushing the urinary passages with natural mineral waters.

STRANGULATION OF THE TESTICLE BY ROTATION.

The July, 1894, number of the *Annals of Surgery*, contains an admirable summary, in an editorial article, of our knowledge on this subject, taken from the description of this accident, by Lauenstein in the *Sammlung Klinische Vorträge*, No 92, 1894. The conclusions which the study of cases and experiments on animals lead to are as follows:

(1) The accident was first described by Nicoladoni.[19] By a torsion of 180° or more of the spermatic cord, hemorrhagic infarctions of the testicle may be produced.

(2) The condition has occurred in both the undescended and the descended testicle.

(3) The accident may occur at any age.

(4) There have been eleven cases reported.

(5) In six the right testicle was affected.

(6) Five of these six cases showed a left spiral twist of the cord. Four cases involved undescended testes; in a fifth the testicle was just outside the outer ring.

(7) The accident is thought to be caused by mechanical movements of the testicle in walking, jumping, falling, etc.

(8) In all the reported cases the attack was very sudden — pain, local swelling, œdema, redness and fever; and vomiting occurred in most of the cases.

(9) When an undescended testis is attacked there may be difficulty in making a differential diagnosis between this condition and strangulated hernia or appendicitis.

◆

Reports of Societies.

AMERICAN DERMATOLOGICAL ASSOCIATION.

WHEN the Eighteenth Annual Meeting was called to order by the President, **DR. MORISON**, of Baltimore, in the pleasant quarters at the Arlington, there was a good attendance, but not equal to that at the last Congress, when only three members were absent.

DR. G. T. JACKSON, of New York, read the first paper on

THYROID FEEDING IN DISEASES OF THE SKIN.

After a general survey of the subject, he reported three cases of xeroderma, one of ichthyosis, and one of dermatitis exfoliativa, that he had treated with the thyroid. He prefers to use the powder of the desiccated thyroid in gelatine capsules, as that method allows of exact dosage, and assures the absorption of the medicament, and is greatly cheaper than any glycerine extract that he knows of. There is no definite dose, so he began with small doses, say two grains t. i. d., and increased as the patient bore it.

Headache, more or less severe and continuous; nausea; vertigo; lassitude; rapid pulse; sharp rise of temperature; and an intense and general erythema were occasioned by the drug. No case, save one, escaped some unpleasant symptom referable to the thyroid feeding. On the other hand, increased scaling, moisture and suppleness of the skin were apparently caused by its use. No one of his cases was cured.

Up to May 1st, there had been reported 33 cases of skin diseases treated by thyroid feeding, namely: psoriasis 26 cases — 10 cured, 7 improved, 9 no change; xeroderma 2 cases — both improved; eczema chronica 2 cases — 1 cured, 1 no change; lupus vulgaris 2 cases — both improved; rosacea 1 case — no change. When the author's five cases are added to these, the total is 38, with 11 cured, 14 improved, and 13 unchanged.

The author is disinclined to further follow this method of treatment, because the results do not justify subjecting the patients to the unpleasant if not grave symptoms incident to the use of thyroid feeding.

Dr. Jackson's paper was discussed by **DR. FOX** who said he thought the conclusions drawn were judicious. Any case of inflammatory disease like psoriasis is apt to improve when subjected to the change from outdoor to hospital care, and not too much stress must be laid on the effect of new remedies under these conditions.

DR. HARTZELL had used the preparation in eczema psoriasis and ichthyosis, with no effect.

DR. STELWAGON had seen no benefit in his cases of psoriasis, dermatitis exfoliativa and pityriasis rubra pilaris. He had used the desiccated thyroid, and had seen disagreeable symptoms produced, including œdema of the legs.

DR. HYDE reported cases of psoriasis in ten male subjects. Two showed decided improvement; two were made very ill; and no benefit was noted in the others. In a case of enlarged thyroid with eczema and alopecia, although the skin diseases were made worse, the thyroid cachexia and enlargement of the gland were improved. The improvement was so noticeable to the patient herself that she asked for a second course. Instead of beginning with small doses and gradually increasing, the speaker had commenced with a large dose and decreased.

---

[19] Arch. für Klinische Chir., Bd. xxxi, 11.

The prevailing opinion of the members was to the effect that little is to be hoped from this new remedy, and that it may under some circumstances be a remedy not free from danger. Rheumatoid pains, great weakness, cholera-like attacks, high temperature, etc., were some of the symptoms which have been observed. So far as skin diseases are concerned, it would scarcely be worth while to make further trial of thyroid extract.

Dr. Corlett stated that, in conversation with English physicians, he had found they were about ready to give it up over there unless it might be in lupus vulgaris, where some benefit was promised from its use.

The next paper was by **Dr. Fox**, of New York, on

FOLLICULITIS DECALVANS.

He said there were undoubtedly various forms of alopecia areata other than the common variety with which we are familiar under this name. The term "folliculitis decalvans" he thought should include the greater number of these affections, which would appear to belong to one and the same disease, to which he would limit his remarks. Two photographs of the scalp, illustrating an instance of the affection, were shown. He considered this his best effort in photography of skin disease. In the advanced stage of the affection there were depressed pigmented cicatricial patches with affected follicles in the vicinity. The extension which usually took place resulted from the agmination and grouping of the follicles, and was well shown in the photograph; and attention was called to the difficulty in getting a sharp picture of this region. The affection begins by the formation of hyperemic patches which are tender; but as a plugging of the follicles is the chief feature, the name seems appropriate. The crown is the part usually affected. Nodules which are not follicular are seen to undergo superficial suppuration. These have given rise to the name "acne," which is a faulty term. As the hyperemia subsides, there is a noticeable sinking of the patch and the diagnosis "alopecia areata" is apt to be made. The chief distinction in this early stage is the redness of the surface and the subsequent sinking, as it were, of the surface, or incipient atrophy, which goes on until in the larger patches we have a cicatricial condition. In one case there was marked pigmentation. The term "keratosis" might be applied to the condition of plugging up of the follicular openings.

Whether the condition just mentioned precedes the inflammatory process or whether the disease is essentially inflammatory in nature, the microscope must show. It is seen in men, women and children, but in all of his cases there had been a general nervous condition present. Treatment had been unsatisfactory, though some cases have improved. A ten-per-cent. salicylic ointment is recommended as one likely to be followed by improvement, but the writer believes no plan of treatment can be regarded as curative.

Dr. Zeisler agreed with the speaker's view that these cases differed from alopecia areata. He had seen half-a-dozen such cases. The roughness of the patch he thought was striking from the hairs being broken off. He referred to one case which the patient told him had been called folliculitis decalvans, but which on examination he had found to be favus, and he thought that after the scales and cups were removed a case of favus might readily be so regarded. His treatment had consisted in the use of a strong sulphur ointment.

Dr. Hyde thought the pathology little understood; and until we do get more at the bottom of the matter, we cannot classify all unusual alopecias in the category. He spoke of tuberculosis of the scalp and odd varieties of lupus erythematosus which we can occasionally watch as it spreads over the scalp, leaving scar tissue behind. Inflammatory diseases of the skin, as we well know, do not leave scars, Why should it be otherwise on the scalp? He agreed with the impropriety of the term "acne," but at the present time was unwilling to express a decided opinion as to the nature of the affection. He had found benefit from the ammoniated mercurial ointment.

Dr. Sherwell thought it might be a variety of discoid lupus erythematosus of the scalp. He had in his cases also had best results from the white precipitate.

Dr. Fox thought the adjective *hystrix* might be applied to denote the roughened spinous features. He thought it might be allied to lupus erythematosus. There was no suspicion of syphilis in any of his cases.

Dr. Cantrell, of Philadelphia, read the next paper on

A CASE OF FAVUS OF THE HEAD AND BODY.

The patient was a boy of ten, who had characteristic lesions upon the scalp, which after two years existence spread to the rest of the body with patches scattered over the back, arms, legs and buttocks. An excellent photograph showed this wide and marked distribution.

He asked whether the fungus being aerobic could live in the intestines and internal organs as had been reported.

Dr. Jackson spoke of an observation in which an hepatic ring had been surrounded with outlying cups.

Dr. Grindon spoke of the different varieties of fungus in hairy and non-hairy parts.

Dr. Zeisler said extra-capital location was explained by artificial inoculation from the scalp, but that especial interest attached to those cases in which the body lesions were primary. He spoke of favus attacking the nails of a coachman's toes, explained by the patient's going barefooted in damp straw, etc., where mice were abundant. In Kaposi's case of internal favus the diagnosis had been made post-mortem only, but was an undoubted fact.

Dr. Wigglesworth said the fungus was with difficulty inoculated upon the skin of the body. He and Dr. White had experimented in many ways, and had only succeeded in its reproduction when the fungus was pricked into the hair follicles. The corn-colored cups which resulted yielded readily to treatment.

Dr. Hyde said almost any treatment was effective, but none curative. A change of treatment at frequent intervals gave the best results.

Dr. Sherwell spoke of favus of the face in a gentleman whose three dogs and three other members of the family had it; also the mice, and some so badly that all tissues were destroyed down to the brain, and the fungus could be detected in the brain substance, which was equivalent to its existing in the internal organs.

Dr. White mentioned an instance of favus upon the glans penis. One might infer from the remarks of several gentlemen that favus was an incurable disease, whereas we see constantly, and especially among Russian immigrants, the unmistakable evidence of past favus upon the scalp, which has entirely disappeared. He knew of one positive cure which had shown no return for fifteen years.

Dr. Hartzell said that Hardy quotes a case of favus of the glans penis where, with the aid of a lens, a hair follicle was found, indicating that non-hairy parts are really exempt.

Dr. Allen said he was about to say just what Dr. White had said relative to the number of cured cases seen in Russian Poles, although he believed many of these permanently bald scalps have resulted from some alopecia such as Dr. Fox had discussed under folliculitis decalvans and not all from favus. He had not until recently seen favus upon the general surface in his own practice, but had now under treatment a little girl with lesions upon the ear as well as the scalp. The mother and brother both have favus of the scalp.

Dr. Stout read, by invitation, a description of the microscopic appearances of the case.

Dr. Corlett, of Cleveland, followed with a paper on

COLD AS AN ETIOLOGICAL FACTOR IN DISEASES OF THE SKIN,

reporting a series of cases that presented for the most part lesions upon the backs of the hands, of an erythematous and slightly scaly nature resembling patches of eczema, but without exudation. The patients for the most part showed the same affection upon the same locations in succeeding winters, remaining free in mild weather. Some patches were the size of a silver dollar, thickened, and of rosy hue with elevated margins. There was little tendency to spread.

Three conditions seemed necessary to its occurrence: (1) low temperature; (2) air in motion; (3) humidity. At times the affection resembled herpes; but the reader considered it a disease *sui generis*, and would name it "dermatitis hiemalis."

Treatment consisted in 50 per cent. glycerole of tannin, and emollients or astringents according to the case, but above all change of climate.

Dr. Sherwell said some of the descriptions suggested angeio-keratoma.

Dr. Hyde said we were all familiar with the condition, and with the, at times, marked influence of cold in skin diseases, especially in the fall of the year. Many factors may, however, be present; and he was especially suspicious of hand lesions. Here occupation, the various trades, gloves worn the preceding year and put on as the cold weather approaches, and the many sources of infection should all be eliminated before we attribute any etiological importance to the weather. Treatment by parasiticides was usually successful.

Dr. White, if asked to make a diagnosis from the photography, would call the condition eczema. This, of course, may be aggravated by cold.

(To be continued.)

THE BOSTON

Medical and Surgical Journal.

THURSDAY, JULY 12, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

SMALL-POX IN MASSACHUSETTS: A REVIEW OF ITS PREVALENCE.

The epidemic of small-pox which began in October last being practically at an end, so far, at least, as Massachusetts is concerned, an opportunity is afforded for reviewing the situation as presented by the experience of recent years.

As compared with the epidemic of 1872–73, and the still greater prevalence in pre-vaccination times, the recent outbreak is scarcely worthy of mention. But the collection of more careful records during the past ten years furnishes data for conclusions as to the effect of better methods of control.

The first table on the following page shows the comparative prevalence of small-pox in Massachusetts for the past forty years. The data presented are the deaths in each year, the percentage of the total mortality, and the death-rate per 10,000 of the living population.

According to this table, it appears that there have been 4,720 deaths from small-pox in Massachusetts in the forty years ending with 1893; and so far as is known from the returns received since January 1, 1894, 30 deaths have occurred from the same cause during the first six months of the present year.

Of the total of 4,720 deaths in the forty-year period, 4,412 occurred in the first twenty years (1854–73), and 308 in the second twenty years (1874–93). The ratio in the first instance was 170 per million of the population annually, and in the second twenty years, eight per million. For the decade ending with 1893, the mortality from this cause was but little more than two per million annually.

The next table presents the number of deaths from small-pox at each period of life, as compared with the total mortality from this cause. For the sake of comparison, similar facts are presented for populations living in the seventeenth and eighteenth centuries.

SMALL-POX IN MASSACHUSETTS.—FORTY YEARS (1854-1893).

Years.	Deaths from small-pox.	Percentage of total mortality.	Ratio per 10,000 of living population.	Years.	Deaths from small-pox.	Percentage of total mortality.	Ratio per 10,000 of living population.
1854	207	.97	1.9	1874	26	.08	.2
1855	325	1.56	2.9	1875	34	.09	.2
1856	140	.68	1.2	1876	31	.09	.2
1857	23	.11	.2	1877	24	.08	.15
1858	12	.10	.1	1878	2	.007	.012
1859	255	1.22	2.1	1879	7	.02	.04
1860	334	1.45	2.7	1880	38	.11	.21
1861	33	.14	.3	1881	47	.13	.25
1862	40	.17	.3	1882	45	.12	.24
1863	42	.15	.3	1883	5	.01	.03
1864	242	.84	1.9	1884	3	.008	.01
1865	221	.84	1.7	1885	19	.05	.10
1866	141	.59	1.1	1886	..	..	..
1867	196	.82	1.5	1887	3	.007	.015
1868	20	.08	.2	1888	8	.019	.04
1869	59	.22	.4	1889	6	.014	.03
1870	131	.48	.9	1890	1	.002	.005
1871	294	1.05	1.9	1891	1	.002	.004
1872	1,029	2.94	6.7	1892	2	.004	.01
1873	668	1.97	4.3	1893	6	*	.03
Totals	4,412	....	....	Totals	308	....	....
Av'ges	....	.088	1.7	Av'ges	....	.04	.08

DEATHS FROM SMALL-POX BY AGE-PERIODS.
DISTRIBUTION OF 1,000 DEATHS.

Ages.	Geneva, 1580-1760.	Kilmarnock (Scotland), 1728-1764.	Massachusetts, 1863-1892.
Under 5 years	805.5	942	324
5 to 10 years	155.5	34	70
10 to 20 years	26.5	5	119
20 to 30 years	10.	5	266
30 to 40 years	2.5	....	103
40 and upward		....	106
Not stated	....	11	12
	1,000	1,000	1,000

Statistics giving deaths by ages are not abundant for years prior to 1800. The foregoing statistics, from authentic records of Geneva and from a very carefully kept town-clerk's record in a Scotch village, are believed to be trustworthy. A comparison of these figures for periods prior to 1800 with the table for Massachusetts for a recent period show that a very marked change has taken place in the comparative mortality at different ages, and that some influence has been operative to effect a very decided change; so that small-pox, which was almost exclusively a children's disease prior to 1800, has in recent times undergone a transformation, from the operation of some cause or other. This change has not taken place, so far as any records show, in the case of any other disease.

In Geneva, from 1580 to 1760, out of every 1,000 deaths from small-pox, 961 were those of children under ten years of age; and in Kilmarnock during the thirty-six years (1728–64), 976 out of each 1,000 deaths from small-pox were also those of children under ten.

In Massachusetts, on the contrary, for the period (1863–92) but little more than one-third (394 out of 1,000) of all deaths from small-pox were those of children under ten; and the majority were those of persons over ten years old. The number of such deaths between the ages of twenty and thirty was more than double the number of deaths between ten and twenty.

Now, this very decided change in the incidence of small-pox at different age-periods, a change which has not taken place in the case of any other disease, can only be explained by some influence which is exerted upon small-pox, but not upon other diseases; and this factor is the practice of vaccination.

When the population of a large city invaded by small-pox is subjected to a critical investigation, as was done by Dr. Barry in his searching examination of the population of Sheffield, England, in 1887, it was found to be possible to contrast the unvaccinated with the vaccinated population living under like conditions in the same city; and the result was precisely similar to that which appears in comparing a community living in the last century with a vaccinated community living in the present century under an invasion of small-pox.

Had the 324 infants in each 1,000 who died of small-pox in Massachusetts in the period (1863–92) been successfully vaccinated, the contrast between the column for Massachusetts and the two preceding columns taken from pre-vaccination periods would undoubtedly have been much more striking, since the death from small-pox of a successfully vaccinated infant is an almost unknown event.

As the protection afforded by primary vaccination begins to wane, and this well-known immunity is not re-established by re-vaccination, the deaths begin to increase, as is shown in the column for Massachusetts by the figures 70, 119 and 266 for the successive age-periods 5–10, 10–20, 20–30, these deaths being made up partly of unvaccinated persons who had not been exposed to small-pox in infancy, and partly of those who had been vaccinated in infancy, but had never submitted themselves to re-vaccination.

During the past ten years very careful records have been kept, in consequence of a statute of 1893, requiring immediate notice of all cases of small-pox to the State authorities. From these records it has been possible to collect definite evidence relative to the protection afforded by vaccination in this State.

The following table presents a summary of the cases:

Small-Pox in Massachusetts, 1885-1893.
Comparative Fatality of the Vaccinated and Unvaccinated.

Years.	Small-Pox.			Vaccinated.			Unvaccinated.			Doubtful or Unknown.		
	Cases.	Deaths.	Per ct.	Cases.	Deaths.	Per ct.	Cases.	Deaths.	Per ct.	Cases.	Deaths.	Per ct.
1885	32	11	..	7	0	..	13	9	..	12	2	..
1886	2	1	..	1	1	..	..	..	..	1	..	..
1887	13	4	..	6	0	..	5	2	..	2	2	..
1888	32	5	..	15	1	..	13	3	..	4	1	..
1889	15	3	..	11	1	..	3	1	..	1	1	..
1890	6	1	..	2	..	..	2	..	..	2	1	..
1891	5	1	..	1	..	..	3	1	..	1	..	..
1892	19	2	..	7	..	..	10	1	..	2	1	..
1893	44	6	..	11	..	..	27	6	..	6	..	..
1894 6 mos.	182	30	..	80	3	..	82	21	..	20	6	..
	350	64	18.3	141	6	4.3	158	44	27.8	51	14	27.4

Total number of reputed cases of small-pox, nine years and a half, ending June 30, 1894	350
Total number of deaths from small-pox for same period	64
Ratio of deaths to cases	18.3 per ct.
Of the foregoing, there were among the vaccinated	141 cases.
Of the foregoing, there were among the vaccinated	6 deaths.
Ratio of deaths to cases in the vaccinated	4.3 per ct.
There were among the unvaccinated	158 cases.
There were among the unvaccinated	44 deaths.
Ratio of deaths to cases among the unvaccinated	27.8 per ct.
There were among those in whom the facts relative to vaccination were doubtful or unknown	51 cases.
There were among those in whom the facts relative to vaccination were doubtful or unknown	14 deaths.
Ratio of deaths to cases among these	27.4 per ct.

It is a favorite practice among the opponents of vaccination to quote the severe epidemic of small-pox of 1872–73 in Massachusetts to disprove the efficacy of vaccination. All such statements, however, have absolutely no value, from the fact that they fail to show any definite information as to the comparative mortality from small-pox of the vaccinated and the unvaccinated. As a matter of fact, there are no definite statistics upon this point in Massachusetts for years prior to 1885.

Hence the value of the foregoing tabular statements may be recognized, as confirming similar inquiries made in other countries. By this table, it appears that the mortality from small-pox among the unvaccinated was 27.8 per cent., as compared with only 4.3 per cent. among the vaccinated, the former being more than six times as great as the latter.

Of the foregoing 350 cases, 138 (or nearly 40 per cent.) occurred in Boston, 39 in Holyoke, 31 in Chicopee, 20 in Springfield, 21 in Worcester, 17 in New Bedford, 12 in Lowell, 9 in Westfield, 8 in Chelsea, 7 in Huntington, 6 in Fall River, 4 at the State almshouse in Tewksbury, and the remainder were scattered in smaller numbers in 34 cities and smaller towns. Twelve of these cities and towns were places in which paper-mills using rags are located; but the actual number of paper-mill operatives attacked with small-pox was only 18, a smaller ratio than that which prevailed in earlier years. Several persons were attacked who were doubtless indirectly exposed to this influence, being persons of other occupations living in the same families or tenements with paper-mill operatives.

* * *

MEDICAL NOTES.

The Cholera. — The cholera, which has been epidemic for the past few weeks at Jemmapes in the province of Hainaut in Belgium, has now appeared in Liège, and in the two neighboring villages of Angleur and Jeysille. In Russia, the disease has continued in many of the provinces, and has appeared in St. Petersburg, according to official statements. The Danish government has prohibited further importation of rags from St. Petersburg, and has established a quarantine against that city.

The Plague. — The plague at Hong Kong continues unabated, and reports from St. Petersburg state that there is a disease now prevalent in the province of Radom, with many fatal cases, which bears a strong resemblance to the plague at Hong Kong. Cases have also occurred at Moscow and St. Petersburg. Radom is one of the provinces in which the cholera was reported epidemic a short time ago; but the reports now given are that the disease is not choleraic but more resembles the plague.

The American Academy of Medicine. — The nineteenth annual meeting of the American Academy of Medicine will be held at Jefferson, N. H., on August 29 and 30, 1894. The greater part of the session is to be devoted to the discussion of certain problems relating to "The Medico-social Relations of the Medical Profession to the 'Dependent Classes.'"

Italian Dermatological Society.—The Italian Society of Dermatology and Syphilography will hold its annual meeting in Rome in the latter part of October. The subjects proposed for discussion are (1) Mycological Morphology: Clinical Study and Treatment of Tricophytic Diseases; (2) Hereditary Syphilis.

The Board of Medical Examiners of Maryland. — At the last semi-annual examination held by the State Board of Medical Examiners of Maryland, sixty-six graduates in medicine applied for examination. Fifty-three were granted licenses. The following medical schools were represented: University of Maryland, 36 applicants, 3 failed; College of Physicians and Surgeons, 12 applicants, 4 failed; Baltimore Medical College, 8 applicants, 1 failed; Baltimore University School of Medicine, 3 applicants, 2 failed; Howard Medical College, Washington, D. C., 2 applicants, 2 failed; Woman's Medical College, Baltimore, University of Pennsylvania, Georgetown Medical College, Washington, D. C., University of the City of

New York, College of Physicians and Surgeons, New York, each one applicant, no failures.

The Distribution of Red Hair in France. — An enterprising Frenchman, M. Topinard, has investigated the distribution of red hair in France, and finds that the departments showing the largest proportion of red-haired persons are those which have also the greatest number of blondes. The proportion of "red heads" in the various provinces is given as 175 to 1,000 in l'Asine, 177 in la Drôme, 176 in Saône et Loire, 174 in la Meuse, while it is only 65 in le Lot, 60 in la Haute-Garonne, 52 in Corse and 27 in le Var.

Death of the Smallest Man in the World.— Dudley Foster, said to have been the smallest man in the world, died at Bridgetown, N. S., on June 20th, of heart disease, aged sixteen years and ten months. He was thirty inches high, and weighed twenty pounds.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, July 11, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 33, scarlet fever 26, measles 15, typhoid fever 17.

The Emergency Hospital of Boston. — The Emergency Hospital completed its third year of work last week. Since its establishment it has given its service to nearly twenty-six thousand cases of varying degrees of severity.

The Harvard Summer School of Physical Training. — There are already sixty-five students taking the summer course in physical training at Cambridge this year. This is a larger number than last year, but smaller than the attendance in 1892, when there were one hundred students. Thirty-eight of the students this year are women.

A Physician's Golden Wedding. — Dr. and Mrs. Benjamin Hubbard of Plymouth, Mass., celebrated their golden wedding recently.

A Nurses' Home for the Malden, Mass., Hospital. — Hon. E. S. Converse and A. H. Davenport have signified their intention of building a nurses' home for the Malden City Hospital. For some time there has been a need of proper accommodation for the nurses, and the new building, which will have rooms for twenty nurses, will be a welcome addition.

A Legacy to the Portsmouth, N. H., Hospital. — The will of the late Franklin R. Bragdon, of York, Me., bequeaths five thousand dollars to the Portsmouth Cottage Hospital, to establish a free bed. The corporation of the hospital is also made residuary legatee of his estate.

NEW YORK.

St. John's Guild Floating Hospital. — The twentieth season of the St. John's Guild Floating Hospital was inaugurated on July 5th. As was the case last year six trips will be made each week, three from the East and three from the West side of the city. The average number of mothers and children carried is about one thousand, and the expense of each trip of the hospital boat is $250. Contributions of this amount have already been received from a considerable number of wealthy citizens. This season Dr. W. A. Walker is the attending physician and Dr. W. J. Purcell, health inspector. Since the floating hospital was started over half a million individuals have been carried on its excursions. The city now has thirteen free baths in operation, and two others are shortly to be opened. This is a larger number than in any previous season.

Death of Major Willard Bullard. — Major Willard Bullard, for a number of years Chief of the Sanitary Corps of the Police, recently died at the age of sixty. He was a veteran of the war and a man of great ability and the highest integrity. Many of the improvements in the tenement-house system introduced during the last few years were largely due to his energetic and persevering work, and he devoted much time and attention to the affairs of the Society for Improving the Condition of the Poor, of which he was a trustee.

State Commission in Lunacy.— For some time past the State Commission in Lunacy has been holding an investigation of the condition of the city asylums for the insane on Ward's Island, and the state of affairs revealed by this is such that it seems altogether probable that the outcome will be the transfer of all the pauper insane of the city to the care of the State. In the State Care Act, as it was passed by the Legislature, the counties of New York, Kings and Monroe were permitted to retain the care of their insane dependents, but it was provided that whenever a Board composed of the State Commissioners in Lunacy, the President of the State Board of Charities and the State Comptroller shall decide that it is advisable that the State shall assume the care of the pauper insane in any of these counties and so report to the Governor, the Legislature has the power to make the transfer. In Monroe County this transfer has already been made, while in Kings County the change has been determined upon, though not yet carried out.

A Commission to Examine into the Insanity of Mrs. Halliday. — The Governor has appointed a commission to investigate all the facts relating to the sanity of Mrs. Halliday, of Orange County, who was found guilty of murder in the first degree on June 21st. There seems to be little question that she is really insane, but the local feeling was very bitter against her, and the jury was no doubt influenced by this. Previous to the commission of the murders for which she was indicted she had been confined for considerable periods in three different asylums for the insane, and the experienced alienists in charge of these institutions had no doubt of her insanity; while the medical testimony as to her sanity accepted by the jury was that of one or two country practitioners and of one expert, Dr. Mann, who saw her but for a few hours in the last days of her trial.

Miscellany.

LINGUA GEOGRAPHICA.[1]

Spehlmann reports a careful study of twenty-three cases of this disease, which has been but little known. He describes it as an independent benign affection of the tongue, entirely unrelated to any other disease of that organ. The clinical picture is that of a circumscribed area of desquamation of epithelium with more or less prominent borders. The disease runs a chronic course and the patches disappear and shift their position. The anatomical changes consist of an accumulation of lymphoid cells in the meshes of the connective tissue of the mucous membrane, in the papillæ, and especially in the epithelium, and of an exudation in the upper layers of the rete Malpighi, the horny layers being thrown off. The disease affects especially children in the first year of life, and most frequently accompanies organic diseases with consecutive disturbance of nutrition. A parasitic origin for the disease has been often suggested, but never proven. There is no particularly effective treatment.

"BARCLAY'S GEESE."[2]

In an address delivered at the opening of the Wistar Institute of Anatomy and Biology of the University of Pennsylvania, Dr. William Osler, speaking of the developments of human anatomy and biology, said:

"Truth has been well called the daughter of Time; and even in anatomy, which is a science in a state of fact, the point of view changes with successive generations. The following story, told by Sir Robert Christian, of Barclay, one of the leading anatomists of the early part of this century, illustrates the old attitude of mind still met with among 'bread and butter' teachers of the subject. Barclay spoke to his class as follows: 'Gentlemen, while carrying on your work in the dissecting-room, beware of making anatomical discoveries; and above all beware of rushing with them into print. Our precursors have left us little to discover. You may, perhaps, fall in with a supernumerary muscle or tendon, a slight deviation or extra branchlet of an artery, or, perhaps, a minute stray twig of a nerve, — that will be all. But beware! Publish the fact, and ten chances to one you will have it shown that you have been forestalled long ago. Anatomy may be likened to a harvest-field. First come the reapers, who, entering upon untrodden ground, cut down great store of corn from all sides of them. These are the early anatomists of modern Europe, such as Vesalius, Fallopius, Malpighi, and Harvey. Then come the gleaners, who gather up ears enough from the bare ridges to make a few loaves of bread. Such were the anatomists of last century, — Valsalva, Cotunnius, Haller, Winslow, Vicq d'Azyr, Camper, Hunter, and the two Monros. Last of all come the geese, who still contrive to pick up a few grains scattered here and there among the stubble, and waddle home in the evening, poor things, cackling with joy because of their success. Gentlemen, we are the geese.' Yes, geese they were, gleaning amid the stubble of a restricted field, when the broad acres of biology were open before them. Those were the days when anatomy meant a knowledge of the human frame alone; and yet the way had been opened to the larger view by the work of John Hunter, whose comprehensive mind grasped as proper subjects of study for the anatomist all the manifestations of life in order and disorder.

"The determination of structure with a view to the discovery of function has been the foundation of progress. The meaning may not always have been for 'him who runs to read'; often, indeed, it has been at the time far from clear; and yet a knowledge in full detail of the form and relations must precede a correct physiology. The extraordinary development of all the physical sciences, and the corresponding refinement of means of research, have contributed most largely to the enlightenment of the 'geese.' The remarkable revolution in our knowledge of brain functions has resulted directly from the careful and accurate study by Barclay's 'geese,' of the anatomy of the nervous system. Truly the gleaning of the grapes of Ephraim has been better than the vintage of Abi-Ezer."

THE ACTION OF ASPARAGUS ON THE KIDNEYS.

Dr. Burney Yeo writes to the *Lancet*[1] a brief account of a test as to the diuretic properties of asparagus. He says:

"Choosing four separate, not consecutive, days when I was at liberty to follow precisely the same *régime* of eating and drinking, removed by at least twenty-four hours from any such disturbing effect as "dinner parties," to which one of your correspondents refers, I added on two of those days to my diet, in other respects precisely the same, some asparagus, and I carefully measured the excretions of urine on each of the four days for purposes of test and comparison, and with the following results. On April 28th to 29th, having eaten about fifteen heads of asparagus the night before, and the same quantity at a mid-day meal, I measured the urine passed in twenty-four hours, — namely, from 8 A. M. to 8 A. M.: the total amount was 50 oz., and the density varied from 1.012 to 1.028, the average being 1.020. On April 30th to May 1st, having eaten and drunk in precisely the same manner, but without any asparagus, and having measured the urine passed within a like period, I found the total amount was 31½ oz., the density varying from 1.021 to 1.029, the average being 1.025. On May 2d to 3d I ate asparagus as before, and again carefully measured the urine passed between the same hours; the total amount was 54½ oz., and the density varied from 1.012 to 1.023, the average being 1.018. On May 5th to 6th I again measured the urine passed in a like period, adhering to the same diet, but without asparagus; the total amount passed was 35½ oz., and the density varied from 1.018 to 1.025, and the average was 1.022. I ought perhaps to add that the total amount of beverage I habitually take daily does not exceed 35 oz. to 40 oz. To resume; on the two days I took asparagus I passed respectively 50 oz. and 54½ oz. of urine of an average specific gravity of 1.020 and 1.018; on the two days I took no asparagus I passed respectively 31½ oz. and 35½ oz. of an average specific gravity of 1.025 and 1.022."

A similar test was applied to two hospital patients who were laid up with fractured legs. The following are the results:

---

[1] Centralblatt für innere Medicin, 18, 1894.

[2] University Medical Magazine, June, 1894.

[1] Lancet, June 2, 1894.

"(1) A. B., aged thirty-six: average amount of fluid consumed daily, 56 oz.; average daily excretion of urine before eating asparagus, 53 oz.; average daily excretion with asparagus, 61½ oz. — a balance or excess of 8½ oz. in favor of asparagus. (2) C. D., aged fifteen: average amount of fluid consumed daily 36 oz.; average daily excretion of urine before eating asparagus, 32 oz.; average daily excretion with asparagus, 41½ oz. — a balance or excess of 9½ oz. in favor of asparagus.

"Such, then, is the effect of the addition of asparagus to the diet of persons with presumably healthy kidneys; and from these observations I think we are justified in accepting the common belief that the physiological effect of asparagus is to increase the flow of urine; but diuretic drugs are notoriously uncertain in their action."

◆

HENNA.

Henna, known to Europeans almost solely as a hair-dye, holds an important place in Arabian pharmacy, according to the reports of M. Ehrmann.[1] With them it is used principally in the form of a powder of greenish-brown hue, showing an orange tinge when exposed to the light. It is formed by simply drying and then powdering the leaves of the Lawsonia alba. As among the earliest Egyptians, it is used by the Arabians as a cosmetic. Its slightly tanning effect toughens the skin, lessens the perspiration, and protects the skin against sudden changes in temperature. Almost all the women and many of the men dye their hands and feet with the powder, after the following manner: The powder is moistened in a little water and the paste spread upon the extremities, which are bandaged with linen on going to bed. By morning the color, a bright yellow, has become sufficiently endyed to last without renewal for fifteen or twenty days.

The "koheul" of the Arab women is made with powdered henna mingled with lemon-juice, this preparation being considered superior to that made with antimony. The Arab proverb says, "that every woman who smears her eyelids with koheul, her hands and feet with henna, and perfumes her breath, is pleasing to God and to her husband."

In a more strictly therapeutic sense, the powder is used in the treatment of rhagades and ulcers; while a decoction of henna is prescribed in diarrhœa, hepatitis and calculous disease. It is a commonly used parasiticide for pediculi. Cataplasms of henna and anise are employed for the relief of migraine.

◆

CERTAIN PECULIARITIES OF THE URINE IN PERTUSSIS.

The statement of Cherubino, in 1892, that in sixteen out of one hundred cases of pertussis he had found sugar in the urine, has led Blumenthal, of Moscow, to a careful study of the urine in a series of cases of whooping-cough. He makes a preliminary report[2] in which he says that without exception the urine of children with whooping-cough has the following character. It is pale yellow and very acid, with a high specific gravity of 1.022 to 1.032, being nearer the latter in a vast majority of the cases. Soon after being voided, it deposits a yellow sediment of uric acid. In a very large proportion of cases this deposit consists wholly of uric acid, rarely showing any urates. Calcic oxalate crystals were never found. Albumin was absent, and although repeatedly sought *no sugar was ever found*, though there was several times a reduction of Fehling's and Nylander's solution, due to the uric acid or an excess of glycuronic acid. Certain specimens showed an abnormal sinisterrotation in the polariscope. The cause of the high specific gravity seemed largely due to the uric acid which on quantitative examination was found to be two or three times the normal amount in twenty-four hours, especially in young children.

This peculiar group of characteristics appeared in the very first stages of the disease, being well marked in the catarrhal stage — increasing with the cough and lasting till the disease is over. Quinine and antipyrine had marked effect in reducing the specific gravity often to 1.005 or 1.006, in lessening the excess of uric acid until often the urine became turbid and alkaline. Careful comparative examinations all pointed to this group of signs belonging especially to whooping-cough and not being the result either of the fever, the dyspnœa or the vomiting. It is suggested for further investigation that the excess of uric acid is the result of abnormal leucocytosis which appears with the onset of the disease.

◆

THERAPEUTIC NOTES.

A useful Suppository for Hemorrhoids. — Dr. James McLeod reports excellent results from the use in cases of hemorrhoids of suppositories made from the following formula:

℞	Chrysarobin	gr. i
	Iodoformi	gr. $\frac{1}{4}$
	Ext. Belladonnæ	gr. $\frac{1}{8}$
	Ol. Theobromæ	gr. xxx
	Cocainæ Hydrochloratis	gr. $\frac{1}{4}$
	Glycerini	q. s. ft. Suppositor.

Sig. One daily.

Malakin.—Jaquet reports[1] upon the pharmacological and therapeutic action of malakin. It occurs in small, bright-yellow needles which melt at 92° C., and are insoluble in water and but slightly so in alcohol. It dissolves with a yellow color in sodium solutions. Weak mineral acids break it up into salicyl aldehyd and phenitidin. After trial upon animals had shown it to have an antipyretic action without causing any fall of blood-pressure, Jaquet gave it to human patients. In acute articular rheumatism doses of four to six grammes gave very satisfactory results. Four grammes represent a little more than two grammes of salicylic acid. As an antipyretic, one gramme suffices to reduce the temperature from one to one-and-one-half degrees; but, unlike previous antipyretic drugs, it acts slowly, the fall of temperature being noticed first in about two hours, which points to a slow decomposition of the drug by the gastric acids. The reduction of temperature was always accomplished without depression, collapse or chill. As an antineuralgic its effect is slow, but fairly good. The only unfavorable symptom noticed was vomiting in one patient. It seems to have an especial usefulness in patients who are sensitive to depressants.

---

[1] La Médecine Moderne, No. 43, 1894.

[2] St. Peterburger Med. Wochenschrift, 17. 1894.

[1] Correspond. blt. fur Schweizer Aerzte, 1893, No. 18, and Centralblatt f. med. Wiessenschaften, 1894, No. 3.

METEOROLOGICAL RECORD,

For the week ending June 30th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..24	30.25	56	58	55	91	81	86	N.E.	E.	18	10	O.	O.	
M..25	30.12	64	71	56	89	83	86	S.E.	S.W.	5	12	O.	O.	
T..26	29.98	77	88	66	92	75	84	S.W.	S.W.	10	16	O.	O.	
W..27	29.88	78	84	71	89	82	86	S.W.	S.W.	17	13	O.	F.	
T..28	29.96	78	87	69	68	74	71	W.	S.W.	8	5	C.	O.	
F..29	30.12	60	63	58	95	93	94	N.E.	N.E.	8	6	O.	O.	0.01
S..30	30.04	70	82	58	97	82	90	N.E.	S.W.	5	12	O.	O.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, June 30, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Scarlet fever.
New York	1,956,000	971	523	29.70	9.00	18.60	6.80	1.00
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,139,457	617	319	30.88	7.04	22.72	4.32	.80
Brooklyn	1,043,000	663	382	34.75	7.50	21.20	7.50	2.55
St. Louis	540,800	—	—	—	—	—	—	—
Boston	501,107	168	49	13.20	15.60	4.80	7.20	.60
Baltimore	500,000	—	—	—	—	—	-	—
Washington	285,000	192	97	38.48	5.20	29.64	1.04	1.04
Cincinnati	325,000	123	35	14.58	12.96	10.53	.81	—
Cleveland	325,000	136	—	24.42	4.14	11.84	1.48	1.48
Pittsburg	272,000	—	—	—	—	—	—	—
Milwaukee	265,000	—	—	—	—	—	—	—
Nashville	87,754	26	11	30.80	—	15.40	—	—
Charleston	65,165	30	9	13.33	13.33	6.66	3.33	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	100,410	29	12	10.35	10.35	—	—	—
Fall River	92,233	49	35	51.00	2.04	48.96	—	—
Lowell	90,613	38	20	18.41	10.52	15.78	2.63	—
Cambridge	79,607	29	12	17.25	17.25	3.45	—	10.35
Lynn	65,123	—	—	—	—	—	—	—
Springfield	50,284	21	6	23.80	9.52	14.28	4.76	—
Lawrence	49,900	—	—	—	—	—	—	—
New Bedford	47,741	17	5	5.88	17.64	5.88	—	—
Holyoke	43,348	—	—	—	—	—	—	—
Brockton	33,939	7	3	28.56	42.84	—	—	—
Salem	33,155	10	3	—	10.00	—	—	—
Haverhill	32,925	10	2		20.00	—	—	—
Malden	30,209	10	1	30.00	20.00	10.00	10.00	10.00
Chelsea	29,806	11	2	—	18.18	—	—	—
Fitchburg	29,383	8	2	—	—	—	—	—
Newton	28,837	7	4	14.28	—	—	—	—
Gloucester	27,293	—	—	—	—	—	—	—
Taunton	26,955	8	1	12.50	62.50	—	12.50	—
Waltham	22,058	2	0	—	50.00	—	—	—
Quincy	19,642	—	—	—	—	—	—	—
Pittsfield	18,802	5	0	—	—	—	—	—
Everett	16,585	3	0	—	66.66	—	—	—
Northampton	16,331	4	1	—	—	—	—	—
Newburyport	14,073	0	0	—	—	—	—	—
Amesbury	10,920	1	0	—	—	—	—	—

Deaths reported 3,228: under five years of age 1,544; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 932, diarrhœal diseases 607, consumption 290, acute lung diseases 223, diphtheria and croup 169, scarlet fever 43, typhoid fever 31, whooping-cough 29, measles 22, malarial fever 12, cerebro-spinal meningitis 11, small-pox 5, erysipelas 3.

From typhoid fever Philadelphia 8, Washington 7, New York 6, Brooklyn 3, Cincinnati 2, Boston, Cleveland, Nashville, Charleston and Somerville 1 each. From whooping-cough Philadelphia 8, Brooklyn 6. New York, Washington and Worcester 3 each, Brockton 2, Cleveland, Nashville, Cambridge and Newton 1 each. From measles New York 10, Cleveland 9, Philadelphia 2, Fall River 1. From malarial fever New York 5, Brooklyn 4, Nashville 2, Philadelphia 1. From cerebro-spinal meningitis New York 4, Washington 3, Cincinnati 2, Brooklyn and Cleveland 1 each. From small-pox New York 4, Cleveland 1. From erysipelas Brooklyn 2, New York 1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 30, 1894, TO JULY 6, 1894.

Captain George McCreery, assistant surgeon, will be relieved from duty at Fort D. A. Russell, Wyoming, by the commanding officer of that post and will report for duty at Fort Washakie, Wyoming.

First-Lieut. Frank T. Meriwether, assistant surgeon, will be relieved from duty at Fort Logan, Colorado, by the commanding officer of that post and will report for duty at San Diego Barracks, California.

Major Augustus A. DeLoffre, surgeon, U. S. A., Fort Logan, Colorado, is granted three months' leave of absence, with permission to go beyond sea.

Captain Louis S. Tesson, assistant surgeon, is relieved from duty at Jefferson Barracks, Missouri, upon the arrival of **Captain Charles B. Ewing**, assistant surgeon, and ordered to duty as attending surgeon and examiner of recruits, Chicago, Ill., relieving **Captain Daniel M. Appel**, assistant surgeon.

Captain Appel, on being thus relieved, is ordered to Fort Porter, New York, for duty, relieving **Major Curtis L. Price**, surgeon.

Major Price, on being thus relieved, is ordered to Fort Custer, Montana, for duty, relieving **Captain Peter R. Egan**, assistant surgeon.

By direction of the President, the retirement from active service, June 28, 1894, of **Colonel Bernard J. D. Irwin**, assistant surgeon-general, is announced.

BOOKS AND PAMPHLETS RECEIVED.

Catalogue of the University of Texas for 1893–94.

Twenty-seventh Annual Report of the Directors of the Massachusetts Infant Asylum, 1894.

The Massachusetts Medical Society, Catalogue of its Officers, Fellows and Licentiates, 1781–1893.

The Uric Acid Diathesis and its Treatment. By John F. Barbour, M.A., M.D. Reprint. 1894.

Papilloma in the Sclero-Corneal Region. By David Coggin, M.D., of Salem, Mass. Reprint. 1894.

Woman's Medical College of the New York Infirmary, Annual Catalogue and Announcement, June, 1894.

Report of the Directors of the Boston Training-School for Nurses, attached to the Massachusetts General Hospital, for 1893.

Transactions of the Massachusetts Medico-Legal Society. Vol. II, Nos. 3 and 4, 1893–94. Boston: Published by the Society. 1894.

Neurasthenia and its Treatment by Hypodermic Transfusions (According to the Method of Dr. Jules Chéron). By Ralph Browne. Reprint. 1894.

Transactions of the Vermont State Medical Society for the Year 1893. Published by the Society. Annual Meeting in 1894 in Montpelier, October 11th and 12th.

Transactions of the Fifteenth Annual Meeting of the American Laryngological Association, held in the City of New York, May 22, 23 and 24, 1893. New York: D. Appleton & Co. 1894.

Resoconto Clinico Triennale della Sezione Chirurgica dell' Ospedaletto Infantile Regina Margherita in Torino per gli anni 1891–92–93. Dott. Annibale Nota, Chirurgo Primario. Torino. 1894.

Some Anatomical and Surgical Relations of the Parts Involved in the Operation of Intra-Cranial Neurectomy of the Fifth Pair of Nerves and Removal of the Gasserian Ganglion. By William J. Taylor, M.D. Reprint. 1894.

Text-Book of Abdominal Surgery, a Clinical Manual for Practitioners and Students. By Skene Keith, F.R.C.S., Ed., assisted by George E. Keith, M.B., C.M. With illustrations. Philadelphia: J. B. Lippincott Co. 1894.

Text-Book of Medical and Pharmaceutical Chemistry. By Elias H. Bartley, B.S., M.D., Professor of Chemistry and Toxicology in Long Island College Hospital, etc. Third edition, revised and enlarged, with 84 illustrations. Philadelphia: P. Blakiston, Son & Co. 1894.

Amputation of the Entire Upper Extremity (including the Scapula and Clavicle), and of the Arm at the Shoulder-Joint; with Especial Reference to Methods of Controlling Hemorrhage with a Report of one Case of the Former Amputation and Four of the Latter. By W. W. Keen, M.D. Reprint. 1894.

Clinical Medicine, a Manual for the use of Students and Junior Practitioners. By Judson S. Bury, M.D., Lond., F.R.C.P., Senior Assistant Physician to the Manchester Royal Infirmary. With numerous illustrations and plate in colors. London: Charles Griffin & Co. Philadelphia: J. B. Lippincott Co. 1894.

Original Articles.

THREE YEARS' EXPERIENCE WITH SANITARIUM TREATMENT OF PULMONARY DISEASES NEAR BOSTON.[1]

BY VINCENT Y. BOWDITCH, M.D.,
Assistant Visiting Physician at the Boston City Hospital; Assistant in Clinical Medicine at the Harvard Medical School.

(Concluded from No. 2, p. 30.)

I HAVE thus given you, gentlemen, the results of three years' work in a special direction. That the amount accomplished is small I am well aware; but I can, at any rate, say I have given you my honest and sincere impressions, and have endeavored, as far as possible, to leave out the so-called "personal equation."

I believe that the highest aim of our profession should be the aid we can give to our fellow-men, and to accomplish this, the truth, and nothing but the truth, should be tolerated. Should my conclusions seem to any one unwarranted, I ask only for honest criticism. Certain it is that I feel a pride and pleasure in giving these results, however small, to the American Climatological Association, which has been to me, ever since my connection with it, a source of great profit and pleasure.

RECORDS OF THE TEN CASES OF "ARRESTED DISEASE."

Case I (No. 1). American, single, age forty-six, typewriter. Entered February 9, 1891. Family history rather consumptive. Never strong. Cough for four or five years, with catarrhal symptoms, loss of flesh and strength, night-sweats, dyspnœa, disturbance of digestion, etc.

Physical Examination. — Dulness in both apices, most in right. Respiration harsh in both apices, somewhat bronchial in right. Clicking râles in both apices, with sonorous and sibilant râles more or less diffused over the chest. Bacilli in sputa.

Although the case was not one where special improvement was expected, an entire cessation of active symptoms occurred. Cough and expectoration ceased. The temperature was normal. The digestion greatly improved. Patient left at the end of four months and resumed work.

Synopsis.—Chronic pulmonary tuberculosis of fibroid variety. Arrest of all active symptoms for over a year, followed by relapse subsequent to an attack of *la grippe*, the presence of two tape-worms, and illness from swallowing ammonia by mistake.

Case II (No. 3). American, single, age twenty-one, teacher. Entered March 31, 1891. Family history on father's side consumptive. Never strong. Has worked hard. Cough for over a year, with occasional hemorrhages. Night-sweats. Some feverishness. Slight pain across chest. Dyspnœa. Anorexia.

Physical Examination.— Pale. Slight dulness at right apex down to fourth rib, with "crumpling" in this region. In right back dulness slight, and râles throughout. Occasional "crackling" after cough in lower portion. Bacilli in sputa.

At the end of five months all active symptoms had ceased (cough, expectoration, etc.). The physical signs at the end of that time showed a dry condition at the top of the right lung (dry râle after cough, the crackling râles having largely disappeared from the lower portion), the general condition being excellent. Against advice the patient left Sharon and returned to the arduous duties of teaching, which she continued for over a year in about the same condition, when after an illness of a few days she suddenly died, the cause of her death being unknown to the attending physician, who reported her previous condition as good.

Synopsis. — Well-marked case of catarrhal pulmonary tuberculosis in right lung. Arrest of all active symptoms for several months, with probable relapse after a year consequent upon resumption of former arduous occupation. Death after sudden short illness, fifteen months after discharge. Cause unknown.

Case III (No. 9). American, married two years, age twenty-six, housewife. Entered June 24, 1891. Family history good. Usually well up to fifteen months previous, when she had *la grippe*. Never well afterwards. Cough, sputa, night-sweats, loss of flesh and other phthisical symptoms. Laryngeal symptoms, aphonia, etc. Entered City Hospital, where tuberculin was used and tracheotomy performed, in Dr. Geo. B. Shattuck's service, followed by almost complete cessation of symptoms. Patient entered sanitarium at the request of Dr. Shattuck. At time of entrance there was occasional slight cough with little sputa, marked hoarseness.

Physical Examination. — Slight dulness at right apex. Harsh breathing in both apices; most marked in right, where it was rather tubular; an occasional dry click in apex, and in lower right front a few dry râles. Respiration in lower right axillary region rather obscured. The aperture of the glottis contracted, owing to old cicatrices. Epiglottis thickened with cicatrices.

The patient steadily improved in every way, and at the end of three months was discharged, September 28, 1891, to go back to her husband feeling perfectly well, the physical signs showing nothing more than an occasional faint, dry click at the end of full inspiration on the right side, and somewhat harsh breathing in the apices.

Since that time the patient has been seen once or twice, and reported a year later that she had no cough, although the last time (about a year ago) she had taken a cold and appeared at my office and promised if not better she would come again. As she was a most excellent patient, we have every reason to suppose she recovered, as we have not heard since from her.

In this case, doubtless the large part of the benefit was due to her stay at the City Hospital; but the treatment at the sanitarium, I think, served to supplement the good work already done.

Synopsis.— Pulmonary and laryngeal phthisis. Use of tuberculin in City Hospital, followed by almost complete cessation of symptoms. Cessation of symptoms at the sanitarium.

Case IV (No. 10). American, single, age sixteen. Entered July 1, 1891. Mother died of phthisis one year before, one sister died of hip disease. Others well. Patient well until nine months previous. Phthisical symptoms appeared nine months previous to entrance, after severe overwork and taking cold. Cough; later, sputa, loss of flesh, dyspnœa, malaise, occasional fever, etc.; later, hemopytysis.

Physical Examination. — Anæmic; sclerotics very clear: thin. Faint clicks in right apex; one or twice a "squeak" in left apex. Slightly lessened tone in right apex. Signs persisted for several months, and finally disappeared. Hemoptysis from time to time slight. The cough finally ceased; and on the last examination about a year after entrance only a faint, dry click could be heard in the apices. The patient left June 29, 1892, at the end of a year, having gained seventeen pounds, and feeling perfectly well. Since then she has written enthusiastically of her perfect health, and has a heathful occupation away from her former unhealthy surroundings.

---

[1] Read at the meeting of American Climatological Association at Washington, D. C., May 30, 1894.

Synopsis. — Incipient phthisis at both apices. Arrest of disease after twelve months' stay at Sharon.

Case V (No. 20). American, single, age twenty-five. Entered October 6, 1891. Sent by Dr. C. Ellery Stedman. Family history not phthisical. Usually well. Began to have malaise about a year and a half before entrance. Intermittent cough for several months. Copious sputa. Pain in right chest at first. Loss of flesh.

Physical Examination. — Slight dulness at right apex. Suspicion of a râle occasionally there, with broncho-vesicular respiration and increase of voice. Later faint râles were heard in both apices, which persisted for a time, as well as the dulness in the right apex. Occasional rise of temperature, especially after fatigue: but there was a steady improvement in symptoms, and just before her departure, six months after entrance, the râles had all disappeared, slight dulness at the right apex and prominence of right clavicle persisting.

Synopsis. — Signs of incipient phthisis in apices of both lungs. Arrest of disease after six months' stay at Sharon. Cough and sputa disappeared. Gain of twenty-eight pounds. The patient continues to write of her perfect health for the past two years, and has moved from her former damp home to one on higher land.

Case VI (No. 24). American, single, age nineteen, factory operative. Entered November 29, 1891. History of probable pulmonary disease in the mother's family; the mother as a young woman was supposed to have pulmonary disease.

Patient had diphtheria six or seven years previous to entrance, and throat had been delicate since. Fairly well up to four years previous to entrance, when she began to work in a factory where much dust was inhaled, and frequent malaise was complained of. Coughed intermittently for two years, mostly in the morning, with rather scanty sputa occasionally streaked with blood. Once a slight hemorrhage. Pain in the upper portion of chest on both sides. Anorexia, loss of flesh and strength. Irregular menstruation. Great nervousness.

Physical Examination. — Except for pallor, a look of weakness, lack of proper expansion of the chest, tenderness upon percussion at the apices of both lungs and later a lessened tone in the left apex, there was little to be found in the chest; but the cough, with occasional bloody expectoration persisted for some time with varying intensity.

There was a general and steady improvement in all the symptoms. She gained eight pounds. The shape and expansion of the chest had markedly improved; and, finally, at the end of three months, as the cough and expectoration had ceased, and the patient persisted in going, contrary to advice, she was discharged.

Although the physical examination revealed only slight evidence of pulmonary disease, yet the cough and occasional hemorrhages, loss of flesh and strength, with slight fluctuations of temperature, rendered it a very suspicious case; and it was so deemed by Dr. Sheldon, of Lynn, whose patient she had been. She has since married, and at last accounts was very well.

Synopsis. — Case with evidences of incipient pulmonary disease (cough, bloody expectoration, loss of flesh and strength, etc.). Arrest of disease.

Case VII (No. 27). American, single, age twenty-eight, tailoress. Entered April 13, 1892. Family history somewhat phthisical. Never very strong. Subject to cough since fifteen. Working hard all winter. Slight cough for several weeks, with bloody sputa and slight hemoptysis at times. Pain in left front at times. Feverish at first. Dyspnœa. Loss of flesh and strength, etc.

Physical Examination. — Slight variations in pitch in both apices, with obscure moist râles, and "squeak" in left apex and to a less degree in right apex. In backs obscure "crumple" heard in tops, and extending downwards somewhat. The signs persisted with some variations for some months, and from time to time there was slight hemoptysis; but the râles finally disappeared, and the cough and expectoration ceased. Gain of eight and a half pounds. The patient left the sanitarium September 28, 1892, at the end of six months, feeling perfectly well, and remained at her home in Canada for the ensuing winter and spring. She has since married, lives in the country, and writes of her perfect health.

Synopsis. — Signs of incipient phthisis at both apices. Arrest of disease after six months' treatment at Sharon.

Case VIII (No. 28). English, single, age twenty-three, domestic. Entered April 14, 1892. Family history favorable. Fairly well up to three years before entrance. Had an attack of bronchitis and general debility. Recovered. One year before entrance had severe cold, with tightness and pain across chest, which symptoms persisted up to three months before entrance, when another cold caused a cough, which persisted with scanty expectoration. Loss of flesh and strength. Anorexia. Irregular menstruation.

Physical Examination. — Pale, with a tired look. Right clavicle prominent. Slight dulness in right apex, with prolonged expiration in front and very faint "crumpling." Just above the line of spine of right scapula a few dry râles. Voice increased in this region. Heart rather rapid. No murmur.

The patient steadily improved after the first month, at times raising some bloody mucus, and left at the end of five months with an entire absence of cough and expectoration, apparently well, the signs in the right apex showing a dried-up process in the lung. She has remained well ever since.

Synopsis. — Signs of incipient phthisis at apex of right lung. Arrest of disease after five months' stay at Sharon.

Case IX (No. 37). Nova Scotian, single, age twenty-four, dressmaker. Entered October 8, 1892. Sent by Dr. R. W. Lovett. Family history negative. Ten months before entrance, developed cough, after general debility for many months previous. Was in City Hospital, and there had all the symptoms of tubercular trouble in the lungs and intestines, and was sent to the Channing Home to die. Improved greatly, and finally came to Sharon.

Physical Examination. — Pale; dark under the eyes. Percussion not remarkable. Faint broncho-vesicular respiration, and faint click or crumple upon full inspiration in right apex. In the lower right axillary region fine crepitation, probably pleuritic. The patient gained in weight, and steadily improved in every way. The cough and expectoration ceased, the temperature was normal, and at the last examination the lungs both expanded well, only a few dry râles being heard at the end of long inspiration, with prolonged expiratory murmur, the fine faint crepitation in the lower right axillary region being still present, but less marked than before. The patient felt "perfectly well, better than for many years before." She left at the end of four months, and has continued to do well since.

Synopsis. — Phthisis involving right lung. Very marked signs, with marked amelioration before entrance. Complete arrest of disease after a stay of four months at the sanitarium.

Case X (No. 41). American, single, age twenty. Entered January 14, 1893. Sent by Dr. H. P. Jaques, of Milton. Mother died of phthisis two and a half years before patient's entrance. Mother's family consumptive. Never very strong. Uterine trouble for several years, and dyspeptic symptoms for a long time. Cough began about six or eight months previous to entrance. Improvement upon changing from her damp home to a dry one. Sputa variable, and at times streaked with blood. Night-sweats severely. Dyspnœa. Acute feverish attack after removal to Milton, where evidence of apparently unresolved pneumonia was found at the base of right lung behind (dulness, faint bronchial breathing, faint moist râles, etc.). These signs persisted for some time, but slowly improved. Bacilli were found in the sputa. At one time there were questionable faint râles heard in the right apex.

In spite of the marked improvement in the pulmonary symptoms at the end of seven months, the uterine symptoms persisted so markedly I advised operation, and the patient was removed to the New England Hospital for Women, where she was relieved almost entirely of her previous dysmenorrhea. The appetite and digestion after her return to Sharon were "better than ever in her life before," and the cough and expectoration finally ceased entirely, and the temperature became normal. There was a gain of eighteen pounds. After an eleven months' stay the patient went to live in the country with an aunt who has a healthy, dry house; and she writes enthusiastically of her perfect health. The last examination showed only a shade of dulness in the lower right back. Only after cough could a faint, dry crepitation be heard.

Synopsis — Tuberculosis at base of right lung. Arrest of disease after an eleven months' stay at Sharon.

The Canadian Quarantine Station on Grosse Isle in the St. Lawrence below Quebec, is reported as being in perfect order and one of the most extensive of modern quarantine plants. There are forty buildings with a capacity of housing three thousand persons and the effects of one thousand immigrants can be thoroughly disinfected in twenty-four hours. Dr. Montizambert, Superintendent of the Canadian Quarantine System, is in charge of the station.

CLIMATIC THERAPEUTICS IN THE TREATMENT OF PULMONARY TUBERCULOSIS.[1]

BY EDWARD O. OTIS, M.D.

Much of the vagueness and misconception existing regarding the use of climate in the treatment of pulmonary tuberculosis, arises, I believe, from two principal causes: First, a failure to appreciate the supreme importance of the *hygienic* management of the disease; and, second, a false conception of the effect of climate *per se*, and often a too exalted idea of its value, and a blind confidence in it as a panacea. To conduct a case of pulmonary tuberculosis to a successful issue requires infinite attention to details, constant vigilance, and a command of every resource, hygienic, climatic, hydropathic, and medicinal — the latter of the least importance. I am a thorough believer in the great value of climate in the treatment of this disease, and yet I am as thoroughly convinced that it is but one factor, although a very important one, in the complete management of the disease. "Climates are not specific agents," says Daremberg,[2] "capable in themselves of curing tuberculosis, but simply aids to a method founded upon abundant and careful alimentation, and upon an out-of-door life and rest." "I would," says a specialist in the treatment of pulmonary tuberculosis at a well-known health-resort in a private communication, "take my son or daughter even now to Boston, and there give them the advantage of proper regulations of diet, rest, exercise, out-of-door life, hydropathic measures, rather than to depend upon the best climate in the world." "A change of climate," says Lindsay, "is likely to prove efficacious only when it is regarded as a preliminary step to a change in the mode of life."[3]

One of the most woful mistakes, and yet a most common one, is to send a tuberculous patient to a climatic resort where he will be left practically to himself, with no careful and constant supervision of his daily life; what and how he shall eat; when and when not he shall take exercise; how he shall care for his sputum to avoid reinfecting himself and infecting others; what kind of a sleeping apartment he should occupy; what he should do when he has a rise of temperature; and all the many details necessary for him to know in order to obtain the best available results from his climatic cure. I have seen a patient at one of our well-known health-resorts coming down to the hotel dining-room table for his meals, with the fever of the septic stage of the disease, wasting his little strength in this way when he ought to have been conserving it by rest in bed. I have seen a patient, at the same resort, sitting on the hotel piazza and expectorating his bacilli-laden sputum upon the ground about the hotel, a menace to every occupant of the house; and I do not doubt that among those, not tubercular, who frequent the resort for other reasons, often as "caretakers," there are cases which have become tuberculous in this way. Recently a physician at one of the resorts told me that he was consulted by a consumptive, who said his physician at home — a man of reputation in a large city — sent him there with the advice that he need place himself under no medical care, but simply follow out the directions he received at home; as if this disease, with its infinite variations and changes could be successfully managed a thousand miles away!

---

[1] Read before the Norfolk District Medical Society at Brookline, March 27, 1894.

[2] "Traitement de la Phthisie Pulmonaire," Paris, 1892.

[3] Climatic Treatment of Consumption.

When climate is so misunderstood and abused in this way, is it any wonder that the results of its use are disappointing? Apply the same methods to the use of any of our most valuable medicinal agents, and what would be the result?

Let us clearly keep this fact before us, that climate is but one factor, although a most important one, in the treatment of pulmonary tuberculosis, and unless accompanied by good hygienic conditions, wise and constant medical supervision, it will, in many cases, prove but a delusion and a snare. Hence the importance of well regulated and appointed sanitariums in the climatic resorts. I am fully in accord with Solly's[4] statement that the percentage of the cured and benefited in these institutions is double that obtained in open resorts. "Experience has shown that nowhere can the necessary daily regulation of the patient's life and habits be so successfully carried out as in a sanitarium, and that the most favorable results in combating the disease have been attained in institutions devoted to this special purpose."[5]

I am thoroughly convinced from my experience and observation that the most successful treatment of this disease in the future, as, indeed, it has been in the past, will be in the sanitariums, and instead of the few that now exist in this great country, hundreds will arise. Look at the marvellous results obtained by Brehmer in his great sanitarium at Göbersdorf, and the equally favorable ones of Dr. von Ruck at the Winyah Sanitarium in Asheville, and of Trudeau's at Saranac. So long, however, as so many of our tuberculous patients do go to climatic resorts where no sanitariums exist, or who will not, from mistaken ideas, enter one, we can do much by wise advice, if we will ever bear in mind the exceeding importance of a carefully regulated life for the consumptive in every particular, and place him under a reliable and skilful physician at the resort we may select for him. If we are not sure that these conditions exist, then we should not send him there. With these preliminary observations, without which what I have to say upon climatic therapeutics would be both misleading and of little practical value, I will now consider the effects of the use of climate in the treatment of pulmonary tuberculosis and the condition and stages, both of the individual and the disease, which are most likely to be benefited by it. I shall presuppose that those favorable conditions exist for the proper management of the disease, which I have tried to impress upon you as of paramount importance: and let us always remember that a less ideal climate is rather to be chosen and will produce better results if these other conditions can be more perfectly fulfilled.

In the application of climate to this disease we must remember the principal influences which have been insidiously at work in rendering the lung tissue a favorable soil for the bacillus. In-door life, and in consequence insufficient pure air, malnutrition, lack of physical exercise, defective lung expansion, insufficient sunshine, a damp soil, worry; how much can we depend upon climate to reverse and correct these vicious influences? First, we can give our patient pure, dry, out-of-door air, and surround him with an aseptic atmosphere. Second, we can give him plenty of sunshine. Third, we can place him under such climatic conditions as will induce a better circulation, promote tissue metamorphosis, improve digestion and so increase nutrition and constitutional vigor. Fourth, we can give him attenuated air to breathe (mountain air), which will promote chest expansion and a full, free, and constant lung ventilation. Fifth, the out-door life will naturally lead to physical activity in cases suitable for it. Sixth, we remove him oftentimes from the vicious conditions which cause his worry, and place him where he will have an attractive environment and under influences which conduce to tranquillity of mind. An abundance of sunshine in itself will often go far towards bringing about this result. Who ever saw a melancholy Italian or negro under their sunny skies? And, lastly, we can give him a dry soil. With some patients means of occupation must be present — sometimes from necessity, and sometimes as a purely therapeutic measure; for to do something, however little, brings hope and health to many a patient, while to sit idly by and await the expected cure, even in the best climate, is only to await disappointment and a fatal issue. Sir Andrew Clark's advice to his patients, to work to the measure of their ability, is sound.

If we will bear in mind the unfavorable conditions and mode of life which produce the disease, and study the conditions and mode of life which exist in those localities which are comparatively exempt from it, we shall be a long ways towards possessing the key to the proper applicaton of climatic therapeutics. It is well to be reminded that climate anywhere, even as unfavorable as ours is, when wisely and fully utilized in connection with good hygienic management possesses possibilities of cure. Tuberculous patients — plenty of them — get well in any and all climates, and often without knowing that they were tuberculous. A year and a half ago or more, a young woman consulted me for a cough and general malaise, in whom I discovered unmistakable evidence of apex catarrh. Not long ago I examined her again, and found that all signs of disease had disappeared and she seemed to be in perfect health. The only climatic change she was able to take was a summer outing. All of you, doubtless, can cite similar instances.

Equally important is it for us to bear in mind that the climatic treatment is not applicable to all cases and all stages of pulmonary tuberculosis. This ought to be a self-evident truth, but from the lamentable and disastrous mistakes physicians make in this respect, it is evident that it is not. To send a tuberculous patient away from home, who has drifted into a septic condition for instance, with fever, anemia, and an irritable heart, is to shorten his life probably, and cause him and his friends unnecessary suffering and distress, besides bringing discredit upon climatic treatment in general. At home and in bed is the place for him.

The question of what cases are proper and suitable to send away for the climatic cure is one which must first be settled, and it is one which must be thoroughly studied in connection with each individual case. The constitution and vigor of the patient; his inherited tendencies; the activity and extent of the disease; his age, habits, temperament, material and social condition, must all be taken into account. We must possess a thorough knowledge of the disease in general in all its phases, and in each individual case, together with its rate of progress; a thorough knowledge of the individual himself; and a thorough knowledge of climates in general; and then are we in a condition to apply wisely, or refrain from applying unwisely, our climatic therapeutics. Incidentally I would here remark that we ought to use all our efforts and skill in detecting the disease at the very earliest moment, the time when it is most amenable to treatment. Why lose precious time in waiting for marked dulness and râles when a slight lack of resonance, a bit of roughened respiration, a hack now and then, and a condition of malnutrition indicate plainly enough that the disease already exists? A pity it is that so few cases come to us in the pre-tubercular or early tubercular stage, when we could use our climatic therapeutics to the greatest advantage; but unfortunately the hope which "springs eternal in the human breast" leads in this case to a disregard, on the part of the patient, of the inception of the disease and a neglect of obtaining timely medical advice.

---

[4] Hare: System of Practical Therapeutics, vol. i, p. 431.

[5] Circular of Adirondack Cottage Sanitarium.

"If we have to define the stage of the disease," says Lindsay,[6] "most suitable for climatic treatment, we should say the quiescent, as distinguished from the active stage, rather than any of the three stages familiar to medical literature. In other words, the first and third stages, provided *they be chronic and inactive.*" The second stage, or the stage of septic infection, when the disease is active and accompanied with much pyrexia, is regarded, I think, by most authorities as unsuitable for the climatic treatment; and yet if patients in this stage even could be in a climate such that they could lie on a couch all day out of doors and have equally as good treatment as at home, it seems to me there would be a chance of materially shortening it and more quickly arresting the active morbid process.

Having then taken into consideration all these questions and decided that a given case is a suitable one for the application of climatic therapeutics with the hope of a *cure* or *arrest*, what climate will you select? We have practically but two kinds to choose from, the low and the high. Each must possess certain common characteristics: purity of the air, abundance of sunshine, dryness of the air and soil; and in addition, the higher possesses rarefaction of the air, greater diathermancy, and a more tonic effect. The majority of cases which are proper to be sent away at all, can, I believe, be sent to the medium and high altitudes, for I do have the most thorough conviction that altitude, with all its means, materially increases the chances of a cure, other things being equal. Not all cases are suitable for the altitude treatment, some on account of the general condition and some on account of the local. A certain amount of strength and vigor are a prerequisite, I think, especially in the higher altitudes; but I believe the chances are better for a cure or arrest in cases proper for it, than in climates without altitude. One important and common cause of pulmonary tuberculosis, I believe, is insufficient lung expansion and ventilation. The patient may never have learned to breathe properly and fully, and the air he has breathed has been impure indoor air. Now, it is most essential that these conditions should be reversed as soon as possible. He should expand his lungs with pure aseptic air, and that is just what altitude compels him to do. Nature supplies him with the most natural and complete method of pulmonary gymnastics. "The use of natural, rarefied air," says Williams,[7] "such as we obtain from diminished barometric pressure at high altitude stations yields wonderful results in phthisis." The local effects upon the chest and its contents have been observed to be as follows: hypertrophy, or more complete development of the healthy lung tissue; compression of the diseased parts, through emphysematous dilatation of the neighboring portions of the lung. And in consequence of these changes there is increased thoracic expansion accompanied by diminution of the number of respirations, and a slowing of the pulse. The tonic effect of altitude is increase of appetite, improvement of sanguification and general nutrition, strengthening of the heart and circulation, raising of muscular and nervous energy and of activity of the skin.[8]

As I have before said, to the majority of cases suitable for climatic treatment the medium and high altitudes are applicable. The high altitudes have been found beneficial[9] (1) in incipient phthisis; (2) cases of imperfect expansion of the thorax; (3) hemorrhagic phthisis; (4) chronic pleurisy and unresolved pneumonia; (5) patients with more advanced disease showing some consolidation, but no excavation nor any serious disturbance; (6) cases of cavity, if not large and the disease is quiescent. As to anemia and the "fibroid phthisis" of Sir Andrew Clark, authorities differ. As to the latter cases I agree with Lindsay, that "if there be a fair amount of functionally active lung, the high altitude climate may be tried."

The contra-indications to the high altitudes are: (1) Advanced age; (2) septic condition, when the disease is active and pyrexia constant; (3) double cavities with or without pyrexia; (4) cases in which there is great irritability of the nervous system; (5) diseases of the kidney, liver, or heart; (6) diabetes; (7) great loss of pulmonary tissue; (8) emphysema; (9) tubercular laryngitis. Observers differ as to the least degree of elevation at which the special characteristics of altitude are manifested, probably, as Solly[10] says, it is about 2,500 feet. I should include in the medium altitudes places of from 1,500 to 3,000 feet, and in the high from 3,000 to 7,000 feet. First, let us consider the available resorts of medium altitude some of which can be utilized the year round, which is better; and others for only portions of the year. In this country we have various places in the highlands of the great Appalachian System. For warmer portions of the year and possibly for the whole year, if proper accommodations existed, we have our own White Mountain region represented by such places as Bethlehem and Maplewood 1,459 feet above sea level; Dublin 1,600 feet high; Jaffrey near by; Gilmanton, Whitefield, Jefferson, and others possessing about the same conditions. At Bethlehem and Maplewood the mean temperature of nine seasons for the three summer months was 64.91° F.,[11] the relative humidity 65.51°; and there were on an average only two days each month when an invalid could not go out with safety and comfort. The accommodations are good and abundant.

At Dublin the mean temperature for the four summer months of last year (1893) was 62.45° F.; the average number of clear, partly cloudy, and cloudy days for each of these months was 14.7, 6, 7, or 27.7 days per month when an invalid could presumably be out of doors. The prevailing wind was south-west. The average death-rate for three years (1889–91) was 1 to 99.9, and the average age 72.6 years.[12] Pulmonary tuberculosis is said to be almost wholly unknown in the town. The summer life here is essentially a cottage one.

---

[6] Climatic Treatment of Consumption.

[7] Pulmonary Consumption.

[8] Weber: Croonian Lectures on the Hygienic and Climatic Treatment of Chronic Pulmonary Phthisis.

[9] Knight, Weber, Williams, Lindsay, Solly.

[10] Hare: System of Practical Therapeutics, vol. 1, p. 418.

[11] Geddings: Bethlehem and Maplewood, reprint from the Climatologist, 1891.

Next we have various places in the Adirondacks which Osler [13] says he prefers to other American resorts for early cases. There are very many places of an elevation of from 1,500 to 2,000 feet; Lake Placid, 1,863 feet; Blue Mountain Lake, 1,800 feet; the Lower St. Regis Lake (Paul Smith's), 1,600 feet; Saranac Lake, 1,752 feet. At the latter place is situated the admirable "Adirondack Cottage Sanitarium," with a capacity for 75 patients who have the skilful advice and great experience of Dr. E. Trudeau, who has done so much work in this department of medicine. "Only those who are in the first stage of consumption or convalescing from other pulmonary diseases, or in the opinion of the examining physicians are likely to be benefited by the sanitarium treatment, and can afford to pay no more than the low price demanded here for board, are admitted." [14] All medical attendance is free, and five dollars a week is charged for board and lodging.

The Asheville Plateau has become well known as a resort of medium altitude, especially through the work of Dr. Karl von Ruck, whose admirably conducted sanitarium is situated in Asheville, which is 2,350 feet high. The mean winter temperature (for four years, 1888–92) is 45.79° F., and the mean summer temperature 65.89° F.; the mean relative humidity is 66.78°, and the mean number of days without sunshine per month is 0.75. Dr. von Ruck, from a record of 500 cases reports a cure or arrest in 35 per cent., and improvement in 56.[15]

In South-western Texas and Southern California, inland, are places of an elevation of about 2,000 feet. Boerne, 1,300 feet high, about thirty miles north-west of San Antonio, Texas, is a well-known health-resort in that State, as is also San Antonio itself. The western part of Kansas consists of an extensive plateau of from 1,500 to 4,000 feet, and a mean annual temperature of 49° F. Kansas is said to be a very healthy State and highly favorable to consumptives.[16]

Europe is too far away to be available ordinarily, although there are many well-known resorts for pulmonary tuberculosis of medium altitude. Montreux, about 1,200 feet high, and the more elevated regions above it; Les Avants, 3,500 feet; Glion, 2,200 feet; and others are said to give favorable results. I know personally one patient with first-stage phthisis, who seems to have recovered at Les Avants. Then there is Görbersdorf, 1,700 feet high, with its famous sanitarium; and many others in the Pyrenees and lower Alps.

Of the high altitudes I shall speak only of that portion of the eastern slope of the Rocky Mountains lying between the elevation of 4,000 and 8,000 feet, embracing portions of Wyoming, Colorado and New Mexico. Practically the high altitude region is represented to us by Colorado, and is the only region of which I can speak from personal experience. The marvellous results obtained by the high altitude treatment at Colorado Springs and Denver, from which places we have the fullest and most exact reports of cases, are doubtless familiar to you. And when we have more sanitariums constructed on the most approved principles in the Colorado region, the results, I believe, will be still more favorable. Colorado Springs, the elevation of which is 6,022 feet, has a mean annual temperature of about 47° F. and a relative humidity of about 48°. For the three years 1884 to 1887 inclusive, during January and February, there were 106 clear days, 3 cloudy, and 7 stormy days; while in Boston at the same time there were 53 clear, 59 cloudy, and 73 stormy days.[17] According to Solly, during the three winter months, the cloudy days do not average more than three a month; [18] and for five years the average number of clear days at this place was 194, fair 128, and cloudy 43, so that for 322 days the invalid can be out of doors and have sun. A day of winter sunshine is about eight hours. Nearly all the other meteorological conditions are also highly favorable; the soil is very dry and "the natural drainage is perfect." There are many other places, in the region about, which probably possess nearly as good conditions as Colorado Springs, but they are not so well known, save Denver, which has the objection of being a large city; but Colorado Springs has probably the best accommodations. I might mention Manitou near Colorado Springs, Idaho Springs, Salida, Georgetown, Boulder, Pueblo, and Estes Park. This latter place is most beautifully situated in close proximity to the mountains and is about 7,000 feet high. With proper accommodations it would be an ideal high altitude resort, and I trust the time will soon come when it will afford well-appointed sanitariums. In Wyoming, we have Cheyenne, 6,052 feet high, with a mean temperature not lower than 43.6°,[19] and in the north-western portion the famous Yellowstone Park, 6,000 feet high.

New Mexico offers many resorts of high altitude warmer a little than those in Colorado, but otherwise possessing about the same characteristics. I will mention Las Vegas, 6,500 feet high, whose mean annual temperature is 51°, and the humidity about 45; and Santa Fé, 7,000 feet high, of about the same temperature and humidity. The air is very dry. "The skies are commonly clear and the sunshine fine. . . . About 280 days each year are observed as clear and fair." [20] I am informed by Dr. Atkins, of Las Vegas, that in both these places there are good accommodations at reasonable rates and good medical attendance. Albuqueque, over 5,000 feet, and Silver City, between 5,000 and 6,000 feet, are also classed, by Dr. Atkins in a private communication, among "our best towns." Just beyond the southern border of New Mexico in Texas is El Paso, which has "one of the dryest climates in the Union," says Dr. Taylor.[21] It is 3,950 feet high, has an average temperature of 55.5° F., and a relative humidity of 48; the number of clear and fair days are 330. There are great daily and yearly variations of temperature, but this is more or less the case in all high altitude stations; the accommodations are fairly good, I should think.

The Engadine Valley is the great high altitude resort for pulmonary tuberculosis in Europe; and Maloya, Samaden, Wiesen, Pontresina and Davos are the principal places for invalids, all of which places I have had the pleasure of visiting. The elevation is from 5,000 to 6,000 feet. Davos, 5,124 feet high, is the best known and most frequented of them all. The mean annual temperature is about 37° F., and the mean relative humidity 78. In the yearly average one may reckon 99 clear days, 94 dull, and 17 foggy.[22] It is at its best in winter, owing to the great purity of the air, the number of clear days, and the calm atmosphere.[23] The accommodations are excellent and under careful medical supervision; and in this respect it possesses a great advantage over most of our own high altitude health-resorts. For an attractive account of the life there I will refer my readers to the papers of the late J. Addington Symonds, who lived many years there. I have a vivid recollection of the exhilaration produced by the deliciously pure dry air and the warm sunshine.

---

[12] Dr. Hamilton Osgood: private communication.

[13] Practice of Medicine, p. 251.

[14] Circular of the Adirondack Cottage Sanitarium.

[15] Karl von Ruck: The Climate of Western North Carolina, reprint.

[16] Evans: Phthisiology.

[17] E. O. Otis: Hints to Physicians sending their Consumptive Patients to Colorado, Boston Medical and Surgical Journal, 1887, vol. cxvii, No. 24.

[18] Invalids' Day in Colorado Springs, reprint, 1888.

[19] Evans: Phthisiology.

[20] Atkins: The Health of Las Vegas, New Mexico.

[21] The Climate of South-western Texas, etc. Transactions of the American Climatological Association, 1888.

In a comparison of the results obtained in high and low (less than 2,500 feet) climates, Solly gives the following *résumé:*[24]

Low Climates.

	No. of Cases.	Cured.	Benefited.
All stages	4,167	10%	36%
First stage	714	20	44
High Climates.			
All stages	709	36½	74
First stage	350	62	84½

As to the length of residence in the selected climate, I can only repeat what I wrote in a paper upon Colorado several years ago:[25] "In whatever climate one finds his lung trouble improving steadily, there he should remain, not only until all signs of mischief disappear, but, in many cases at least, as long as he lives."

In closing this paper I cannot give a better summary of the value and limitations of climatic therapeutics than to quote a sentence from Lindsay:[26]

"Climatic treatment," he says, "is not a complete therapeusis, and will be only a snare if so interpreted. It is a means to an end, not an end in itself; a powerful adjunct to hygienic and medicinal measures, not a substitute for them; a channel of escape from vicious habit and abnormal mode of life, not a mysterious remedy or an unfailing specific. Much observation and inquiry are still indispensable before its sphere and precise limitations can be fixed with exactness, and the medical profession must be prepared in the future, as they have been in the past, to face much obloquy in their application of a remedy which still defies scientific precision, in this as in so many other departments of knowledge."

"Science moves, but slowly, slowly creeping on from point to point."

TUBERCULOSIS IN CATTLE.[1]

BY FREDERICK H. OSGOOD, M.R.C.V.S.,

Professor of Veterinary Surgery in Harvard University.

Tuberculosis in cattle is a subject of equal importance, not only to the veterinarian, but to the medical man and public generally. Its eradication from the animals from which we derive so large a portion of our nutrition is of the utmost importance from the standpoint of public health. The subject has not been considered of enough importance in our own State until 1892 to receive even passing attention from the government, when a bill was passed entitled "An Act to More Effectually Prevent the Spread of Tuberculosis among Cattle." Under the provisions of the act, an earnest endeavor has been made by the "State Cattle Commission" to do all in their power towards the prevention of the disease; but, as in all matters of public health, the community from which the legislators are drawn are not sufficiently informed upon the subject to fully understand or appreciate the importance of radical measures in such a disease. Consequently, the officers upon whom the enforcement of this law depend are prevented by lack of efficient legislation from carrying on the work in a manner by which the best results could be obtained.

The insidious nature of the disease has much to do with the comparative slowness with which professional and public attention has been directed to it; but the strides which it has made and the hold which it has gained upon our neat stock render it the most important question affecting the future well-being of the bovine species.

PREVALENCE.

Owing to the facts that up to within a very short time we have been unable to make a reasonably sure diagnosis, and that we have no systematic inspection of our abattoirs and slaughter-houses, there are no available statistics as to the prevalence in our immediate vicinity. All we can do is to reason by analogy from such statistics as are obtainable. The following abattoir statistics showing the percentage of tuberculous animals are of value in this connection:

Prussia	6.3%
Berlin	12.
Dresden	14.4
Bromberg	26.2
Upper Silesia	9.5

In England, during an outbreak of contagious pleuropneumonia extending over a period of sixteen months (1890–91), there were slaughtered, as being infected or having been exposed, 12,000 animals, all of which, under the direction of the Department of Agriculture, were subjected to a critical post-mortem examination by skilled veterinary surgeons for the purpose of ascertaining the prevalence of tuberculosis. From these examinations were derived the following results:

Cows	16.09%
Bulls	1.53
Cattle over one year	2.77
Cattle under one year	1.2

Of the 12,000 examined, 12.22 per cent. were found tuberculous. In some herds the rate was as high as 75 per cent., and only a few herds were entirely free. Earl Spencer's herd of Jerseys, containing twenty odd animals, was tested by tuberculin, and all reacted.

---

[22] Handbook to the Health Resorts in Switzerland, by M. Loetscher, M.D., Zurich.

[23] Von Ziemseler's Handbook of General Therapeutics. Weber: Treatment of Disease by Climate.

[24] Hare: System of Practical Therapeutics, Art. Climate.

[25] Hints to Physicians sending their Consumptive Patients to Colorado, Boston Medical and Surgical Journal, 1887, vol. cxvii, No 24, p. 569.

[26] Climatic Treatment of Consumption.

[1] Read before the Norfolk District Medical Society at Brookline, March 27, 1894.

Post-mortem examination of the entire herd confirmed the diagnosis.[2]

At a recent conference of the Sanitary Association of Scotland, Professor Wright presented estimates that tuberculosis in cows causes an annual loss to the owners of dairy stock in Scotland of £440,000 sterling, or $2,200,000.[3]

Professor Janson, of Tokio Veterinary School, in his "Report of the Contagious Diseases of the Domestic Animals in Japan," says: "Tuberculosis is very frequent in mankind; but it has never been witnessed among the native cattle, though it prevails among those imported into the country, especially in the Devons, Ayrshires, Americans and their crossings with the indigenous breed. According to the abattoir statistics, 50 per cent. of the American cattle and their crossings are tuberculous."[4]

From November 1, 1888, to November 1, 1889, Dr. Faville examined 5,297 cattle killed in the vicinity of Baltimore, 159 of which were tuberculous, more than 3 per cent.[5]

Any reliable estimate of the percentage of tuberculous animals in a given area cannot be given for reasons before mentioned, but that it exists to an alarming extent none deny. From my own experience, the percentage is variable in different herds bearing a direct ratio to the surroundings and conditions under which such animals have been perpetuated and kept. From the results of 163 examinations by tuberculin test, which I have recently made among cattle widely distributed, which had been periodically examined by physical examination (at which time any animals manifesting marked symptoms of tuberculosis had been destroyed), 29 showed marked reaction, 16 of which were apparently in the pink of condition.

In one instance a family herd of five animals, kept especially to provide the children with a pure milk-supply, all reacted, and post-mortem examination confirmed the diagnosis.

The causes are exciting and predisposing, both of which seem in a manner to be essential, owing to the fact that the bacillus is so exacting as to suitable conditions for its development and propagation, and each of which must be provided against, so far as possible, in any plan of prophylactic treatment before it will prove efficacious in the suppression of this disease. Koch has demonstrated that the sole exciting cause is the bacillus, but there are many accessory or predisposing causes which are important to consider.

While the preponderance of evidence points clearly to the conclusion that tuberculosis is not, as a rule, congenital, we recognize at the same time that it may be, and occasionally is. So much cannot be said as to the transmission of a predisposition or diathesis.

INFECTION.

Infection may, and usually does, occur either through the respiratory or digestive tract, while it is not impossible through the sexual organs or skin. That any portion of a tuberculous animal or any secretion of such animal, if it contained the bacilli, would be a source of danger, all agree.

That the milk from any animal suffering from tubercular mammitis always contains the bacillus. The result of scientific experiment shows that the milk of an animal suffering from tuberculosis, even though the udder is not involved, may, and occasionally does, contain the bacilli. It is not uncommon to find tuberculosis in calves, in which cases the lesions are far more common in the digestive than in the respiratory tract, leading us to the conclusion that infection took place through this channel.

DISSEMINATION AND PROPAGATION.

Infection by direct inhalation is, I believe, the most common among cattle, regardless of the numerous statements of those who have confined their observations principally to the human family. If such is not the case, through what channel does the germ gain entrance? Certainly it is only a matter of time, under suitable conditions, after the introduction of a tuberculous animal into a supposedly healthy herd, before a large percentage become victims of the disease.

Since by far the greatest number of cases of tuberculosis in milch cows apparently begin in the lungs, it is fair to presume that infection occurs as frequently, if not more so, from inhalation of dust charged with germs.

Koch says: "Animals produce no sputum, so that during their life no tuberculous bacilli gets from them into the outer world by means of the respiratory passage. In the excrements of tuberculous animals, the bacilli appear to be only exceptionally present. On the contrary, it is a fact that the milk of tuberculous animals can cause infection. With the exception of this one way, therefore (that is, through the milk), the tuberculous virus can only have effect after the death of the animal, and can only cause infection by the eating of the meat." But the veterinarian, who is familiar with the lesions in the respiratory organs and the general symptoms presented, must take exception to any such misleading statement, which is capable of doing incalculable harm if allowed application in practice in the arrangement of our cattle.

The lesions in the lungs not infrequently show ulceration of the wall of the tubercular nodule, by which a communication is formed with the nearest bronchial tube, into which portions of the contents are evacuated and subsequently expelled through the nostrils. The mucous membrane of the larynx, trachea and bronchial tubes may all be the seat of tubercular nodules, which undergo softening when they are expelled through the same channels. From the anatomical construction and position in which the head is held, it is not uncommon to find a profuse discharge of semi-purulent mucus from such animals. Again, experiments made by equally careful investigators seem to point to the fact that the nasal, vaginal and fecal discharges frequently contain the bacilli when the respective organs are tubercular. In six cows suspected of intestinal tuberculosis, "Siegen" has in four of them detected Koch's bacillus in the feces. In examining the muco-purulent discharge from the vagina of four cows suspected of suffering from uterine tuberculosis, he found Koch's bacillus in two of them; and the autopsy of the animal fully confirmed the diagnosis.[6]

Such infected discharges, having gained exit from the body, are lodged upon the floor, manger or other fittings of the stable, where they remain until they become thoroughly dry (retaining at the same time their virulence), when they become pulverized and float about as dust in the atmosphere, and liable at any moment to gain access to the system of other animals, where, if conditions are favorable, the same process is repeated.

---

[2] Report P. H. Brice, M.D. (P)

[3] Veterinary Journal, November, 1893, p. 391.

[4] Fleming's Journal, January, 1894, p. 45.

[5] From Inspection of Meat and Milk, by A. W. Clement, Maryland Medical Journal, February 1, 1890.

[6] Report of Paris Congress for the Study of Tuberculosis, 1893.

Further, it is not at all unusual in our modern stables to see a common trough running in front of the animals, from which they all drink. This can be easily remedied if its importance is realized. Observations have led me to believe that cattle tied in rows together are more frequently affected than those confined in boxes. Tuberculosis spreads more rapidly in winter, when animals are housed, than during the pasturing season.

The following table prepared by "Rockl" is of interest in this connection: Of 51,427 cattle slaughtered in 1888–89 in abattoirs and butcher-shops in Germany, the percentage of infection according to age was as follows:[7]

Up to six weeks old	0.6 %
From six weeks to one year	0.6
From one year to three years	11.4
From three years to six years	33.1
Over six years	43.4
Account not given	11.2

Such statistics, showing a very high percentage of infection in city dairies, where they are constantly housed, as against the relative freedom of young cattle, as well as the cattle on our Western plains (who lead an out-door life), point to the conclusion that atmospheric infection, as a result of prolonged and intimate contact, rather than the milk-supply from mother to calf, is the common cause.

Inhalation experiments have been repeatedly made with positive results in a large percentage of cases. Professor Arloing, Director of the Lyons Veterinary School, says: "It is no longer possible to entertain any doubt as to the dangers with which tuberculous cattle threaten their neighbors and descendants. Such animals expel the virus by the respiratory and digestive passages and by the mammary secretions. The virus may infect healthy creatures when introduced into their digestive apparatus with the food or drink, or through the respiratory organs with the air." Oft-repeated experiments made by men in whom confidence can be placed have put these facts beyond all dispute; and various governments both at home and abroad have recognized this by placing tuberculosis upon their list of the contagious diseases of animals, France being the first to do this in 1887.

PREDISPOSING CAUSES.

Of the predisposing causes, hereditary predisposition is the most potent. For some reason or other, the bovine species is apparently more predisposed than any other class of animals; whether this is due to the conditions to which they are subjected, or is a natural result of the normal high temperature, is an open question.

It is observed that an animal is not at every time an equally favorable subject for the development of the bacillus, for we often observe upon post-mortem examination old points of infection where the nodule has become calcified or encysted, pointing to the belief that at time of infection the system was in such a condition as to furnish a suitable breeding-ground so that they could multiply and spread; but the tone of the system being improved by the early removal of the predisposing cause, it gradually loses these favorable properties, changes itself into a bad breeding-ground, and so sets a boundary to the further growth of the bacilli.

The effect of the present system of management of our dairy stock is to deprive them of their natural resisting power against disease. This is due largely to the fact that the price received by the farmer for milk is so low that in order to produce it at a profit he is obliged to force his animals to their extreme limit by constant breeding, abnormally prolonged lactation and over-stimulating food, which undermines the constitution and renders the tissues prone to degenerative change.

DIAGNOSIS.

The only positive means of diagnosis up to within a very short time was microscopic examination of, or inoculative experiments with the nasal, vaginal or mammary secretions, whereby the presence of the infective germ could be demonstrated, which methods could not be put into general application.

Physical examination is very difficult and unsatisfactory in a disease which may affect so many organs and tissues. The recognition of disease in the early stages is almost impossible, because in whatever organ it may be situated the changes are so slight that the functions of the organs are not seriously interfered with, and consequently no marked symptoms are developed.

There are certain anatomical difficulties in the way of making a perfect physical examination of cattle that are not met with in man. In cattle fed for milk or beef the digestive function is all-important, and the abdominal organs have been developed by nature and breeding until they encroach upon the thoracic cavity. The first stomach or rumen, with a capacity of fifty-five gallons, distended with food, fluids or gas, presses forward against the diaphragm, crowding it into the thorax, thereby materially altering the sounds elicited upon percussion over the posterior portion of the lungs. This influence is so irregular, and at times so great, as to render the results obtained by percussion in this region of but little value. Auscultation is also interfered with, by the soft breathing of cattle, by the thick layer of interlobular connective-tissue, by the confusing sounds which originate in the rumen, as well as by the thick skin and mass of muscular tissue interposed between the ear and lung. When the tubercular lesions are located in the liver, intestines, mesenteric and mediastinal glands, it is impossible to make a positive diagnosis till after death, but, fortunately, we now have an agent by the use of which the disease can be detected in its early stages.

As a result of the researches of Dr. Koch, Professor Gutman of the Veterinary Institute of Dorpat, Russia, experimented upon cattle, and found the high reaction in tubercular animals equally constant, since which time tuberculin has been used with almost uniform satisfaction in the detection of tuberculosis in cattle. "Bollinger says tuberculin is a most valuable aid to diagnosis in the case of cattle suspected of tuberculosis."[8]

Satisfactory results have been reported by the imperial sanitary office of Berlin, by the Toulouse Veterinary School and by the Copenhagen Veterinary School.

---

[7] Report of P. H. Bryce, M.D., to the Provincial Board of Health, Toronto, p. 25.

[8] London Veterinary Journal, February, 1891.

The Belgium Minister of Agriculture issued a circular November 22, 1892, giving official sanction to test inoculation for tuberculosis.

Professor Duckerhorf says: "The results are absolute and gratifying, and show that tuberculin is a reliable agent for determining the presence of tuberculosis in cattle."[9]

The conclusions arrived at by the Paris Congress of 1893 for the study of tuberculosis were, "That notwithstanding the negative results, which are happily very rare, it is an undeniable fact that the use of tuberculin constitutes by far the best means for detecting the existence of tuberculosis in the domestic animals."[10]

The value of tuberculin as a diagnostic agent in our own country is vouched for by the Bureau of Animal Industry; Professors Law of Cornell University; Pierson of the University of Pennsylvania; Drs. Peters, Faust and Cooper Curtis, inspectors for the New York State Board of Health; and J. J. McKenzie of the Provincial Board of Health. Regarding my own feeling in the matter, based upon the results or 163 test inoculations, I believe that in it (as the means whereby we can recognize the disease in its early stages) we have the solution of the problem whereby we cannot only prevent the spread, but very materially reduce the prevalence of the disease.

In the inoculations which I have lately made, the temperature of the animals in 118 cases was taken every two hours, from 8 A. M. to 8 P. M., after which an injection of two cubic centimetres of a ten-per-cent. solution of tuberculin was injected (in ordinary-sized animals), the temperature being again taken at 6 A. M., and once in two hours to 6 P. M.

I have observed that animals, after a marked reaction, when being tested a second time, three weeks later, did not show so high a temperature. Two cases of interest have occurred, both of which, by physical examination, would be immediately condemned as tubercular; but, much to my surprise, neither of them showed any reaction upon inoculation. Whereupon I inoculated them a second time at the expiration of three weeks, with a second negative result; but so certain was the owner that one of the animals was tubercular that he ordered her destroyed. An autopsy was made, and the diseased organs sent to Prof. William Whitney of the Harvard Medical School, who, after a thorough investigation, pronounced the organs free from tuberculosis. At the expiration of two weeks the second animal died, and was subjected to the same examination, with like result.

This, together with the fact that I have never made an autopsy where I had obtained a positive reaction by this test, where the presence of the bacillus in the diseased tissues was not demonstrated either by a microscopic examination or by inoculation into guineapigs, leads me to believe that its practical value is such that it should be taken advantage of by every owner of animals kept for the production of milk.

ITS RELATION TO THE PUBLIC HEALTH.

Dr. Brush, who is a physician and cattle-breeder, in his paper on the "Coincident Geographical Distribution of Tuberculosis and Dairy Cattle," read before the New York State Medical Society February 5, 1894, calls attention to the fact that in lands like Egypt the indigenous inhabitants retain immunity while associating for a long period with consumptive immigrants; while, on the other hand, in regions like Australia and the Sandwich Islands, the inhabitants have become infected after the introduction of dairy cattle. The best dairy cattle breeds, he argues, are the tubercular breeds, while others not classed as dairy cattle are exempt from tuberculosis, owing to their vigor and health. Again, in all dairy countries, the prevalence of tubercular consumption is a settled fact, while the only countries at all in doubt are those where the dairy products are supplied from other sources than our domestic cows. Referring to China, he spoke of the pure Chinese as a people who did not use milk, while the Tartars in that country were meat and milk consumers; and therefore the observations of medical men are very confusing, and they confess that they cannot understand why the disease prevails among the dominant Tartar class, and not among the poorer Chinese, who, according to all preconceived notions, ought to be tubercular. The doctor then contrasts the conditions in Spain and Morocco, where the climatic conditions are about the same. "Morocco, where there are no European dairy cows, is exempt from tuberculosis; while in Spain and Portugal, where dairying is carried on in the European style, tuberculosis prevails."

The question of the infection of tuberculosis being conveyed by the milk is often of even greater importance than is infection by flesh, for the twofold reason that the former is largely consumed by infants, and is taken generally in an uncooked state; and that the cream and butter from such milk are as dangerous, if not more so, than the milk itself.

(1) All agree that the sole exciting cause of tuberculosis is the bacillus or spores.

(2) Tuberculosis prevails to an alarming extent among our dairy cattle.

(3) While it may occur in any organ or tissue of the body, some one or other of the glandular structures is almost universally involved.

(4) The tubercle bacillus is constantly present in the diseased tissue.

(5) If conveyed into the system of men or animals under suitable conditions, tuberculosis, with the characteristic tissue change, is sure to follow.

(6) Tuberculosis localized in the mammary gland is of not uncommon occurrence in cattle. Milk from such animals is found to contain the bacilli, and is capable of producing the disease.

Unlike other affections of the mammary gland, tuberculosis does not at once change the appearance and quality of the milk secreted. It is a fact that for months after the disease has appeared in the gland the milk is to all appearances normal, and may be sold and consumed without arousing the least suspicion. Authorities are, however, not fully agreed as to whether the milk from tubercular cows in which the udder is not involved should be considered dangerous; but the results of experiment have been positive in a large number of cases where no recognizable disease of the udder was manifest.

Professor Ernst and Dr. Peters report, from the result of their experiments conducted under the most exacting conditions and with every possible precaution against contamination, that the proportion of positive results in a lot of cows affected with a high degree of general tuberculosis was 80 per cent.; in a lot affected with only a moderate degree, 66 per cent.; and a lot in which the disease was localized in the lungs, 33 per cent. The bacilli could only be demonstrated in one specimen of the milk, showing that inoculation experiments are the most certain guide as to whether the milk is infectious or not. In conclusion, Dr. Ernst says:

---

[9] Journal of Comparative Medicine, October, 1892, p. 637.
[10] London Veterinary Journal, December, 1893, p. 411.

"First, and emphatically, that the milk from cows affected with tuberculosis in any part of the body may contain the virus of the disease.

"Second, that the virus is present whether there is disease of the udder or not.

"Third, that there is no ground for the assertion that there must be a lesion of the udder before the milk can contain the infection of tuberculosis.

"Fourth, that, on the contrary, the bacilli of tuberculosis are present, but with no discoverable udder lesions."

In Bulletin No. 3 of the United States Bureau of Animal Industry (1893) is the report of the inoculation of guinea-pigs with milk from six tuberculous cows, where the udder was not visibly diseased, in which positive results were obtained in two cases and negative in four.

J. J. McKenzie reports 40 per cent. contained bacilli, in animals where no lesions could be found in udder by post-mortem examination.

Some authorities, however, still contend that the udder is diseased when the milk is infected, but that the disease escapes observation. However this may be, if such is the case, the mere fact that the udder may be diseased and the disease not recognizable simply casts a suspicion upon all milk from tuberculous animals. When we consider, therefore, the prevalence of tuberculosis, and take into account the hidden character of the disease, a certain amount of suspicion rests upon all milk while these conditions exist.

While I do not for a moment contend that animal tuberculosis is the main cause of consumption in the human family, it is, however, an element of danger that should be removed.

PROPHYLAXIS.

The remedy for such a condition of affairs can only be provided by legislation, which, to be efficient, must be stimulated by public opinion.

It has recently been demonstrated, in the eradication of contagious pleuro-pneumonia, that half measures are of no use in dealing with contagious disease. The only hope of eradicating the disease from a herd and rendering the use of the products safe is the prompt destruction of all infected animals. The diagnosis is now made possible by the use of tuberculin, after which the premises should be thoroughly disinfected. Tubercular attendants should not be allowed to care for dairy cattle.

It is useless for us to think of stamping out the disease by separation and slaughter of the affected animals alone. Although this step must be taken, it would be simply so much money thrown away did we not go further and look to the hygienic surroundings, taking into consideration what changes were necessary in our present system of breeding and management to enable us to raise a class of animals free from this fatal predisposition and capable of withstanding the effect of the bacillus. Radical changes should be made in a large majority of the stables where animals are confined, thus providing suitable ventilation and drainage. The periodical examination of all herds by men of technical skill, who will take advantage of the modern scientific methods and the restriction by law so that no animal should be brought into a stable until it had been submitted to the tuberculin test, except it be vouched for by the inspector of a surrounding district.

Quarantine measures are feasible against cattle coming into the State to remain (since a satisfactory examination can now be made and completed without detaining the animal over twenty-four hours). The national government should enforce the law so that all conveyances in which animals are transported should be thoroughly disinfected after each shipment.

◆

THE TREATMENT OF LARYNGEAL PHTHISIS.[1]

BY S. G. LANGMAID, M.D., BOSTON.

A PORTION of what I shall say about the especial treatment of the tuberculous throat is inseparable from the consideration of the subject of general treatment about which Drs. Sabine and Otis will speak later on.

The scope and character of the papers read to-night is clinical rather than scientific. I shall offer a similar plan in what I have to offer in my own department.

Laryngeal phthisis has been defined as "a chronic affection of the larynx attended by tumefaction and ulceration of the softer structures, and frequently by perichondritis and caries of the cartilages arising from the local deposit of tubercle which, as far as experience goes, is invariably preceded by a similar disease of the lungs."[2] It may be the cause of a simple, but persistent, catarrhal affection, or it may result in serious obstructive and destructive ulcerative lesions.

Questions of pathological interest, such as the existence of tubercles in the laryngeal muscles, of the nature of the ulcerations, whether they are ever catarrhal, namely, the result of inflammation or are always due to the presence of tuberculous nodules, cannot be considered.

Nor shall we enumerate the signs by which tuberculous ulceration can be distinguished from syphilitic, lupoid or so-called catarrhal lesions. However important such signs are for the laryngologist, they can be of no real importance to the general practitioner.

The fact is that a large number of cases of tuberculosis of the lungs are complicated by disease of the larynx which we now know is tuberculous. The suffering caused by the laryngeal lesions is frequently so great as to render all general treatment of the disease quite abortive. It will not be unimportant, then, to rehearse briefly the gross pathological changes to which tuberculosis gives rise in the larynx, and to state what treatment is found efficacious in relieving suffering and prolonging the life of the patient.

The symptoms of laryngeal phthisis are aphonia, dysphonia, dysphagia, stridulous breathing, dyspnœa and cough. There have been few cases of laryngeal phthisis recorded in which it existed without previous or coincident disease of the lungs.

It has always seemed strange to me that, as laryngeal phthisis so often coexists with tuberculosis of the lungs, it should not oftener be an isolated disease. Although I may say that I have never seen it in the larynx when either the rational or physical signs did not point to disease of the lungs, yet I have had my attention

[1] Read before the Norfolk District Medical Society, March 27, 1894.

[2] Mackenzie.

attracted to the chest in a few cases by the pre-tuberculous laryngeal anæmia with or without swelling in certain elective regions.

A persistent laryngeal catarrh in patients predisposed to tuberculosis always excites my fears.

I have spoken of anæmia of the larynx. This is, perhaps, as common as any of the early symptoms. Infiltration of the ary-epiglottic folds is also an early symptom, as is infiltration of the inter-arytenoid fold. Later on, this infiltration may put on a coxcomb appearance, caused by granulations covering an ulcer. Aphonia may arise from the mechanical effects of this infiltration or from a paresis of the vocal muscles or from both causes.

As the disease progresses the vocal cords and ventricular bands may become thickened and ulcerated. The epiglottis does not long escape, and the amount of disease varies from one or more small ulcerative spots on the laryngeal surface of the epiglottis to an enormously œdematous enlargement with extensive ulceration.

A common laryngoscopic picture is an ulcerated epiglottis, swollen, club-shaped arytenoids, thickened and ulcerated vocal cords and ventricular bands. The glottis is narrowed by loss of movement of the cords and by the swelling of the vestibule of the larynx.

Later on the cartilaginous structures may become involved. As a rule, they generally do, and a more or less extensive perichondritis results.

The larynx is bathed by adhesive mucus which frequently causes cough through efforts to dislodge it.

The dysphagia of phthisis laryngis is very terrible. Nothing but laryngeal cancer causes anything like the painful dysphagia.

The disease of the larynx progresses in proportion as the disease of the lungs does, but sometimes the laryngeal disease stops at a non-ulcerative stage, and the swelling of the epiglottis and arytenoids with paresis and thickening of the vocal cords alone remains for months or years.

The object of treatment of the tuberculous larynx is to relieve pain and modify or cure the disease and so to prolong life.

Formerly, almost nothing was done to relieve the distress of the laryngeal phthisis. Now, in the crowded hospital clinics these poor doomed and suffering patients receive more than usual attention out of pity for their torments.

The means used in the treatment of the larynx consists in the local application of medicines, palliatives and escharotics; surgical procedures, such as curetting ulcers, draining œdematous swellings by puncture and tracheotomy. The use of electrolysis has also its advocates.

The list of emollients and escharotics which have been used is a long one. I shall refer to some of these only which have retained their popularity after years of trial.

Lactic acid stands, perhaps, at the head of the list of local remedies. It is an escharotic, and it is claimed that it attacks only ulcerated surfaces. However this may be, it has certainly retained the confidence of those who have had the largest experience in treating laryngeal tuberculosis. It is used either with or without previous curetting. The application of the acid by simply brushing over the ulcers is not enough. It should be well rubbed in by means of a hard cotton pledget upon the end of a bent wire after the application of cocaine. In suitable cases, I have seen ulcers healed by it.

Menthol is of great value when used in a twenty-per-cent. solution in olive oil. Its analgesic effects are of great service. It is not caustic. It seems to prevent and remove infiltration.

Iodoform in the form of powder or by solution in ether is sometimes very efficacious in relieving pain.

Resorcin, in eighty-per-cent. solution has its warm advocates. It certainly seems to diminish suppuration, and it can be safely used without the laryngoscopic mirror.

Some years ago morphia in glycerine was thought to be most useful in relieving dysphagia. I can only say that I resort to its use as seldom as possible.

Of the astringents, I prefer the aceto-tartrate of aluminium which in addition to its astringent properties has remarkable antiseptic power.

The use of cocaine has been advocated as a remedy in excessive dysphagia. I have found that it soon loses its analgesic power, and I have thought that it produced insomnia.

With regard to surgical procedures, I would say that remarkable cures have been effected by very vigorous curetting. When the œdema of the epiglottis and arytenoids is excessive I frequently puncture, and I feel sure that in quite a number of cases I have relieved dyspnœa.

Tracheotomy has been done to relieve dyspnœa and to rest the larynx.

You see how various the methods and remedies are, and the fact that cures by each are reported would tend to show that topical treatment should be employed in every case of ulceration.

The treatment by caustics must be left to the skilled laryngologist, but if for any reason the assistance of such cannot be obtained, great comfort may be given the patient and his life may be prolonged by a harmless course of treatment which can be carried on by the sufferer and his physician. This treatment consists in the frequent cleansing of the lower pharynx and top of the larynx by an alkaline spray, thoroughly applied several times a day and followed by the application of menthol in oil as mentioned above. The programme may be varied by substituting from time to time the eighty-per-cent resorcin or an astringent such as the aceto-tartrate of aluminium or iodoform in powder. The result of such treatment is some relief from cough and dyspnœa, perhaps healing of ulceration and diminution of swelling. The patient's comfort is secured because one great source of irritation is lessened or removed.

A few words with respect to the effect of climate upon laryngeal phthisis. There seems to be a feeling among those who have much to do with tuberculous patients that the existence of laryngeal disease is a contraindication to sending patients to Colorado or to high altitudes.

Dr. Solly wisely remarks that "tuberculous laryngitis does well literally nowhere. But," he says, "cases which have resisted treatment in the East sometimes yield remarkably in Colorado, ulcers healing. But when, and this we can easily believe, tubercles exist, they may break out again."

If the progress of disease of the lungs is delayed or arrested by residence anywhere, I believe beneficial action will take place in the larynx, but I also believe that the benefit which might be expected to result from such a residence may not occur because the disease of the larynx has progressed so far that it wears out the strength of the patient and prevents proper feeding.

I am inclined to think that whatever improves the general condition, improves the larynx, or, in other words, that if the case is in other respects one for residence in moderately high altitudes, the laryngeal symptoms may not be considered, except that local treatment must be carried out wherever the patient goes.

I have known laryngeal symptoms to improve in the forest at an altitude of eighteen hundred to two thousand feet.

I have made a plea for local treatment of phthisis laryngis. I would not be understood as asserting that many cases can be cured, in fact, very few are cured; but that is not an argument in favor of neglect to attempt to give comfort to the patient and assistance to general treatment, for no matter what general treatment is given if the diseased larynx is not treated the patient will fail rapidly on account of persistent pain and dysphagia.

I state as a matter of not infrequent personal observation that many phthisical patients die, not from the effects of the disease in the lungs, but from exhaustion caused by pain and starvation dependent upon an ulcerated larynx. In many a case, although necessarily fatal, the end could be long deferred and approached with bearable amount and kind of suffering were it not for the agony which an ulcerated larynx produces.

Since the above was written, a pamphlet by Dr. Solly has reached me in which he reports the results of forty-five cases of laryngeal tuberculosis treated by him at Colorado Springs. This report is most interesting, and is corroborative of what I have written. The results of treatment of the forty-five cases were: "Non-ulcerated — six cured, seven greatly improved, four improved, five died, three worse; ulcerated — two cured, two greatly improved, one improved, fifteen died; total laryngeal — eight cured, nine greatly improved, five improved, twenty died, three worse."

"While I believe," he says, "that contrary to what was a common impression, namely, that high climates are injurious *per se* to tubercular laryngitis, they are positively beneficial, speaking as a generality, yet such results as I report could not be reached without, in the majority, especially in the ulcerated cases, careful local treatment."

◆

HOME TREATMENT OF PHTHISIS.[1]

BY G. K. SABINE, M.D., BROOKLINE, MASS.

Much more has been said and written about the climatic than the home treatment of phthisis; and yet the latter is perhaps the more important, as by far the greater number afflicted with the disease are unable, owing to circumstances, to avail themselves of the advantages to be obtained at the various health-resorts. Probably much of the benefit derived from sending patients away from home is due, not to climate alone, but to removing them from the usual cares and worries incident to daily life, and to the much more important fact that they will follow out rules laid down for them when sent away which they would not do if at home. This is only a peculiar phase of human nature, that to appreciate a thing it must be obtained at some cost.

It seems that nowhere in the field of therapeutics has so much error in judgment been shown as in sending phthisical patients away, for climate is only one of many things to be considered.

Patients with incipient trouble are often sent away who can ill afford it, and, in consequence, are obliged to so economize as to deprive themselves of many things which are most essential to their welfare; for instance, the best of food, which is, perhaps, quite as important, if not more so, than the air they breathe. Others with advanced trouble are sent away, as we all know, when there is no possible chance of the disease being cured or even arrested. The question has often arisen in the reader's mind, whether a very large percentage of these patients would not do quite as well, and possibly better, if they remained at home, providing that the same rules governing their mode of life could be carried out. Certainly, the result of autopsies tends to show that, not only do very many cases of phthisis recover at home, but do so without any treatment whatever, and are only revealed after death from some other cause.

Be this as it may, many must of necessity recover at home; and the question is, How can they best be cared for? When a patient with incipient trouble consults a physician, what advice and directions ought he to receive? In as few words as possible, I should say: (1) Good food and an abundance of it; (2) fresh air; (3) suitable occupation. First in importance is the subject of food. This should be abundant and nutritious. One rarely sees a phthisical patient gain flesh and the local trouble increase at the same time (perhaps never), so that a gain in weight is a most favorable sign, and worth more than all others. We have here a key to the situation, so to speak; if it is possible to make the patient increase his weight, he will be pretty sure to gain in other respects. An excellent plan is to weigh patients at stated intervals, this being an important guide to the physician and an incentive to the patient to take the greatest possible amount of nourishment. The question might arise whether the gain in weight was not the result of improvement in the local condition, rather than the cause.

Two things are essential for a case of phthisis: the presence of bacilli, and a suitable soil for their development and growth. Certainly it is not every one who is exposed to the influence of bacilli who has tuberculosis, as we well know. It has been a well-recognized fact for a long time that patients suffering from certain wasting diseases (diabetes, for instance) are particularly susceptible to their influence; hence it is only fair to suppose that by bringing the nutrition up to a certain standard by feeding we may render the soil unfavorable to their further development. The diet should be general, and include a large proportion of milk and eggs, as patients can usually be induced to take larger quantities of these than other forms of food.

Too much cannot be said to convince the patient that he must not be in constant dread of catching cold, for it is this fear that usually keeps him from getting the requisite amount of fresh air. The moment most persons learn that they have trouble with their lungs they begin to house themselves and live in a close atmosphere.

It is still almost impossible to convince any except the more intelligent that their trouble is not due to exposure of some sort or other, so firmly rooted is the old idea of almost everything coming from cold.

---

[1] Read before the Norfolk District Medical Society, March 27, 1894.

As a large portion of one's time — at least one-third — is spent in bed, too much stress cannot be laid on the importance of keeping the sleeping-room well aired. The patient should sleep with the window open. If there is too much wind, and he is afraid of draughts, this can be obviated by putting a frame like that of a mosquito-netting covered with flannel in the window, and allowing the air to sift through this. A number of frames of varying height can be used, according to the temperature and amount of wind. The sleeping-room should have a sunny exposure, be provided with an open fireplace, and be free from upholstery, superflous furniture, or anything that will tend to make the room stuffy in warm weather. It would be a most excellent plan if patients living in the country could be induced to sleep in tents in summer, as is done in the Adirondacks.

During the day, one should be out of doors as much as possible without over-fatigue, regardless of weather. The early hours are the best. This is especially true of spring and fall in our climate, when so many days are pleasant until towards noon, when they become cloudy. Undoubtedly a certain amount of good can be accomplished by inflating the lungs by prolonged inhalations, especially if the patient is not accustomed to take tolerably violent exercise. He should be instructed to do this at stated times, otherwise it is very apt not to be done at all. Many patients, more especially women, almost never fill their lungs with air. We constantly see this in examining them. When requested to take a long breath they are simply unable to do so, owing to the fact that they have never done it. This may depend upon too tight clothing, or to the fact that their exercise is rarely anything except the most moderate.

Occupation is most essential. This is comparatively easy to provide for in the case of men, but in that of women it is a very different matter. It should be out of doors, if possible. It is much better that a young man should enjoy a healthy, long and useful life at some laborious occupation in the open air than to be confined to an office and die prematurely of phthisis. Frequently, the first thing to do is to induce a patient to change his occupation, as this may be a very important factor in causing his trouble. There are but very few conditions (and this does not apply to phthisis especially) where it is not better for one to be occupied and to have regular duties to perform. It conduces to contentment of mind and happiness, and this prevents patients from watching themselves too closely. Fortunately, consumptives are usually cheerful and hopeful.

One thing all should be cautioned against, and this applies, I think, to all stages of the disease, and especially the latter, and that is to avoid over-fatigue.

It seems hardly necessary to speak of medication, for oftentimes the less there is of this the better.

Of course, symptoms must be met as they appear. For a long time I have been accustomed, where there is any elevation of temperature, to give continued doses of quinine, and, I have fancied, with good effect. Patients almost always demand something for the cough, and it has to be given. It is important that this should be simple, and not interfere with the appetite, digestion or bowels. If it is explained that the cough is not the trouble, but only a symptom of the real disease, they will bear it with much more patience.

It has been generally the custom to give phthisical patients cod-liver oil or some one of its various preparations. This should be done with great caution, as it may easily do more harm than good by interfering with the appetite and digestion, and so preventing the proper amount of food being taken.

The importance of the care of the sputa, and of keeping the patient more or less isolated, especially at night, is now very generally recognized by the medical profession; and it is only fair to the patient and his family that they should have a clear understanding of the matter, that the rules may be carried out intelligently.

TUBERCULOSIS IN MENTAL DISEASE.[1]

BY WALTER CHANNING, M.D.

FOR at least the last fifty years, the intimate connection of phthisis and insanity has frequently been observed and commented upon. The greatest mortality among the insane was found to be due to consumption, and in any case of dementia such an outcome was to be both dreaded and anticipated.

In 1862–63, Dr. T. S. Clouston, Superintendent of the Royal Morningside Asylum at Edinburgh, made a careful study of the two diseases. He found, in his own asylum, that from 1842 to 1863 the percentage of deaths from phthisis was 29 in the whole number dying, while from 1879 to 1889 the percentage had fallen to 13.6 — the difference being chiefly explained by the vastly improved sanitary conditions of the institution and the more rational treatment, for, of course, the disease might have become less prevalent in the general community.

The fact was, however, brought out, that the mortality from tubercular disease was three times as great in the asylum as in the general community, being 1.19 per cent. in the former, and 0.40 per cent. in the latter case. It is the more striking when we reflect how much better off the insane person is, in regard to medical and general care in the asylum, than the sane individual in the same class in the general community. As far as these things are concerned, everything possible to prolong life is freely provided for him, with the result, already spoken of, of speedily lowering the mortality.

I find that in 1893, in twenty American hospitals for the insane, there were 1,729 deaths, of which 280, or 16 + per cent., were caused by tuberculosis. The total number of persons treated in these institutions during the year was 22,937.

That, in spite of everything that has so far been accomplished, the mortality should continue to be so considerable calls for serious consideration and study, to see what causes there may still be at work to perpetuate this fatal disease.

Clouston has established a form of insanity, from his researches, which he calls "phthisical insanity," wherein he clearly traces the evolution of the mental disease. It is a curious fact, that in this disease the whole mental outlook is the reverse of that of the sane individual. There is no cheerfulness or hope, but, on the contrary, extreme melancholy and despair. The subject of the disease is irritable, suspicious and hard to satisfy in many little ways. Savage says: "Phthisis in the insane is associated with certain groups of symptoms characterized by suspicion and refusal of food, on the one hand, and the masking of the phthisical symptoms on the other."

---

[1] Remarks in the discussion at the meeting of the Norfolk District Medical Society, Brookline, March 27, 1894.

The actual number of cases coming under the head of phthisical insanity is small and difficult to determine. I simply refer to this part of the subject to emphasize my other remarks.

The first point that strikes one in seeing mental cases in which phthisis exists is the marked lowering of nutrition. There is usually a history of insufficient nourishment, loss of weight, anemia, etc. Let the vitality be lowered to a given point in a case of melancholia or terminal dementia, and tuberculosis is almost sure to follow. The soil is ready for the tubercle bacillus to surely develop, generally slowly, sometimes rapidly. Its approach is often very insidious where it comes in patients already advanced in dementia. There is such a loss of peripheral sensation that cough is largely or wholly absent, and it is not until emaciation, and perhaps flushing or night-sweating show themselves, that its existence is recognized. Suddenly the diagnosis is made, only to be followed by death within a short period, sometimes, perhaps, within a few days.

It is remarkable how long these patients may have had the disease, judging from the post-mortem findings, without showing signs of discomfort or inconvenience, which emphasizes the fact that the mental condition is a very potent factor in determining the course the disease may run. There are many cases which recover entirely. Clouston states that indications of tubercular deposit were found in from 30 to 60 per cent. of those asylum patients on whom autopsies were made, and apparently about 30 per cent. of the so-called cases of "phthisical insanity" recovered. We can imagine that if the mind had been in its normal condition of sensitive responsiveness, awake to the meaning and significance of each symptom, and hence filled with fear and apprehension, the vital depression would have been greater, and the result would have showed itself in an increased mortality. I do not here forget the *spes phthisica*, the strange hope and buoyancy of the consumptive, but hold that with these very mental conditions there must still be the pressure of fear and despondency at work, unconsciously acting as an important factor. The duality of the mental operations is now so generally accepted that we can have these apparently opposed forces working against each other. Furthermore, the *spes phthisica* comes when the disease has developed, and is a part of it.

Perhaps, to the general practitioner, the connection between tuberculosis and insanity, from an hereditary point of view, is of the most essential interest. There is plenty of evidence to show that either of these diseases in one generation may be followed by the other in the next. They are both transmissible, and substitute each other. It has been in times past a pretty definite rule that, given either of them in the parent, there was more than a slight tendency to their recurrence in the children, and the form taken would depend somewhat on environment.

If this was hygienically good, with severe mental strain, the chances might be more in favor of insanity, provided there had been insanity in the parent; that is, the point of divergence would be in that direction. If there had been phthisis in the parent, and the environment were neither good nor bad, then either disease might assert itself, with the chances in favor of insanity. Or neither disease might assert itself, and the phthisis, by the law of atavism, recur in the grandchildren.

As time goes on, these laws of heredity appear to exercise a less degree of potency, leading to the suspicion that something besides heredity plays an important rôle in the development of these diseases, and it must be found in the environment which is called the "continuation of the heredity," but is, after all, a very much more comprehensible and controllable thing than so-called "heredity."

The fact to bear in mind is that both insanity and phthisis, while widely different in their pathology, are diseases of degeneration. If occurring in one generation, they both tend to recur in a succeeding one, provided the environment is one in which the moral, mental and physical conditions are depressing and devitalizing.

The reading of the foregoing papers was followed by a discussion of the general subject of Tuberculosis by Dr. F. C. Shattuck, of Boston, present by invitation of the Chairman.

Dr. Shattuck first alluded to the question of the preventability of tuberculosis, direct and indirect.

The direct means were made possible by the discovery of the bacillus of tuberculosis, and of the fact that the sputum and milk are the principal vehicles of the contagium. From these facts logical conclusions may be drawn and rational measures for prevention taken.

These measures may, however, be carried too far, as seen in the circular of the Pennsylvania Society for the Prevention of Tuberculosis, which society Dr. Shattuck has joined, but under protest that he cannot agree to all the measures prescribed. The essential thing is to take proper precautions regarding the sputum. As to the propriety of reporting cases to the Board of Health, there can be no objection to such a course, and it might be well to require that the apartments occupied by the patient should be properly disinfected after death or removal.

The indirect means of prevention were briefly noted, comprising those measures of general hygiene which will, by raising the general condition of those exposed, fortify them against the invasion of the disease.

There is abundant evidence that the bacillus is omnipresent, and the wonder is that the death-rate from pulmonary tuberculosis is as low as it is. The fact that so many escape, goes to show that there is such a thing as immunity. Tolerance and cure are varying degrees of immunity.

The fact that cure is possible is shown (1) clinically, by the numerous cases that get well and stay well; and (2) at the post-mortem table, which reveals apex cicatrices in those who have never shown the symptoms of tuberculosis.

The text-books used to state, that a recovery from tubercular peritonitis was proof of error in diagnosis; but modern surgery has demonstrated the falsity of such a statement. The speaker believed that meningeal tuberculosis may be recovered from, and even that in the acute miliary form some cases may be saved. This claim was first made by McCall Anderson, of Glasgow.

Dr. Shattuck's remarks were concluded by brief reference to recent private cases, illustrating the views he had expressed.

Reports of Societies.

AMERICAN DERMATOLOGICAL ASSOCIATION.

(Concluded from No. 2, p. 42.)

Dr. Fordyce, of New York, read a paper on

ADENO-CARCINOMA OF THE SKIN STARTING IN THE SWEAT GLANDS.

There were exhibited a series of photographs and microscopic slides in illustration of the structure of the malignant growth. Although a number of pathologists had claimed a sweat-gland origin for certain varieties of skin cancer, a few only were recorded in which such a point of departure had been proven.

In the case reported the speaker said the growth had started as a proliferation of the column cells lining the sweat glands, breaking through the membrana propria, infecting the surrounding connective-tissue. The patient was a male, thirty-five years of age, from whose leg an egg-sized tumor was removed.

Demonstration was made of the intra-cellular bodies, which are looked upon by many pathologists as the cause of cancer. The speaker expressed his belief in the parasitic nature of cancer. The etiology has not yet been made clear.

Dr. Stelwagon, of Philadelphia, reported a long array of cases from literature in proof of the

CONTAGIOUSNESS OF MOLLUSCUM CONTAGIOSUM,

which was the subject of his paper, and which he defended with many convincing examples of the spread of the disease in hospital, institution and family. He also quoted instances in which physicians had become accidentally inoculated in operating upon patients, and referred to successful intentional inoculations. He was inclined to regard the mollusc corpuscle as the medium of contagion.

Dr. Fordyce showed photographs of these bodies within, and one just escaping from, an epithelial cell.

Dr. Hartzell did not regard them as animal cells of parasitic nature.

Dr. Zeisler had been looking for clinical evidence of contagion for years, but had never seen a case which was for him convincing. He had, however, long given up the term "non-contagiosum."

Dr. White said proof was necessary that the bodies were of animal parasitic nature.

Dr. Duhring said the clinical evidence of contagion must be accepted.

Dr. Hyde said almost all reports came from institutions, and that dermatologists saw comparatively few cases in private. He had never seen transmission from one individual to another.

Dr. Allen referred to accidental inoculation in his own person mentioned by the reader. The clinical diagnosis was confirmed by a colleague, and he had taken the precaution to remove the small tumors in the presence of medical men. The microscope showed molluscum corpuscles and the appearances usually found. The reason the cases showing only small tumors, observed by Dr. Duhring, did not seem to transmit the disease was because auto-inoculation as well as transmission to others was much more frequent when one or more lesions had softened, and even suppurated in nature's effort to cure.

Dr. Fordyce said that while protozoa as a cause of psorospermosis were not growing in favor, this explanation for cancer was, and that Neiser had never receded from his views concerning their relationship to molluscum.

Dr. Sherwell, of Brooklyn, then read an account of a still living and indeed improving example of the type of congenital ichthyosis known as

HARLEQUIN FETUS.

The child was six months old, and he expected it to grow up. The whole surface at birth had been covered with horn-like scales from one-sixteenth to one-eighth of an inch in thickness. It was a congenital condition of non-development, but there was no other imperfection present.

Dr. Zeisler said a permanent cure was not to be looked for, but persistent oiling keeps the skin in splendid condition.

Dr. Hartzell, of Philadelphia, read the next paper on

THE PROTOZOA-LIKE BODIES OF HERPES ZOSTER.

These were considered in their bearing upon the question of psorospermosis. Certain bodies which closely resembled protozoa were always found in the zoster vesicles examined by the writer at a certain stage. Pfeiffer first accurately described these bodies a few years ago, and Weigert found them in variola pustules. They had previously escaped observation in zoster.

They increase rapidly as the evolution of the vesicle progresses. There are three varieties: round or oval cells; larger ones, having two or three times the diameter of epithelial cells; and pear-shaped bodies with a wide border surrounding an internal capsule enclosing a cavity containing a number of rounded cells. These resemble strikingly the epithelial cells containing coccidia found in rabbits' bile-ducts. The author had found the same bodies in a case of recurrent zoster over the course of the sciatic, in which all clinical features pointed to a traumatic origin; and therefore the writer thinks the possibility of infection is excluded.

We can therefore conclude with certainty that we have to do with altered epithelium, not with protozoa. It is fair to presume, too, that so-called psorospermosis in other diseases are metamorphosed epithelial cells. Active movement observed in these cells argues against hyaline change. The process which produces their enormous growth and peculiar arrangement is certainly one of vital activity and not of degeneration.

Dr. J. C. White, of Boston, then read a paper on

RARE DERMATOSES,

which included his experiences with and views upon such interesting conditions as pityriasis rubra pilaris (Besnier), *erythème induré des scrofuleux*, lymphangioma circumscriptum, multiple benign cystic epitheliomata, and angioma serpiginosum (Crocker).

The first disease was a member of the group of keratoses requiring our special attention. It is less rare than our statistics would indicate.

The peculiar erythema resembling that of the nodose variety but which subsequently softened and suppurated like a gumma was next discussed. Antisyphilitic treatment has no good effect. There may be deeply imbedded nodules on the lower legs. Some of the larger lesions have a dusky purple color, and some become depressed in the centre, with discolored cicatrices. They are more deeply seated and more uniform than erythema nodosum, more sparse, not limited to the shins, are covered with normal skin, not "contusiform," become necrosed, not so tender on pressure. It resembles the so-called scrofulous gumma, but the bacilli would have to be demonstrated to make the writer believe it a tuberculosis.

The much betitled condition, "multiple benign cystic epitheliomata," was illustrated by an excellent photograph showing the lesions upon the face. There were fifty lesions, in some of which softening had begun three years ago. There were flat, skin-colored papules and tubercles, lesions with depressed centres, lesions with crusted centres and crater-like margins, and irregularly elongated ulcers, some showing the characteristic appearances of rodent ulcer. All were free from subjective manifestations, but some had taken on the features of ordinary epithelioma. Dr. Bowen's examination had shown identity with Dr. Fordyce's case. The question was asked, Have some of these lesions undergone malignant transformation, or is this to be the eventual fate of these cases, showing that in time new epithelial tissue is bound to go to the bad?

The angioma serpiginosum occurred in the person of a boy and extended as a belt three inches in width from the right scapula forward to the region of the nipple. The lesions were from a pin's head to two or more inches in diameter, elevated from one-twelfth to an eighth of an inch, and having an annular elevated creeping margin. New foci would spring up at a little distance from the original. The progressing ring was a firm, smooth elevated structure of uniform breadth. Hutchinson had described the process in 1891 as infective angioma or nevus lupus. Crocker's term was considered more appropriate.

Dr. Councilman, of Harvard University, had examined specimens from the case and on invitation of the Society reported upon them. The points of most interest to him, he said, had been the evidences of retrogression in the growths. The growths themselves consisted essentially in masses of cells in the corium, but no alteration in the epithelial cells of the skin. The general structure of the skin had undergone no alteration. Cells not unlike granulation cells were found in inflammation tissue everywhere. The nucleus was epitheloid. In the nodules one could see larger aggregations of cells made up by still smaller nodules. At first there was a growth of endothelium and perithelium of the corium. At the same time there might have been a growth of blood-vessels.

In a number of places, indicated in a drawing which was shown, there seemed to be evidence that these masses were undergoing retrogression, and in the small masses there were very curious structures in the blood-vessels. In the spaces which were believed to be blood-vessels there were small masses which appeared to be somewhat like amœba, or forms of lower organisms; but it was concluded that they were not such. Dr. Bowen examined the specimens with Dr. White, and the name which they decided upon as fitting the condition was angeio-sarcoma. It does not correspond to the ordinary type of angeio-sarcoma because in pathology this applies to a tumor originating from a blood-vessel. Still this evidently was a sarcoma and was certainly not an inflammatory condition but one often found about blood-vessels. The growth as presented was very rare.

Dr. Allen, of New York, read the next paper on a

QUININE EXANTHEM,

showing itself only upon certain well-defined areas, each time the drug was administered even in the most minute dose. The spots were always erythematous at first, symmetrically distributed on upper and lower extremities, between the shoulder blades, and invariably upon the glans penis and prepuce. If five grains were taken bullæ vesicles and denuded patches would follow at the site of early redness. The eruption was produced experimentally a number of times with various preparations, ranging from the tannate to the carbamide, by mouth and hypodermatically, showing that the base and not the acid is the offending agent. It was also shown that no local effect could be produced, though alcoholic solutions and ointments applied to the skin were invariably followed by pruritus and erythema in distant parts. A symptom present several times was a heavy dragging feeling between the shoulders and examination showed tenderness on pressure over a dorsal vertebra which disappeared with the other symptoms due to the drug. From this the argument was drawn that that the cord was primarily affected by the quinine and that the angeio-paralysis in these symmetrical locations was a reflex nerve condition and not due to elimination of the drug by the skin nor to any effect on the skin nerves. If this was found on future investigation to be a tenable position it might help explain some little understood dermatoses and might also explain the way in which quinine acts therapeutically to produce some of its peculiar effects.

Dr. Bronson, of New York, then read a paper on

A CASE OF SYMMETRICAL CUTANEOUS ATROPHY OF THE EXTREMITIES.

The rare condition described affected a man of forty-five, a varnisher of brass and iron, and first appeared fourteen years ago upon the left ankle, and in course of time upon various other regions. There was thinning of the skin permitting the blue veins to show through. These spots were sensitive. It was spontaneous and idiopathic. From the hips down and the lower two-thirds of the arms are the parts now affected, the trunk being normal. The skin of these parts is in wrinkles, and everywhere the tortuous veins show through. The whiteness of the normal skin has disappeared. A lilac hue is here and there noticeable. The wrinkling is most pronounced about the knees, thighs and buttocks. Hairy growth has almost disappeared and sweating seems to have ceased in these parts. The skin has the feel of dry parchment. The appearance is much that of superficial cicatrix. The clinical type to which this case most clearly corresponds is that described by Buchwald and the atrophy might well be named after this observer. The etiology is obscure. The adipose layer seems to have disappeared and a general atrophy of all the skin elements to have taken place. No treatment was suggested.

Dr. Zeisler, of Chicago, spoke upon

THE RELATION OF IMPETIGO HERPETIFORMIS TO PEMPHIGUS VEGETANS.

One who has studied the literature of the subject and observed the two diseases with the picture of Kaposi and Neumann before him, must have been struck by the features which are common to both, and which make the differences all the more difficult to the dermatologist. The tendency seems to be to include so few cases under impetigo herpetiformis that there is danger of its being done away with. Formerly it occurred mostly in women. This is true of pemphigus vegetans also. The inception is mostly on the mucous membranes. In the speaker's own case there was a peculiar roughness and herpetic condition of the lips.

In impetigo herpetiformis Kaposi's postulate is in the main true, but a little liberality ought to be allowed for deviations from the type. In his own case large bullæ appeared during the last four weeks, but up to this time he had been in doubt. Peripheral extension, too, is common to both diseases, with central desificcation. Papular vegetations are not characteristic of either disease exclusively, but are to be regarded as the expression of a cachectic condition; and the same thing may be observed in syphilis and in burns where cachexia is present. Auspitz selected the name from the vegetations observed in his own case. In the speaker's case vegetations had not been present from the start. They come where moisture, friction and warmth are effective, and their importance as conceous pemphigus vegetans falls to the ground. In both diseases vegetations may be noted in certain regions from the very beginning. In one disease the miliary character is more pronounced, in the other the pemphigoid. In order that the diagnosis may be positive the case should be followed from beginning to end. A strong protest was entered against throwing out a case because it does not agree in every minute detail with the early descriptions for diseases in which only ten of the one and thirteen of the other have been recorded; a clear, decisive picture of undeviating type is scarcely to be expected.

In the discussion several speakers agreed, and favored the view expressed.

Dr. Bronson showed a new dermal curette and comedo expresser.

Dr. Duhring presented photographs sent by Dr. Breakey, of Ann Arbor, illustrating a case of sarcoma of the skin, but which bore great resemblance to granuloma fungoides.

Dr. Duhring also submitted portions of skin; and by invitation, **Dr. Gilchrist**, of the Johns Hopkins, read a report on their examination, which showed the disease to be one of

PROTOZOA DERMATITIS

such as had not before been encountered in this country. The microscope showed proliferation of epithelium and prolongations downward, miliary abscesses with pathological changes deep down into the subcutaneous tissues. There were so-called cancer parasites in the epidermis. The protozoa were particularly frequent, 60 being seen in the field under low power, there were large giant cells with as many as 160 nuclei to a cell. Twenty protozoa could be found in one giant cell.

The only case in literature like it was reported from Buenos Ayres. The bodies measured up to 30 millimetres. The adult showed a clear outerspace and granular protoplasm in the interior.

A dog was inoculated and the same disease was reproduced, protozoa being found a month later.

The reader thought the bodies belonged more to plant than to animal life.

THE BOSTON
Medical and Surgical Journal.

THURSDAY, JULY 19, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 WASHINGTON STREET, BOSTON, MASS.

AN INDICTMENT OF ASYLUM SUPERINTENDENTS.

THE July number of the *Journal of Nervous and Mental Disease* contains the address delivered by Dr. Weir Mitchell before the American Medico-Psychological Association at their fiftieth annual meeting in Philadelphia last May, to which reference has already been made in these columns. The Association invited the freest and frankest criticism. They got more than that; they got a sweeping indictment of American asylum superintendents and American asylums and their methods.

First of all, Dr. Mitchell criticizes the character of the average board of managers. He has, of course, nothing but the bitterest condemnation for the custom, which is only too common, of regarding official positions on such boards and in the asylums themselves as part of the spoils to be used by a political party; but even where politics do not enter into the question the boards are only too often wooden; the best of them are made up of "very excellent, kindly, middle-aged clergymen, merchants, lawyers and the like," who are bound down by routine and tradition, who make valueless inspections, who "do not know their business, and do not know that they do not know."

Turning to the superintendents themselves, Dr. Mitchell tells them frankly that he does not believe that they "are so working these hospitals as to keep treatment or scientific product on the front line of medical advance. Are you really doing all that might be done without serious increase of expenditure? Where are your annual reports of scientific study, of the psychology and pathology of your patients? Where are your replies as to the questions as to heredity, marriage, the mental disorders of races, the influence of malarial locations, of seasons, of great elevations? Even in your own line most of the text-books, many of the ablest papers are not asylum products. What is the matter? You have immense opportunities, and, seriously, we ask you experts, what have you taught us of these 91,000 insane whom you see or treat. When we ask for your asylum notes of cases we are too often surprised at the amazing lack of complete physical study of the insane, at the failure to see obvious lesions, at the want of thorough day by day study of the secretions in the newer cases, of blood-counts, temperatures, reflexes, the eye-ground, color-fields. You may be fair general practitioners in insanity, but productive neurologists of high class, regarding disease of the mind organs as but a part of your work? No — I think not." With this inertia in scientific research, treatment is too often neglected. Many superintendents still cling to the superstition that an asylum is in itself curative, that there is some mysterious therapeutic influence to be found behind walls and locked doors; but massage, electricity and hydro-therapy are seldom employed, the diet is poor and monotonous, the patients have too little occupation and employment, and the nursing force is inadequate, uneducated and unfit. "Neither States, nor boards, nor you," he says, "are ardently living up to the highest standard of intelligent duty."

Weighty as this indictment is, it would lack force were it simply the criticism of a single man, eminent as that man is. Dr. Mitchell publishes with his address letters from thirty of the leading neurologists and consultants in the country, and this jury practically endorses his indictment as a "true bill."

To the honor of the Association be it said that they invited this criticism and that they have accepted it in the spirit in which it was uttered. In their attitude lies the greatest hope for the remedy for these evils. It is but natural to plead extenuating circumstances, and to point to the good work that many of the superintendents are doing and to the distinct advance that has already been made by the Association itself. All these things, however, have been fully recognized by Dr. Mitchell. He has given full credit to the superintendents for the good work they have done, and he recognizes all the obstacles in their way — the limited means, the inertia or opposition of governing boards, and the multiplicity of duties that are thrust upon the superintendent, yet all these obstacles are among the things he condemns, and it is against these evils that he and his jury have raised their voices.

It must be admitted that many of the items in Dr. Mitchell's indictment hold good here in Massachusetts. Seldom, if ever, does a governor venture to appoint an expert in neurology and psychiatry on the State Board of Lunacy and Charity or the boards of asylum trustees. The overseers of the poor are ever eager to cut down the rates of board in the asylums, and the legislatures are only too stingy with their appropriations. The inspector of charities would not venture to make provision for a suitable pathological laboratory at Medfield, for fear that the item would be stricken out, and the trustees of Taunton hardly dare hope for a pitiful $2,500 for a simple mortuary and autopsy-room there. Even the asylum assistants, on whom the burden of administrative work is light, and whose duties are less onerous than those of the city practitioner, can only with difficulty be induced to undertake clinical research and to present papers at the various society meetings.

We recall a large State asylum, containing several hundred insane, near a small city. The printed blanks on which the case records are kept contain headings which demand, when filled out, that a most thorough examination has been made of every patient by the most careful methods of clinical research, and an examination of the blanks in use and the reports of published cases prove that this has been done. In connection with the administration building is a large reading-room containing files of all the leading neurological journals in the world; close by is an examining room with apparatus for testing the reaction time, and for other elaborate methods of psychological research; in the pathological laboratory, almost as large as that of the Harvard Medical School, not only are careful examinations made of the central nervous system in the cases that come to autopsy, but experimental research is carried on upon animals with reference to various problems of neurological interest, and one or two young men are constantly at work there; from time to time the assistants publish careful studies of the effect of certain new methods of treatment or excellent clinical studies of their cases, and aid in editing a journal of psychiatry; in one of the buildings is an elaborate system of baths, where hydro-therapy in all its forms can be employed; the whole asylum is a centre for scientific research, and there are many other asylums like it in the State. Are our State asylums doing any such work? Neither in men nor in money would the Commonwealth of Massachusetts admit inferiority, yet why, in this respect, is Massachusetts so much inferior to Italy?

The American Medico-Psychological Association, as we have said, have shown the spirit which will enable them to profit by the criticism they have received, but Dr. Mitchell's indictment extends beyond them to the whole medical profession. It is the duty of the profession to support the superintendents in the reforms which they will undertake; to urge upon the governor that upon every board that has to do with the insane there shall be men who are experts in neurology and psychiatry; to teach the overseers of the poor and the legislators that an asylum is not a house of detention where the insane are to be boarded as cheaply as possible, but a hospital, demanding modern apparatus for scientific research and medical treatment as much as any other hospital. Our cities are more than liberal in the support of general hospitals, why should not the State be as liberal in the support of its insane hospitals? The profession, too, must demand that only men who have proved their ability should be appointed to asylum positions, and that they should receive proper pay. Finally, they must say to the superintendents, "We do not want to hear about bath-tubs or the price of coal; what we want to know is what are you doing for the care and treatment of the insane, what are you doing to advance our knowledge of mental pathology?"

◆

THE EIGHTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

The approaching session of the Eighth International Congress of Hygiene and Demography brings renewed appreciation of the amount and character of the attention paid, at the present time, to questions of hygienic and prophylactic medicine, and its work is a just measure of the permanent ground gained by scientific civilization.

Medicine at first attempted by its crude therapeutics to repair damage done; then, as it advanced to a crude and speculative pathology, it entered upon a struggle with disease to thwart it. At this period its stronghold was a heavily stocked armamentarium of drugs. Under the first great advances of modern chemical, microscopical and bacteriological knowledge the battle-field has become that of prophylaxis; and it is here that the greatest victories have been won and will continue to be won.

The wide extent of this work is amazing even to the student of medicine, who might suppose that a Congress of Hygiene would be a small affair. The preliminary announcement of the Buda Pesth Congress, however, should dispel any such idea. The work of the Congress will be carried on in many sections, the hygienic division having nineteen, and the demographic seven. They are as follows: *Hygiene* — (1) Etiology of Infectious Diseases, (2) The Prophylaxis of Epidemics, (3) The Hygiene of the Tropics, (4) The Hygiene of Trades and Agriculture, (5) Hygiene of Children, (6) Hygiene of Schools, (7) Articles of Food, (8) Hygiene of Towns, (9) Public Buildings, (10) Dwellings, (11) The Hygiene of Communications, Railroads and Navigations, (12) Military Hygiene, (13) Saving of Life, (14) State Hygiene, (15) Hygiene of Sport, (16) Hygiene of Baths, (17) Veterinary, (18) Pharmacology, (19) General Samaritan Affairs. *Demography* — (1) Historical Demography, (2) General Demography and Anthropometry, (3) The Technic of Demography, (4) The Demography of the Agricultural Classes, (5) Industrial Laborers, (6) The Demography of Towns, (7) Statistics of Bodily and Mental Defects.

The Executive Committee have selected for each section the main questions the discussion of which seems most important, and have secured adequate discussion by invitation to special scientists, which have all been accepted. Already more than five hundred and thirty papers have been received for reading, and two hundred and thirty official delegates have been announced. The arrangements thus far made indicate a well-ordered Congress, without delays or confusion, and sessions in which the discussion will be direct, brief and able. The social aspect promises well.

MEDICAL NOTES.

The Plague. — The plague at Hong Kong is becoming less prevalent, though still of an exceedingly fatal character. Several physicians have been taken ill, and one has already died. There have already been some two thousand deaths.

The Cholera. — The cholera is now most severely epidemic in St. Petersburg, and is reported as being of a more intense and fatal character than in the past two years. All the hospitals are now full, and the new cases number several hundred each week. In the Warsaw districts and in the provinces the disease is still prevalent, but has as yet not increased to any extent. The outbreak in Belgium has not spread, and is lessening somewhat. The disease is now reported epidemic in Canton, China, where it is said several thousand deaths have already occurred.

Dr. John Williams made a Baronet. — Dr. John Williams, who attended the Duchess of York during her confinement, has been made a baronet.

Mr. Gladstone's Eyesight. — Mr. Gladstone is reported as making continued progress in the recovery from the recent operation on his eye, and will soon be about again.

Professor of Pathology in the University of Glasgow. — Dr. Joseph Coats has been appointed professor of pathology in the University of Glasgow, the appointment to date from October 1, 1894.

Doctor of Medicine "Honoris Causa." — The University of Moscow has made Dr. Roth, the Vice-President of the Moscow Society of Neuropathology and Psychiatry, a doctor of Medicine "*honoris causa.*" Dr. Roth is a privat-docent in the University.

A Physician in the Cabinet of Costa Rica. — Dr. Juan J. Ulloa, of San José, who was the official delegate of the Republic of Costa Rica to the Pan-American Medical Congress in Washington, has been appointed Secretary of the Interior and of Public Improvements by the President of Costa Rica.

Boston the City of Parks. — In an editorial upon the Boston park system *Architecture and Building* says: "The idea that a city needs 'lungs' where its inhabitants may breathe fresh air, where its children may play, has been a growing conviction with Bostonians, and is bringing about a condition of things in and about their city which will rename it the 'City of Parks.'"

The American Chemical Society. — The American Chemical Society will hold its annual meeting in Brooklyn, N. Y., during the session of the American Association for the Advancement of Science, in August. Prof. H. W. Wiley, of the Department of Agriculture, will preside.

Shorthand in Medicine. — In order to promote the use of shorthand by medical students and practitioners, by enabling them to increase their knowledge at the same time of the art and of their profession, a small sheet of clinical teaching in lithographed phonetic shorthand has been issued by a London firm. The paper, which will be continued if found to fill a need, contains reports of clinical lectures by Dr. Gowers, and other prominent London clinicians.

Advanced Cerebral Localization. — A Philadelphia physician has made so thorough a study of brain topography that he makes the following definite statement: "The corpus callosum is the seat of the soul, the imperishable mind, and is the great reservoir and storehouse of electricity, which is abstracted from the blood in the arteries and conveyed through the nerves up the spinal cord to the corpus callosum." Inasmuch as formerly the mind resided in the sella turcica, it must be that like the sun, the soul "do move."

"De bes' Food for Babies and Puppies." — The following conversation occurred between a Georgia physician and an old negro nurse who objected to the dietary prescribed for the baby under her care: "Been nursing long, Auntie?" — "Yes, sir, nussin' young miss dare and ole miss and all ole missus chillun since afore freedom." — "Is pot-liquor and corn bread good for babies?" — "Corn bread and pot-liquor is de bes' in de world for babies an' puppies, yes, sir." — "Always fed your own babies on it?" — "Yes, sir." — "How many babies have you had, Auntie?" — "Thirteen, sir." — "How many alive now?" — "One, bless de Lawd."

The Ancient Use of Sterilized Water. — A correspondent sends to the *Dietetic and Hygienic Gazette* the following interesting quotation from a recent book on Media, Babylon and Persia, by Ragozin: "As soon as Susa became the principal capital of the Persian Empire, its river, the Choaspes, had the honor of supplying the kings with the only drinking-water they would use. Kyros first instituted this custom, which was religiously kept up by his successors. 'Whenever the great king travels,' Herodotus reports, 'he is attended by a number of four-wheeled cars drawn by mules, in which the Choaspes water, ready boiled for use, and stored in flagons of silver, is moved with him from place to place. It is amusing to find so early an instance of this hygienic precaution — the boiling of water — which we are wont to consider so very modern."

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, July 18, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 34, scarlet fever 32, measles 2, typhoid fever 5.

The Annual Report of the Adams Nervine Asylum. — The annual report of the Adams Nervine Asylum shows that 101 persons received treatment during the year just ended. The average stay of the patients was 4.55 months. Sixteen patients were discharged as recovered after an average stay of 4.68 months; 38 as relieved after a stay of 5.20 months and 19 as not relieved after an average stay of 3.17 months. There were no deaths. The average weekly expense for each patient was $27.92. The income received from the patients was a little over thirty per cent. of the expenses. There are at present 28 patients in the hospital.

A Legacy to St. John's Hospital, Lowell.— St. John's Hospital, Lowell, which was one of the residuary legatees of Patrick Moran, who died several years ago, has, by the recent death of Mrs. Moran, come into possession of $25,000, its share of the estate.

The Burbank Hospital at Fitchburg, Mass. — The new Burbank Hospital at Fitchburg, was opened for the reception of patients on July 16th. It has at present accommodations for over twenty patients, and some rooms are still incomplete. The building is heated by hot-water methods, and is lighted by both gas and electricity. The operating-room is especially well arranged and equipped. There is a separate building for contagious cases and another for the nurses' home. The matron and head nurse are graduates of the Waltham Training School. The visiting staff consists of Drs. F. H. Thompson, C. H. Rice, E. P. Miller, H. H. Lyons, J. W. Stimson and C. W. Spring. Drs. George Jewett and G. D. Colony, with Dr. M. H. Richardson of Boston, compose the consulting staff.

NEW YORK.

Vital Statistics. — According to the returns just made by Dr. John T. Nagle, Registrar of Vital Statistics, there were recorded during the first six months of 1894, 21,655 deaths in the city, as against 23,734 for the corresponding period last year, when the population was estimated to be about 65,000 smaller than at present. This represents an annual death-rate of 25.10 per thousand of the population for the first six months of 1893, and of 22.02 for the first six months of 1894. In the first half of 1893, 23,451 births were reported, while in the first half of 1894, 28,196 were reported. The recent report by Sanitary Superintendent Roberts on the tenement-house census, shows the general sanitary condition of the city to be very good.

Tuberculous Cows. — The attempt was recently made to smuggle into the city and butcher two cows in an advanced stage of tuberculosis, but fortunately the meat inspectors discovered the matter in time. Both animals were promptly killed, and the autopsy showed not only that the lungs were filled with tuberculous deposits, but that the liver, intestines and other abdominal viscera were frightfully diseased. It was found that one of the cows came from Brewster, on the Harlem Railroad, and the other from Orange County, and that the milk from one of them had been sent regularly to the city. Sanitary superintendent reported the cases to the State Commissioner on Tuberculosis for investigation.

Mortality. — During the week ending July 7th, there were reported 979 deaths, as against 971 for the preceding week. This is an increase of 62 over the corresponding week of 1893, but is 57 below the average of the first week in July during the past five years, although the population has been increasing at the rate of about 65,000 a year. It represents an annual death-rate of 26.08 per thousand of the estimated population, and it is .92 below the average of the corresponding weeks of the past five years. The greatest mortality of the week was naturally due to diarrhœal diseases, which carried off 240 persons, 227 of whom were children under five years of age. Diphtheria still continues to be the most prevalent and fatal of the contagious diseases, and during the week there were reported 232 cases, with 61 deaths. There were 9 cases of small-pox, with 4 deaths.

◆

Miscellany.

THE NEGRO AS A HOSPITAL INTERNE.

In the last examinations for position as interne at the Indianapolis City Hospital, a negro was appointed as the best fitted among a considerable number of candidates. The young man is of Massachusetts birth and is twenty-one years old. He is a graduate in arts of the State University of Missouri, and received the degree of M.D. from the Medical College of Indiana in this year's class, ranking third in a class of fifty-four, all the others being white.

This appointment of a negro, though fairly won, has caused a most bitter outpouring of abuse upon the young man and all concerned in his appointment. His services began in the surgical wards, whereupon the pay patients left and the charity patients made bitter complaint at what they considered an indignity. The general character of the vituperation can be judged by the following extracts from a letter to one of the local medical papers. After bewailing the fact that during this young man's service — which the writer will only speak of as "these circumstances," — no pay-patients will enter the hospital, and thereby the city will lose some two to five hundred dollars a month, the letter continues:

> "The worst feature of this unfortunate situation is that in four months, by rotation, this young man will be placed in charge of the obstetrical department, and white women, whose only crime is poverty, must submit to the unspeakable outrage of bringing innocent children into the world under the touch and manipulation of this son of Ham."

He then asks

> "the Board of Health, who made this appointment, the cringing politicians who prevent the righting of the wrong, and, lastly, all persons who favor this phase of negro equality: How would *you* like to look back to the day of your birth and know that a negro doctor helped to usher *you* into the world?"

In conclusion he says:

> "If the Indianapolis city government does not place this young man where he will only administer to those of his own race, as is fit and proper, they will rob the city treasury, degrade and humiliate many persons, benefit no one and deserve everlasting contempt from every citizen, both white and black."

In publishing the letter from which the above quotations are made, the editor appended this note as a much-needed rebuke to the writer:

> "Prejudice, custom and habit are all stubborn things. The writer of the above article is shaved by a colored barber, attended by a colored waiter, is often bathed by a colored attendant, eats food from a colored cook, and we have seen him driving with a colored coachman by his side. All the most intimate personal services are performed for most of us at times by colored barbers, waiters, attendants, nurses, etc., and we take it as a matter of course; but prejudice cries out against a colored doctor, who undoubtedly possesses more intellect and learning than the average white man of similar training and who very likely possesses a more sympathetic heart and more gentle touch and manner by reason of his race and nature than the average white man."

◆

THE HOLY WELL AT MECCA.

Mr. E. H. Hankin reports[1] the following interesting analysis of a sample of water from Hagar's Well at Mecca. The water had been brought from Mecca by a hadji of repute, and was contained in a vessel of tin hermetically sealed:

"The vessel was shaped like a watch, and held about 200 c. c. of water. Owing to the small quantity of the water at my disposal, the analysis was only carried out with difficulty, and the results are no doubt somewhat inaccurate. They are as follows:

"Total solids in grains per gallon	259
Chlorine grains per gallon	51.24
Free ammonia parts per million	0.93
Albuminoid ammonia parts per million	0.45

"The figures for ammonia are no doubt without value, owing to the very good reason that at least eight months elapsed between the collection of the sample and its coming into my possession. The amount of chlorides is not necessarily an indication of pollution, as it would generally be regarded in England. In India, at all events, chlorides in well water are, I believe, more often an indication of the presence of saline matter in the soil than of contamination with organic matter. The quantity of total solids is, however, far greater than I have ever found in any well water reputed to be fit for potable purposes.

"It is a universal custom for the pilgrims to bring away with them these tin vessels, or dibias, of Zem-Zem water. Rich pilgrims may bring away one or two hundred of these dibias to distribute to their friends on their return to their native country. Poor pilgrims are, however, content with one or two. The Zem-Zem water is put into the dibias by the Mecca traders during the time of the year when no, or few, pilgrims are present; and it is very probable that the Zem-Zem water is often diluted, as this does not diminish its sanctity, and the supply of water in the well is by no means equal to the demand."

◆

"HAIL HORRORS!"

Macbeth "supped full with horrors." But could he return and live in modern times, he might have even a richer banquet than his first; for a Frenchman, M. Gelineau, has just published a volume upon "Unhealthy Fears, or Phobiæ." These curious and uncomfortable states of mind were first described by

---

[1] British Medical Journal, June 30, 1894.

Benedict and Westphall; but there are many species, and M. Gelineau has carefully compiled a complete list for the benefit of his shuddering and yet fear-bound reader.

They are, aichmophobia, or fear of sharp points, as of needles or pins; agoraphobia, or fear of open spaces, with a sub-variety, thalassophobia, or dread of the ocean; astrophobia, or fear of the stars and celestial space; claustrophobia, or fear of enclosed spaces; mysophobia, or fear of filth; hematophobia, dread of blood; necrophobia, or horror of dead bodies; thanatophobia, or dread of death; anthropophobia, or fear of crowds; monophobia, a fear of being left in solitude; bacillophobia, or fear of microbes; siderodromophobia, or dread of railways; pathophobia, or fear of disease — with many subdivisions, of which the most important and most frequent are anginophobia (fear of angina pectoris), ataxophobia, syphilophobia, lyssophobia (or fear of rabies), spermatophobia and zoöphobia (or fear of animals), which in its turn has subdivisions for cats, dogs, horses, mice, etc., *ad totum catalogum animalium.*

Returning to the list, we find still kleptophobia, fear of becoming a kleptomaniac; pyrophobia, fear of matches; stasophobia, dread of standing upright; aërophobia, or dread of draughts of air; acrophobia, fear of high places; toxicophobia, a fear of poisons; demonophobia, a dread of the devil (*this is rather rare*).

There are also a very great number of phobiæ peculiar to certain professional persons — as physicians, artists, merchants — which have yet to be Hellenized and classified. The culminating fear, however, the quintessence of dread, is the fear of having a fear, the dread of a dread, or phobophobia.

TWELVE THOUSAND PRESCRIPTIONS.

The anticipated formation of a new and more extensive British Pharmacopœia has led to an exceedingly interesting compilation of statistics by Mr. Martindale, F.C.S., of London.

In the constant changes which must inevitably occur in the advances made in therapeutics, many drugs and preparations become obsolete, and the art of pharmacy replaces others by improved processes.

In his pamphlet, "Analyses of Twelve Thousand Prescriptions," Mr. Martindale has endeavored to indicate the current of this change in recent years. He has carefully analyzed the last two thousand prescriptions dispensed antecedent to April 1, 1894, in six pharmacies in the following cities of the United Kingdom: Aberdeen, Bournemouth, Carlisle, Cork, Oxford and London. The statistics do not record the number of times a drug has been employed nor repetitions of prescriptions, but simply the frequency with which a drug or its preparations has occurred in the written prescriptions of physicians, surgeons and general practitioners.

Out of the twelve thousand prescriptions spiritus chloroformi leads the van with a record of 1,117. The second most popular article was tincture of nux vomica, which was written for 991 times. Glycerine had 875 calls, standing third on the list. Next in order came bicarbonate of soda, 807; syrupus aurantii, 796; spiritus ammonii aromaticus, 675; quininæ sulphas, 598; vinum ipecacuanhæ, 504; potassii bicarbonas, 463; and aqua chloroformi, 437. There were but ninety-nine preparations called for more than a hundred times, showing a fairly wide range of therapeutic choice.

The first preparation of opium in any form is the liquor morphinæ hydrochlorates, which stands fifty-second in the list, with a score of 172. Tincture of opium is sixty-third, with a score of 147. The relative positions of a few other drugs are interesting. Tincture of digitalis was called for 300 times and ranks twenty-seventh. Tincture of the chloride of iron stands thirty-fourth, with 249 calls; with bismuth subnitrate next, having 247.

Of the relatively specific drugs iodide of potash had 356 calls, and stands eighteenth; salicylate of soda had 323 calls, and ranks twenty-one. Pilulæ hydrargyri, the first preparation of mercury, stands twenty-ninth, with 273 calls; while three below it is the subchloride, with 258 calls.

One hundred non-official preparations appear in the list, of which but four were prescribed over one hundred times, namely, syrupus ferri, quininæ et strychniniæ phosphatum, 173; syrupus hypophosphitum comp., 143; nepenthe, 107; and lotio acidi borici, 103.

One hundred and twenty-six official preparations, other than tests and those required for making official compounds, were not once prescribed.

A similar study of prescriptions in this country would offer an interesting comparison and a basis for the formation of an international pharmacopœia.

THERAPEUTIC NOTES.

The Treatment of Typhoid Fever with Lactophenin. — Von Jaksch[1] reports the treatment of eighteen cases of typhoid fever with lactophenin with surprisingly good results. Some of the cases had shown a continuous temperature of over 40° C. for several days with great dulling of the intellect and marked prostration, all of which had defied other lines of treatment. Other cases had severe renal complications, or hypostatic pneumonia. It is very essential to give the lactophenin in capsules — 0.5 to 1.0 at a dose. According to the antipyretic effect noted the drug may be repeated up to six grammes a day. So far, he has not noted any ill effect whatever. In one case only was the first dose vomited — but subsequent doses were excellently well borne, and the effect upon the patient was as favorable as in the other cases. Twice during the administration of the drug a somewhat arhythmic pulse was noted for a while. The excellent effect of the drug was always a prompt reduction of the temperature which under even very moderate dosage remained for several hours, and the rise of temperature following was gradual and unaccompanied by chill. In some 360 observations there was but one case in which the rise of temperature was accompanied by slight chilliness. The drug had a particularly quieting effect upon the typhoid patient. The delirium ceased and the intellect cleared to a marked degree so that the patients all expressed a sense of subjective comfort. It is a crystalline powder with a slightly bitter, not unpleasant taste, and soluble in water. A similar favorable report of its use in some forty cases of various acute febrile disease including numerous cases of typhoid, is made by Jaquet from the medical clinic at Basel.

---

[1] Centralblatt für die gesammte Therapie, May, 1894.

METEOROLOGICAL RECORD,

For the week ending July 7th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S.. 1	30.04	80	92	68	67	70	69	W.	S.W.	10	12	C.	C.	
M.. 2	30.04	79	86	72	71	76	74	N.E.	S.W.	5	14	C.	C.	
T.. 3	29.84	75	86	64	95	80	88	S.E.	S.W.	5	12	O.	C.	.18
W. 4	29.83	77	88	66	45	70	58	W.	W.	12	7	C.	C.	.01
T.. 5	29.86	72	80	63	52	48	50	W.	N.W.	17	8	C.	C.	
F.. 6	29.86	70	80	61	47	64	56	S.W.	S.	5	8	O.	O.	
S.. 7	29.86	72	81	63	65	57	61	S.W.	N.W.	12	14	C.	F.	.04
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, July 7, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Scarlet fever.
New York . .	1,956,000	979	519	32.80	9.30	24.00	5.10	1.10
Chicago . . .	1,438,000	—	—	—	—	—	—	—
Philadelphia .	1,139.457	605	336	33.92	6.08	27.84	3.20	.48
Brooklyn . .	1,043,000	607	393	39.52	5.60	31.04	5.44	.16
St. Louis . . .	540,800	—	—	—	—	—	—	—
Boston . . .	501,107	196	65	14.79	11.22	6.63	3.57	1.53
Baltimore . .	500,000	—	—	—	—	—	—	—
Washington .	285,000	159	81	27.72	6.30	22.05	.63	—
Cincinnati . .	325,000	—	—	—	—	—	—	—
Cleveland . .	325,000	140	85	38.34	5.68	28.40	2.84	3.55
Pittsburg . .	272,000	122	77	20.50	6.56	16.40	—	.82
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	29	14	24.15	6.90	13.80	—	—
Charleston . .	65,165	38	15	13.15	2.63	10.52	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	100,410	24	9	24.96	12.48	16.64	4.16	—
Fall River . .	92,233	52	42	53.76	3.84	53.76	—	—
Lowell . . .	90,613	26	16	42.35	3.85	34.65	—	3.85
Cambridge . .	79,607	19	9	31.56	15.78	15.78	—	10.52
Lynn	65,123	12	1	—	16.66	—	—	—
Springfield . .	50,284	17	13	64.68	—	64.68	—	—
Lawrence . .	49,900	16	7	6.25	—	—	—	—
New Bedford .	47,741	14	6	28.56	14.28	28.56	—	—
Holyoke . . .	43,348	29	15	51.75	6.90	37.95	—	—
Brockton . .	33,939	6	1	—	33.33	—	—	—
Salem	33,155	9	—	—	—	—	—	—
Haverhill . .	32,925	6	0	—	50.00	—	—	—
Malden . . .	30,209	7	2	—	14.28	—	—	—
Chelsea . . .	29,806	6	2	16.66	33.33	—	—	—
Fitchburg . .	29,383	9	1	—	—	—	—	—
Newton . . .	28,837	6	2	16.66	16.66	—	—	—
Gloucester . .	27,293	—	—	—	—	—	—	—
Taunton . . .	26,955	12	6	50.00	—	33.33	8.33	8.33
Waltham . .	22,058	4	0	—	25.00	—	—	—
Quincy . . .	19,642	—	—	—	—	—	—	—
Pittsfield . .	18,802	4	1	—	25.00	—	—	—
Everett . . .	16,585	4	2	—	25.00	—	—	—
Northampton .	16,331	7	3	28.56	28.56	14.28	—	—
Newburyport .	14,073	3	1	33.33	—	33.33	—	—
Amesbury . .	10,920	1	0	—	—	—	—	—

Deaths reported 3,197: under five years of age 1,723; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 1,055, diarrhœal diseases 801, consumption 250, acute lung diseases 184, diphtheria and croup 119, scarlet fever 28, whooping-cough 27, typhoid fever 22, measles 20, cerebro-spinal meningitis 14, malarial fever 9, puerperal fever 7, small-pox 4.

From whooping-cough Brooklyn 9, Pittsburg 4, Philadelphia and Washington 3 each, Cleveland 2, New York, Charleston, Cambridge and Newton 1 each. From typhoid fever Philadelphia 10, New York and Brooklyn 2 each, Boston, Washington, Cleveland, Pittsburg, Nashville, Lowell, Marlborough and Medford 1 each. From measles New York 8, Brooklyn 6, Cleveland and Holyoke 2 each, Philadelphia and Washington 1 each. From cerebro-spinal meningitis Boston and Washington 3 each, New York and Holyoke 2 each, Philadelphia, Worcester and Taunton 1 each. From malarial fever New York 6, Nashville 2, Brooklyn 1. From small-pox New York 4.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending June 23d, the death-rate was 15.7. Deaths reported 3,152: acute diseases of the respiratory organs (London) 201, measles 162, whooping-cough 86, diphtheria 69, scarlet fever 42, diarrhœa 39, fever 35, small-pox (London 5, Birmingham 3, West Ham, Wolverhampton, Manchester and Salford 1 each) 12.

The death-rates ranged from 8.3 in Leicester to 21.7 in Liverpool; Birmingham 19.4, Bradford 15.1, Croydon 9.3, Gateshead 13.4, Huddersfield 13.2, Leeds 14.5, London 16.0, Manchester 18.0, Newcastle-on-Tyne 18.3, Nottingham 17.7, Portsmouth 10.1, Sheffield 12.8, Sunderland 20.7.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 7, 1894, TO JULY 13, 1894.

Captain James D. Glennan, assistant surgeon, now on leave of absence, will report without delay to the commanding general, Department of the Missouri, for temporary duty.

Major Egon A. Koerper, surgeon, granted leave of absence for one month on surgeon's certificate of disability.

The leave of absence for seven days granted **Captain Paul Clendenin**, assistant surgeon, is extended twenty-three days.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 14, 1894.

Ammen Farenholt, assistant surgeon, ordered to Naval Laboratory and Department of Instruction, New York.

APPOINTMENT.

Chas. F. Kindelberger, appointed an assistant surgeon in the U. S. Navy.

RECENT DEATH.

Joseph Pagani, M.D., died in Boston, July 15, 1894, aged fifty-eight years. He was born in Borgomanero, Italy, of a family noted for many generations for its professional attainments. He graduated in medicine at the University of Pavia and received degrees from the University of Palermo and the Instituto Accademico Umberto 1 at Livorno. In 1865 he came to this country and after a short residence in New York settled in Boston. For his kindness to Brazilian subjects he received, in 1882, from Dom Pedro, the decoration of Chevalier de Buenos Ayres. In 1892 he was made Cazique and Baron Roxley in the Aryan peerage of Russia. He was a distinguished member of several medical societies, among which were l'Académie de Médicine of Paris and the Societa Medicale di Roma. Dr. Pagani was prominent in all movements for the welfare of his countrymen in America.

BOOKS AND PAMPHLETS RECEIVED.

Albany Medical College Catalogue, 1893–94 and Announcement, 1894–95.

Charaka-Samhita. Translated into English and published by Avinash Chandra Kaviratna. Part IX. Calcutta. 1894.

Semi-Centennial Annual Announcement of the Eclectic Medical Institute, Cincinnati, 100th Session, 1894–95, with Catalogue of Matriculates and Graduates, 1893–94.

Nuovo Metodo di Cura della Tubercolosi Polmonare. Per el Dottore Carasso Giovanni Michele, Tenente Collonnello Medico, Direttore dell'Ospedale Militare di Genova. Rome. 1894.

Diseases of the Nose and Throat. By F. De Haviland Hall, M.D., F.R.C.P., Lond., Physician to Out-patients and in charge of the Throat Department at the Westminster Hospital, etc. With two colored plates and 59 illustrations. Philadelphia: P. Blakiston, Son & Co. 1894.

A Manual of Instruction in the Principles of Prompt Aid to the Injured, Including a Chapter on Hygiene and the Drill Regulations for the Hospital Corps, U. S. A., Designed for Military and Civil Use. By Alvah H. Doty, M.D., Major and Surgeon, Ninth Regiment, N. G. S., New York, etc. Second edition, revised and enlarged. New York: D. Appleton & Co. 1894.

Enormous Oval Hemorrhoid Encircling the Anus; Whitehead's Operation; Entire Cure. Operation Wounds of the Thoracic Duct in the Neck; With a *Résumé* of the Two Prior Recorded Cases and Two Additional Cases. Ligation of the Common and External Carotid Arteries and the Jugular Vein, for Arterio-Venous Aneurism of the Internal Carotid and Jugular, with Division of the Optic Nerve on the Opposite Side, the Result of a Gunshot Wound. By W. W. Keen, M.D. Reprints. 1894.

Lecture.

THE RANGE AND SIGNIFICANCE OF VARIATION IN THE HUMAN SKELETON.[1]

The Shattuck Lecture for 1894.

BY THOMAS DWIGHT, M.D., OF NAHANT.

In 1878, an essay on "The Identification of the Human Skeleton" had the good fortune to receive the Shattuck Prize offered by the Massachusetts Medical Society. It is fitting that the same line of thought should be developed in the Shattuck Lecture.

In that essay were discussed the recognition of the sex and age of the skeleton, the method of estimating the height and of making proper allowance for such parts as might be wanting. To some of these questions I brought methods of my own, but for many points I was forced to rely on the statements in books, too often quoted one from another. No part of medical literature is so perfunctory, artificial and altogether unsatisfactory as medico-legal anatomy.

During my professorship at the Harvard Medical School I have tried to use the material for original investigations, to find new criteria of sex and of age, to observe the degree of asymmetry between the two sides of the body, to learn how frequently anomalies occur which would vitiate the usual methods of procedure, and finally to study the question of the relation between the external shape of the body, its peculiar individuality, and the shape of the supporting framework. Though, as I hope to show, these researches have not been fruitless, yet some of these fields have yielded little. Attempts have exceeded performances. But if the man is to be pitied who can travel from Dan to Beersheba and cry "'Tis all barren!" much more is the anatomist worthy of compassion whose studies in the dissecting-room show him nothing but dry details of the structure of the body. It is his own fault if he brings no fresh learning to the great topics of the day. In these studies I have seen many luminous facts throwing light on the relations of the bodies of man and lower animals, on the peculiarities of prehistoric man, and on the process of development and growth. I shall not leave these quite without notice; but, speaking as I am to a medical audience, rendering, as it were, an account of my stewardship (for what is a professor in a medical school but the trusted servant of the profession?), I shall bring into strongest relief those parts of the inquiry which are of most practical value in medico-legal questions. It would require a course of lectures, rather than a single one, to follow the steps of my investigations. I wish as much as may be to spare my audience the details, giving only the results. I shall not, however, confine myself exclusively to my own work, as it is my purpose to show the present state of our knowledge.

In living nature each species suggests a more or less ideal type, the exact counterpart of which the student often searches for in vain. This type is not the expression of the mean development; it is far above that. It is the perfect individual. It is what in a show of animals or plants would be called a "prize-winner." It is in such a specimen that we would study the relative development of the different parts. We shall never reach this by compiling the means of vast numbers of specimens. This latter method, however, if exercised with due care and discretion, will give us, not the type of the animal or plant as shown at its best, but the one most commonly met with. These two conceptions must not be confounded, for they are two different things, each of which has its place and its uses. When we come to Man, one ideal type is not enough. We should have to take each race by itself, were it not that I am dealing with the Caucasian alone. The difference caused by sex, however, requires one type for man and another for woman. Indeed, it may be said in parenthesis that this shows admirably the difference between the ideal and the average. What sort of a human figure would be reached by an average of measurements of males and females? This principle hereafter with advancing science must be carried even further, so as to recognize sub-types such as the tall, the short, the intermediate.

But nature shows the student more than type and the mean. It even disguises them by numberless variations in many, often in opposite, directions.

THE SEX.

Turning at length to the human skeleton, we find as in the whole body, two types, a male and a female. The typical skeleton reveals its sex so distinctly that none but a tyro would need measure and compass to find it. But to the anatomist there are many signs which to others are unknown, by which almost every bone in the body reveals its sex. This is not to say that it is always easy or even possible to decide on the sex of a skeleton. Far from it. We are confronted here with the effect of variation. The mean male or female skeleton is of course less easily recognized than the typical one. Then come those which have fewer and fewer characteristic points, till we find a certain number of which the diagnosis is very difficult or even impossible. My studies have been specially directed to these cases, among which we may reckon skeletons of which the most characteristic parts are wanting.

The sex has always been determined by the pelvis. I can reiterate my remark of sixteen years ago, that it is for that purpose of more value than all the rest of the skeleton. There is little or nothing to add.

The female pelvis is broad and the male deep. These remarks apply, however, chiefly to the true pelvis. There is some discrepancy in the statements, as to the transverse measurements of the false pelvis. While I believe it is true that as a rule the anterior superior spines of the ilia are farther apart in woman, I queston very much whether this is true of the most distant points of the iliac crest. Should the pelvis be wanting or too little typical to be conclusive, for such there are, we must turn to the general sexual characteristics of bone, which indeed will help us with the pelvis itself.

There is the male and female type of bone, there are the proportions of the body (which, however, are not of much use if the bones are separate), and there are the peculiarities of each bone. Of course the spheres of these different criteria fuse, one with another.

First, as to the general male and female characteristics. We all know that male bones are larger, stronger and more curved. Their ridges and projections are greater and rougher. It seems to be tacitly assumed that, excepting the mere size, these features depend on the greater muscular development of man.

---

[1] Delivered before the Massachusetts Medical Society June 12, 1894.

This I do not believe is the fact, at all events among civilized races. My observations go to show that female bones rarely assume the male development. I never find, even in the strongest, the same rough surfaces and ridges, rarely the same thickness. There is one sign which has received little attention and which repays research. It is the small size of the female articular surfaces. I shall return to this again and again, for it is of the greatest significance, and as all the bones have joints, of the widest application.

Next, as to the proportions of the figure. The small thorax, both short and narrow, is essentially female. While it is true that the lumbar region of the spine is relatively longer in woman, the chief factors in the shortness of the thorax are the short sternum and small lower ribs. Add to this the relatively slight development of the upper extremities, and we are ready for the study of the individual bones.

The sex of the skull is very often fairly easy to determine. The relatively small size of the face, the lightness of the jaws, the small size of the superciliary eminences, of the occipital protuberance and ridges, and of the mastoid processes of the female are very suggestive. One feature, which I think of much value, is the more sudden change of direction from the forehead to the top of the skull in woman. Another, which we owe to Professor Cleland, is the more marked elevation above the occipital condyles in man, which throws the face higher up, departing more from the infantile condition which lingers in woman, as is shown by the more prominent frontal and parietal eminences. As a specimen of the male skull I show one which its late occupant would have been glad to have so used,— that of Spurzheim, the phrenologist.

The studies which I have undertaken on bones of the trunk and limbs must be given at some length. In my previous essay I had discussed on the basis of a very small number of observations of the sternum, the value of Hyrtl's law that "the manubrium of the female sternum exceeds half the length of the body, while the body of the male sternum is, at least, twice as long as the manubrium." I found then, curiously enough, that the averages of my measurements confirmed that law, but that the exceptions were equal to the cases in accord with it. More curiously still, I found this result repeated in a series of measurements large enough to be satisfactory (those of 228 bones), with the difference that the exceptions amounted to almost precisely 40 per cent. Thus, though the law still held true in averages, it would fail to apply to two bodies out of five, and thus would be useless for the determination of any particular case. Farther, as yet unpublished, observations have raised my numbers to 342 sterna, of which 222 were male and 120 female. My results once more confirm Hyrtl's law for the mean, but still approximately 40 per cent. of the cases are exceptions, owing to the variability of this bone.

Strauch found in addition that in male and female sterna of equal length, the former is narrower in the manubrium and in the lower part of the body. According to him, the female sternum is relatively (but not absolutely) broader than the male one. Hence we conclude that though averages may deceive us, yet it is possible to recognize very distinctly a male and a female type of breast-bone. The former with a relatively long and regular body, the lower parts of which are well developed, separating the attachments of the lower cartilages, the latter with a shorter body, broadened below and having depressions of the lower cartilages close together, indicating a want of development of the lower sternebræ. Intermediate forms of difficult diagnosis must occur. In these I should look on relatively large or small clavicular facets as signs of male or female sterna respectively. Here are more or less peculiar specimens. In this, which happens to come from a negress, the body ends opposite the fourth or fifth cartilage.

The separate bones of the spine and ribs offer little that is of practical value.

The whole upper extremity is much lighter in woman. The lighter shoulders rest on a smaller and relatively narrower thorax. The collar-bones are very characteristic. Strong, long, and boldly curved in man, they are slight, short and straighter in woman. The degree of curve is less characteristic than some other features, as we sometimes find slight but strongly curved clavicles in woman and strong straight ones in man. This depends on the peculiarities of the figure. The largeness or smallness of the articular surfaces is of much importance.

The shoulder-blade is an extremely variable bone. To me it is very interesting. I imagine that I shall surprise my hearers in speaking of its sexual characteristics as very remarkable. The scapular index, that is the ratio of the breadth to the length, need not be discussed, though I have measured 198 bones for this paper. Its sexual significance is practically nil. In a previous paper I have given drawings of two widely different scapulæ with almost identical indices.

While it is very difficult to state what, beyond small size and delicacy of build, constitute the sexual characteristics of the female scapula, yet there is no question that in well-marked cases it has a characteristic type. In my opinion, a competent expert can decide with great probability the sex of the scapula in at least four out of five of a considerable number of bones taken at random.

The mere question of size is an important one. I have examined the bones of 123 bodies, 84 male and 39 female, in which the height and breadth of shoulders were known, and have taken the length, breadth and index. By far the most useful of these measurements is that of the length, as shown in the following table:

LENGTH OF SCAPULA.

Length of Bone.	Male. Number.	Female. Number.
From 13 to 14 cm.	..	10
From 14 to 15 cm.	3	13
From 15 to 16 cm.	10	11
From 16 to 17 cm.	32	5
From 17 to 18 cm.	30	..
From 18 to 19 cm.	8	..
From 19 to 20 cm.	1	..

Average length of male bone, 16.8 cm.
Average length of female bone, 14.7 cm.

As the two sides usually differ, I have in this series always taken the longer bone.

Thus it appears that of 123 bones 26 measure less than 15 cm., of which only 3 were male; also that 76 measure 16 cm., or more, of which only 5 were female. There is no single instance of a bone measuring less than 14 cm. being male, nor of one measuring 17 being female. It is needless to say that exceptions would be found in a very large series, but these limits are very valuable.

I have studied the dimensions and proportions of the glenoid cavity on 90 bones, of which 63 were male and

27 female. In brief, the female socket is not only smaller but relatively narrower. The average male length is 3.92 cm., and the female 3.36. Very few male sockets are less than 3.6 cm., and very few female ones as long.

When it comes to examining the various parts of the bone, one by one, it is very difficult to find sexual characteristics that will stand rigid examination; none the less, I have little difficulty in defining a typical female scapula. It is more easy to do so than to define a male one, as the latter is more variable. The greatest length should not exceed 15 cm., and that of the glenoid should be about 3.4. The latter should look narrow and delicate. The inferior angle is sharp, the posterior border straight as far as the spine, its upper portion inclining forward. The upper border shows a sharp descent from the superior angle to the supra-scapular notch. The process for the teres major at the lower end of the axillary border is small. The coracoid is remarkably delicate, its end is compressed instead of knobbed. The acromion is narrow, of the shape called falcate by Professor Macalister. In the male the lower angle is broader, the teres major process more developed. The posterior border is rather more rounded, the upper border more horizontal and higher, so as to make a larger supra-spinous fossa, the coracoid is thick with an approach to a knob at the end. The acromion larger, squarer, with a large clavicular facet.

In view of the considerable difference in size already mentioned, it is plain that the sex of most shoulder-blades may be determined by that alone beyond reasonable doubt. Many bones, however, are of the doubtful size. These, in my opinion, can for the most part be sorted out by an expert. A small residue is not to be recognized. A bone the sex of which cannot be told is more likely to be male than female. We may feel reasonably sure that it does not belong to a tall man or a short woman. There are exceptions to all rules. Here is a female scapula which both in size and shape is distinctly masculine, yet it came from a short and fat old woman with a short neck and high shoulders. It is perhaps relevant to state that she was insane; as it is thought that structural peculiarities are often found in the deranged.

The female humerus, radius and ulna show far more strikingly what I have called the general femininity of their structure, than the bones of the thigh and leg. Though I do not in this case speak by the book, that is by measurements, I believe that the difference of size is greater between male and female humeri than between the femora. It is generally thought that the female humerus is more slanting than the male, that is to say makes a smaller lateral angle with the extended and supinated fore-arm, but Berteaux's measurements make the difference too slight to be worth much. The articular ends of bone of both arm and fore arm come to the rescue, but I regret that I have no series of measurements large enough to quote.

The femur has rightly received much attention. It is a favorite of anatomists. I have, therefore, the advantage of valuable observations of others to compare with my own. I may in particular refer to the works of Humphry, Broca, Mikulicz, Charpy and Berteaux. The monograph of the last on the humerus and the femur is a mine of information. Leaving aside the length of the femur, let us take certain parts.

My observations on these details are founded on 64 cases, 38 men and 26 women, in which the body was measured before dissection and the bones studied in detail later. The length of the neck of the femur is on the whole in direct ratio to the length of the shaft. That of woman is therefore on the average the shorter, but there is no relative sexual difference worth noting. Berteaux has shown moreover that the relation of the thickness of the neck to its vertical breadth is the same in the two sexes. The angle which it makes with the shaft has long been a moot point. It has been taught that it is less (that is to say nearer a right angle) in shorter femurs, and if a short femur joins a broad pelvis, as in woman, by so much the more is the angle decreased and thus the angle is smaller in woman. This is diagrammatic demonstration which I long taught with perfect good faith. Of late years, however, it has been disputed by several observers, some even maintaining the reverse. My own observations, taken with others, convince me that there is probably no sexual significance in the angle (with one reservation to be presently set forth). The average in the two sexes is about the same, that of the women being indeed in my series a trifle the greater, thus in men 125.1°, in women 125.6°. Like every one else I find that there is a great individual variation, ranging from 110° to 144°. Be it noted by the way that the lowest is in a man and the highest is in a woman. But in the male bones there seems to be no regularity in the distribution of these variations. In man a long or a short femur is about equally likely to have a large or a small angle; but the shorter female ones tend to a lower angle.

There is, therefore, this much truth in the old idea, that the shortest, but I do not say the most typical, female femurs have angles below the average, as proved by the following observations. The average angle of the longer half of the male bones is 126.5°, and that of the shorter 123.6°, while the longer and the shorter halves of the female series give 129.2°, and 121.9° respectively. It appears also that the highest angles of all are in the longest female femurs, but I doubt whether this connection is so regular as that of the short ones. This shows, however, that as a whole this angle is of little value as a sign of sex.

Another angle which has been thought to have more or less significance is that of the shaft with a vertical line, which according to the old theory should also be greater in shorter bones and wider pelves, and therefore associated with a smaller cervical angle. An analysis of my tables shows no system of relation between these angles. On the other hand the average inclination is a little less in the male than in the female, being 9.3° and 10.6° respectively. This is too small to be of any practical value, especially as the individual variation is very great.

Some other measurements seem to throw more light on this matter. They tend to establish the theory that the small size of joints is characteristic of woman. They are the greatest diameter of the head of the femur and the greatest transverse breadth through the condyles. The average diameter of the male head is 4.8 cm., that of the female 4.15. My tables show one marked difference between the sexes; namely, that in the women there is a fairly regular increase in the size of the head corresponding with the increase in length of the femur. Among the men this is not so. While it is true that most of the largest heads are found in the longer half of the bones and most of the smallest in the shorter half, the correspondence is far less evident. I find, moreover, that but two of the male bones have a diameter of less than 4.5 cm. and but two of the female a greater. Both these female bones were among the longest, but the two male were but a little below the average. Thus it would seem that the actual measurement of the head of the femur is a pretty good criterion of the sex. The measurements of the knee are less conclusive. The average difference is just under one centimetre (8.3 and 7.3), but there are more that overlap.

Moreover there is a peculiarity in the shape of the typical male and female thigh bones which defies mathematical statement, which indeed I found very difficult to define long after I was aware of its presence. It is not merely that the typical female bone is more slender, as in fact everybody knows, but that seen from the front it has a peculiar outline. The shaft narrows gradually from the condyles till, at or above its middle, a part is reached that is narrower than elsewhere, above which there is a much less evident expansion. The typical male bone narrows much more suddenly from the condyles, so that the stout shaft soon reaches a tolerably uniform thickness. A rear view shows more distinctly that the male peculiarity seems to depend on the greater lateral projection of the outer condyle. Exceptions are plenty, but for all that there seems to be a pretty distinct difference of type, which with the help of certain measurements should enable us to determine the sex in most cases. I may mention that with the exception of a third trochanter (of the true kind) peculiar forms of femur are almost always male.

The tibia is in many respects a very variable bone. As a rule its greater delicacy of structure in woman is very plain. The smallness of the articular surfaces is striking. It is easy for an expert to judge rightly of its sex in most cases, though beyond the signs mentioned there is nothing absolutely characteristic.

While it appears from this discussion that there are certain mathematical considerations of great value in determining the sex, I would say emphatically that I consider the intelligent familiarity with bones which develops what might almost be called an instinct, more trustworthy than hard and fast rules, resting on the dreary accuracy of statistics.

I have here bones from two widely different bodies which are interesting in this connection. One was an uncommonly good, even a graceful, figure of a young woman, were it not that the shoulders were somewhat too square and heavy. The bones are all remarkably graceful, though rather strong. The femur has the characteristic female outline. In spite of the comparatively heavy shoulders the scapulæ and humeri are distinctly feminine. The other was one of the largest and most powerful looking female bodies I ever dissected, except that the hands and feet were small. She had been a factory hand. The femur is an uncommonly powerful bone for a woman, but the small head, as well as its outline, suggests the sex. The bones of the upper extremity are evidently female. The slight development of the shoulders in women is therefore a recognizable feature in the bones. Contrast the bones of this large woman with those of a slight young man, of whom more later.

(To be continued.)

Original Articles.

A CASE OF PRIMARY TUBERCULOSIS OF THE FEMALE BLADDER DIAGNOSED AND TREATED BY HOWARD KELLY'S NEW METHOD OF DIRECT INSPECTION WITH LARGE ENDOSCOPES.[1]

BY W. L. BURRAGE, M.D.

The case I have to present to-night is of especial interest, both on account of the rarity of the disease, and, as illustrating the successful employment of a new method of investigating and treating diseases of the bladder and ureters in women, a method that is, in my opinion, as much superior to all former methods as the electric cystoscope was to digital exploration.

Our ability to see and treat all parts of the bladder interior directly, as I am about to describe, is destined to revolutionize diagnosis and treatment in bladder, ureteral and kidney diseases in women. We must see as well as feel ulcerated areas and new growths, and define their limits. The diagnosis, for instance, of urinary tuberculosis will no longer be deemed sufficient. We must be able to say whether or not the disease is confined to the bladder, or is located in one or the other ureter or kidney, or in all.

Before reporting the case it is my purpose to say a few words as to the usual methods of bladder exploration, and then briefly describe the new method, and show you the instruments.

The previous recognized methods of exploration of the female bladder have been:

(1) Bimanual examination, with the uterine sound in the bladder, the finger in the vagina, and the other hand on the abdomen; or, without the sound.

(2) Digital exploration, the urethra being first dilated to not more than twenty millimetres by means of graduated dilators and the finger.

(3) Endoscopy, by means of a straight tube of hard rubber about seven centimetres long and ten millimetres in diameter, open at its inner end and carrying a glass-tube closed at its inner extremity. The glass-tube projects a little beyond the hard-rubber sheath and has in it a little mirror inclined at an angle of one hundred degrees. The mirror being attached to a long handle may be moved forward or backward and turned around. Light from an Argand burner, or direct sunlight, is reflected from a head mirror to the little mirror in the tube and thence into different parts of the bladder wall. The rays of light pursue the same path back to the operator's eye at the focus of the head mirror.

(4) Cystoscopy, by means of an instrument made on the same plan as the endoscope, except that the source of the light is an electric lamp in the end of the instrument in the bladder.

(5) We must enumerate also examination of the interior of the bladder through a vesico-vaginal fistula or opening made by supra-pubic cystotomy.

Examination by touch has been of great use, and will continue to be; but it cannot rival in value, either from a diagnostic or therapeutic point of view, examination by sight. With the endoscope and cystoscope the bladder has to be partly filled with a perfectly clear, transparent fluid in order to be inspected. In most bladder affections the urine is cloudy, and the walls can be cleansed with difficulty; besides, the urine constantly coming into the bladder from the ureters may tend to render it cloudy; and also only a portion of the bladder interior can be inspected, owing to the necessary obliquity of the mirror in the instrument. We must add, as a further objection to endoscopy and cystoscopy, the distortion of the image, due to errors of refraction of the fluid media through which the light passes. Our knowledge of the appearance of the interior of the living bladder both in health and disease is largely due to the investigations of Mr. E. Hurry Fenwick, of London, with the electric cystoscope.

---

[1] Read before the Boston Society for Medical Improvement, April 9, 1894.

Catheterization of the ureters has been practised more or less extensively ever since Prof. G. Simon published his work on the subject in 1875. He dilated the urethra; then, passing his finger into the bladder, located the ureteral orifice by touch, and passed the catheter along his finger into the ureter.

Professor Pawlik, later on, improved on this method by demonstrating landmarks in the vagina which serve to locate the ureters; then passing the catheter into the bladder he observed the play of its tip on the anterior vaginal wall and directed it into the ureteral openings. He also improved the catheter. By Pawlik's method the dilatation of the urethra with the attendant danger of subsequent incontinence, was done away with, and the seriousness of the operation lessened.

Professor Sänger at this time demonstrated that the ureters in their lower course can be palpated per vaginam.

Prof. Howard A. Kelly of the Johns Hopkins University published two valuable papers in the *Annals of Gynæcology and Pædiatry* for May and August, 1893, in which he gave the results of his researches on the anatomy of the ureters and formulated exact rules for catheterization. He presented a new catheter.

While house-surgeon at the Woman's Hospital in New York I had the opportunity of following Dr. Nathan Boyeman's work on the bladder and ureters. In cases of cystitis and ureteritis he made a vesicovaginal fistula, and irrigated the bladder and catheterized the ureters through the openings so made. It was his routine treatment to irrigate the ureters and pelves of the kidneys by means of small English gum-elastic catheters. With a catheter in the pelvis of each kidney it was a part of my duty to catch the urine as it came drop by drop from the catheters — note the rate of flow on each side — and finally analyze each specimen chemically and microscopically. Today this work is done without cystotomy.

It was not until January of this year that Howard Kelly published in the *American Journal of Obstetrics* his article on "The direct examination of the female bladder with elevated pelvis. The catheterization of the ureters under direct inspection, with and without elevation of the pelvis." I hand you a reprint of this article, which is the basis of my work. As you see the very good illustrations do away with the need of much explanation.

The main steps of the procedure consist in emptying the bladder with a catheter; in elevating the patient's hips from eight to twelve inches, so that the residual urine will run up to the fundus, and the weight of the abdominal viscera being removed the bladder is distended with air; in the gradual dilatation of the urethra and the employment of large, straight, open endoscopes, which, by the way, are fitted with handles for ease of manipulation; and in the use of a strong light from an Argand burner or electric lamp held near the pubes, and reflected into the bladder by a head mirror. The graduated dilators are passed until sufficient calibre has been obtained. Kelly says many take No. 16. I have found Nos. 12 and 14 to pass easily in most cases. Suppose a No. 12 dilator passes, then introduce the speculum of the same size and remove the obturator. Thus by means of a simple speculum and proper posture all parts of the air-distended bladder are rendered visible. To inspect the upper and anterior zones the patient is placed in the knee-chest position. If there is a pool of urine in the bladder it is removed by a simple suction apparatus. Applications may be made to all parts of the bladder and urethra. Small quantities of urine are removed by pledgets of cotton held in delicate mouse-toothed forceps, and applications are made with a cotton-wound applicator. The ureteral openings are seen as little slits in the mucous membrane, and if watched urine may be seen issuing from them. A probe with a long handle bent at an obtuse angle is of use in verifying the position of the orifices. The ureters are catheterized with Kelly's catheter, the patient in position with hips raised, or flat on the table.

The necessary instruments are, four specula with obturators, Nos. 8, 10, 12 and 14; and four dilators, Nos. 7 and 8, 9 and 10, 11 and 12, and 13 and 14; mouse-toothed forceps; ureteral searcher, or long, bent probe; ordinary applicator; and one ureteral catheter. The dilators and specula are calibrated in millimetres; for example, No. 10 is ten millimetres in diameter, No. 12, twelve millimetres, and so on; a good light held near the pubes, is essential to success in this field of work.

I show you my set of instruments. I find two ureteral catheters more convenient than one, because the operator does not always care to spend the time to clean one catheter before catheterizing the second ureter.

Mrs. J. F., twenty-six years old, married seven years, and sterile, was referred to me October 17th, 1893, by Dr. N. K. Noyes, of Duxbury.

From Dr. Noyes's notes and from conversation with the patient the following history was obtained: Grandmother died of heart-trouble; mother and father and two sisters living and well; uncles and aunts of father died of consumption. There was consumption on the mother's side a generation back. The patient was not very strong as a child, being subject to coughs and colds. At nineteen years of age she had whooping-cough and later in the same year rheumatic fever. At twenty-one she had pneumonia, and three years ago had the grip. Husband is living and well. She suffered with inflammation of the bowels when she had rheumatic fever, and has had an attack each year for the last three years, being sick in bed for two or three months with each attack; the abdomen during these attacks would be swollen and tender. She had absolutely no trouble with her urine until August, 1893, not even with the attacks of inflammation of the bowels. A short time before the beginning of Mrs. F.'s urinary difficulty she spent the night at a house where her sister's husband was dying of general tuberculosis, and she was in and out at the house a good deal at that time.

Dr. Noyes first saw the patient September 5, 1892, when she was suffering with an attack of what he diagnosed as subacute peritonitis. The abdomen was tender, very slightly swollen, and she had a temperature of from 99° to 101° for five or six days. She was in bed for a month, the pain and soreness being very persistent.

In December, 1892, she complained of a "bunch low down in front passage" and pain in the back. Dr. Noyes diagnosed retroversion, and treated her for it for three months by packing and then fitted a pessary. The pessary failed to keep the uterus in good position, however. She wore it until August.

August 30, 1893, Dr. Noyes was called to see patient, and found her suffering from severe pain in lower part of abdomen, associated with swelling and great tenderness. Temperature 103°. Large doses of morphia relieved the pain, and in two or three days the temperature declined to normal. Patient took a vaginal injection of a pint of hot water just after the beginning of this attack. Two or three hours after, she began to have painful micturition, and has had it ever since. Pain near the end of micturition, which was every hour or two; urine cloudy and often bloody. After a time the pain became nearly continuous, and the frequency of micturition was at times as often as every few minutes. The bladder was irrigated every few days with some relief. She was catheterized for the first time in September.

Previous to the occurrence of the urinary difficulty she had made arrangements to enter St. Elizabeth's Hospital for operative treatment for retroversion and supposed peritonitis. She entered the hospital October 17, 1893. I saw her on the following day and found a well-developed and nourished woman of large frame, and of dark complexion. The uterus was retroverted in the third degree, replacable, two-and-three-quarters inches deep; ovaries and tubes not felt because the vagina was very long and roomy and the abdominal walls thick and tense. She was put on salol, gr. v., t. i. d., and prepared for exploratory abdominal section and ventral fixation. Urine slightly cloudy; no albumin. Heart and lungs negative.

Operation, October 25, 1893. Ether. Curretting the uterus brought away very little tissue. On opening the abdomen with a three-inch incision the uterus was found on the floor of the pelvis in the third degree of retroversion. Ovaries and tubes normal to feel and sight. No adhesions anywhere. The bladder wall felt thickened universally. Both ureters were palpated from the broad ligaments to the pelves of the kidneys, and nothing abnormal felt. Uterus anchored to abdominal wall by two stitches of fine twisted silk (No. 1) passed through each round ligament at a point one inch from the uterine cornu, and then through the parietal peritoneum and overlying fascia one and a half inches from the median line and at right angles to the incision. Toilet of peritoneum, and wound closed in usual manner.

Patient developed a mural abscess and an attack of bronchitis. Temperature not above 100° at any time. The painful micturition was a prominent symptom soon after the operation, and the bladder was irrigated daily with a one-half-per-cent. solution of boracic acid, and the salol was continued. Urine slightly alkaline, and containing a trace of albumin and much pus.

November 2d, the bladder was injected with glycerine (ʒi) and iodoform (ʒss), and this was continued every other day until November 24th, with some temporary relief of pain. She was then convalescent from the bronchitis; the wound was healed; the uterus was in good position, where it has remained since. There was no special tenderness over bladder at any time. Urine alkaline when not taking benzoate of ammonia or benzoic acid; cloudy and containing a small amount of pus; specific gravity generally about 1.012; a trace of albumin.

Endoscopic examination November 24th showed injection of upper urethra and bladder above trigonum. The bladder neck and upper urethra were swabbed out with nitrate of silver, 1 to 60, every third day for two weeks, with relief for twenty-four to thirty-six hours after each treatment. Various diluents for the urine were tried, and a large variety of drugs to relieve the pain, but with only temporary benefit.

She was discharged December 22d, and instructed to take citrate of potash and buchu. Repeated examinations of the chest failed to reveal evidence of anything but bronchitis.

Mrs. F. entered the hospital for the second time January 31, 1894. She complained of the frequent and painful micturition about as before. The urine was cloudy; of specific gravity of 1.010; slightly alkaline; albumin absent; twenty-four-hour amount only 12 to 14 ounces.

February 5th. Endoscopy by Howard Kelly's method. Not having Kelly's new specula at that time the examination was made with a Skene endoscope tube 10 millimetres in diameter, the patient's hips being raised. I made out a reddened area that bled easily, situated in the right posterior inferior zone of the bladder. It was studded with little grayish, glistening, translucent bodies the size of the head of a pin and raised above the surrounding surface. They looked like the miliary tubercles seen in peritoneal tuberculosis. The upper urethra was injected also. Ether was then given, and the urethra was dilated to admit my forefinger, which is 13 millimetres in diameter at the largest joint; and the patch was scraped with my finger-nail, and then touched with a ten-per-cent solution of nitrate of silver. Dr. J. M. Jackson examined the urine two days after the operation and found very numerous tubercle bacilli in a urine typical of cystitis. The bladder was irrigated twice daily with a warm solution of boracic acid and later with a very weak solution of tinct. myrrh. The myrrh gave more relief from pain than any other local treatment except the late effects of the nitrate of silver applications. She took oil of sandal wood by the mouth for two weeks without benefit, also belladonna, hyoscyamus and citrate of potash and buchu. Bromide of potash in 20 grain doses, frequently repeated, gave as much relief as any medicine that was taken internally.

February 21st, I made an examination of the bladder with Kelly's instruments, having failed a few days before because of the abundant flow of urine following the administration of citrate of potash and buchu. No anesthetic was necessary in this or subsequent examinations. No. 14 endoscope was easily passed. With the hips elevated and with the patient in the knee-chest position the entire interior of the bladder was inspected. The ureteral orifices were found as slits in the slightly elevated papillæ. No evidences of inflammation about either orifice. In the posterior inferior zone of the bladder, and situated one centimetre above the right ureteral orifice, was a reddened area, circular in shape, and one and a half centimetres in diameter, easily bleeding with slight touch, and studded here and there with the glistening, grayish bodies before described. I picked off one of these and gave it to the pathologist. He said it was too small for examination. I catheterized each ureter, and obtained what appeared to be normal urine from each. Examination by Dr. Jackson failed to reveal the presence of tubercle bacilli in either specimen. Although negative evidence in cases of urinary tuberculosis is not conclusive, I felt that the risk of carrying contagion up the ureter on my catheters was good reason for not obtaining further specimens.

Examination of the urine, March 2d, by Dr. Jackson, showed it to be cloudy, alkaline, 1.017, with a faint trace of albumin. In the sediment was a large amount of bladder and squamous epithelia, a few small round cells, much fresh blood, a considerable number of leucocytes, and a great number of bacteria and spores.

March 9th. She had an attack of pain and tenderness in the abdomen, associated with a cough. There was no temperature. Examination of the chest showed a few moist râles and high-pitched respiration in both backs, but nothing further.

March 14. I made another examination of the bladder with the No. 14 speculum, and confirmed my previous diagnosis. I curetted the reddened area with a Simon's spoon curette, and touched it with ten-per-cent. solution of nitrate of silver. There was moderate bleeding at the time.

Mrs. F. left the hospital March 20th.

Dr. Noyes writes, under date of April 7th: "At present she is in bed about all the time, because to be up causes more pain. The bladder is being irrigated twice daily through a soft-rubber catheter with four ounces of plain boiled and filtered water, and she is taking five grains of benzoic acid four to six times daily. I saw her yesterday, and she said she had very little pain except during and for a short time after urinating. She urinates only every three to four hours during the night, and every one and one-half to two hours during the day. She eats well, sleeps fairly well, and looks well."

The obstacles in the way of diagnosis have made the literature of primary tuberculosis of the female bladder somewhat meagre. Most of the work in the field of vesical tuberculosis has been done on the male. The text-books confine themselves to general statements. They give an unfavorable prognosis, though relatively more favorable than in secondary tuberculosis.

Pozzi says the duration of the disease may be estimated as from one to two years, but cases have been known in which it lasted from five to ten years without affecting the general health.

Fenwick said, in 1890, that most cases died in three years. But in 1892, in a paper on "The Mimicries of Primary Urinary Tuberculosis," published in the *British Medical Journal* for May 28th, he made the following statement: "After having watched the progress of over a hundred cases of urinary tuberculosis, I have come to the conclusion that when it attacks the lower division of the tract, the bladder, prostate and urethra, and is wisely treated, it exhibits as marked a tendency to obsolescence, or even cure, as the same disease when situated in the lungs." He also said, that, even when the disease was situated high up, the prognosis was better than was generally admitted.

I have not time to go into the question of infection — whether the bacillus is introduced from below, and the process ascends from bladder to ureters and kidneys; or whether it is excreted by the glomeruli of the kidney and travels downward to the ureter and bladder. Both views are advocated by eminent authorities. Fenwick says primary vesical deposits first appear on the posterior wall of the bladder, as in my case.

The symptoms are frequent micturition, not relieved by rest, as is the case in stone; pain, especially at the end of micturition; and blood in the urine.

The object of treatment in chronic tubercular cystitis is to render the urine unirritating, and, if possible, germicidal by means of diet and drugs; and to remove mucus and uric acid deposits as sources of irritation by irrigation; also to destroy the bacilli by the direct application of caustics and germicidal agents; and to relieve pain. The system should be built up by cod liver oil and tonics. A milk diet is of great benefit as a diuretic, also plenty of water. The drug that has the best reputation is benzoic acid. Tyson recommends it in the form of five-grain pills; at least thirty grains in the course of the day. The potash salts, especially the citrate and acetate are of great use. In a general way we employ the alkalies to dissolve uric-acid deposits and to prevent them, and benzoic and boric acids to dissolve the phosphates. Other drugs that are well spoken of, are: buchu, triticum, repens, corn-silk, sandal-wood, copaiba, eucalyptus and resorcin. Salol has been found to prevent the growth of the staphylococcus in the bladder; but, by the statement of Rommalaere, the bacillus of tuberculosis resists it absolutely. It is certainly a valuable drug on empirical grounds alone.

As local treatment, the bladder should be irrigated at least once a day. Tyron says that tepid water, four to six ounces is as good as anything, and relieves pain better than other injections. He also advises very weak bichloride, 1–26,000.

Other remedies that stand well are borax, one drachm to a pint of warm water; common salt in the same amount; salicylate of soda, one drachm to the pint; alum enough to give an astringent taste; nitrate of silver twenty grains to the ounce; and creolin, one per cent. Guyon uses bichloride, 1–5,000 to 1–1,000, twenty to thirty drops at a time. Loumeau also uses strong bichloride.

Guyon and Reverdin have obtained excellent results by curetting and cauterizing the ulcerated area through an opening in the bladder made by supra-pubic cystotomy. With our new method the cystotomy will often prove unnecessary.

For the relief of pain morphine is to be avoided. Skene recommends bromide of potash, twenty grains every four hours. I have found it of great use in frequent and painful micturition in chronic cystitis.

METHOD OF STUDY FOR MEDICAL STUDENTS AND YOUNG MEDICAL GRADUATES.

BY E. R. AXTELL, M.D., DENVER, COL.,

Professor of Histology and Bacteriology, University of Denver, Medical Department; Neurologist to the Deaconess Home Hospital. Pathologist to the St. Luke's and Arapaho County Hospitals.

At this time students have been released from their winter's work, the spring courses have been completed and a few weeks of rest have supervened. Ambitious students are now taking up their books and wondering where to commence their work and how best to systematize it for the best results. Certain students are studying in definite paths for definite ends; hospitals, prizes, positions of various kinds. The purpose of this article is to point out to those who have the summer before them how best to do the best work possible. It is unfortunate that a single medical student should be compelled to work hard at some laborious occupation during the summer months that lie between the sessions of his school. It is true that many of our brightest men have done so, but certainly those months can be well employed in study. There is no profession in which there is so much knowledge to be gained as in the medical profession, and it is well said that no one man can gain it all.

It is particularly true that all things can be bought except knowledge. The knowledge that we put away in our brain cells, we must work for and work for diligently.

For the best summer's work three things are essential, a good capable preceptor, a stated schedule of work and a method of study.

Let the student look about him for his preceptor. He should be a man, twenty-seven to thirty-five years of age, one who has done some writing for the medical press, a man who is engaged in college work or in some progressive investigation. A man who is yet young in the medical profession; one who is not too busy and who is ambitious. There are many of just such men in every city of any size and as I review my knowledge of the men in smaller places, that I have visited, I see them there. If the student cannot find such a man let him consult his old family physician. Do not accept the services, however, of the "old doctor" if he wants to be the preceptor. All honor to the noble old men of our profession! Never did there live such an array of grand old men, but the old doctor as we may all affectionately call him, is too busy a man, he has lost some of the fire of youthful ambition, he is not as pleased with the germ theory of disease as he might be, he is not the reader of the text-book that is now put into your hands.

Choose your teacher, ask him to tutor you, to assign your lessons, to hear you recite for one or two hours on Tuesday and Thursday of each week, and on every Saturday to have prepared for you a series of ten questions, which you are to answer, not orally but in writing. Arrange with him to mark these papers carefully and closely and to point out the deficiencies.

Make a reasonable money transaction of the arrangement. Ten dollars a month per student is a nominal fee.

Look about you and try to secure a fellow student. If you can arrange to have your rooms together, so much the better. A fellow compeer makes competition, stimulates work and sharpens the mental activity and keenness of you both.

Arrange for instruction in June, in July, for two weeks in August and for two weeks in September. Then to work! Do not try to accomplish too much, but do the little well. What you are working for during these holidays is not practical work but theory. Get theory first, then practice, time enough then to review your theory. As a practitioner of medicine you must have most of your knowledge available at all times. You cannot read, you have no time for reading when you stand before a case of uremic convulsions, before edema of the glottis, before a case of post-partum hemorrhage. You must act. How can you act when you have no knowledge of what should be done?

Thousands of young medical students make a mistake in allowing themselves to be entangled by practical work before they are ready for it. Many a physician has used the ready hands of a young medical student, when that student should have been at his books.

My old preceptor had me passing catheters and assisting at fractures and dislocations long before I should have done any work of that kind. Of what value was it to me to pass a catheter when my knowledge of the anatomy of the urinary tract and of the cause of the retention of the urine was so cloudy? Of what use was the reduction of a dislocation to me when the anatomy of the joint was so obscure? Every medical student should have some hospital training, he should study medicine with that expectation and he should certainly strive for that goal. Let a large bit of the practical work go until that time comes.

Summer is usually a poor time to attend clinics. The professor in attendance is not stimulated to work; but little is said of the cases as they are seen and the result is that the instruction to be derived is slight.

If your preceptor does not give you a time-table to guide you in your work, adopt this. Other students have followed it closely for months and months. What one man has done another man can do. You have agreed to work.

On every week day you are to rise at 6 A. M. One hour is given for the toilet and for breakfast. On Tuesdays, Thursdays and Saturdays, the days on which you recite, review your lesson from seven until seven forty-five. If you recite from eight to nine, walk to the place of recitation, and after it is over return to the room at once and study until twelve. From twelve to one get your noon-day meal, which under the schedule I am giving you should be the main meal of the day. From one to two in the afternoon you should go to bed. Do this in earnest. Throw off your clothes, don some cool sleeping gown and darken the room. Your alarm clock will tell you when it is two o'clock. From two to five you study. From five to six you exercise. Walk, ride, use some Indian clubs, box or wrestle. Some of the greatest tussles of my life occurred between my room-mate and myself, between the hour of five and six. Supper is taken from six to seven. Then a rest until seven thirty. Then study until ten. Go to bed at once. This advice I am free to say I did not always follow, but it is good advice.

On the days that you do not recite your study hours are unbroken.

Wednesday night is your night off. Go to the open-air theatre, visit your friends, take a car-ride or a drive. On Sunday you are not expected to study. Read the papers for the week, write letters and take recreation. You will find, however, that your Sundays of rest will not be more pleasant than your days of work. The acquirement of knowledge is a pleasant thing, and when once ambition whispers you become a willing slave. Quickly speed the days away. Your summer's vacation will have passed before you are aware. In August take two weeks from study. Go into the country, rest your eyes, get a little sunburned. Come back full of life. Study two weeks in September, and then commence your attendance at your medical school.

You will have gained much knowledge, and will be proud of your work. Your digestion will be perfect, your health good, and you will have cause for congratulation.

It is the purpose of this paper to outline for you principally how best to study the practice of medicine. From the outline which I shall draw for you, and which, I may say, is not by any means entirely original, you can readily draw up suitable outlines for other studies, using your originality and knowledge in so doing. Purchase first a ream of good white or light yellow paper. The one sheet, practical legal, made by a few firms in the United States, I found answered best. This is but a matter of taste. Get some good, heavy-ruled writing-paper, sufficiently good, so that if you want to have it bound its appearance will be creditable.

Provide your room with two writing places: one that you can use sitting down, one that you can use standing up. Arrange to have good light at all hours of study. Then select your books, if you have not already done so. In my work I used Roberts's Practice of Medicine and Strümpell's Text-Book. I am prejudiced in favor of them. Certainly they are good enough. I would advise the student to follow Roberts and use Strümpell as a reference-book. Osler's Practice is a new candidate for favor, and it has good claims for high recognition.

Then, with an unabridged dictionary and a good medical dictionary, you are ready for your first lesson. It is a question with me if *the* student's medical dictionary has as yet made its appearance. We have wonderful dictionaries of medicine, Foster's and Billings's, the possession of which marks an epoch in the library of their purchaser. I am not now acquainted with the new dictionary of Professor Duane, but, from reviews which I have seen, I judge it to be the best dictionary now on the market for the medical student.

Having now your material, I ask you to memorize the following schedule in such manner that you can repeat it from any point, forward or backward. Get it impressed on your cerebral cells better than you have the alphabet, better than your notation. The use of this schedule is our "method of study."

- 1 DEFINITION.
- 2 SYNONYMS.
- 3 VARIETIES.
- 4 FREQUENCY.
- 5 MORBID ANATOMY.
  - (*a*) Macroscopic.
    - 1 Number.
    - 2 Size.
    - 3 Shape.
    - 4 Appearance.
    - 5 Seat and Stage.
    - 6 Secondary changes.
    - 7 Changes in other organs by system.
    - 8 Terminations.
  - (*b*) Microscopic, after above system.
- 6 ETIOLOGY.
  - (*a*) Predisposing causes:
    - 1 Age.
    - 2 Sex.
    - 3 Climate.
    - 4 Seasons.
    - 5 Habits.
    - 6 Idiosyncrasies.
    - 7 Occupations.
    - 8 Hygienic surroundings.
    - 9 Other conditions, diseases, diathesis.
    - 10 Heredity.
    - 11 Idiopathic.
  - (*b*) Exciting causes:
    - 1 Dietetic.
    - 2 Mechanical.
    - 3 Chemical.
    - 4 Heat, cold or wet.
    - 5 Specific.
- 7 SYMPTOMATOLOGY.
  - (*a*) Period of incubation.
  - (*b*) Prodromes.
  - (*c*) Method of onset.
  - (*d*) Symptoms:
    - 1 Countenance and general aspect.
    - 2 Nervous.
    - 3 Respiratory.
    - 4 Circulatory.
    - 5 Temperature.
    - 6 Digestive.
    - 7 Genito-urinary.
    - 8 Tegumentary.
    - 9 Muscular and osseous.
    - 10 General nutrition.
    - 11 Physical examination:
      - (*a*) Inspection.
      - (*b*) Mensuration.
      - (*c*) Palpation.
      - (*d*) Percussion.
      - (*e*) Auscultation.
      - (*f*) Succussion.
      - (*g*) Analysis.
  - (*e*) Course.
  - (*f*) Duration.
  - (*g*) Termination.
  - (*h*) Complications and sequelæ.
- 8 PATHOLOGY.
  - (*a*) Exact definition.
  - (*b*) Pathological explanation of prominent symptoms and signs.
  - (*c*) Theories.
- 9 DIAGNOSIS.
  - (*a*) Diagnostic points. Use system given under symptomatology.
  - (*b*) Name all diseases to be diagnosticated from.
  - (*c*) Differences:
    - 1 Causal.
    - 2 Method of onset.
    - 3 Symptoms by system.
    - 4 Physical examination.
    - 5 Duration and course.
    - 6 Methods of termination.
    - 7 Complications and sequelæ.
    - 8 Prevalence of epidemics.
- 10 PROGNOSIS.
  - (*a*) Favorable or not —
    - 1 As to life.
    - 2 As to complete recovery.
  - (*b*) Favorable points.
  - (*c*) Unfavorable points.
  - (*d*) Average duration of the disease.
  - (*e*) Statistics of mortality.
- 11 TREATMENT.
  - (*a*) Expectant.
  - (*b*) Hygienic.
  - (*c*) Prophylactic.
  - (*d*) Specific.
  - (*e*) Symptomatic.
  - (*f*) Supportive.
  - (*g*) Surgical.
  - (*h*) Psychical.

With this scheme, take up each independent disease and write out a full treatise, or a skeleton of the subject under consideration. It can be made very complete if enough time can be given it; very short, yet clear, if it is necessary that it must be abridged. Personally, I think a lengthy analysis is better. With this scheme you cannot lose a single point if you use care. It makes you study, it makes you think. Writing makes a careful and attentive man. That is what is needed in our study of medicine.

Let us say that your preceptor has assigned you, for the next lesson, typhoid fever. You consult your books, and work out a definition and write it down. You next take up the synonyms and write them down under their proper heading. If your books speak of any varieties, record them. In like manner, the schedule is followed until the subject has been exhausted. You cannot write under every sub-heading, but under the eleven main subdivisions there is always something to be said.

After the paper is finished review *it*, and not the book, for your next recitation. You will find that the writing of the text alone has given you a clear knowledge of the disease, and that but little study is needed for you to recall, not only the essential, but the minor points of morbid anatomy, etiology, symptomatology, diagnosis, prognosis and treatment.

One can readily understand the value of the system, for the knowledge is impressed in so many different ways: by study, by writing, by recitation.

Then, when the weekly examination is given, you find yourself provided with a system which brings the work all back to you. You have simply to take your knowledge from each of the pegs with which the system provides you. Certainly it aids materially.

As I know from personal experience, the entire subject of medicine can be exhaustively taken up and completed from the 1st of June to the 10th of September.

The schedule is not only of use to you as a student, but in actual practice it can be used every day. What better system is needed for reviewing the symptoms of a patient than the one given under symptomatology? How can you omit any important investigation if you follow the system through a physical examination?

When medical students realize the benefit to be derived from system, they will quickly accept it. It is an idea of mine that the schedule which I have given you ought to be the subject of the first lectures of those who teach medicine in our medical colleges.

◆

Clinical Department.

A CASE OF ACUTE YELLOW ATROPHY OF THE LIVER: A CASE OF RAPID SARCOMATOSIS.[1]

BY F. C. SHATTUCK, M.D.

I. ACUTE YELLOW ATROPHY OF THE LIVER.

A WELL-DEVELOPED and nourished woman, apparently between twenty and thirty years of age, was admitted to the Massachusetts General Hospital, April 5, 1894. No history was obtained until after her death, as no friends accompanied her, and she was unconscious on admission, remaining so to the end.

She was deeply jaundiced; pulse 70; respiration 20, stertorous; temperature 97°; pupils equal, contracting or dilating on exposure to light. There was some rigidity of the arms, but no paralysis could be detected. Physical examination was otherwise negative, except that the liver dulness was very small and that the lower abdomen was occupied by a tumor corresponding to an impregnated uterus at the fifth or sixth month. No fetal heart or placental souffle could be heard, and there was no bluish discoloration at the introitus vaginæ. A probable diagnosis of acute yellow atrophy of the liver was made, and the catheter was used to get a specimen of urine which was submitted to Prof. E. S. Wood. This secretion showed only seventy-five per cent. of urea, a slight trace of albumin, with pigment; a little blood and renal epithelium free and on casts, a few hyaline and brown granular casts, an occasional epithelial cast. The cells were stained with bile and with bilirobin crystals. Leucin and tyrosin absent. The blood examination was negative. In one of four cultures made from the blood in glycerine agar before death a small growth of staphylococcus aureus occurred. In view of the negative results of the autopsy cultures this was doubtless due to contamination.

The coma became rather less deep for a time and the patient became very restless. But no marked change in the symptoms occurred until 9 P. M., April 6th, when tonic spasm began in the left leg, soon involving the whole body, and passing off with some clonic spasm of the left arm. Death at 10.40 P. M.

It was then learned that she had been married three and one-half years, had a child two years old, considered herself now six months pregnant, and was perfectly well until three weeks ago, when she noticed red spots on various parts of her body, disappearing in a few days. A week ago jaundice first appeared and rapidly deepened. She kept at work and was only "a little sick," until two days before entrance, when she became worse. April 4th she could "hardly speak from weakness," vomited several times, once a little blood, and gradually became unconscious, fully so at 11 P. M.

The great viscera were extracted through the rectum and submitted to Dr. Whitney, whose report is summarized as follows:

Lungs. — Negative.

Heart.— Extreme and universal fatty degeneration shown by the microscope.

Liver.— Reduced at least one-half in volume, capsule not wrinkled, organ fairly firm, form symmetrical. The microscope showed that the liver cells in the centre of the lobules were entirely destroyed and those at the periphery filled with fat drops of varying size. Many of the cells were filled with minute fatty molecules. The region of the portal vessels was infiltrated with round cells, invading more or less extensively the lobules.

Spleen, large, firm, dark-red in color; the follicles not distinct.

Kidneys.— The microscope showed extensive fatty degeneration of the renal tubules.

Pathological Diagnosis.— Acute yellow atrophy of the liver with jaundice. Acute fatty degeneration of the heart and kidneys. Hyperplasia of the spleen. Glycerine agar cultures of the liver, spleen and kidneys were negative.

This is the first case of this rare affection which has come under my observation both clinically and pathologically. The course was rapid. The case was in most respects typical, and the only important diagnostic feature which was absent during life was the leucin and tyrosin in the urine. Out of fourteen cases Riess says they were absent only once. Their absence in the liver post mortem is also noteworthy. The necessity for a purely objective diagnosis added to the interest of the case. Advanced pregnancy in a young woman the condition of whose general nutrition showed that the process must have been of short duration, deep coma, intense icterus, the absence of fever, and negative results from physical examination, except for a marked diminution in the liver dulness — these points were sufficient to establish the diagnosis beyond reasonable doubt.

Tenderness in the hepatic region, even during coma, is spoken of as a common symptom. It was absent in this case and there was not even muscular rigidity on palpation.

---

[1] Read before the Boston Society for Medical Improvement April 9, 1894.

Incidentally I should like to call attention to the discrepancy between the urinary examination during life and the condition of the kidneys only thirty-six hours later. Although these organs were acutely fattily degenerated, the urinary sediment suggested nothing more than decided renal irritation or hyperemia.

II. RAPID SARCOMATOSIS.

T. S., thirty-six years of age, single, of negative family and previous history, and good habits, entered the Massachusetts Hospital March 6, 1894. He was well until two and one-half weeks before entrance, when he began to have pain in the back and malaise, his work — that of an insurance agent — requiring effort. Several days later he had a sharp pain like a stitch just to the left of the small of the back which made him scream, but soon passed off. Some malaise and pain in the back continued, but he kept at work. March 1st, after a sleighride, he had a chill lasting for ten minutes, not followed by sweating. The two next days he felt miserable, suffered from severe pain in the back and legs but went to business. At night at this time he had no pain. March 4th he thrashed round on the sofa all day on account of pain and nervousness and then sent for Dr. H. P. Jaques of Milton, where he lived. Morphine was given with relative relief to the pain but impairing the appetite and binding the bowels. The pain came in entire side and even when he was lying still.

When admitted to the hospital two days later, physical examination was negative except for tenderness in the small of the back.

March 13th. Several small subcutaneous nodules were discovered over the lower sternum, movable, not tender. The next day others were found in the axillæ, back, front of chest, and over the right biceps. One of these was excised and examined by Dr. Whitney, who pronounced it sarcoma. The skin over some of the nodules was discolored by hemorrhage.

A blood count showed:

Red	2,637,000
White	24,000
Hemaglobin	50%

The differential count of the white by Dr. R. C. Cabot was as follows:

Polymorphonuclear neutrophiles	70%
Lymphocytes	19
Large mononuclear in transition	3
Eosinophiles	1
Myelocytes and small mononuclear neutrophiles	7

March 21st. Decided enlargement of the liver was made out but pain has disappeared and was absent afterwards. The breathing became labored and wheezy, with inspiratory retraction of the soft parts above and below the thorax. The spleen became palpable and April 7th he died. There was almost constant but irregular pyrexia throughout. The autopsy was by Dr. Whitney and may be abstracted as follows:

No nodules below waist line. Some in scalp, over clavicles, and scattered over chest, upper abdomen and back.

Masses, plates and nodules of new growth in mediastinum, heart, lungs, pleura, lower dorsal vertebræ extending into the spinal canal but not into the cord, omentum, mesentery and intestines, spleen, liver, kidneys and adrenal bodies. The marrow of the femur was normal. Glycerine-agar cultures from the various organs were negative. This case ran its course in about six weeks from the first symptom, between four and five weeks from the time when a physician was first summoned. The first subcutaneous nodule was found between three and four weeks before death.

It seems probable that the disease started in or near the dorsal vertebra, where pain was first noticed, and thence rapidly spread. The blood examination was remarkable only for the chloranemia and the increase in the percentage of the myelocytes and small mononuclear neutrophiles.

◆

AN IMPACTED GALL-STONE REMOVED BY OPENING THE COMMON DUCT, THE WOUND IN THE DUCT BEING CLOSED BY SUTURES.[1]

BY J. W. ELLIOT, M.D.

The patient, a laundress, aged thirty-nine, had been subject to occasional bilious attacks for fifteen years. Ten years ago she had a very severe attack, and five years ago another. During the last two years they have become more frequent, so that in the last year she has had six or eight. In the last two months she has had an attack with vomiting almost every week. She has lost flesh and strength. Five days before I saw her she had an attack so severe that she left her work and went to bed. She had fever and chills and a severe pain in the right side and middle of abdomen. She thought she had not been jaundiced, and the bowels had moved.

She entered the Massachusetts General Hospital in the evening of February 1, 1893, with a temperature of about 102° and a pulse of 110. Dr. Fitz and I saw her soon after her arrival.

She had a moderate general icterus. The abdomen was full and tympanitic, except in right hyperchondrial region, where there was a pyriform tumor continuous with the liver-dulness, occupying nearly the whole of the right side of the abdomen, extending below the anterior superior spinous process. This was dull on percussion, fluctuating, with rounded borders, and moderately tender. The rest of the abdomen was not tender. The general condition of the patient was one of suffering and exhaustion and seemed to demand immediate relief.

The diagnosis was not made, as we were unable to get any of the above history owing to the patient's critical condition, and the jaundice was not noticed in the electric light.

Operation. — An incision was made above and to the right of the umbilicus over the most prominent part of the tumor. It was found to be a very much enlarged gall-bladder, which contained about three pints of bile and twenty gall-stones. Its contents being evacuated, the gall-bladder wall, which was much thickened, was stitched into the abdominal wound. No attempt was made to clear the ducts of stones, as the pulse had become rapid and weak during the operation.

The patient rallied well from the operation, and gradually improved; but a large amount of thick, tenacious bile continued to pour from the gall-bladder, and the stools remained white. The patient was still jaundiced, but less so. For the next two months the patient remained in poor condition. There was occasionally a rise in temperature and a chill. She had frequent attacks of pain and vomiting, which were relieved by a copious discharge of bile from the opening. The ducts were twice explored — once by Dr. Homans and by myself with a finger and a sound passed into the gall-bladder; but no stone could be detected.

---

[1] Read before the Surgical Section of the Suffolk District Medical Society, March 7, 1894.

On May 22d, the above-mentioned attacks continued; the stools were still white, and the patient was losing flesh and looked poorly.

Operation. — The abdomen was opened just inside the sinus which remained where the gall-bladder had been stitched to the abdominal wall at the first operation. After the adhesions about the gall-bladder were cleared away, an examination of the duct was made with one finger in the gall-bladder and the other hand in the abdominal cavity. A large stone was finally found impacted in the common duct near the duodenum. It was found impossible to reach this by an instrument passed through the gall-bladder. The duodenum was in front and adherent to the common duct. The duct was dissected clear, and the region was packed with gauze. The duct was then incised, and a stone as large as a pigeon's egg extracted. Several smaller stones were found in a pocket in the duct near by. The finger was then easily passed back into the cystic and hepatic ducts. The incision in the duct was closed with silk sutures, and gauze was packed about this part of the duct and brought out through the abdominal wound. Two separate dressings were used, one for the operation wound and another for the sinus of the gall-bladder. The wound dressing was kept separate and dry by a collodion partition.

The patient did very well. The wound healed without trouble. The discharge from the gall-bladder soon lost its color of bile, and became a clear, thick, tenacious fluid like glycerine.

On June 1st, there was much less discharge from the sinus, and the stools became yellow for the first time. During June and July the patient improved slowly. She often had attacks of pain in the back and side accompanied by nausea. At the suggestion of Drs. Cutter and Cabot, she took salicylate of soda with great benefit. In August she gained flesh and strength and went to Ireland in good health with a small sinus from the gall-bladder.

According to Murphy [2] this operation has been done five times with two deaths, a mortality of forty per cent.

This is perhaps the most valuable procedure in gall-bladder surgery, as the common duct must be cleared. In difficult cases incision is less apt to injure the duct than the crushing or needling of a stone. Its hitherto high mortality is its only objection. This success leads me to hope that the mortality can be reduced.

◆

AN OVARIAN CYST SIMULATING A STRANGULATED UMBILICAL HERNIA.

BY GEORGE G. HOPKINS, A.M., M.D.,
Surgeon to St. John's Hospital.

Flora Fader, aged fifty-seven years, married, Scotch.

Admitted November 27, 1893, for a strangulated umbilical hernia. We were sent for immediately, supposing it to be an intestinal hernia.

We found a tumor protruding just below the umbilical opening. It was about the size of a walnut, and very dark — almost black. All aseptic precautions having been taken, ether was administered. Assisted by the house staff we proceeded to nick the strangulating band, guarding the tumor with a broad, flat director. The constriction being relieved the tumor at once disappeared; but to our surprise fluid began to discharge by the opening, but there being no odor, we felt sure that our first thought was *wrong*, that is, rupture of the intestine. We enlarged the opening to two inches, and serous and gelatinous matter began to discharge. Exploration with the fingers discovered that a tumor occupied a large portion of the abdominal space.

This tumor proved to be a multilocular gelatinous cyst of the right ovary, of an estimated weight of twenty-five pounds. It was entirely free from adhesions. It was necessary to extend the incision seven inches in order to remove the tumor. The pedicle was secured with sterilized braided silk, cut short and dropped in the abdomen. The pedicle was treated with crystallized carbolic acid, after division. The toilet of the abdomen was made with great care. It was twice irrigated with Tiersch's solution. The wound was closed with deep sutures, including all the tissues. No drainage-tube was used.

This unpromising patient — an ambulance case — never had an unfavorable symptom. The temperature never reached 100° F. She was discharged from hospital December 28, 1893, cured.

◆

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

C. L. SCUDDER, M.D., SECRETARY.

Regular meeting, Wednesday, March 7, 1894, **Dr. Abner Post** in the chair.

Dr. Lund showed a

PORTABLE TRENDELENBERG TABLE.

Dr. W. T. Councilman showed two specimens illustrating

LESIONS OF THE INTESTINAL CANAL.

One of these comes from an officer in the late war. The case was as follows: This officer was shot in the right flank by a Minié-ball. The ball entered the right flank a little posterior to the lateral median line and about five centimetres above the crest of the ilium. The course of the ball was backward and a little downward and emerged from the back just posterior to the spine of the second lumbar vertebra. He lay on the field of battle all night. He was removed to a hospital and it was said that evidences of peritonitis appeared. He was supposed to have had a general peritonitis and fecal matter was discharged from the wound in the back. A short account of the history of the case is given in the Surgical Volume of the War of the Rebellion, in Part II, p. 78. The case was supposed to be one of remarkable recovery after gunshot wound perforating the colon. He was in the hospital for some time after that, and finally recovered. It was supposed that the colon had been perforated by the ball, and also that the ball had injured the spinal column. The autopsy was made a short while ago. There was a cicatrix which was very slight in extent and scarcely visible at the point where the ball had entered. and a somewhat larger cicatrix on the other side where the ball had come out. Death was due to disease of the liver. There was no evidence of there having been any general peritonitis. The peritoneal cavity was entirely free from adhesions, and the entire peritoneum smooth. There was no evidence of any peritonitis of any very large extent about the colon. The injured portion of the colon was free; and at a point corresponding to the line of the passage of the ball, that is, about six or seven centimetres above the ilio-cecal valve in the ilium the gut was adherent over a considerable distance, that is, the line of attachment at that point was very much larger and thicker than at any other point. The tissue behind the bowel at that point was cicatricial, and the bowel was drawn in and adherent. On opening the intestine and examining carefully, there was no evidence of any double perforation of the bowel. The mucous membrane of the bowel was drawn in, and there was a slight puckered cicatrix just opposite the point where this cicatricial tissue is behind it. This is the only evidence of any cicatrix in the bowel till just at that point; and it would seem to be quite evident that there had been no general peritonitis at the time, that the ball had not passed through the colon at all, that it had entered the peritoneal cavity for but a very short distance, had passed probably in close proximity to the colon, probably touching it but not perforating it, and then gone on. It is possible that the necrosis might have been produced from the touching of the gut by the ball, or it is possible that a perforation may have taken place afterwards. That is not the sort of perforation of the colon which would be made by a ball at all, so that the case would have been really peculiar if the individual had died.

---

[2] Medical Record, January 20, 1894.

The next specimen which I have is one of rather more interest, I think, than that. This is one of the interesting specimens of simple stricture of the rectum. This case is one which is from the City Hospital. The history of the case has no especial bearing on this point. It was known that she had a stricture. She was in the hospital some little time, was quite ill when she came into the hospital, and died of peritonitis. At the autopsy there was a general peritonitis found — pus in the upper cavity everywhere; and, as the cause of the peritonitis, a perforation of the gut immediately above the stricture was found. The perforation had apparently first taken place into an abscess, or at least an abscess was first formed between the uterus and the rectum, and that opened into the general peritoneal cavity with general peritonitis as a result. There was no history of syphilis in this case, and the patient was a respectable married woman, and I think she had had children. The most peculiar point about these strictures is the density of the tissue which is around them. On examining the specimen further, it is seen that in the stricture itself there are some ulcers and one ulcer which we have here. You see a large, fistulous passage behind the rectum, into which the probe passes some distance and communicates with this second stricture; and this abscess in which I have the probe now passes readily into the intestine at that point; so that this large abscess behind the rectum communicates with the rectum at two points — here just in the middle of the stricture, and above through an opening at the base of the ulcer, so that this large abscess here communicates at two points. These strictures of the rectum are, I think, exceedingly interesting. One of the most marked things about them is this enormous mass of cicatricial tissue behind the rectum, which fills up the hollow of the sacrum. It is composed of the densest sort of cicatricial tissue mixed with masses of fat. It is so hard that it cuts almost like cartilage. It is with the greatest difficulty that one can remove such a rectum as this from the body at the autopsy.

The etiology of these strictures seems to be a perfectly obscure point. There is really little or nothing known about the etiology. There has always been a tendency to regard them as syphilitic in character, but there is not a great deal of evidence in favor of this. The most extensive article on this subject appeared in Virchow's *Archives* about a year and a half ago, by a writer who had gone over very carefully almost the entire literature on stricture of the rectum. He found 217 cases of it reported in all. He also reviewed the evidence in favor of syphilis when syphilis was given as a cause, and he concluded that the evidence of syphilis was greatly overrated. There is one thing which is somewhat opposed to regarding them as syphilitic, and that is the enormous frequency of them in women as compared to men. Of his 217 cases he found 170 cases were in women, and only 25 in men, and two of the cases were in children. Of course, if the thing is syphilitic in origin, there is no more reason why females should be affected than males. Then he reviews also another point which has frequently been given as a cause, and that is the influence of the vaginal secretion in cases of gonorrhea and cases of syphilis. That has been supposed to flow down from the vagina and into the rectum and produce inflammation and lead to stricture in that way; and he denies the possibility that the vaginal discharge can pass through the perfectly intact and constricted sphincter of the rectum. He found in some of the cases that there were fistulæ between the rectum and the vagina; and he thinks that these fistulous openings may have had something to do with it, but he is very uncertain. He also reviews the result of treatment in all sorts of ways — by surgical interference and by antisyphilitics; and the result of antisyphilitic treatment does not seem to throw very much light on the subject. The whole question seems to be an extremely obscure one. Another point which he made out was the very great frequency in prostitutes, far more common in them than in any other class; and one of the causes which has been assigned to it is coitus through the anus, but he found that had been the case in only three of the cases.

Dr. Fitz: I do not understand how Dr. Councilman eliminates the possibility of a nick in the surface of the colon at the time of the passage of the bullet. He does not consider that there had been a perforation, and yet feces were discharged through the wound.

Dr. Councilman: Feces were discharged after two or three days; and I thought the colon had not been wounded at the passage of the ball, because there was no evidence of anything like general peritonitis, and almost certainly there would have been if the colon had been actually perforated by the ball.

THE SURGERY OF THE GALL-BLADDER.[1]

Dr. J. W. Elliot read a paper describing the removal of an impacted gall-stone.

---

[1] See page 83 of the Journal.

Dr. Fitz: What I have to say does not so much relate to the operation for removal of gall-stones as to call attention to the importance of considering the medical side of this subject in contradistinction to the surgical. In the first place, the conspicuous symptoms of gall-stones may be present, especially the jaundice, pain and febrile disturbance, perhaps coming on suddenly and so urgent as apparently to demand operation. An operation is done, and nothing found. I have in mind a case I saw with Dr. Mixter, in which this grouping of symptoms existed, and in which it was felt that, in consequence of the suffering, the loss of flesh and strength, and the apparent lack of benefit resulting from treatment, an exploratory operation was desirable. Gall-stones were not found. Such cases illustrate the desirability of trying medical treatment in the first instance for these symptoms, without having recourse to so serious an operation as exploration of the gall-bladder. I have in mind other cases in which the symptoms were severe, but in which relief resulted from morphia and from the use of sweet oil or of salicylate of soda — these remedies being employed for a period of months and being followed by a practical relief from the severe attacks and from the jaundice.

The other set of cases, which also makes clear to my mind that medical treatment is to be employed in the first instance, or at all events that surgical treatment may not be immediately called for, comprises those in which gall-stones exist without any symptoms whatsoever. It is a frequent occurrence at post-mortem examinations to find one or more gall-stones in the gall-bladder, especially of elderly people, which had existed without symptoms. These may be associated with thickening of the wall and adhesions about the gall-bladder, producing so little disturbance that the friends had forgotten its existence. In short, gall-stones occur without producing any special disturbance; and where they produce slight disturbances, the patient recovers from the latter under medical treatment.

With reference to the operation, each case, of course, has to be considered by itself; and it seems to me particularly important that perhaps most of the operations on the gall-bladder and gall-ducts are to be regarded in the first instance as exploratory. The inference from the symptoms is that an obstruction exists; the probability is that the obstructive jaundice is due to gall-stones. The surgeon should state to the friends of the patient that the operation is at the outset exploratory. That the operation is exploratory is illustrated by the case just mentioned. It is also illustrated by the fact that gall-stones in elderly people are infrequently associated with malignant disease; hence, that the removal of the calculi has no permanent beneficial result. Furthermore, it seems to me advisable to bear in mind that, although the operation may relieve the patient of the sufferings which have existed a longer or shorter time, it presents no immunity from future disturbance. This point was recently illustrated in one of the cases which I have had in the hospital during the past winter. The patient some four or five years ago was operated on by Dr. Polk, of New York, for a gall-stone said to have been in the common duct. It was removed; and she had immunity from further disturbance until within a few months. Then the vomiting recurred; there was a slight degree of jaundice; and, within a few days before entrance to the hospital, pain in the region of the liver. The local symptoms suggestive of gall-stone disappeared, but there was persistent elevation of temperature, which suggested some inflammatory process as a complication. During the course of these symptoms the scar reopened, but closed in a day or two. Then a certain degree of pain and a considerable area of dulness appeared in the left hypochondrium. The occurrence of these symptoms, in addition to a slight cough, lead me to suspect the existence of some localized inflammatory process, and I aspirated the chest. There was withdrawn about half a pint of clear fluid, in which there were large cells apparently from the pleura. This gave a temporary relief to the condition, but the elevation of temperature continued. I hesitated at puncturing the diaphragm, with the lack of satisfactory evidence that there was pus beneath it; but, in the course of a short time, a small amount of pus suddenly escaped from the bronchi, and it seemed to me probable that a small subphrenic abscess had been evacuated through this outlet. The case illustrates the last point, that, even after removal of gall-stones, the prognosis of the operation is one which is necessarily limited to the immediate conditions, and does not secure an immunity from future disease.

Dr. Cabot: The operations I have had upon the gall-bladder and the gall-ducts have been of various degrees of severity and for the correction of various pathological conditions. In the first place, I have had several in which the pathological lesions were confined apparently to the gall-bladder, where the stones had set up an inflammation of the gall-bladder, and the inflammation was the cause of the patient's serious symptoms. In one case the gall-bladder was quite large; in the others small, and contracted upon the stones. In those cases the operation was easy; the gall-bladder was opened and the stones pretty easily dislodged and removed. In one of my cases I remember that the symptoms were such as Dr. Elliot has spoken of as being confounded with malaria — that is, there were many chills, which were recognized as due to the inflammation in the gall-bladder by the physician in attendance; but he was very sure there must be an abscess in or around the gall-bladder to account for their frequent occurrence. In that case I found the gall-bladder filled with glairy mucus, but no pus. It contained several stones, one of which was impacted just before the junction of the cystic and hepatic ducts. The duct was so narrowed between the gall-bladder and the stone that I could not sufficiently dilate it to remove the stone through the gall-bladder; I incised the duct, removed the stone, and then, putting a drainage-tube into the duct, closed the wound in the gall-bladder. The case recovered perfectly.

I have had two or three cases in which the impaction of the stone has taken place apparently at the junction of the two ducts; and these have been reached with tolerable ease, and removed with good results. In one case a stone was in the hepatic duct; it was broken in attempts to seize it. The hepatic duct was very much dilated and the stone could be just felt with the finger, but the forceps could not be easily manipulated in the space offered. Finally, on seizing it, it broke and was partially removed. The symptoms were relieved, and the patient made a good recovery.

The cases in which the operation is really difficult — and I think it is about the most difficult operation that I have ever done — are those in which the impaction has taken place in the common duct pretty close to the duodenum. I think I have had five of these cases. In one of them I operated by incising the duct with the knife. I found it exceedingly difficult to carry the knife down to the proper point without injuring the parts about. There was a good deal of tympanites, the abdomen was distended and the coils of intestine got in the way. The stone was removed but the patient, who had been sick a long time, did not recover. In consequence of the difficulties met with in this operation I had a hook made which I have shown to this Society, and have used several times with a great deal of satisfaction. It is a cutting hook at right-angles to the staff, and blunt-pointed so that there is no danger of injuring coils of intestine or catching in them as you carry it down to the point where you wish to make incision. With the stone fixed under the finger, it is not difficult to carry this hook below the bulb of the forefinger, turn it over so that the blunt-point is directed towards the calculus, and work it gradually through the wall of the duct until it comes in contact with the stone; then, drawing upon the hook, the wall of the duct is incised, and the stone is uncovered. I have in two cases found it possible to operate in this way at a great depth, and have thus removed stones with fortunate results. In the last case that I operated upon for stone impacted in this region, the duodenum so overlay the duct, and the adhesions were so firm in that neighborhood, that I could not feel sure of really getting my finger down upon it. It was a case where I had to operate rather rapidly as the patient was not in good condition. In that case I needled the calculus, running the needle through it several times and breaking it up thoroughly. The patient did very well after the operation, and the icterus cleared up. He then had a return of the jaundice to a certain degree, but not as severe as before, and not accompanied by the pain he had had in the attack during which I operated. The patient is well and about; but I think he still has trouble in that region. Whether that trouble is due to the fact that some part of the calculus was still too large to pass the duct, but allows some of the bile to escape past it, or whether it is due to irritation of the duct having set up cholangitis in the liver, or possibly due to a stricture perhaps caused by the long presence of the calculus at one point, I do not know. Certainly the immediate recovery was very gratifying, as he could not have long survived the condition that existed before the operation. I have seen one case in which, on account of hepatic colic, an operation was advised but refused. The patient subsequently died of pancreatitis due to irritation of the impacted stone. I have also heard of one other similar case.

I think the statistics of recoveries, where the operation is done by skilled hands, is probably somewhat better than Dr. Elliot has collected. The period during which these statistics were collected, was one in which we were all learning. I think we can now do somewhat better, and the necessary dangers of the operation are not as great as those statistics would show. The success of the cases which are done early, done before the stones are firmly impacted in the ducts, is very much greater than the success of the operations done after such impaction has occurred; I think that fact ought to weigh considerably against the plea for delay and medical treatment made by Dr. Fitz. If the diagnosis is clearly made, if the patient has had a number of attacks of jaundice with pain in the hepatic region, perhaps we ought to be a little readier to operate from the fact that finally so many come to operation, and come perhaps in a less good condition than if operated on after but few attacks.

Dr. Conant: I have seen five cases of trouble with the gall-bladder. The first one I saw I thought to be a case of malignant disease of the cecum; and although I considered the subject of gall-stones, it was ruled out because of lack of symptoms. The woman presented the symptoms of some malignant disease causing pain and constipation, and the family were told that probably operation would do very little, if any, good. She lingered along under morphine and medical treatment, and finally died; and there were 180 stones taken out of a dilated gall-bladder. I think if that case had been operated on she would have been saved much suffering, and it probably would have prolonged her life.

I have seen one other case similar to that; and the diagnosis was made of probable malignant disease of the cecum, although with that other case in mind the possibility of gall-stones was considered and an exploratory operation done. The woman was nearly of the same age, and presented almost the same symptoms (constipation and pain); she had a mass in the right iliac fossa, and no jaundice whatever. A large gall-bladder was found, which held nearly a cupful of fluid; and on opening the gall-bladder, three large stones were removed. She did uninterruptedly well.

Another case occurred in a much younger woman. In this case pain, no jaundice, and the mass was in the right iliac fossa. The diagnosis was between a very long-pedicled ovarian cyst and gall-bladder. On cutting down upon it, it was found to be the gall-bladder, and two large stones were removed.

Another case was thought to be gall-stone somewhere along the track of the duct. The patient was under medical treatment some time at the Massachusetts General Hospital, and finally was referred to the surgical side for operation. I think it was the most severe case I have ever seen operated on. Not only were the small intestines glued down with the cecum, but the cecum glued to the ascending colon; and the whole of the cystic bladder, as well as the liver, was so obscure that it was almost impossible to get any opportunity at all to follow along down. It took considerable time to find anything that looked or felt like the gall-bladder. It was very much shrunken; and on going into it, nothing was found in the bladder. But on going farther down, at the junction of the two ducts we found a round stone which completely blocked the duct; and this woman presented the most complete case of jaundice I have ever seen. This after some difficulty was removed, and found to be many-facetted —almost so many-sided that they pointed up like little spiculæ, and the amount of induration of the ducts was very considerable indeed. This was removed. No attempt was made to bring the gall-bladder up; and therefore this tract of some two or three inches was thoroughly packed as far as possible. The ordinary methods of drainage were used, and the patient finally recovered.

The last case, I think, was a case which for twelve years had had repeated attacks of jaundice, with pain and inability to work. In the last two or three years, every two or three months attacks had recurred; and having tried medical treatment thoroughly, she wanted something done. In this case we found only a small bladder, and on opening it found two stones about as large as your thumb. They were removed; and I did in this case a thing I think Dr. Richardson did before me. I sewed up the gall-bladder by Lembert suture, dropped it back into the abdomen, and sewed up the abdomen tight. She never had a temperature above 99°.

My experience is very limited, and I have not seen any of these severe cases barring that one case. The operations have been simple, almost no temperature, and the result uniformly good. The four cases on which I have operated have recovered without a symptom.

Dr. Gay: I wish to say a word upon the absence of symptoms. I have operated twice in two years in cases in which there was no symptom previous to a week before the operation. The first case was in a blacksmith, who had been well until four days before I saw him. Then he was taken with moderate pain in the bowels, vomiting and chills. Dr. Goss asked me to see him, with a view to deciding what the cause was, and doing an operation if necessary. He had a moderately distended belly, tender over the gall-bladder, and an indistinct tumor. Whether this was the gall-bladder or high appendicitis, I was unable to decide. We etherized and opened the abdominal cavity, and found it was the gall-bladder. These two stones were removed. This man was fifty-eight, perfectly well until four days before the operation. It is a year and a half since the operation, and he is all right now.

About six weeks ago I saw a man who had never had any distinctive symptoms of gall-stones, and had only been sick about three or four days. He had a tumor in the region of the gall-bladder, moderately tender, and which had given pain enough to get the doctor up the night before I saw him to relieve the distress. He relieved it without morphine. He was tender; there was moderate fever, moderate pain. An operation was done; the gall-bladder was opened and thirty-five gall-stones taken out. It required a good deal of work, because the gall-bladder was long and narrow, and it all had to be done by fishing them out, one at a time, with forceps. By running the finger down outside I could feel a row of stones in the duct. I realized that it would be a good deal of an operation to open the duct and clean out the stones. I could not squeeze them up into the gall-bladder. I sewed the gall-bladder in the wound and let him alone. In the first ten days he discharged seven gall-stones. I felt two more in the duct. Under ether, these two were squeezed into the gall-bladder, and were taken out without any trouble. I think the fact that the gall-ducts were able to empty themselves after a free opening was made above was curious. These stones had never produced stoppage; there never had been jaundice, and he never had colic.

The obscurity of the symptoms is the one point to which I wish to draw attention. The presence of stones may be only accidentally discovered at the autopsy, as every one knows.

Dr. Richardson: I am very glad to hear the details of this case of Dr. Elliot's, because I examined the patient with Dr. Homans, and it seemed to me that the diagnosis was very obscure, as it is in all cases of jaundice. I believe this is the only case in this community in which the duct has been sewed up. The mortality surprises me. I had no idea that opening a large gall-bladder had any such mortality as 15 per cent., because it is the simplest operation in the world; and if the patient is in good condition, I believe in the future there will be no such mortality as that. In speaking of the prognosis in these cases, we must bear in mind the fact that the diagnosis in many of them is obscure. Malignant disease is often associated, even if we do not discover it at the time of the operation. Again, patients are brought to consideration of operation only after most prolonged and exhausting cholemia. A simple exploration under such conditions is often fatal. I think my mortality has been larger in simple explorations where nothing whatever has been done than in the cases of cholecystotomy. It is not fair in making up the mortality returns of operations on the gall-bladder and ducts to bring in, as Dr. Cabot has said, these cases in which the operation was performed as a forlorn hope. Of course, it is not fair to suppress fatal cases or to make our record better than it ought to be by a process of eliminating, for one reason or another, fatal cases. We ought to divide these cases into two or three groups: first, those in which the patient's condition is good; second, those cases in which the gall-bladder can be manipulated without contaminating the peritoneum by bile, which may be septic; and, third, those cases in which the patients are so exhausted that from the simplest operation, even from etherization, there is a large mortality. There are certain dangers which I have seen which cannot be avoided by any care whatever on the part of the surgeon; one is the danger of hemorrhage. The one death from hemorrhage was, I suppose, my case. That danger is always present to a certain degree in cases of cholemia. I had never had any hemorrhage, and was beginning to think that that was a false danger; but a persistent capillary hemorrhage in a case in which no vessels had been cut, no ligatures placed, destroyed a patient in spite of everything to prevent it. Another danger is that of peritonitis, and that is always present in cases of contracted gall-bladder. My experience seems to be much more unfavorable than that of other gentlemen, because in a large proportion of the cases the gall-bladder is contracted down so that it is impossible to remove the stone without a very extensive infection. We cannot tell whether the bile is infectious or not by the general appearance; but I have found recently that the organisms of the bile are very rapidly growing and virulent. If we happen to have such a case, of course we have a contamination and peritonitis, although I have not had any case of general peritonitis associated with these operations. I have been very much interested in the question of opening the duct for several reasons; most important is the surgical anatomy of the common duct. We know very little about the relations of the common duct with the portal vein and hepatic artery. It seems to me that knives must be used with the greatest care about the duct. The further you go from the duodenum the less danger, because the portal vein is removed by a very considerable interval from the lower portion of the duct. Unless there are very strong adhesions the duodenum can be very easily turned aside by careful dissection of the normal peritoneum, or if there are extensive adhesions, even then by careful dissection you can turn back the duodenum and get where you can work with comparative ease and safety.

That leads me to make one other remark, and that is the insufficiency of operations upon the gall-bladder, unless you explore with the hand. Of course, every case of jaundice associated with gall-stones means impaction in the hepatic or common duct; and we can open the gall-bladder and take out all the gall-stones from it without reaching the stone that is doing the damage at all. I think it is very difficult, even with the whole hand in the abdomen, to be sure you have got all the gall-stones out. Until you have explored from the fissure of the liver to the opening behind the duodenum, you are not sure that you have removed the stone. I do not think it is necessary to close the duct, if this procedure is going to add much to the length of the operation, or if the difficulties of applying the needle are very great, because by capillary drainage we can leave the duct in apposition, and it will close just as an urethra closes after perineal section. I have seen that a number of times. In almost all instances in which the gall-bladder is contracted, and when I have tried to get at the stone by dilating the cystic duct, the whole thing is torn down either into the cystic duct or the common duct. The trying cases have been those with full gall-bladder.

I was interested in Dr. Conant's cases because I made the mistake of advising against operation, having made the diagnosis of malignant disease; but the patient insisted on operation, and we found trouble in the gall-bladder. Dr. Gay spoke of the diagnosis between gall-bladder and appendicitis. Dr. Mumford and I operated the other day on a strong young man in whom the symptoms of appendicitis were marked. I found a thickened appendix which gave to the sense of touch the feeling of a recent swollen appendix, carried the incision downwards, and found an old adhesion which could not have been dissected out, nothing to do with the case. We found the gall-bladder dilated; opened the gall-bladder, and found it crammed with the colon bacillus; drained it; and the patient is now well. That case shows that the bile may be very septic indeed. We therefore must not get the confidence which I had acquired of the innocuous nature of the bile; but we must regard all cases of extravasation as possibly the source of fatal peritonitis. I feel with Dr. Cabot that as we increase our experience the mortality will diminish. My mortality since reading last spring has been very much worse than before. They have been cases of malignant disease, all patients *in extremis*. One case was of such advanced weakness that the patient died of inanition in two days. I have had some very gratifying cases.

Dr. Mixter: Dr. Fitz referred to a case he saw with me — the first case, I think, in which I did exploratory operation on the gall-bladder. There had been repeated attacks, and apparently an abscess. On opening the abdomen we could find only a single band, which represented the obliterated gall-bladder. The patient recovered. The paper being on the subject of removal of stone from the common duct and suture of the duct, I will show these stones from a case in which that was done. An interesting point about the case is that it had been seen by several physicians, and a diagnosis of malignant disease of the liver made; and that seemed the most probable diagnosis. She was very anxious to have an operation done; and I did an exploratory laparotomy, and found an enlarged gall-bladder, and took out the six stones which are in this bottle. She rallied well from the operation. The opening did not close; and three months later I opened the abdomen in the median line, having failed to find anything in the dilated opening into the gall-bladder, and then I found an enlarged duct, and this stone. The duct was opened and sewed up. The patient recovered promptly, and the opening in the duct healed. Here is a bottle filled with stones that I removed in a case — an acute attack where the gall-bladder was very much dilated. The case was in a large, strong man who had had several previous attacks, and had passed quite a number of gall-stones. This attack was attended with considerable temperature and a great deal of pain and distention. The gall-bladder held at least a quart, was necrotic, and there was an abscess formed already outside the wall. There are 500 of these, I think; and there is that small bottleful in addition. The removal of the stones was difficult from their great number. The gall-bladder was filled with pus. The cases I have seen that were fatal cases have been those where the operation was delayed too long. In one case where I removed a number of stones, the patient had been practically under ether for twenty-four hours. An interesting point is the very small opening that is necessary for the bile to be discharged through. In this case where I removed the stone from the duct, it admitted only a fine probe.

Dr. Elliot: I forgot to mention that the number of the cases in the list permanently cured, as put down by Murphy, is 51 per cent. of patients operated on. That seems to me very small. I agree with Dr. Cabot and Dr. Richardson that the mortality from obstruction from cancer of the pancreas, etc., should not be confounded with the mortality where stones are removed, and I carefully separated the two. My impression is that the mortality will always be high. It certainly is a simple thing to open the gall-bladder and get out a few stones; but when it comes to these deep operations Dr. Cabot speaks of, and the cases where the gall-bladder is contracted, there must be a high mortality. Dr. Thornton described an operation where he opened the common duct, which was so deep that he could not see or feel anything. He therefore put in a Ferguson speculum to see the duct; got the stone out, and sewed up the duct. In many of these cases that have died the autopsy reports have shown kidney and lung trouble. I am sure that we shall always meet many feeble and unsound subjects.

Dr. Fitz: I think if there is evidence of an impacted stone, the only thing to do is to get it out, even if the symptoms may recur. As to opening the duct, it seems to me that this operation is to be done more and more. Prolonged or rough handling of the duct is dangerous. Overstretching or tearing of the common duct is to be avoided, since sloughing or perforation of the duct is a very serious matter.

With reference to the relation between gall-stones and pancreatitis, this has occurred in a number of cases; and the most plausible explanation seems to be that the associated inflammation of the gall-duct has been extended into the pancreatic duct.

With reference to medical treatment, the point I intended to make was not that medical treatment should be carried on indefinitely, but that it should be tried in the first instance. If the symptoms persist, then is the time for surgical treatment. The gall-ducts are more likely to be found dilated if there have been previous attacks of gall-stones; and it is usually easier to remove the stone, after the ducts have been dilated, especially when it is in the common duct, than in those cases in which the cystic duct is so narrow that it is impossible to pass a probe through it.

I did not intend to have it understood that the fact that gall-stones might recur should indicate that operation should not be done. On the contrary, the point is that as the operation is to be considered in the first instance as exploratory, the patient should not be guaranteed against subsequent attacks of gall-stones. Of course, there is every reason why the stone should be removed if the symptoms continue.

◆

Recent Literature.

Abnormal Man, being Essays on Education and Crime and related Subjects, with Digests of Literature and a Bibliography. By Arthur MacDonald, Specialist in the Bureau of Education. 8vo, pp. 445. Bureau of Education, Circular of Information, No. 4. Washington: Government Printing Office. 1893.

Much of the work in this volume is a compilation of brief summaries of many of the chief monographs and articles that have appeared on the various subjects in recent years. The different chapters treat of education and crime, criminology, criminal sociology, alcoholism, insanity and genius, sociological, ethical and charitological literature, and a report of the twenty-first meeting of the National Prison Association. Of the value and importance of such a compilation, there can be no question, and Dr. MacDonald's own work has enabled him to add much in the way of personal views, which are often of more value than the views of the authors quoted. Abstracts are given of many articles which are accessible to but few writers, so that the work will prove of great use to all interested in the subjects. Unfortunately the later chapters show signs of haste. More than half of the book is made up of a bibliography of the various subjects, which is the most full and complete of which we have any knowledge, and which must prove indispensable for every student.

Clinical Diagnosis. By Albert Abrams, M.D. (Heidelberg). Third edition, revised and enlarged. Illustrated. New York: E. B. Treat. 1894.

The subject of clinical diagnosis is well supplied with books and outlines and the present volume has no advantages which are at all apparent. Much of the material is put in the form of comparative tables and so briefly as to enhance that most dangerous method of differentiation. The illustrations and press work are poor.

Essentials of Physics, Arranged in the Form of Questions and Answers, Prepared especially for Students of Medicine. By Fred J. Brockway, M.D. Second edition, revised, with one hundred and fifty-five illustrations. Philadelphia: W. B. Saunders. 1894.

That this book has reached a second edition is evidence that it has found a place among medical students who attain their knowledge "cross lots." Like others of this series the book is well printed and liberally illustrated, but it is hard to believe that a lasting understanding of physical principles can be obtained from such catechisms.

The Physiology of Death from Traumatic Fever. A Study of Abdominal Surgery. By John D. Malcolm, M.B., C.M., Fellow of the Royal College of Surgeons in Edinburgh, etc. Surgeon to the Samaritan Free Hospital. London: J. & A. Churchill. 1893.

This interesting little book is more in the form of an essay than an account of personal experience. The author is undoubtedly a thoughtful student, and differs in his ideas on this subject from those generally accepted. He considers that traumatic fever is traceable to sources other than sepsis, although he believes that the poison emphasizes the fever. He believes that peripheral irritation is the cause of changes in the blood-vessels, which he assigns as the cause of the fever. He sustains his position in an admirable manner, and the book is worth reading by all surgeons.

A Manual of Minor Surgery and Bandaging, for the Use of House-Surgeons, Dressers and Junior Practitioners. By Christopher Heath, F.R.C.S. Surgeon to University College Hospital and Holme Professor of Clinical Surgery in University College, London; Member of the Council of the Royal College of Surgeons of England. Philadelphia: P. Blakiston, Son & Co. 1894.

This is the tenth edition of this well-known little book, and while the author has "endeavored to embody the latest teachings as regards antiseptics," we cannot believe that he has succeeded. In many ways this little work is of great value, yet it signally fails in that one important point which should be introduced into all technical books; namely, a thorough attention to detail.

The After-Treatment of Cases of Abdominal Section. By Christopher Martin, M.B. (Edin.), F.R.C.S. (Eng.), Surgeon to the Birmingham and Midland Hospital for Women. London: Simpkin, Marshall, Hamilton, Kent & Co., Limited. Birmingham: Cornish Brothers. 1894.

The author has had under his care over one thousand abdominal sections. A great deal of his experience has been gained from an intimate association with Mr. Tait, but he differs from Mr. Tait on several important points. The work, although small, is filled with practical points, and is one that any abdominal surgeon can read with benefit. Its value would be added to by a well-prepared index.

A Clinical Text-Book of Medical Diagnosis for Physicians and Students. Based on the Most Recent Methods of Examination. By Oswald Vierordt, M.D., Professor of Medicine at the University of Heidelberg. Authorized Translation, with additions. By Francis H. Stuart, A.M., M.D., etc. Third revised edition. 178 illustrations. Philadelphia: W. B. Saunders. 1894.

We have already noticed previous editions of this book, and can cordially extend the same praise to this, the third edition. The fact that the work has passed through three editions in so short a time, and is published in the German, English, Russian, Italian and Spanish languages, is additional proof of the general and critical appreciation of its merits.

Last year Baron Hirsch gave from his turf winnings to selected charities £42,000, and this year he has just donated to the various hospitals of London £15,000.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, JULY 26, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 Washington Street, Boston.

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

THE HARM DONE BY CERTAIN LOCAL MODES OF TREATMENT IN DIPHTHERIA: TREATMENT OF NASAL DIPHTHERIA.

Under the head of "Non Nocere," Dr. Abram Jacobi, at the Eleventh International Medical Congress of Rome, Italy, called attention to the danger on the part of physicians of too much officious interference in the local treatment of diphtheria.

It is true, he says, that when the diphtheritic pseudomembrane is within reach, it ought to be either destroyed or disinfected. But we must not forget, first, that only a small part of the pharynx is directly accessible to such treatment, and that it is only one class of patients that can be subjected to it. In order to be effective, the application must be thorough. None but adults or large children, and of them but a small number, will submit to opening their mouths and having applications made. Smaller children will object, will defend themselves, will struggle. It takes much time to force open the mouth; meanwhile the patient is in excitement and perspiration, screams, and fights, and exhausts his strength. If the physician succeeds in forcing the jaws, the attempt to swab, to scratch off the pseudo-membrane, and to cauterize will be very difficult, as the struggling child will prevent the physician from limiting his application to the diseased surface. By injuring the neighboring epithelium, the extension of the morbid process will be favored. No application can do as much good as the struggling of the frightened child proves destructive. Dr. Jacobi has seen children die in defending themselves against the attempted violence, leaving doctor and nurse victorious on the battle-field. He calls attention to the fact that what physicians can reach with their instruments is but very little besides the tonsil, and the tonsils are not very apt to favor the invasion of general sepsis. Why then insist upon those cruel and brutal exertions, most of which are discovered or devised by men possessed of a schematic knowledge of a pathological process "which leads them to kill their patients while trying to destroy a bacillus? *Le sujet est mort, mais il est mort guéri.*"

Dr. Jacobi insists on the fact so often forgotten that diphtheria, not to speak of the larynx, is mostly and almost exclusively dangerous when located in the nose and naso-pharynx. When the blood-vessels ooze slightly, the toxine may be immediately absorbed into the blood. The pseudo-membranes swarm with bacilli and toxine and lead to immense tumefaction between the ears and clavicles, to the formation of multiple abscesses, to hemorrhages, and to sepsis. All these forms of nasal diphtheria require immediate persistent and efficient local treatment, for every case of nasal diphtheria has a tendency to terminate fatally. Every procrastination is a death sentence. The local treatment is to consist in cleansing and disinfecting. In the bad cases in which the nares are clogged with pseudo membrane, the cleansing and disinfecting is to be preceded by forcing a passage through the nares with a probe covered with wadding and dipped in carbolic acid. Particularly is this indication urgent when there is sopor. In making local applications, it is important that they should be made often, every half, one, or two hours, and that the whole of the diseased surface should be touched. Ointments are not available in the average cases, where the whole naso-pharynx is the seat of the affection. The atomizer will seldom carry a sufficient amount of liquid into the cavities to be of much use. A spoon or small feeding-cup, the nozzle of which is narrow enough to enter the nose, will do fairly well, and will allow the introduction of liquids into the nares in small or large amounts, all of which will enter the throat and be either swallowed or flow out of the mouth. The irrigator is liable by undue pressure to injure the ear. Dr. Jacobi prefers a small glass syringe with a conical nozzle of soft rubber. It will close up the nostril, the pressure can always be well measured and modified, and it is effective. The injections must be made in the recumbent or semi-recumbent position, frequently. On no condition must a child be taken out of bed for the purpose of having the nares washed and disinfected, the heart being seriously weakened in these bad cases.

In connection with this subject, Dr. Jacobi again emphasizes the danger of large doses of potassic chlorate in diphtheria. Several cases of fatal poisoning are on record, and he has himself seen a number of such cases. This remedy has been too much vaunted for all kinds of sore throats. Both nephritis and methemoglobinuria have been the effect of its administration.

In curious contrast to the views and practice of the above writer is the method of an eminent German authority, F. Bloebaum,[1] who heroically employs the galvano-cautery, though "only when the disease is confined to the tonsils, the soft palate, the uvula, and the posterior pharyngeal wall." The false membrane, he says, is thus burnt off and does not form again.

---

[1] Deutsche Medizinal Zeitung, Berlin.

"This treatment should be employed in the beginning, before systemic infection has occurred." According to this author, red-hot iron is a concentrated antiseptic whose action is strictly limited to the diseased parts; it destroys the microbe and the focus of infection and excites a regenerative process. Goris [2] also approves of this treatment which he has used "in three cases of mild diphtheria." There was no reproduction of the false membrane, and no constitutional infection.

This mode of treatment as well as the cauterization and forcible ablative method of Gaucher, of Paris, is not likely to be extensively adopted for reasons well stated by Dr. Jacobi.

◆

THE HEALTH OF BOSTON AND PHILADELPHIA.

In an article in the *Forum* for July, Dr. J. S. Billings discusses the relative mortality-rates of Boston and Philadelphia. Contrary to the usual rule that the larger a city the higher its death-rate, Boston has an average mortality of 23.59 per thousand, while Philadelphia has a death-rate of only 21.86. Some of the causes leading to this are the lower average level of Boston, the larger proportion of foreign-born inhabitants and a greater density of population. The effect of race upon mortality cannot be compared, as in Philadelphia the birthplace of the parents of the decedent is not registered as it is in Boston.

"The low proportion of tenement-houses in Philadelphia, and the fact that in that city each family, as a rule, occupies a separate dwelling, has a powerful influence in reducing its mortality. The figures for typhoid fever indicate a more polluted water-supply for Philadelphia than Boston. Diphtheria, measles, whooping-cough, cancer and heart-disease were more fatal in Boston; but the differences in death-rates due to these diseases are insignificant in comparison with those due to consumption and pneumonia."

The death-rates for these two diseases were for Boston 38.7 and 22. as against 29.8 and 16.4 for Philadelphia.

The returns for alcoholism, while below the true rates, show that alcoholism is nearly twice as fatal in Boston in proportion to population.

The conclusion drawn from the statistics is that the persistently higher death-rate in Boston for the last twenty years has been mainly due to diseases of the lungs. Climatic conditions have, in the long run, but small effect, for the extra mortality from respiratory diseases in Boston during the winter months, is to some extent counterbalanced by the increased mortality of children in Philadelphia, owing to the higher, more continuous summer temperatures.

The sewer system of Boston is better than that of Philadelphia; but although the death-rate of the latter city is already below that of Boston, it is probable that more can be done towards further lowering its mortality than can be done for Boston.

"Philadelphia has the immense sanitary advantage of having the great majority of its families supplied each with a separate house; and if it can obtain a fairly pure water-supply, and a properly planned and well-constituted system of sewerage, it should be possible to maintain its death-rate for a series of years at about eighteen per one thousand, while it is not probable that the death-rate of Boston can be brought by such means below twenty-one per one thousand for more than a year or two at a time. The causes of disease and death which the health authorities of Boston can probably attack with the most hope of good results are consumption and pneumonia; and this is to be done largely by educating the class most affected by these diseases as to the comparatively simple measures required to check their spread and by aiding in thorough disinfection of houses, rooms and bedding infected by their germs."

There is a closing satisfaction given the Boston reader, however, in the statement that "the man who lives in his own house in Boston has as long an expectation of life for himself and his family as the man under similar circumstances in Philadelphia."

◆

INDIAN MEDICAL CONGRESS.

During recent years the amount of good medical work done in India has been steadily increasing. Although the first impulse and much of the subsequent advance is due to Englishmen, there is a constantly increasing number of native medical men of high education and ability. Both English and natives have already done, and are now doing, useful and important work. The empire is very large, the distance from Europe great; and much of this work has not received the attention which it deserves.

In order to bring together members of the profession scattered through India an Indian Medical Congress has been inaugurated, and will meet in Calcutta during Christmas week.

Though the Congress is primarily Indian, the Executive Committee have invited their confrères from other countries. Apart from the medical work of the Congress, which promises to be interesting and instructive, there will be the opportunity of seeing India and visiting its chief cities. There are few more interesting countries historically or archæologically, and the scenery of the Himalayas is amongst the grandest of the world. The climate during the winter is perfect, the facilities of travel excellent; and two or three months, inclusive of the double voyage, would suffice not only for the work of the Congress but for a visit to most of the chief centres of interest. The journey from London to Calcutta occupies about eighteen days by the way of Brindisi and Bombay.

The papers of the Congress will be largely on subjects connected with India, where the conditions of life and medical practice differ widely from those of Europe.

---

[2] La Presse Médicale Belge, Bruxelles.

MEDICAL NOTES.

Cholera. — There has been a continued and marked abatement of the cholera at St. Petersburg; but it has been decided not to hold the autumnal mobilization of troops this year. Four cases of cholera with three deaths occurred at Adrianople on July 23d. Elsewhere the cases have been few and scattering, not causing any special anxiety.

Illness of Professor Herman Helmholtz. — Professor Herman Helmholtz was taken ill on July 12th, with cerebral symptoms, and is now suffering from left-sided hemiplegia.

Bequests to New York Hospitals. — The Presbyterian and St. Luke's Hospitals of New York, have each received a bequest of twenty-five thousand dollars under the will of the late John Crerar of Chicago.

Physicians as Dispensers of their own Medicines. — According to a bill now before the French Senate, after passing the Chamber of Deputies, physicians are not to be allowed to dispense any medicine at all.

A Pension for the Widow of Dr. Hassall. — Mrs. Hassall, the widow of Dr. Arthur Hill Hassall, who died recently at San Remo, has been granted by Lord Roseberry a pension of fifty pounds a year from the Civil List in recognition of her husband's services.

Municipal Honors to Physicians. — The city council of Paris has paid municipal tribute to three more physicians by giving their names to certain new streets. Two streets in the immediate vicinity of the Salpêtrière are to be called Rue Charcot and Rue Ulysse Trélat, while the present Rue St. François-de-Sales is to be extended and renamed Rue Trousseau.

Sir Joseph Lister Awarded the Albert Medal. — The Albert Medal of the Society of Arts, has been awarded, with the approval of the President of the Society, the Prince of Wales, to Sir Joseph Lister, "for the discovery and establishment of the antiseptic method of treating wounds and injuries, by which not only has the art of surgery been greatly promoted and human life saved in all parts of the world, but extensive industries have been created for the supply of materials for carrying the treatment into effect."

Señor Aguilera and the Spanish Medical Profession. — The medical profession of Spain has recently had an unpleasant experience of the truth that no man is a prophet in his own country. The Spanish Minister for Home Affairs, Señor Aguilera, wishing to satisfy himself as to the nature of some suspicious cases of "choleriform" disease which occurred on the Portuguese frontier, had specimens of the excreta sent to the Pasteur Institute in Paris for examination, an action which caused great indignation in the profession in Spain.

The Orloff-Davidoff Prize.—A prize of 10,000 rubles ($5,000) is offered by Count Orloff-Davidoff for the discovery of a certain cure or preventive of cattle plague. The efficacy of the remedy is to be proved by the same standard as those known to science as protective against small-pox, anthrax, etc. The award of the prize is in the hands of the Curator of the Imperial Institute of Experimental Medicine of St. Petersburg, acting on the advice of a committee of experts selected for the purpose. The competition is open to the whole world with the exception of active members of the above-named institute. The description of the proposed remedy must be clear and complete; it must be sent in, under the ordinary conditions as to concealment of identity on the part of the author, on or before January 1, 1897. The award of the prize will be made on January 1, 1899. If no remedy satisfies the committee, a further competition will take place, and the award made on January 1, 1902.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, July 25, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 35, scarlet fever 27, measles 10, typhoid fever 13.

Third New England Conference of Charities, Correction and Philanthropy.— The Third New England Conference of Charities, Correction and Philanthropy, will be held at Newport, R. I., October 10, 11, 12 and 13, 1894, under the Presidency of John Hare Powel. Rev. John Graham Brooks, of Cambridge, will read a paper at the opening session. The remaining five sessions will be devoted to the following subjects: (1) Reports, covering New England, on Charity Organization, Prisons, Work for Children; (2) Public Relief and Almshouses; (3) Charity Organization; (4) Work for Children; (5) Medical Relief and Hospitals, Dr. W. H. Carmalt, New Haven, Conn.

NEW YORK.

The New York Lying-in Asylum. — The managers of the New York Lying-in Asylum, which has for many years maintained an admirable outdoor as well as indoor maternity service for the benefit of the poor, have secured as the future home of their institution the fine old mansion of the late Hamilton Fish, standing at the corner of Second Avenue and Seventeenth Street, and fronting on Stuyvesant Square.

One Hundred Years Old. — Mrs. Elizabeth Jervis of Amytyville, Long Island, celebrated her one-hundreth birthday on July 20th. Mrs. Jervis was born at Sayville, Long Island, and was married in 1812, her husband dying in 1863. She has been the mother of eight children, seven of whom are still living; the oldest being seventy-eight, and the youngest sixty-one. She has twenty-three grandchildren, thirty-eight great-grandchildren, and three great-great-grandchildren. She is in excellent physical and mental health.

Commutation of Mrs. Halliday's Sentence.— Governor Flower has commuted the sentence of Lizzie Halliday, the Sullivan County murderess, who was to have been executed in August, to imprisonment for life in the State asylum for insane criminals at Matteawan. The reason for this action he gives in the following memorandum: "The defense was insanity, and the evidence to establish it was very strong. Dr. Selden H. Talcott, medical superintendent of the Middletown State Hospital, and Dr. Henry E. Allison, medical superintendent of the Matteawan, both of them men of great experience, testified that she had at different times, some years before the homicide, been under their charge as an insane patient, at which time she was unquestionably insane, and that they had no doubt that she was insane at the time of the homicide. Three commissioners, appointed since the trial, have, after a careful examination, filed their report, stating that, in their opinion, she is insane. Under these circumstances I do not think her a fit subject for the death penalty. It will be much safer to commute the sentence to life imprisonment."

Vacation Schools. — On July 23d, the Society for Improving the Condition of the Poor inaugurated the "experiment of vacation instruction of a nature akin to recreation, by providing a six weeks' midsummer term that shall win the children who loiter in the heated streets of New York while the public schools are closed." The Society has appealed to the public for subscriptions amounting to $5,000, with which to pay teachers' and janitors' fees, and the Board of Education has agreed to co-operate by allotting four of the public-school buildings in crowded and destitute districts. These attractive manual training and kindergarten schools are free to every child willing to attend, and the sessions last but four hours a day, from nine until one. The services of a superintendent and an efficient corps of teachers have been engaged, and they will be aided by the supervision of a gentlemen experienced in these educational methods, who will act for the Society. It is believed that the benefit to the children who attend will be very great, and it is hoped that the scheme thus inaugurated may prove to be an object-lesson so encouraging as to secure wider adaptation in the ordinary curriculum of the common schools.

High Mortalty-Rate. — What will probably be the highest mortality of the present summer was reached during the week ending July 21st, when the number of deaths reported amounted to 1,106. This is an increase of 137 over the previous week, and represents an annual death-rate of 29.42 per thousand of the estimated population. Six hundred and twenty-nine deaths were of children under five years of age. It is gratifying to note that notwithstanding the high mortality, the number of births reported in the city exceeded the deaths, amounting to 1,145. During the week ending July 14th there were reported 969 deaths, which is a decrease of 10 when compared with the previous week, 127 below the record of the corresponding week in 1893, and 259 below that of the average of the corresponding weeks for the past five years. This represents an annual death-rate of 25.80, or a decrease of .28 from the preceding week, and 6.90 below the average of the corresponding weeks for the past five years. Of the week's deaths 603, or nearly 66 per cent. of the whole number, were among children under five years of age. Diarrhœal diseases naturally caused the greatest mortality, the number of deaths amounting to 268, or more than 25 per cent. of the total deaths. This is an increase of 28 over the preceding week, but a decrease of 64 when compared with the corresponding week in 1893, and 143 below the average of the corresponding weeks of the past five years.

◆

Miscellany.

THE PHYSICIAN'S REMUNERATION AS SEEN BY A LAWYER.

The question of the physician's actual and deserved remuneration has been a subject of general discussion this year, both in the journals of this country, medical and popular, and in several English medical papers. The latest contribution to the subject is in the *New York Law Journal*. The writer, viewing the subject from a lawyer's standpoint, takes exception to a recent enthusiastic and liberal estimate of a physician's proper fee on the very ground of its contention that it involves a system of banditti's ransom rather than a conscientious service to mankind for a just compensation.

He lays down the principle, which certainly seems the proper one, that "In dealing with rich patients and clients, physicians and surgeons, and lawyers acting in cases not involving specific property, should make out their bills not commensurately with the wealth of their employer, but simply on the basis that he is rich enough to pay whatever is right. The charges should be fixed according to the practitioner's standing and experience and the amount of labor involved, the customary rates of practitioners of equal standing in the same community for similar services being kept in view as a guide and a possible corrective. This general rule would not preclude the acceptance of smaller fees from poor people, but it would debar a practitioner from charging a man worth $1,000,000 more than one worth $100,000 for the same service. We believe it is essentially communistic and subversive of professional conscience and dignity to charge a rich man all that can be screwed out of him, in order to make up for what one thinks he ought to have received on account of professional acts of charity or mercy."

◆

DISEASE GERMS IN EUROPEAN RAILROAD CARRIAGES.

Drs. Petri, Kolb and Friedrich have recently concluded a series of experiments, under the direction of the Imperial Board of Health of Germany, as to the danger arising from the dust in railroad carriages. Their results[1] show a decided risk involved in travelling under the present sanitary conditions of the coaches.

---

[1] Arbeiten aus dem Kaiserlichen Gesundheitsamte, 1893, ix, 3.

The dust was collected in each instance from a square metre of surface, and from forty-five compartments, representing twenty-one carriages. The inoculations were made upon guinea-pigs. Many of them died of various diseases, and the rest were killed. Three only were found to have tubercles. The number of bacteria was largest in the fourth-class cars, and grew less with each rise in grade of the compartments. In the fourth-class cars the number was estimated at 12,624 per metre; in the third class, 5,481; in the second, 4,247; and in the first class, 2,583. On the seats and upper walls the numbers varied in the four clases from 2,646 to 29, while the roof was almost free. Though the third- and fourth-class carriages were the most infected, it was much easier to clean them, as they could be washed with hot water and soap, which could not be so vigorously applied to the better class carriages owing to the carpetings and upholstery.

◆

DR. BROWN-SÉQUARD'S LAST ILLNESS.

Dr. John Ogle[1] has given circulation to an interesting account of Dr. Brown-Séquard's last illness which was written in a private letter from Dr. Dupuy of Paris, Dr. Brown-Séquard's physician. Shortly after his return to Paris in March, Dr. Séquard had an attack of vertigo accompanied by disturbance of vision and followed by a period of unconsciousness.

"At that period the speech remained 'thick' and embarrassed at times, and Dr. Brown-Séquard remarked, 'This is an attack of epilepsy, as you can see.' Instead of going to bed, as desired, he wrote several letters. During the following day he was in the same condition as regards vertigo, hemiopia, and occasional thickness of speech, but there was no aphasia. On the next day (Friday) he consented to take meat, milk and bread in small quantities throughout the day, and was comparatively cheerful. At the close of the day his face became much flushed, and the vertigo and hemiopia very distressing, and in consequence of this he walked from one room to another on 'all fours,' giving at the time the analysis of his symptoms and the prognosis of his case, as if he was contemplating and discoursing on the illness of another person. During the night of that day he was seized with vomiting, and in the early morning it was found that he was unable to speak, and that the left arm was paralyzed as to power of movement. Dr. Dupuy found later on that paralysis of the muscles on the right side of the face existed and that the tongue was protruded to the right side. The left leg and the arm and leg on the right side were unaffected. There was no muscular spasm in any part, no interference with sensation, either general or special; but vertigo was much increased, and there was external strabismus of the right eye. The condition of speech was the same, and there was still no aphasia. Towards the evening of the day the face became exceedingly congested on several occasions, and the blood-vessels of the forehead much swollen, and there was drooping of the upper eyelid of the right eye. During the morning of the next day (Saturday) he made Dr. Dupuy understand that he wished to write on a slate, but the result was unintelligible, excepting that the word 'hyperesthesia' was recognized. At 2 A. M. on Sunday he became entirely unconscious, and coma set in. The axillary temperature rose to 40° C. (104° F.), and he died without a struggle near midnight. After the cessation of breathing and of the heart's action, all the muscles of the legs and arms were for several minutes in a state of fibrillary contraction; and the axillary temperature at the point of death rose to 41.5° C. (105.9° F.). No post-mortem examination could be made."

◆

SCIENTIFIC INVESTIGATIONS AND THE PUBLIC.

In a recent address to the British Economic Association, Mr. Balfour remarked that "the public had never mixed itself up with scientific investigations without spoiling the investigations and doing itself a good deal of harm."

Taking the subject of vaccination as an example, he said he "looked with a sort of remote interest at the quarrel between doctors on the one side and that section of the public who had never studied the question in a scientific spirit, but who were determined that their feelings should override science. He did not say who was right or who was wrong. Science had before been proved in the wrong, and popular feeling, even uneducated popular feeling, had in many cases been proved right; but there could be no doubt that if they were going to allow questions of scientific interest to be decided by universal suffrage, that they would not do much good to universal suffrage, and they would absolutely ruin science. If science was wrong, it could only be got right and placed in the direction of truth by being allowed free play outside altogether the influence of popular forces."

In commenting upon these remarks, the *British Medical Journal* says: "The invasion of the pathologist's laboratory by the interviewer and descriptive reporter, which may almost be called a sign of the times, is an unmixed evil from every point of view. The irresponsibility of the new journalism is nowhere more conspicuously displayed than in the lightheartedness with which the latest 'cure' for cancer or consumption is 'boomed' with all the emphasis of sensational headlines, without the slightest inquiry as to the truth of the facts or as to the competence of the authority on which they are given. The mischief thus done is incalculable. It is not merely that the 'man in the street' is invited to judge of matters as to which he is incapable of forming a rational opinion. False hopes are excited in the breasts of sufferers and their friends, and the bitterness of disappointment is added to their cup of sorrow. The diffusion of sound knowledge on matters appertaining to the health — a thing of the very greatest importance for the welfare of a community — is retarded. Scientific discovery is degraded in the eyes of cultured persons by being applied to such catchpenny uses. The effect on the scientific worker himself is hardly less disastrous. He is in danger of being bitten with the desire for cheap notoriety, and in his eagerness for an unwholesome publicity he becomes too apt to give to the world the unripe results of hurried and imperfect research. A great Father of the Church said, 'Securus judicat orbis terrarum,' but the 'democratic idea' has no place in medicine, and the 'great heart of the people' cannot do the work of a scientifically trained brain."

---

[1] Lancet, June 2, 1894.

METEOROLOGICAL RECORD,

For the week ending July 14th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:–

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S.. 8	30.00	64	70	57	60	61	60	W.	N.W.	10	8	O.	O.	
M.. 9	30.11	66	75	56	56	56	56	W.	S.W.	6	12	C.	C.	
T..10	30.07	64	71	56	60	70	65	N.W.	S.E.	4	3	H.	F.	
W .11	30.00	72	83	62	60	54	57	S.W.	S.W.	4	11	F.	C.	
T..12	29.86	74	80	69	61	63	62	S.W.	S.W.	16	12	O.	F.	.01
F..13	29.80	86	97	75	47	47	47	S.W.	S.W.	15	13	C.	O.	
S..14	29.87	72	79	66	55	76	66	N.E.	S.E.	5	2	O.	F.	.05
☛														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☛ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, July 14, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Whooping-cough.	Diphtheria and croup.
New York . .	1,956,000	969	603	34.90	7.90	26.80	.20	5.20
Chicago . . .	1,438,000	—	—	—	—	—	—	—
Philadelphia .	1,139.457	506	282	29.26	7.98	23.94	2.28	9.88
Brooklyn . .	1,043,000	676	441	40.50	6.30	31.95	1.05	4.95
St. Louis . . .	540,800	—	—	—	—	—	—	—
Boston . . .	501,107	195	56	17.34	15.81	12.75	—	3.06
Baltimore . .	500,000	—	—	—	—	—	—	—
Washington .	285,000	140	56	29.82	7.81	16.33	2.13	2.84
Cincinnati . .	325,000	128	61	23.40	10.14	16.38	.78	3.12
Cleveland . .	325,000	163	108	36.60	6.71	25.01	3.05	2.44
Pittsburg . .	272,000	—	—	—	—	—	—	—
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	30	13	10.00	20.00	6.66	—	—
Charleston . .	65,165	32	17	28.12	15.65	28.12	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	100,410	39	18	46.08	7.68	35.84	—	2.56
Fall River . .	92,233	63	45	59.66	3.14	54.95	—	3.14
Lowell . . .	90,613	49	28	51.00	14.28	46.92	—	—
Cambridge . .	79,607	36	23	55.60	5.56	33.33	8.34	5.56
Lynn	65,123	13	4	23.07	7.69	23.07	—	—
Springfield . .	50,284	25	14	40.00	16.00	40.00	—	—
Lawrence . .	49,900	25	16	64.00	8.00	52.00	—	—
New Bedford .	47,741	26	13	23.10	15.40	19.25	3.85	—
Holyoke . . .	43,348	—	—	—	—	—	—	—
Brockton . .	33,939	7	1	—	14.28	—	—	—
Salem	33,155	14	11	42.84	—	42.84	—	—
Haverhill . .	32,925	9	5	22.22	—	22.22	—	—
Malden . . .	30,209	8	2	12.50	12.50	—	—	12.50
Chelsea . . .	29,806	13	6	7.69	—	7.69	—	—
Fitchburg . .	29,383	7	2	—	14.28	—	—	—
Newton . . .	28,837	9	2	—	11.11	—	—	—
Gloucester . .	27,293	—	—	—	—	—	—	—
Taunton . . .	26,955	6	0	—	33.33	—	—	—
Waltham . .	22,058	6	1	16.66	16.66	—	—	16.66
Quincy . . .	19,642	—	—	—	—	—	—	—
Pittsfield . .	18,802	4	1	25.00	—	25.00	—	—
Everett . . .	16,585	—	—	—	—	—	—	—
Northampton .	16,331	5	1	20 00	20.00	20.00	—	—
Newburyport .	14,073	9	3	11.11	11.11	11.11	—	—
Amesbury . .	10,920	2	1	—	50.00	—	—	—

Deaths reported 3,257: under five years of age 1,857; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 1,124, diarrhœal diseases 864, consumption 278, acute lung diseases 197, diphtheria and croup 132, whooping-cough 35, scarlet fever 28, typhoid fever 23, measles 17, cerebro-spinal meningitis 14, malarial fever 4, small-pox 4, erysipelas 3.

From scarlet fever New York 9, Brooklyn 5, Cleveland 4, Boston and Cambridge 3 each, Somerville 2, Philadelphia and Lawrence 1 each. From typhoid fever Washington 7, New York 6, Cincinnati 4, Brooklyn 3, Philadelphia, Lowell and Lawrence 1 each. From measles Brooklyn 6, Cleveland 5, New York 4, Philadelphia 2. From cerebro-spinal meningitis Washington 4, New York and Worcester 3 each, Cleveland, Fall River, Somerville and Springfield 1 each. From small-pox New York 4. From malarial fever Brooklyn 2, New York and Nashville 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending June 30th, the death-rate was 15.5. Deaths reported 3,101: acute diseases of the respiratory organs (London) 152, measles 163, whooping-cough 75, diphtheria 74, scarlet fever 44, diarrhœa 44, fever 26, small-pox (Birmingham 3, Manchester 2, West Ham and Preston 1 each) 7.

The death-rate ranged from 7.0 in Croydon to 24.1 in Salford; Birmingham 13.3, Brighton 10.5, Cardiff 13.3, Huddersfield 13.2, Leeds 12.1, Leicester 10.2, Liverpool 22.3, London 15.4, Manchester 20.0, Newcastle-on-Tyne 17.6, Nottingham 13.3, Portsmouth 12.8, Sheffield 17.1, Sunderland 18.0.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 14, 1894, TO JULY 20, 1894.

Leave of absence for two months is granted **Captain Richard W. Johnson**, assistant surgeon, U. S. A.

The leave of absence on surgeon's certificate of disability, granted **First-Lieut. Frank T. Merriwether**, assistant surgeon, is extended two months on surgeon's certificate of disability.

RECENT DEATHS.

David Thompson Huckins, M.D., M.M.S.S., died in Watertown. Mass., July 21, 1894, aged seventy-five years.

William J. Little, M.D., F.R.C.P. (Lond.), M.R.C.S., Eng., the founder of the Royal Orthopedic Hospital of London, died in West Malling, Kent, England, July 7th, aged eighty-three years. He was the author of several works on orthopedic surgery.

Dr. Joseph Hyrtl, the anatomist, died in Vienna, July 19th, aged eighty-three years. He was born in Eisenstadt, Hungary, December 7, 1811, and received his education in Vienna. In 1837 he was made professor of anatomy at Prague where he remained until called in 1845 to the chair of anatomy at the University of Vienna. In 1857 he was chosen a member of the Imperial Academy of Sciences, and was until 1874, director of the Ecole Superieure. He was a most skilful anatomist and many of his preparations have been presented to various anatomical collections in Europe. His best known works are "The Manual of Physiological and Practical Anatomy" and "The Manual of Topographical Anatomy and Its Applications."

BOOKS AND PAMPHLETS RECEIVED.

Manhatten Eye and Ear Hospital Reports, Number 1, January, 1894.

The Removal of Stone in the Bladder. By Wm. S. Forbes, M.D. Reprint. 1894.

Errors in School-Books. Second competition. Boston: Pope Manufacturing Co. 1894.

Some Observations on an Epidemic of Typhus Fever. By L. D. Pierce Clark, M.D. Reprint. 1894.

First Annual Announcement of the Birmingham Medical College, Birmingham, Ala., Session of 1894–95.

A Case of Cysticercus of the Vitreous. By W. Cheatham, A.B., M.D., of Louisville, Ky. Reprint. 1894.

Human Physiology. By John Thornton, M.A. With 268 illustrations, some colored. New York: Longmans, Green & Co. 1894.

Where to Send Patients Abroad for Mineral and other Water Cures and Climatic Treatment. By Thomas Linn, M.D. Detroit: George S. Davis. 1894.

Inebriety or Narcomania, Its Etiology, Pathology, Treatment and Jurisprudence. By Norman Kerr, M.D., F.L.S. Third edition. London: H. K. Lewis. 1894.

The Diazo Reaction of Ehrlich. Atony of the Stomach. Electric Illumination of the Stomach. By Julius Friedenwald, A.B., M.D., of Baltimore. Reprints. 1893–94.

Small Hospitals, Establishment and Maintenance. By A. Worcester, A.M., M.D., and Suggestions for Hospital Architecture with Plans for a Small Hospital. By William Atkinson, Architect. New York: John Wiley & Sons. 1894.

The Graphic History of the Fair Containing a Sketch of International Expositions, a Review of the Events Leading to the Discovery of America and a History of the World's Columbian Exposition held in the City of Chicago. With nearly 1,000 illustrations. Chicago: The Graphic Co. 1894.

A Hand-Book of Medical Microscopy, for Students and General Practitioners, Including chapters on Bacteriology, Neoplasms and Urinary Examinations. By James E. Reeves, M.D. With a glossary and numerous illustrations (partly in colors). Philadelphia: P. Blakiston, Son & Co. 1894.

Lecture.

THE RANGE AND SIGNIFICANCE OF VARIATION IN THE HUMAN SKELETON.[1]

The Shattuck Lecture for 1894.

BY THOMAS DWIGHT, M.D., OF NAHANT.

(Concluded from No. 4, p. 76.)

THE AGE.

The diagnosis of the age of bones (children not being considered) resolves itself into the study of processes occurring at three periods; first, that of late adolescence and early maturity; second, that of mature and middle life; and third, that of advanced age.

For the first period our guides are chiefly the union of the epiphyses, and that having occurred, the condition of the line of junction. I have not had the opportunity of making extensive observations at this age, but it is remarkable that so far as they go they all point one way, namely, to the earlier union of distinct parts than accords with the general teaching, and to the speedy disappearance of the epiphysial lines.

I agree with Topinard in looking on our knowledge as very unsatisfactory, but I cannot accept his provisional table, which to my mind puts the dates of union much too late. The following table, giving the time of union of the epiphyses of the long bones compiled from English anatomies, is much better, but still wrong in the same direction.

From 16 to 18 lower epiphyses of humerus (except internal condyle) upper ends of radius and ulna, lesser trochanter of femur.

At 18 internal condyle of humerus, great trochanter.

At 18 to 19 head of femur, lower end of tibia.

From 20 to 21 or 22 head of humerus, lower end of radius and ulna, condyles of femur, lower end of fibula, upper end of tibia.

From 22 to 24 upper end of fibula.

My observations on a comparatively small number allow me to offer the following as a provisional chart from 17 on.

At 17 things are much as described as from 16 to 18, but perhaps a little more advanced. The lower end of the humerus is joined, excepting possibly the inner condyle.

Subsequently the process is more rapid, so that the epiphyses of the long bones are usually firmly joined to the shaft at 19. At this age the lines of union about the elbow and hip and ankle are nearly gone. At 20 all are indistinct or quite wanting. As for other parts, the basilar process of the occipital joins the sphenoid at the surface at from 17 to 19, the suture inside the skull being usually closed by 17. Once at 19 I saw the internal suture closed, but not the lower, and on section found a considerable piece of cartilage intervening. In another of the same age, which, however, was not split, there was no trace of a suture. The union of the pieces of the sacrum may be nearly finished at 17. The epiphyses of the crests of the ilia and of the posterior border and inferior angle of the scapula are among the last to unite. They probably join at about 21, but the lines of the crests of the ilia may be seen in parts for some years. As Topinard remarks, individual variations are many. I have several bones from a male skeleton which would seem much younger than those of others of both sexes of the same age. The fact is that this boy of 19, whose bones correspond very well with the usual statements, is the most backward specimen I remember. I think it is pretty certain that in the female the process is completed earlier. I do not agree with Topinard that it is completed earlier in the lower than in the upper extremity.

As I have had occasion to point out, the statements as to the time of the union of the different parts of the body of the sternum found in most text-books are very far from correct, apparently having been copied and recopied. I am glad to find a great modification in the recent editions of the leading English anatomies. The union of the four pieces of the body begins from below, the fourth joining the third by 15 years or earlier. The union of the other parts of the body is completed by the age of 20. I have seen it completed at 16½ and at 19 (but not always). In a girl of 17 I have found the first piece of the body distinct, the others being united. I cannot distinctly remember ever having seen the body of the sternum of a white in more than one piece after 20, but once in a man of 46 the union of the first and second pieces of the meso-sternum had but just begun.

For the long succeeding period from maturity to marked decline three chief criteria may be considered, namely, first, the union of the different pieces of the sternum and the progress of ossification of the ensiform cartilage; second, the closure of the cranial sutures; and third, the co-ossification of the horns of the hyoid with the body.

The sternum having reached its normal condition of three pieces at 20 (and probably often earlier), the next change is the appearance of ossification in the ensiform cartilage, which may after this occur at any time and is no indication of even middle age. This condition of affairs, namely, a meso-sternum in one piece, a distinct manubrium and ensiform, the latter more or less bony, usually persists throughout life. It exceeds 50 per cent. of my observations on about 150 bodies. As these were on the average much above middle age, it is probable that this condition is even more common. In many cases the ensiform becomes one with the body. Though more frequent after middle age than before it, this is a sign of little value, for it is hard to say when this occurs. It rarely, however, begins before thirty. Union of all three pieces into one piece of bone is uncommon, occurring in less than 10 per cent. This condition is probably dependent on constitutional tendency rather than on age, for in most of the cases which I have seen it apparently occurred before 50. I have met with it at 25 and at 28. Union of the manubrium and body with a free ensiform is even more rare than the last, of which it is presumably a preliminary stage. I may note as a sexual difference that the three parts of the breastbone have a greater tendency to fuse in man than in woman.

The time of closure of the cranial sutures (by which I refer to the three great sutures of the vault) is very uncertain. Perhaps this simple statement would suffice, were it not that rules have been given to determine the age of the skull from the condition of the sutures. In 1890 I published my observations on 100 skulls. The process of co-ossification begins on the inside of the skull. It usually begins at about 30. The order and rate of closure are very varying. Complete closure may occur at any time. I have an instance of it in this thick calvaria of an epileptic black boy of 15. It does not necessarily depend on the thickness of the skull, for one of a girl of 20 in which they are all open is nearly as thick. Here is the calvaria of a woman of 52 on the outside of which the sutures appear open, though they are mostly closed within. The sutures may be distinct or open in old age, but I consider an abnormally early closure much more frequent. Partially closed sutures alone do not indicate an age much above 30. Sutures absolutely open in most cases mean an earlier age.

---

[1] Delivered before the Massachusetts Medical Society June 12, 1894.

My observations on the hyoid embrace among whites only 44 men and 20 women. The lesser horn is often rudimentary or wanting. It may be connected by either a joint or a ligament. Its union to the body by bone is uncommon, and when it occurs is a sign of advanced age. I have seen both lesser horns fused with the body only once before fifty, in a man of 31. Our chief guide is, therefore, the great horns. I have seen them both joined only six times out of 31 subjects under 45 (all but two of which had passed 20). After 45 years both are joined in more than half the cases. They may, however, be free in extreme age.

The general changes in the bones in later life are vague and ill-defined. The atrophy, which is often seen in the bones of the very aged, begins at no definite period. I have in my collection bones of persons over 70 which cannot even on section be distinguished from those of early maturity. In extreme age atrophy is, of course, to be expected.

The skull shows a marked atrophy of the face with an enlarging of the angle of the jaw, especially when edentulous. The cranium itself does not show the same wasting as the face, but on the contrary may be thickened. The idea that the angle of the neck of the femur is diminished is no longer held. The ossification of cartilage, the closure of sutures, increased roughness along lines of insertion of tendons, are often changes due rather to constitutional causes than to age. Their significance must be carefully weighed.

While I have felt justified in speaking with greater confidence on the determination of the sex than I did sixteen years ago, in the question of age it is just the reverse.

ASYMMETRY.

The question of asymmetry of the limbs requires brief mention. I have measurements of the separate bones of about 75 subjects, of which rather more than two-thirds were male. As to the arm, the right humerus is almost always the longer, and the right radius usually; the combined length is almost always greater on the right. I find the average difference 6 mm. Rollet, who measured the bones of 50 male and 50 female subjects, puts it at from 7 to 8 mm.

As for the legs, the femurs differ about 2 mm., one side predominating about as often as the other, the tibiæ by some 3 mm., the left side being more often the longer. The combined length is greater on the left in distinctly more than half the cases, the average excess being from 4 to 5 mm. Rollet makes the differences somewhat greater and apparently finds that neither side is particularly favored. The two longer bones of a limb are usually on the same side, but not always. In Wright's measurements on legs on the living and Garson's on skeletons, each gives the predominance to the left limb. My observations show an equality between the sides of the body that is greater than I had anticipated.

I may mention that incidentally to this investigation I have been able to carry some light where it is much needed, namely, as to the value of measurements on the living, but this is foreign to the present discussion. How far inequality of the central nervous system may be correlated with that of the limbs is one of those questions on which surmises far exceed exact knowledge.

I have here the base of a female skull showing almost extraordinary asymmetry in favor of the left side, yet the bones of the right arm exceed those of the left by 1 cm., which though uncommon is hardly remarkable, and the bones of both legs are precisely equal.

THE ESTIMATION OF THE HEIGHT.

If it be asked how far individual variations may affect our success in estimating the height, the answer must depend on the method that is employed. If we follow the best, or anatomical method, namely, that of putting the bones into proper position, making due allowance for soft parts and measuring the height, the individual variation does not count, because the problem is distinctly under the eye. But if parts are wanting so that we must turn to the method of calculating by proportions, individual variations are of the greatest importance. Indeed, they are so important that they make absolute certainty almost impossible. Should the legs be wanting we must turn to elaborate tables which I have calculated to enable us by multiplying the length of the spine from atlas to sacrum by certain coefficients for each sex, to obtain the height; sometimes with wonderful exactness. Still, not only does the length vary considerably, but the number of anomalous spines observed is increasing. Those with six lumbar vertebræ are common enough. My tables show that usually this increases the proportionate length of the spine, but not invariably. Thirteen and eleven thoracic vertebræ without corresponding decrease or increase in other regions are occasionally met with. Then we have the proportions reckoned from the height of the pubes, and finally from the separate bones. From large numbers of subjects measured in our anthropological laboratory, both before or after dissection, I selected forty, twenty male and twenty female, in each of which the humeri, radii, femora, and tibiæ of both sides had been measured. From these I calculated the height according to my own tables from the spine; according to the methods of Topinard, Rollet and Manouvrier from the humerus, radius, femur and tibia. The height may be reckoned from any one of these bones, but I have pursued the method of taking the average length of the bones of both sides, and having found the height from each of humerus, radius, femur and tibia, to take the average of the four as probably the nearest approach to the true height. I have repeated this process according to the method of each of these three observers.

Not to stop for details, it appears that by almost any of these methods we can come within 2.5 cm. or 1 inch in about half the cases, within 5 cm. or 2 inches in about three-fourths of them, which leaves one-fourth remaining in which the error is serious.[2]

---

[2] This subject is discussed at length in a paper read before the Association of American Anatomists at Washington, May 30, 1894, which is to appear in the Medical Record.

THE SKELETON AND THE FIGURE.

What relation, if any, there may be between the shape of the bones and that of the body, is a very interesting question, which under certain circumstances may well become a momentous one. Can we from our knowledge of a person's figure predicate at least the general character of his bones, and conversely if bones are laid before us can we say anything worth saying as to the soft parts that once clothed them? Surely, putting aside extraordinarily tall or short or peculiar figures, the part we should expect to show the greatest individuality is the skull.

A typical long and a typical broad skull are of course readily distinguished. There are also typical long and narrow and typical short and broad faces, such as we can imagine belonging to the melancholy Trois Eschelles and the rollicking Petit André, the two hangmen in Quentin Durward. In the first the nasal opening is narrow and pointed, in the other broad and almost quadrilateral; in the former the jaw is narrow, the roof of the mouth highly vaulted, and the angle of the lower jaw more obtuse than in the other. But such typical faces are not very common. The characteristic points are usually wanting in clearness. Not rarely they are even transposed, so that, for instance, a short face may have the lower jaw with the angle of a broad one, and *vice versa.*[3]

Often when overcome by the intense weariness of a Faculty meeting, I have sought relief in asking myself which of my colleagues I should be able to recognize were their nicely macerated skulls set on the table before me. There are striking types of heads in that august assembly, but I am convinced that the skulls I could swear to would be very few. Even so characteristic a countenance as that of the sad-eyed Mongolian is not, when reduced to a skull, so strikingly evident that one will readily pick it out from a number. Most of the characteristics of a head and face, the size being excepted, are in the soft parts.

The problem may present itself in various ways. Supposing that we had the skulls of two known persons before us, the identification should in most cases present no insuperable difficulty. In many cases we could declare with absolute confidence that a certain skull could not have belonged to a certain person. But while I do not question that the careful and minute study of an expert can accomplish much, I am anxious to insist that the identification of a skull from our remembrance of a dead person, even with the assistance of photographs, is in most cases no easy task.

As for the rest of the body, it cannot be denied that our results are more negative than positive. The shoulder-blade is a very variable bone. I do not know what range of variation a great series of the scapulæ of the larger felidæ might present, but a small one shows nothing like that of the human race, I might add even that of the Caucasian. Yet I am quite unable to find any connection between its shape and the contour of the shoulders. The length, breadth, inclination and shape of the acromion are all valueless. Perhaps the only deduction that seems clear is that the leverage required by a long arm calls for a long scapula.

Conversely, however, I may say that heavy shoulders indicate large humeri. In the strongest arm bones the spiral formation is particularly developed. I have often seen in this type a large, prominent, external supra-condyloid ridge suggesting that of the gorilla. I have never seen this ridge strongly developed on a weak or on a female humerus.

The variations in the details of the femur are endless. I have been baffled in trying to find any definite connection between the figure and the various features of the thigh bone, such as length, or angle of neck, its forward inclination, and indeed the general characteristics of the shaft. I have been inclined to associate the length and forward inclination of the neck with a well-marked lumbar curve, but have no evidence that can be called convincing. Two peculiar shapes of the thigh bone have of late received particular attention, one of which, called the pilastered femur, characterized by the prominent posterior ridge and usually strongly bent, is associated with a very narrow tibia. While I have often found this association, it is not invariable, neither does it always imply large muscular development. The other is the flattened femur, which, except for its greater length, suggests that of the gorilla. I have found it generally in very powerfully built men. I have frequently seen the bending back of the head of the tibia which, together with a facet at its lower anterior border, has, in prehistoric skeletons, been advanced as evidence that an upright position was not fully attained. The studies, however, of Mr. Arthur Thomson, of Dr. R. Havelock Charles, and of Monsieur Manouvrier have shown that it is rather to be considered as associated with powers of excessive flexion, and perhaps with the habit of walking with bent knees. These peculiarities are seen in the leg bones of Orientals who sit squatted on the ground. Here is a Chinese tibia which has the lower articular surface continued on to the front. It in no way implies in either case that the upright position cannot be assumed. I have frequently seen a lengthening of the articular surfaces of the head of the femur which is associated with these features, but I have found it independent of any of them. As to the thin tibia of prehistoric skeletons, we often find striking examples of it in the dissecting-room.

To come to practical application, I do not believe that it is possible to predicate the shape of the bones from that of the body, nor *vice versa*, with any great certainty. Often we should fall into grievous error in attempting it. I have notes on two male subjects that were in the dissecting-room at the same time, which I shall call A and B. A's height was 176.9 cm. (say 5 ft. 9½ in.). B was a mere trifle (6 mm.) taller, but with broader shoulders, broader hips and longer legs. My notes state that A was slender, thin, with a flat chest, rather long neck, thighs somewhat bent outward. B was of very powerful build, with square, thick shoulders, very deep chest, strong legs. B's shoulder-blade is the larger, but by no means strikingly so. Had I measured the arm bones I have little doubt that one factor of B's heavier shoulders would have been apparent. But the femurs were a surprise to me. Each is remarkably heavily made, and though of different types one would hesitate which to ascribe to the more powerful man. In A it approaches the pilastered form, in B it is broad and flat. Here, again, are some very interesting bones from a lightly made, almost puny blind boy of nineteen, who had spent nearly his whole life in an almshouse in a sedentary manner, yet they are distinctly strong bones. The humerus in particular presents a striking contrast to that of the female mill operative who seemed almost twice his size.

---

[3] Formen des Ober und Unterkiefers bei den Europaeern. Dr. J. Kollmann. Schweizerischen Vierteljahrsschrift fur Zahnheilkunde, 1892.

THE ORIGIN OF INDIVIDUAL PECULIARITIES.

This carries us to the causation of peculiarities of structure. Manouvrier argues at great length that the very thin tibia comes from the great development of the tibialis posticus, and the pilastered femur from that of the crureus, useful muscles for walking in a hard country and with bent knees. While I would be the last to question the tendency of the human body in common with all other organisms to adapt itself to its surroundings, I cannot regard such explanations as sufficient. Manouvrier maintains also that the third trochanter is associated with the action of the gluteus maximus. I have endeavored to show on a previous occasion that the theory which explains the shape of bone by mechanical strain is unsatisfactory. We find the third trochanter only in a certain proportion among savage races in which presumably every one lived pretty much the same life. We find remarkable instances of it in delicate bones which show no signs of great muscular development. Finally, we find it in bones that are too young to admit of its having been pulled into prominence by the muscles of its possessor. Manouvrier argues that the platycnemic tibia is due to the mode of life of the individual from the fact that it is not found in childhood. This does not follow. At early adolescence many changes take place in the framework of the body, then beginning to assume its final shape, which can be accounted for by no mechanical cause. Such are the development of the nose and of the larynx at the time when, to quote Thackeray, the boy's voice ranges from an unearthly treble to a preternatural base. Moreover, we are not now concerned with the question how great races acquired their characteristics, but whether mechanical explanations will account for the individual peculiarities found among us. Here we see every variety of shape of femur and tibia, to say nothing of shoulder-blades. Here are prehistoric forms occurring in the midst of us. Here are the strongly developed bones of the blind boy who did nothing. I have spoken of the wonderful variability of the human scapula. There is every reason to believe that it acquires its permanent peculiarities at a very early period. Macalister has found characteristic differences in the acromion at from two to four years, and I have two tracings of the outline of peculiar shoulder-blades made for me by Dr. Monks, from two sisters, aged seven and ten. The resemblance of these two tracings and the early development of outline is strong evidence that this depends upon other than mechanical causes. Without questioning that external influences can and do modify the shape, I am convinced that the main characteristics of each body are largely hereditary, and are predetermined from the very beginning of development.

THE SIGNIFICANCE OF ANOMALIES.

I have met with most of the recognized anomalies of the skeleton, and with some of great rarity. Large third trochanters, supra-condyloid processes, supratroclear perforations, I have seen galore. Here is a large para-mastoid process of the occipital bone, which is found in many mammals, especially in the herbivora and rodents; here is a sternum with the manubrium reaching to the third rib, as is found in gibbons; here is the fossa pre-nasalis, best developed in the seal tribe.

Our collection of anomalous spines shows many curious forms. It is claimed that man is about to lose one of his 24 pre-sacral vertebræ. I have specimens showing the sacrum encroaching on the lumbar region, transforming the vertebra above it into a transitional one and reducing to sixteen the thoracic and lumbar vertebræ, it may be at the expense of one region or of the other. I have instances of the reduction of the thoracic vertebræ to eleven without any remarkable disturbance in any region. There are, on the other hand, cases of the increase of the pre-sacral vertebræ. There may be twelve thoracic and six lumbars or thirteen thoracic and five lumbars. Here are cervical ribs of various degrees of development. This is a bicipital rib recalling the condition in some whale-bone whales. Here finally on a spine showing cervical ribs and the suppression of a thoracic vertebra, is an absolutely unique case of absence of the anterior arch of the atlas.

Much do we hear of atavism. Every anomaly is forced to represent something animal, a short spine is that of the orang, a long one that of the gibbon, one anomaly recalls the sloth, another the seal, another a ruminant, another a marsupial. In the muscular system we have been carried back both to birds and to snakes.

We cannot have inherited the fossa pre-nasalis from the seal. If it be inherited at all it must be from some common ancestor. Following this line of reasoning, we find that if all animal resemblances are reversions, the primitive ancestor must have been a very curiosity shop of peculiarities, in direct defiance of that principle of evolution which brings from the simple the more complex. Convinced as I am that every bodily difference between man and non-rational animals is of degree and not of kind, I am astonished and perplexed by the great net-work of analogies extending throughout nature. No one can ignore them without wilfully shutting his eyes. But the very multiplicity of these resemblances assures me that some other law than that of heredity must be invoked to account for them. They cannot be represented by a tree-like figure. They spread out every way. The opinion is growing daily stronger, among serious scholars, that if man's body came from a lower form it was not by a long process of minute modifications, but by some sudden, or comparatively sudden, transition. The fabulous missing-link, once so accurately described by Haeckel, is retreating to the limbo of worn-out hypotheses.

THE VITAL PRINCIPLE.

The phenomena of growth show unmistakable evidence of an immanent force presiding over the development of the living organism, essentially different from the forces of non-living matter. Its action is strikingly shown in anomalies; not, indeed, in their production, but in remedying the evil. If, for instance, there be but eleven thoracic vertebræ in a spine, it is impossible to say which one is wanting, for a slight modification is found to have taken place in several by which the symmetrical development of the spine is maintained. In the unique case of total absence of the anterior arch of the atlas, a strong ligament running from the odontoid to each lateral mass holds the bone securely and yet allows movement. By what purely mechanical process can this wonderful adaption have been brought about? One of the characteristics of living matter is that its growth is directed to the perfection of the organism as one whole, not as a collection of independent particles. This is the action of the vital principle, which science can no longer afford to ignore.

◆

Original Articles.

WHITE SWELLING OF THE KNEE:

Report of Results After Excision of the Knee in 13 Cases Done at the Massachusetts General Hospital by Different Operators.[1]

BY CHARLES L. SCUDDER, M.D.,
Surgeon to Out-Patients, Massachusetts General Hospital; Assistant in Clinical Surgery and Demonstrator of Surgical Apparatus, Harvard Medical School, Boston, Mass.

By white swelling of the knee is understood a chronic, inflammatory process of tubercular origin, which usually begins in the synovial membrane, or in one of the epiphyses adjacent to the joint, and which may be attended by extensive destruction and degeneration of tissue, and be followed by a reparative process, which is a more or less successful attempt at checking the disease.

A tubercular inflammation of the structures of the knee-joint begins most insidiously. The child, primarily well although never very robust, begins to favor the affected knee, showing a very slight limp, which is almost unnoticeable. Any sudden and unusual twist of the leg causes a twinge of pain. At first the lameness is intermittent: it appears for a few days, and then disappears for a time, only to reappear the more evidently. For several weeks nothing else is noticed, until upon more careful examination of the affected knee, a slight puffiness or swelling is found; the natural hollows about the joint are absent. A little pain is occasionally felt in this slightly swollen knee, independent of motion.

More careful examination will reveal tenderness to pressure over the head of the tibia, and at times over the condyle of the femur. This tenderness is most marked over the inner side of the knee. Tenderness, especially circumscribed tenderness, is more constant and, as an indication of osseous involvement, as Senn has suggested, is of more significance than was formerly supposed.

To bend the leg on the thigh completely will be found to be impossible. The knee is held fixed by muscular spasm. The tonicity of the muscles of the joint is of very great importance; muscular spasm — an involuntary fixation of the joint — always demands critical attention. The muscular spasm increases. At night while asleep, the child suddenly gives the characteristic sharp, high-pitched cry of osteitic pain due to muscular spasm. The ability to walk diminishes rapidly, and the child is often bedridden. Abscesses soon form, attended by higher fever, more pain and general disability. Sinuses, ulcers, cicatrices, contractures, follow one another in characteristic succession.

The knee, if considerably damaged and left to itself, and as a result of thickening of the ligaments, adhesions, and the adaptation of the hard and soft structures to the deformed position, gradually becomes more or less fixed in this flexed, everted, abducted and subluxated position. In certain cases, bony ankylosis may occur, or the patient may succumb to a complicated, local or general, tuberculosis, septicemia or its sequelæ, or exhaustion. It is true that milder grades of the affection also occur which, under comparatively simple treatment, subside, leaving a more or less useful joint.

In the clinical picture of chronic knee-joint disease, the symptoms arrange themselves naturally in three groups: (1) those preceding deformity; (2) those associated with deformity; and (3) those attending abscess formation and permanently deformed positions.

The first group includes lameness, sensitiveness, muscular spasm, slight swelling, moderate sensitiveness to pressure about the joint, slight atrophy of thigh and calf muscles, increase of the surface temperature. These signs are apt to be overlooked, not because the doctor is necessarily incompetent to interpret them, but because he fails to make an examination. Every child who limps should be examined very carefully at once, for evidence of incipient trouble in the knee-joint, or in the other joints of the lower extremity. The ankle, hip and knee-joint limps are distinguishable.

The symptoms of the second stage are an increase of those of the first stage, and are due to poor nutrition and severe traumatisms in the use of the leg. There is found to be more or less pain, night cries, lameness amounting to inability to walk. An acute inflammatory disturbance about the joint results, causing first, pain and tenderness, and finally formation of abscesses. The knee is much swelled; the skin is stretched, pale and shining, with enlarged superficial veins. A deformity is present which is more or less temporary.

In the third stage, however, the tibia is rotated outward and falls behind the normal plane with the thigh. Cicatrices form, in connection with the old sinuses. The limb is partially or completely ankylosed.

In a given case, the process may stop short at any point in the history here laid down.

The treatment of this disease, which has such a progressive, important set of symptoms, depends largely upon the period in the disease at which treatment is instituted.

The indications for treatment are local and general.

The general indication is to improve the nutrition of the patient by means of properly supplied fresh air, a nourishing diet, the relief of conflicting disorders.

The local indications are to provide conditions favorable to the process of repair at the site of the disease, to prevent or to correct deformity, to restore, as far as possible, the functions of the joint.

The local treatment may be classified into

The non-operative, or expectant;
The operative — erasion, excision, amputation.

There is an impression which seems to obtain in many quarters, that even with continuous rest, a tubercular joint never recovers, and that operative treatment itself, short of amputation, is of doubtful utility. It may be taken as an ascertained fact, that the great majority of tubercular joints will recover, if properly treated, with complete rest to the joint, and under good conditions of hygiene, sea-air and nourishing diet.

If, after the palliative and mechanical treatment which secures absolute rest to the functions of the joint — and this means not only rest from motion, but rest from every trauma — if, after this careful mechanical treatment, some permanent abatement of symptoms does not occur, as well as evident diminution in the girth of the joint, as shown by accurate, periodical measurement, operative interference is called for.

---

[1] Read before the Warren Club, of Boston, Mass.

The length of time required in a trial of this palliative treatment should be decided by the condition of the case itself, but at least three months would seem to be sufficient for a fair trial. It is extremely important not to delay too long, for the operative procedures will be sorely handicapped, if attempted late in the course of the disease.

Dr. V. P. Gibney, of New York, has presented[2] a valuable commentary on the opinion of those who regard the protective mechanical treatment as of little value.

In his final results, in 300 cases of tubercular ostitis of the knee occurring among children treated on the expectant plan with some support and rest at intervals, according to the symptoms, 60 per cent. had motion. Under the fixation plan, with good apparatus, applied during a limited time, 76 per cent. had motion. Under the protective plan — that is, complete immobilization until all acute symptoms had subsided and convalescence could be safely predicted — 95 per cent. had motion. In those cases treated by the protective method, it is found that abscesses are uncommon, motion is procured, relapses are not very frequent, deformity is slight, the limit of extension is great.

The protective method of treating ostitis of the knee, commonly known as white swelling, is an important means at our command for checking the disease and preserving a useful limb. In order to insure a satisfactory trial of the protective plan of treatment, the selection of apparatus for each individual case, the accuracy of adjustment, and the continuous and untiring watchfulness over the appliance, as well as its adaptation to the varying conditions of the leg, are all of the greatest importance.

Erasion of the Knee-Joint is the first important operative procedure to be instituted if the protective treatment fails. G. A. Wright, of Manchester, England,[3] presents valuable statistics, which place this operation in its proper relation to other methods of treatment.

By erasion of the knee-joint is understood the removal of diseased synovial membrane and ligaments, and, if necessary, also, to a very slight extent, of bone and cartilage.

The advantages of this operation are:

There is no shortening.
There is no deformity, other than the cicatrix.
There is no arrest of the growth of the limb.
Free movement of the joint has resulted, although this is not always desirable.

The causes of failure of this operation are:

Incomplete removal of the disease.
Failure in maintaining asepsis.
Inability of the patient to repair the wound left by the operation.

Prolonged care is required to prevent flexion of the knee. The leg must be immobilized for some time — two or three years, or longer, if necessary.

Wright has reported 37 cases of erasion, which show some failures. In properly selected cases, it is safe to class erasion as an efficient surgical procedure.

Forcible Correction of the Deformity of Flexion. — In white swelling of the knee there is another operative procedure, which, under certain conditions, is of value. If the knee is flexed, and has remained so for years, it was once thought, because of the shortening which necessarily must have occurred in the muscles, tendons and ligaments of the posterior side of the joint, that in order to correct the deformity, an excision was inevitable.

To-day, forcible straightening is practised successfully upon such flexed and semi-ankylosed knees. Dr. J. Goldthwaite, of Boston, has reported recent cases of his own and others after this operation. In one case reported, after deformity for about fifteen years, there is motion of about ninety degrees.

The operation of forcible straightening is performed by means of a piece of apparatus, purposely devised so that, without increasing the intra-articular pressure, the deformity may be corrected. Seven cases are reported, with good results in all.

Excision of the Knee. — Those cases should be excised which the expectant treatment, properly carried out, has failed to benefit, and in which erasion is contraindicated because of the extensiveness of the disease in the hard parts.

Amputation is necessary for those cases in which there exists disease too extensive for excision, and in which the general health is so poor as to demand immediate relief from the tremendous drain of prolonged suppuration.

Ninety-nine excisions of the knee were done at the Massachusetts General Hospital during the period of ten years prior to May, 1891. Thirteen of these cases have reported years after the operation. This group of operations is interesting, in that 10 of the 13 were fifteen years old and over, the oldest being thirty-one years of age. Two of the cases were aged thirteen and fourteen years respectively, and the age of one was not mentioned in the hospital record and was not obtained. These cases, therefore, represent a group of young adults.

The 13 cases in which the complete results are known, are here tabulated (see next page).

In most cases the excision was done for tuberculosis in the synovial membrane, which condition in almost every instance had extended to the bone. The disease had been of long duration — several years. There was present partial or complete ankylosis, at a larger or smaller angle of deformity in flexion. Subluxation of the head of the tibia backward, with more or less rotation of the foot outward, was increasingly present.

The operation of excision was done because of the persistence of local disease, because of the failure of the general health, because of the presence of discharging sinuses, and for the removal of deformity.

In a few instances an excision was done to avoid amputation, which seemed inevitable because of the tremendously disorganized condition of the knee-joint. In every case, a complete excision was done, the patella being removed, by a curved incision, transverse to the long axis of the leg, carried through the ligamentum patellæ. Drainage at each end of the incision was usually provided.

In a small number of cases the bone was partially immobilized by means of silver-wire sutures or steel nails, which were subsequently removed. In all cases the leg was immobilized externally from the toes to the hip by a plaster-of-Paris or posterior wire splint, at times including the hip, for a period of not less than four to six months.

By consulting the accompanying table, it will be seen that in each patient, a useful leg has resulted from the operation. In all instances but one, in which there is a little motion, union has been firm.

---

[2] The American Journal of the Medical Sciences, October, 1893.
[3] Annals of Surgery, December, 1889.

The limp is slight. The shortening in the cases which were measured has been from one-half to three inches.

With the exception of one case, which reported four months after the operation, the time which elapsed from the date of operation up to the time of observation has been from one to six years.

Table of Thirteen Cases of Complete Excision of the Knee-Joint.*

No.	Age	Reasons for Operating	Result After	Union	Limp	Shortening
1	22	General health failing; deformity; swelling	4 yrs.	Complete	Slight	2¼ in.
2	20	Ankylosis, with deformity.	3 yrs.	Complete	Slight	..
3	20	Ankylosis 6 years, with acute symptoms; amputation later, because all local disease was not removed at first operation.	..	..	..	..
4	13	Discharging sinuses 6 years, ankylosis at a right angle.	2 yrs.	Complete	Slight	..
5	15	Partial ankylosis; swelling; 4 years' duration; reasons for amputation not mentioned.	..	..	..	..
6	31	Swelling, flexed, partially ankylosed; duration 2 years.	2 yrs.	Complete	Slight	..
7	23	Bony ankylosis, after 7 years of disease, at a right angle; no acute symptoms.	1 yr.	Complete	Slight	1½ in.
8	29	A slow tuberculosis; swelling; weak leg; inability to walk much.	4 yrs.	Very slight motion	Slight	½ in.
9	14	No record of value.	6 yrs.	Complete	Slight	3 in.
10	16	Swelling, pain and flexion for 8 years.	6 yrs.	Complete	Slight	2¾ in.
11	27	Trouble with knee for 13 years; flexed, tibia subluxated, lateral motion.	6 yrs.	Complete	Slight	2 in.
12	..	For ankylosis and deformity.	4 mos.	Complete	Slight	..
13	27	Swollen, enlarged, painful, deformed for 6 yrs.	4 yrs.	Complete	Slight	1 in.

* In all cases plaster-of-paris bandage from the groin to the toes; foot at right angle.

This report of excisions is of value because end results are recorded, and because it shows what serviceable legs remain after the removal of the knee-joint in young adults.

There are several questions of importance to be considered in connection with the operation of excision of the knee-joint:

The necessity of internal fixation.
The method of operating.
The external appliance to be used.
The length of time for maintaining immobility.

From a careful review of the experience of many operators, it seems that the accurate approximation of the tibia and femur secured by metallic sutures, offers the best internal fixation, better than that obtained by pins and other means.

The transverse incision through the ligamentum patellæ is most satisfactory, as it affords a more thorough exposure of all the joint surfaces than any of the other incisions suggested.

After the operation, a rigid external support is necessary. For a long time — at least a year or more — the unprotected leg should not be allowed to receive the weight of the body.

Immediately after the operation, a proper protection is provided only where both the hip- and ankle-joints are immobilized. This is best accomplished by a plaster-of-Paris roller bandage, extending from the tips of the toes upward and around the body at the hips.

The preservation of the patella is urged and discouraged by equally good authorities. The leg is stiff after operation; there is little use for the quadriceps, and its attachment to the patella, even if preserved, could be of little use. The bones are firmly united together. The patella therefore cannot help in retaining the bones in place. If there is any disease in the patella, complete removal of the bone is desirable, so that no portion of the disease may be left behind.

White swelling of the knee-joint is insidious in its onset, slow in its progress, and if untreated, is sure in its ultimate results. Its clinical course is varied. The indications for its treatment are constantly changing.

In many cases of white swelling of the knee-joint, there comes a time when just as careful judgment is needed to determine whether mechanical means alone shall be depended upon, or whether operative interference is needed to insure the best results, as is required of the surgeon in the care of cases of appendicitis, where he is called upon to decide for or against operation. The immediate danger from an error of judgment is less in the former than in the latter cases, but the nicety of the judgment demanded is equally great.

Case I. D. B., aged twenty-two. A man of tuberculous appearance, losing flesh rapidly. Presents a right knee firmly fixed, swollen and covered with cicatrices, the remains of old sinuses.

Operation. — Complete excision. Patella removed; silver wire used.

Result, four years after operation. — Good general health; no pain at the seat of operation; complete bony union; a useful leg; slight lameness; shortening of two and one-quarter inches: the right thigh two inches smaller than the left; the right calf half an inch smaller than the left.

Case II. J. C., aged twenty. A man of good general health. Presents a knee completely ankylosed, with deformity — that is, flexion, rotation of the tibia outward and subluxation backward. This ankylosis is said to have followed an axe-wound, which opened the knee joint several years previously.

Operation. — Complete excision. Patella removed.

Result, three years after operation. — A friend reports the man as being in excellent general health and able to work. He has no trouble whatever at the seat of operation. His leg is useful.

Case III. C. W., aged twenty. This man had a chronic ostitis of the femur and tibia, in the neighborhood of the left knee-joint lasting six years. The knee was swollen and partially ankylosed.

Operation. — A complete excision. The patella was removed. One month after the excision, on account of a persistence of the local inflammatory processes, the thigh was amputated. The man recovered.

Case IV. J. C., aged thirteen, a boy who had had for six years a chronic ostitis of the femur and of the head of the tibia, presented a knee firmly ankylosed at a right angle. There were sinuses on either side of the femur, communicating with the carious bone.

Operation. — A complete excision.

Result, two years after operation. — The general health excellent; no pain; a stiff leg; scarcely any lameness: leg useful.

CASE V. C. M., aged fifteen. For four years the patient has had increasing disability of the left knee-joint. The knee was much enlarged, the patella immovable, the contour of the joint obscured, and there was partial ankylosis.

Operation. — A complete excision. The patella was removed. Two months later the thigh was amputated. Two years after the excision and about a year after the amputation, the general health was excellent.

CASE VI. M. M., aged thirty-one, a woman who is said to have had rheumatic fever several years ago, presented a knee which was much swollen and fixed. The deformity had existed for about three months.

Operation. — A complete excision. The patella was removed. Steel nails were used in place of silver wire, but were removed early.

Result, two years after operation. — General health good; absence of pain; a useful leg; complete bony union; slight lameness.

CASE VII. M. Mc., aged twenty-three. A man with a tuberculous family history. He is said to have injured his knee seven years ago. The left knee is flexed to about a right angle; the tibia is subluxated. There is no heat or redness of the skin. The patella can be moved slightly.

Operation. — A V-shaped piece of bone, including the patella, the lower end of the femur and the upper end of the tibia, was removed.

Result, a little over one year after operation. — General health excellent; complete bony union; absence of pain; a useful leg; slight lameness; one and one-half inches shortening.

CASE VIII. K. K., aged twenty-nine. A woman in good general condition, presenting a slow, painless swelling in the left knee, incapacitating her for work. No evidence of any past abscess formation.

Operation. — A complete excision.

Result, four years after operation. — General health excellent; no pain; one and one-half inches shortening of the leg; very slight motion at the seat of resection; a slight lameness; a useful leg. The leg is protected at the seat of operation by a leather corset.

CASE IX. T. M., aged fourteen. A boy with a tuberculous knee.

Operation. — A complete excision. Silver wire used and subsequently removed.

Result, six years after operation. — General health excellent; absence of pain; complete bony union; very slight lameness; three inches shortening of the limb; a useful leg. There is a tendency to inversion of the foot on the excised side.

CASE X. S. H., aged sixteen years. For eight years has had a swelling of the knee accompanied by pain and stiffness. There is marked flexion of the knee.

Operation. — A complete excision.

Result, six years after operation. — Bony union; there is no pain; the leg is useful; slight lameness; two and three-quarters inches shortening of the excised leg.

CASE XI. I. H., aged twenty-seven years. A woman who has had trouble with her knee for thirteen years, that is, slight pain and swelling, and inability to use the knee with perfect freedom. The knee is flexed. There is much lateral mobility. The tibia is subluxated.

Operation. — A complete excision. Silver wire used.

Result, six years after operation. — Her general health is excellent. There is two inches shortening; complete bony union; no pain; a useful leg.

CASE XII. J. M. The left knee is swelled. The tibia, near the joint, measures one and one-half inches more in circumference than does the tibia of the right side. Ankylosis is very nearly complete at a little more than a right angle.

Operation. — Complete excision. Patella removed.

Result, four months after operation. — General health is excellent. Gained in weight immediately after the operation; no pain; a useful leg.

CASE XIII. M. G., aged twenty-seven. A woman who, for six years, has had a swelled, painful and stiff right knee. At the time of operation, there was a great enlargement of the right knee, much lateral motion, and inability to raise the foot from the floor.

Operation. — A complete excision. The patella was removed. During the following year, all the tuberculous tissue not having been removed, many curettings were done.

Result, four years and three months after the first operation. — Knee firmly ankylosed. General health is pretty good. Pain is absent; the leg is useful; very little lameness; one inch shortening of the right leg and one inch atrophy of the right thigh.

◆

ICHTHYOL IN GYNECOLOGY.[1]

BY MALCOLM STORER, M.D., OF BOSTON, MASS.

SUFFICIENT time has now elapsed since the introduction of this drug to form some judgment as to its value in the treatment of diseases of women. While many foreign writers have given us the results of their experience, so little has appeared in this country on the subject that I feel justified in laying it before you.

Much, apparently with justice, has been claimed for ichthyol in other departments of medicine; the question of its value in gynecology has been somewhat vexed, and it may be of interest to give a brief *résumé* of the results of some other observers, and see how closely they are borne out by personal experience.

The characteristics of the drug generally employed — the sulpho-ichthyolate of ammonium — probably are well known to you. Suffice it to say that it is obtained from a fossil fish deposit, and is a thick brown liquid, with a smoky and to some a highly offensive odor. It is soluble in water, in a mixture of alcohol and ether, in oils, glycerine and fats, and contains about 15 per cent. of sulphur, very intimately combined.[2] Discovered by Schrötter,[3] it was introduced to the profession by Unna in 1883, and its success in certain inflammatory dermatological conditions soon brought it into great vogue. Unna's theory of its action was that by its reducing power it deprives the endothelium of the blood-vessels of oxygen, and so causes them to contract. While this view is vigorously combated, no better one has been proposed. (See Elliott.)[4]

Its use in gynecology was first suggested by Freund in 1890.[5] He claimed surprisingly quick and complete cures in many cases of chronic parametritis, chronic and subacute perimetritis, with exudation and adhesions, cicatricial atrophy of the vagina and cervix, chronic metritis and tubo-ovaritis. He also found it valuable for pruritus and cracked nipples, and relieved a case of catarrh of the large intestine with suppositories. His method in severe cases was to introduce the drug into the system in a variety of ways, using all of the following: sugar-coated pills containing $1\frac{1}{2}$ minims, two to eight daily; salve, 10 per cent., for inunction on abdomen; rectal suppositories, containing three minims; ichthyol-glycerine tampons, five per cent.

---

[1] Read before the Massachusetts Medical Society, June 13, 1894, and recommended for publication by the Society.

[2] Lurtigeau: Gaz. des Hôp., 1887, p. 165.

[3] Schrötter: Monatschrift f. Prakt. Dermat., 1882.

[4] New York Medical Record, 1887.

[5] Freund: Berl. klin. Woch., 1890, Nos. 11 and 49.

He claimed, first, an extraordinary resorbent action, and secondly, great analgesic power. Subsequent investigators all admit its analgesic qualities, but that it also promotes absorption is as stoutly denied by some as it is maintained by others.

Following these lines, Reitmann and Schönauer[6] reported on its use in one hundred inflammatory cases, with most gratifying results as regards pain, remarking that the property of promoting absorption also deserves particular mention. Shortly afterwards Bloch[7] gave his results. He too was an enthusiast, and was the first to apply pure ichthyol to the endometrium. He was convinced of its resorbent as well as anodyne action. Great improvement was noticed in cases of acute vaginitis and chronic metritis with venous engorgement. That its effects were not due to the use of a glycerine solution he proved by a series of control experiments with pure ichthyol, and stated his belief that the pure drug was more efficient than the glycerine solution.

Kötschau,[8] in 56 cases of endocervicitis and endometritis, of 127 in which he used ichthyol, in the severer cases combined a preliminary curetting with the iron, massage and douches which he employed in addition to local treatment, and while treatment with other means gives about the same proportion of cures, he regards ichthyol as much safer. But when he speaks of it as a "sovereign remedy for endometritis," one must not be blind to the fact that many of the cases were previously curetted. In 52 cases of afebrile perimetritis he was satisfied that tampons of ichthyol-glycerine with ichthyol pills and hot sitz-baths produced a cure more promptly than any other treatment, pain being often relieved by the first application, and the exudate quickly disappearing.

Thus far all testimony has been favorable. But in 1891, Oberth,[9] of Chrobak's clinic, from the study of 42 cases, concluded:

(1) That the salve had absolutely no power of controlling pain.

(2) That while the pills were usually, though not always, well borne, no improvement in appetite or general condition followed that could be ascribed to them.

(3) That the suppositories had a negative effect as regards tenesmus, and that they sometimes irritated the rectum.

(4) That while pure ichthyol applied to the catarrhal mucosa or eroded os would often produce a cure, the results were by no means as good as those obtained by the older astringents.

The only good of the tampons he believed came from the glycerine they contained, and while granting a certain influence against pain denies absolutely any resorbent action.

Pee[10] arrived at the same conclusions, holding that it should be used only symptomatically for pain, and warning that its intra-uterine use might be followed by severe hemorrhage. In the discussion that followed his paper, Veit, Winter, Schaffer and Bokelmann coincided with the reader.

Egasse,[11] in 1891, remarks that in France the claims of Freund have not been substantiated, and that at Auvard's clinic it has been abandoned.

Jadassohn[12] used it in 37 cases of gonorrhea, using a one-to-ten solution, and regards it as more efficacious than even nitrate of silver in the acute stage. Similar good effect was observed by Bloch, but denied by Pee. Later, Columbini[13] and Jullien[14] reported its very successful use in this disease.

Herff[15] is a strong opponent of its having other than excellent analgesic qualities. He discards its internal use as irrelevant, and the salve as merely a form of massage.

Hermann,[16] on the other hand, from 150 cases in which ichthyol alone was used, either pure or in watery solution, finds that it has a distinct resorbent action, and even regards it as a sufficient means whereby to establish a diagnosis between carcinoma and inflammatory induration, as the latter is so quickly controlled by its use.

Schultz[17] thinks it of great value in chronic inflammatory conditions.

Polacco,[18] from 972 cases observed in Mangiagalli's clinic, states decidedly that it is the most positive local analgesic known in gynecological therapeutics, and that furthermore it has an undoubted resorbent action in cases of pelvic exudates, and in a subsequent paper[19] he remarks that all authorities admit this. I have shown that they do not by any means all do so.

Albertolelli[20] practically had the same experience as the last writer. He regarded it as especially well adapted to intra-uterine injection, greatly preferring it to tincture of iodine.

At the risk of being tedious I have given a hint at most that has thus far appeared on the subject, chiefly to show that such opposed results could be obtained by observers employing much the same methods. Two years ago my interest in the subject was awakened, and suspecting that some of these results might possibly be biassed, I have tried to be entirely fair. While I greatly regret that I have not been able to follow all my cases as closely as desirable, from what I have seen I feel justified in drawing quite definite conclusions.

While of course occasional applications have been made in a much larger number of cases, it was used with more or less faithfulness in about 120, but as many of these were in the out-patient clinics at the Carney and St. Elizabeth Hospitals, owing to the exasperating irregularity of the attendance of the average out-patient as soon as somewhat relieved, it would be impossible to say just which cases deserved to be included in tables, so I will attempt no statistics, but merely state the impressions I have drawn from its use.

Without going into the finer distinctions of pelvic pathology, I would say that in cases of moderately acute pelvic inflammation, with much pain, but where an operation did not seem indicated, or where one if advised was refused, the method pursued was as follows: Every third day after carefully drying the vagina, its vault was freely painted with ichthyol-glycerine, ten per cent., or with pure ichthyol, followed by a pad soaked in the solution, which in turn was guarded by a dry pad to protect the clothing. In addition to this, full hot douches were sometimes employed. Some cases where they were not used improved quite as rapidly as the others. In perhaps a dozen cases ichthyol pills were given. No discomfort from them was noticed, except one or two dyspeptics complained of the taste of the eructations. Von Nussbaum took fifty pills a day with no bad effects. Baumann says that doses of from three to five drachms daily cause merely copious watery discharges. On the other hand, I cannot say that any of the patients taking the pills seemed materially the better for them. In nearly all the appetite improved, but this may have been due to improvement in the general condition. In six cases of deep-seated pelvic pain the ointment was tried, and possibly the very slight but positive relief that was observed may have been due to massage.

---

[6] Reitmann and Schönauer: Wien. klin. Woch. 1890, No. 23.
[7] Bloch: Wien. med. Woch., 1890, No. 50.
[8] Kötschau: Mün. med. Woch., 1891, No. 1.
[9] Oberth: Wien. klin. Woch., 1891, No. 16.
[10] Pee: Zeitschrift f. Geb. u. Gyn., 1891, xx.
[11] Egasse: Bull. de Ther., Paris, 1891, cxxi.
[12] Jadassohn: Deutsche med. Woch., 1892, No. 38.
[13] Columbini: American Journal of Obstetrics, Ap., 1894.
[14] Jullien: Medical Week, Ap., 1894.
[15] Herff: Mün. med. Woch., 1891, p. 315; 1892, p. 911.
[16] Hermann: Centralbl. f. Gyn., 1892, No. 40.
[17] Schultz: Centralbl. f. Gyn., 1893, No. 38.
[18] Polacco: Centralbl. f. Gyn., 1891, No. 40.
[19] Polacco: American Journal of Obstetrics, Ap., 1894.
[20] Albertolelli: American Journal of Obstetrics, Ap., 1894.

In a number of cases I used a suppository containing three minims which was allowed to dissolve in the vagina every night, with very satisfactory results, and now I frequently order them. Care should be taken that in such suppositories the drug is thoroughly mixed with the vehicle, and not merely enclosed in a capsule as is a favorite practice in France. I regard it as distinctly undesirable that the pure drug should be used for any length of time without the physician's control.

Looking back on this class of cases, I can only say that they seemed to improve faster than where other methods were employed. The relief to sharp pain was fairly constant and immediate, and in a few cases a single application gave almost entire relief. To be sure, sometimes a single painting with some other drugs has a very prompt action, but I do not think quite so often. Dull aching pain was not so easily reached, but it was the exception that some relief was not experienced after a number of applications. I found rather better results to follow the use of the pure drug than did that of the glycerine solution, although care had to be taken not to desquamate the vagina — a result which sometimes follows also the over-enthusiastic use of tincture of iodine.

Admitting its anodyne effect, the following case will show that it also sometimes has a resorbent action:

E. R., first seen September, 1892. Twenty-five. Married eight years. Two children, the youngest five. Neither labor instrumental, but a somewhat long puerperium after the last. Since then three miscarriages. Has not been well since the last miscarriage in March, 1892.

Three weeks later had an offensive discharge for a few weeks. Early in July had an attack of severe abdominal pain, and a pelvic abscess was opened by the vagina, but soon allowed to close up. A month later had a return of the pain, amounting to agony when the bowels moved. Catamenia were fairly regular, but not marked by any great increase in the pain. When first seen she was in good general condition, except for a slight afternoon rise in temperature. The posterior vagina and both sides of the pelvis were filled by a very hard, board-like mass, in which nothing definite could be made out. In fact its hardness was such that a previous examiner had been led to make the diagnosis of malignant disease. There was exquisite local tenderness. The patient was put on applications of thiol, which is practically the same as ichthyol, alternating with the latter, with hot douches, which she had been taking previously. After ten days' treatment the mass was much softer and less tender, and the pain had vanished. Defecation even was now painless. After a month the uterus was easily felt anteriorly, and it was fairly movable, while to the left and posteriorly was felt a soft, enlarged and fluctuating tube, and behind the uterus a tender and indurated ovary closely connected with a hard mass filling the right pelvis. Improvement continued under treatment, and the patient was subjectively perfectly well until September, 1893, when the old symptoms returned, and the pelvis was again found filled with exudate. This time the pain was controlled by a single application, and a week later the anatomical condition was much improved. In October catamenia lasted longer than usual, but the patient said she had never felt better in her life. By December there were only traces of exudate left, and what fluid the tubes previously contained had now been evacuated. Douches were not used in this last attack, yet improvement was quite as rapid as in the first.

This good result was by no means unique. Very possibly there would have been equally prompt relief under other treatment, but I have seldom seen cases like it do so well when other treatment has been employed.

Cases of chronic endometritis seen at comparatively long intervals were treated with pure ichthyol applied to the fundus, after a preliminary partial disinfection with lysol or creolin, and the relief from local pain and dragging was constant, and generally there was in a short time much less leucorrhea. Of course very many obstinate cases finally came to curetting, but my impression is that as many, if not more, were cured or relieved than were by any other treatment. In no case was there any real pain from the application, that is, that was not merely due to the passage of the applicator, or to the preliminary slight dilatation. It is to be remembered that cramps following the intra-uterine use of iodine are by no means rare. Pee spoke of hemorrhage sometimes following the intra-uterine use of ichthyol. I have not seen any such immediate effect, but in two cases the following catamenia were prolonged much beyond previous experience, an effect which had not followed the previous use of iodine, nor, on the other hand, had much improvement. Both these cases were subsequently practically cured by ichthyol. I have in mind several other cases previously treated by other gentlemen by the ordinary means which were promptly cured by ichthyol.

In packing adherent retroverted uteri it has been my custom to dip the first two pads in the ichthyol-glycerine solution. I am convinced that since I have done so I have seen many such uteri loosen up and become replaceable that otherwise would have been very obstinate. Another advantage is that it being decidedly inimical to many forms of bacterial life, as shown by Fessler[21] and Abel,[22] when such a packing is removed it is much less offensive than the ordinary glycerine pack — except, of course, for its characteristic ichthyol odor. Here let me say that I have never had a gynecological patient complain of its odor. Purely as an antiseptic its value is not very great, but prolonged immersion in the pure drug destroys streptococci.

---

[21] Fessler: Klin. exper. Strudien. über chir. Krankheiten.
[22] Abel: Centralbl. für Bakt. u. Parasit., 1893, xiv., No. 13

In erosions naturally the chief attempt has been to remove the cause, but in the cases where intra-uterine treatment was not adopted there was improvement, although perhaps no more marked than under other treatment.

I have not tried it in enough cases of gonorrhea to form any opinion as to its value. In four the few times it was applied were followed by little result, while in a fifth obstinate case the very free leucorrhea almost stopped after six applications to the endometrium, combined with daily lysol douches. To which is due the credit I am not certain. Lately it has been used quite extensively in the male urethra. I tried it in one case of female urethritis with no effect that I could see. This case promptly improved with nitrate of silver. The results of Bloch, Jadassohn, Columbini and Jullien warrant further experimentation in this direction.

I have used the salve and the pure drug in a number of cases of pruritus of the vulva and anus. There was improvement, but no cure in all. One severe case was painted extensively with a solution in collodion (1–8), and after the somewhat natural stinging had vanished relief was complete for some time.

In a few cases of painful hemorrhoids it seemed to relieve the discomfort by lessening the congestion.

The use of the collodion solution is most satisfactory in cracked nipples.

CONCLUSIONS.

(1) While ichthyol is by no means the gynecological panacea that some observers have claimed it to be, still it has sufficient approved value to deserve a very high place in our list of remedies.

(2) That while its chief action is to relieve pain it does possess certain resorbent qualities, which in some cases are relatively powerful.

(3) That its use is unattended with danger or discomfort.

(4) That the use of the pure drug is generally more satisfactory and reliable than that of solutions.

(5) That it has not yet been proven that it has any gynecological value other than as a local application.

Articles on the subject not referred to are:

Gadde: Beitrag z. Aus. u. In. Anwendung des Ichthyols. Ther. Monatschrift, Berl., 1890, iv, 121.
Eschen: Iktyolets Anvendelse I. Gynekologien. Gyn. Og Obst. Med., 1891, viii, 281–321.
Schultz: Pest. Med. Chir. Presse, 1892, xxviii, 787.
Marjanchik: (Treatment of Endometritis by Ich.) Vrach, 1892, xiii, 799–855.
Ilinski: (Application of Ich. in Therapeutics, Surgery, Dermatology and Gynecology), Moskow, 1892.
Cocq: Note Sur Ich. in Metrites. Clin. Brux., 1893, viii, 180, 212.

For Better Health Officers, it has been resolved by the Ohio State Board of Health, that Medical Examining and Licensing Boards of the various States be respectfully urged to provide, where permissible, that medical colleges to be considered in good standing shall devote not less than forty hours to the teaching of hygiene, and require an examination in that branch of medical education. — *Sanitary Era.*

APPENDICITIS: WITH A REPORT OF THREE CASES.[1]

BY H. H. A. BEACH, M.D., BOSTON.

Dr. Richardson's recent review of more than one hundred cases of a disease so deadly as to challenge every resource a skilful physician or surgeon can take to the bedside of his patient impresses deeply the conviction that the truest conservatism in the treatment of appendicitis, as in other diseases, provides relief with the least risk to life. In estimating the comparative dangers of operative or non-operative treatment — including all varieties of medication, incisions and the appropriate time for them, drainage, sutures and other details of dressings, as shown by the current medical literature of the past ten years — it is clear that such varied experiences as have been the fortune of competent medical observers, able anatomists and expert surgeons, giving rise to equally varied opinions upon treatment, point to a variety of conditions that may be conveniently included under the term "appendicitis," with the understanding that, without qualification, the word does not completely express the pathological associations of the disease.

The well-known differences of opinion existing among those who have had experience in its treatment are fairly explained, it seems to me, by the significance attached to the term in their minds through the observation of cases which, if not exceptional, are not fully representative of the disease. To one practitioner appendicitis may signify a simple distention of the appendix, with more or less local pain and tenderness, with or without constitutional symptoms. To another, a gangrenous inflammation of the appendix, discharging, or on the point of discharging, into the largest absorbing cavity of the body the foulest virus, only comparable with that of the rattle-snake in its deadly effect. Between these two extremes are other conceptions of the disease not always clearly defined. The treatment applied must be correspondingly uncertain and vacillating. Naturally the practitioner who has seen only the first class of cases always recover under expectant treatment looks upon the practice of his brother, who operates in all cases because his experience has taught him that only those recover, as unnecessarily radical; and in turn the latter regards his brethren who employ the expectant method as lacking in the courage necessary to save their patients, and the recoveries following such treatment as fortunate accidents.

Under the most favorable circumstances the operation is not devoid of danger, and should not be undertaken without a full understanding with the patient or friends of a possible fatal result. In this connection a rare complication in a case promising the very best result in my own practice was the occurrence of a secondary hemorrhage. The bleeding was arrested with difficulty, but the patient never recovered from the exhaustion and inflammation following. Hernia through the cicatrix of the wound may occur in any case. It has not happened to my knowledge in either of my cases. To provide for that possibility I usually order an abdominal belt to be worn when the patient leaves his bed. The tendency to hernia would be greatest in the cases requiring the largest incisions.

The question of when to operate and when not to operate is too large to be included in any formula. Like the judgment required in the consideration of strangulated hernia, it must be matured in the face of the difficulties, always giving the patient the right to the doubt. It is easy to conceive of a case where a slightly irritable appendix had been made more so by an overloaded intestine, giving rise to some tenderness, and pain in the right iliac region, some induration and a feeling approaching fluctuation, due to edema, but suggesting pus. It is also easy to understand the satisfaction which would follow the disappearance of the fluctuation, the lump, the tenderness, the pain, after the administration of saline cathartics, and the temptation it would offer to classify such a case among the cures of appendicitis, to those unfamiliar with the typical case of neglected appendicitis which enters the hospital at a time when any operation can only be a forlorn hope. I have selected the two cases which follow, from my hospital records, to illustrate that side of the question.

---

[1] Remarks made at a discussion upon Appendicitis before the Surgical Section of the Suffolk District Medical Society, December 23, 1893.

Case I. A male, age twenty-three. Five days ago he was seized with pain in the right iliac region, which became more severe on the following day, with the addition of nausea and vomiting. These symptoms continued until he entered the hospital. There had been no movement of the bowels for five days.

Patient well developed and nourished. Tongue covered with a thick white coat. Chest negative. Abdomen considerably distended, typanitic, excepting an area of dulness the size of a hen's egg in the right iliac region, which upon palpation corresponded with a well-defined mass, tender and fluctuating. By the rectum a dome-like tumor could be felt high up on the right side. Temperature 97.5°, pulse 64, respiration 26.

Under ether, a careful dissection was made down to the peritoneum, which was cautiously opened to avoid any possible adhesion to the intestine. There was an immediate escape of several ounces of thick and very offensive pus, which was free among the intestines. The latter were somewhat bound together and covered with patches of lymph. The cavity was carefully washed out and drained. For the next twenty-four hours he was very comfortable, and there was very slight discharge from the wound. This condition continued through the next day, when he had a free movement of the bowels. On the following day the wound was clean, and there was very little discharge on the dressing, and his general condition remained about the same until half-past eight in the evening, when he had a sudden collapse, from which he did not rally in spite of every stimulus. He lingered in this condition until eleven o'clock of the following night, when he died.

Case II. A male, age nineteen. There was the history of vague cramps in the right iliac region for the past year. With that exception he was perfectly well until four days ago, when he had a sharp pain in the right iliac region with chills, nausea and vomiting. He has grown rapidly worse. The bowels have been constipated since just before the attack. The abdomen had become tympanitic and distended from the day of admission. There was marked tenderness of the right side, and the space between the superior spinous process and the last rib was flat on percussion. The rectum ballooned. The face was anxious. Pulse 136, rapid and feeble; temperature 103.5°.

An exploratory incision down to the peritoneum showed that membrane much thickened. Upon opening it, about six ounces of very foul pus was evacuated. The intestines were inflated, but not walled off from the abscess, which extended deeply into the flank, requiring an extension of the original incision nearly to the external border of the quadratus lumborum, to secure adequate drainage. The appendix was short, much thickened and gangrenous, with a perforation at its base opening directly into the cecum. Three concretions rolled out of the opening upon raising the appendix, which was removed, and its region carefully walled off from the abdominal cavity with gauze. In spite of free stimulation and oxygen, he steadily failed, and died on the following morning.

I think that others will agree with me, that these two instances are typical of hospital experiences. To those familiar with death from septicemia, the cyanotic appearance of patients whose cases end fatally, the foul character of the pus (contaminated with intestinal gases and infected with germs whose septic quality cannot be questioned) and the mode of death, leave little doubt as to the cause in the minds of careful observers. The death of our lamented colleague, Dr. Charles P. Strong, from septicemia in a few days following a slight infection received at an operation of that character, is an impressive example of the deadly quality of the virus which may be germinated in these cases and of the importance of its recognition.

I read in a recent argument of Dr. Gordon, of Portland. Me.,[2] in favor of treating all cases in the early stages by salines, that "the effect of inflammation is to close the end nearest to the cecum, so that no material escapes from the bowel. Salines do not, therefore, cause extravasation from the bowel." The only comment to be made upon Dr. Gordon's argument is, that he was fortunate in having the protection of a closed appendix in the cases treated by him; but I doubt if he can rely upon that protection. In the case I have just quoted salines would have flooded the peritoneal cavity with liquid feces; for the little finger could be easily passed through the perforation at the base of the appendix made by the foreign body directly into the cecum. I think that either of my colleagues at the Massachusetts General Hospital could testify to similar experiences. To quote again from Dr. Gordon's paper: "I have never seen a case, with one exception, where any fecal matter has existed in the lumen of the appendix, no matter how large the lumen." Opposed to his experience, I make the following quotation from Fenwick's report:[3] "Out of 125 cases which could be examined upon this point, 55 contained a concretion composed either of feces or some other foreign substance." In my own experience it has been usual to find concretions in the acute cases when it was possible to identify the appendix. I have never failed to find it in relapsing cases. Dr. Gordon states again, that in appendicitis, "there is a perforation through the appendix only, which allows some septic material to escape while the opening to the bowel is practically shut up." Now, while I would not undertake to say exactly how many operations I have witnessed or performed for the relief of appendicitis, my impressions are clear that in acute cases it is as common to find it open into the intestine, as closed. I would not take the position of advising operation in every case, for I have had a fortunate experience in not losing any case treated without operation; but I do not regard such cases as cured in the sense that they would be after the removal of the appendix. To show what risks such patients always incur, I have only to make a brief quotation from my hospital records:

---

[2] Boston Medical and Surgical Journal, vol. 129, p. 557.

[3] Lancet, December 14, 1884.

Patient, a male, age twenty-nine. Entered the hospital with temperature 99°, pulse 64, respiration 26, and a history of four attacks of abdominal pain, the last of which became localized on the right side and occurred one week before entrance. He was admitted on June 8th, and the operation was appointed for the following Monday. In the mean time he was allowed to be up and about the hospital ward and yard. Two days after his admission he was seized suddenly with a sharp abdominal pain about two hours after supper. He was obliged to go to bed, and was made comfortable with morphine and poultices. There was no distention, but considerable resistance in the right iliac region. There was tenderness on deep pressure, and induration at the point of tenderness. No chill. He had a comfortable night. Temperature and pulse were normal in the morning, and there was slight distention. Tenderness well marked in the right iliac region. Upon making the usual incision at the point of greatest tenderness and resistance, no pus was found, but a gangrenous appendix pointing into the abdominal cavity and attached to a wall of old adhesions that had begun to break down. It was carefully removed, and the peritoneal cavity walled off with gauze. There was free hemorrhage from vessels included in the adhesions, which were tied with difficulty, owing to the soft and boggy condition of the tissues surrounding them. He recovered well from his ether; but shortly after hemorrhage was discovered, which was promptly and efficiently controlled by my assistant, Dr. Cobb. He rallied well, but died on the following day with a rapidly developing acute peritonitis.

In doubtful cases I believe there is less risk in a carefully conducted exploration in the direction of the appendix, enlarging the incision according to the necessities found, than in waiting for a belligerent appendix charged with death-dealing germs to explode, torpedo-like, where it can do the greatest harm. To the surgeon accustomed to something more tangible as evidence of the necessity for operation, personal experience alone can guide him safely in delaying action. I have never seen the operation done when the surgeon found less necessity for it than he expected. It is common to find more than an outside inspection would indicate. In the intervals between attacks it is possible to determine the position of the appendix, and from its hardness infer the presence of a foreign body; but I know of no way of settling that question in an acute case without exploration. I believe that if an inflammatory process has once begun in an appendix in the presence of a foreign body, it is likely to be maintained in a milder or stronger degree until the foreign body is removed.

To those familiar with the varying conditions which may cluster about an appendicitis as a centre, and who know the many combinations possible to inflammation, abscess, gangrene and foreign bodies of the appendix — either alone or associated with more or less inflammation of the surrounding tissues, peritonitis (local and general, existing from one to ten days with varying vitality, as shown by pulse and temperature), diarrhea, constipation, vomiting (with or without capacity for food or stimulants) — the chances of meeting exactly similar cases are so rare as to make absolute rules applicable to all cases futile and impracticable. The combinations are only equalled by those of a Yale safe-lock.

◆

APPENDICITIS; REPORT OF THREE CASES.[1]

BY J. C. IRISH, M.D., LOWELL, MASS.

The extreme fatality of cases of fulminating appendicitis, or, in other words, of diffuse septic peritonitis, starting from the appendix, even when operated upon very early, was well shown in the three cases which follow. In each of them the operation was done in less than forty-eight hours after the attack of appendicitis had commenced, that is, after there were any symptoms indicating inflammation of the appendix itself. A mild attack of diarrhea in each instance preceded the general peritoneal infection. They were all examples of diffuse purulent peritonitis.

Case I. A little girl, five years of age, was well Friday; Friday night and Saturday was apparently suffering from slight gastro-intestinal irritation. No serious difficulty in the abdominal cavity was recognized until Sunday morning. I operated Sunday afternoon. There was general peritonitis, a gangrenous appendix and a large quantity of sero-purulent effusion. The child died eight hours after the operation.

Case II. Mr. P., Brookline, age fifty-three. Slight attack of diarrhea August 11th. August 12th, severe pain in right iliac region, frequent vomiting of bile, distention of bowels and spasm of abdominal muscles. In short, patient had all the symptoms of acute obstruction. The condition of the right iliac region was greatly obscured by the distention. I operated Sunday morning, less than forty-eight hours after the slightest evidence of appendicitis or any serious trouble in the abdomen commenced. In this case there was a perforated necrosed appendix and a dirty turbulent liquid in the abdominal cavity. Patient lived about four hours after the operation.

Case III. Mr. T., age forty-two. He had returned from Chicago suffering from a slight attack of diarrhea. On October 30th he was seized with severe pain, vomiting of bile, distention of the bowels, rigidity of abdominal muscles and abolition of intestinal peristalsis. On the evening of that day, twelve hours after the onset of these very serious symptoms, I opened the abdominal cavity, which contained a turbulent serum in small quantity. The intestinal folds were extensively matted together. The patient was in such a condition of collapse that I could not continue the operation to search for the appendix, but had to content myself with simply washing and drainage of the abdomen. The operation was followed by a fatal result in a few hours.

In marked contrast with the above are those cases of perforating appendicitis that have been walled off from the general abdominal cavity. I have operated in fourteen instances in this class within the past two years; twelve have recovered, two have died.

I have operated in two of these cases of recurrent appendicitis in the intervals; and they were as difficult cases as I have ever had. The appendix in each instance was buried in a mass of adhesions, and was found only after a very long and patient search. In several instances of recurrent appendicitis the operation has been done in the midst of an acute attack. The operation was not more difficult, and the patients went on perfectly well to recovery. I can see no reason why the operation is more dangerous during an attack than in the interval, and it is certainly no more difficult. I do not see, therefore, why very much is gained by the selection of one time rather than the other. The patients themselves certainly more readily submit to an operation during the attack than in the interval. I believe there can be no question that a majority of the cases of undoubted attacks recover without operation, and are not followed by recurrence. Therefore the question whether the operation should be done or not in many instances is a difficult one to answer. Those cases that recover and do not become recurrent are undoubtedly examples of simple inflammation of the appendix without perforation. In any given instance, at the commencement of the affection, there is no way by which one can determine whether or not perforation will take place. The two types of the disease in the beginning resemble each other very closely. We have at first the same spasmodic pain followed immediately by rise of temperature, acceleration of pulse, local point of tenderness and marked plastic effusion in the right iliac region. Now, whenever we can definitely trace the tumor, we know that the peritoneum is walling off the infected region from the rest of the abdominal cavity, whether perforation at that time has taken place or not. These are not very dangerous cases for a little delay; and I believe that when the initiatory pain has been controlled during the first twenty-four hours with opiates, when we cannot avoid their use, a laxative should then be administered and the bowels evacuated as speedily as possible. In this way the distention will be much relieved, and our diagnosis as to the local condition can be much more precisely made. If the case is a non-perforating one, the patient from this time will begin to recover, temperature will diminish, the pain and distention will gradually decrease, and the effusion in the right iliac region will become less distinct.

---

[1] Remarks made at a discussion on Appendicitis before the Surgical Section of the Suffolk District Medical Society, December 20, 1893.

In regard to the use of laxatives, I always prefer the mercurial to the saline. I am quite sure that in any event it can do no harm. The bowels are more promptly relieved of their distention by the calomel; oftentimes, too, it relieves the pain more completely than morphine. When once the bowels have been thoroughly evacuated, if the patient does not begin to improve, I always infer that I am dealing with a perforating case, and that the earliest possible operation is imperative.

* * *

APPENDICITIS.[1]

BY J. G. MUMFORD, M.D., BOSTON.

My experience with appendicitis has been such as to lead me to feel that there are two distinct classes of the disease: those that are curable by our present methods and those that are not. The first class is capable of many subdivisions.

During the past three years I have had to do with the treatment of 145 cases from both classes together. Eight of these were cases of my own. The remaining 137 I saw with Dr. Richardson.

Forty of these cases were not operated upon, and recovered. I do not here include such cases as were practically moribund when first seen.

Of the 105 cases which were operated upon 29 died. All but two of these come into my second class — those incapable of cure. They were cases with fully established or beginning septic peritonitis, without adhesions, or with adhesions so slight as to be no barrier against the advance of septic infection. They were given every chance which modern technique affords, and yet the mortality was nearly 100 per cent. Some of these cases were seen as early as the second day, some as late as the tenth, when the surgeon was summoned only after a spreading fatal peritonitis had been set up by the rupture of an abscess.

In connection with these cases I wish to protest against the allegation of those who charge Boston surgeons with timidity in operating. In a large acquaintance with hospital cases, and in my association with Dr. Richardson, I have seen, during the past three years at least, no hesitation about operating for appendicitis except under certain special conditions. There is none of that standing by with poultices, waiting for the "abscess to ripen." Unfortunately there are cases, however, where no amount of zeal for operation can save life. These are the cases in which sudden pain indicating perforation of the appendix, with subsequent fulminating peritonitis, first calls attention to disease. The patient has previously noticed little or no trouble. Such cases can seldom be saved.

There are cases in which slight attacks of pain and tenderness pass unheeded by the patient, until the time comes when the first call of the physician is too late. Then there are cases, I am sorry to say — and they are now rare cases with us — in which the physician himself waits too long before summoning the surgeon.

What some of our enthusiastic neighbors, who save all their cases, would do under these conditions, I confess I am at a loss to understand.

As surgeons, we are called in to render what aid we can under existing conditions. The conditions may be good, or they may be desperate. In the latter case, are we justified in folding our hands and saying that we are too late, that the time for operating has passed? I think not. It is precisely in these cases that the surgeon must shoulder the responsibility, and even at the almost certain risk of damaging his fair statistics, must operate if there seems the most distant chance of saving life.

A word as to the operation of removing the appendix. It has been said to be easy. It very often is not. The little organ may be so distorted, tied down, enfolded, dislocated, deformed, atrophied and buried that its excision becomes one of the most difficult operations in surgery. This statement I have seen proved again and again. It is often true even when the disease is quiescent; and, for my own part, if I should ever come to have my appendix excised, I should prefer to trust myself in the hands of a man who fully realizes, and is prepared to meet, these difficulties.

Measles for Leprosy. — A writer in the *South African Medical Journal*, expresses the belief that leprosy will be cured, not by internal remedies or by external application, but by the introduction into the system of some bacillus inimical to the growth of the leprosy bacillus. This bacillus, he thinks, is to be found in measles.

---

[1] Remarks made at a discussion on appendicitis before the Surgical Section of the Suffolk District Medical Society, December 23, 1893.

Medical Progress.

RECENT PROGRESS IN OBSTETRICS.

BY EDWARD REYNOLDS, M.D.

THE TREATMENT OF ASPHYXIA NEONATORUM.

Budin[1] writes an exhaustive paper on the treatment of asphyxia neonatorum, which is especially devoted to emphasizing the importance of aspiration of the trachea through the laryngeal tube of Ribemont, and subsequent insufflation by the same tube. Budin has seen two cases in which spontaneous attempts at respiration were followed by cyanosis, asphyxia, and death. In the second case the autopsy demonstrated the presence of a mucous plug in the trachea, which was evidently the cause of death. He believes this to be much more common than has been recognized, and that it can be relieved by aspiration.

He discusses at length the various methods of artificial respiration; classifying them under the heads of direct and indirect methods. Under the indirect methods he discusses, especially, the Sylvester and the Schultze methods. He believes that when any such method is applied to an infant in the pale stage of asphyxia, the flaccidity of the muscles of the tongue and throat are likely to permit the pharynx to fall together in such a way as to produce a valvular closure of the air-passages on inspiration. Autopsies made after the unsuccessful use of these methods have repeatedly shown a total absence of air in the lungs.

Under the head of direct methods he considers the mouth to mouth method and the tubes of Chaussier, DePaul, and Ribemont, which latter he considers the best. He believes mouth to mouth insufflation to be frequently insufficient, even in the absence of occlusion of the trachea by mucus, and in that event, worthless. Among tubes he prefers the tube of Ribemont because it is simple and leaves one hand free for compression of the chest. He believes that the insufflation should be done by the lungs of the operator rather than by the rubber bulb. The technique which he recognizes is as follows: The infant should be wrapped in warm clothes, and laid on a table, its shoulders raised by a folded towel, the left index finger should be passed into the pharynx till it recognizes the arytenoids. The tube should then be passed along the palmar surface of the finger by the other hand, and will then glide readily into the glottis. Its position is then to be tested by the following methods:

(1) When the finger is passed along the posterior surface of the tube it is in contact with the smooth metal surface of the tube till this is suddenly superseded by the posterior edge of the larynx, through which the tube can, however, be felt.

(2) On rotation of the handle of the tube the larynx undergoes a lateral motion.

(3) On blowing into the tube, if it is in proper position there is no noise, but the chest inflates; if the tube is in the esophagus, there is a gurgle and the abdomen inflates.

(4) When the lungs have been inflated, their elasticity expels the air with a murmur. Nothing of the kind follows when the abdomen has been inflated.

He believes that post-mortems have fully demonstrated the absence of danger of rupture of the alveoli of the infant's lungs in insufflation by the lungs of the operator, and that the slight excess of carbonic acid gas which the air may contain is unimportant. He states that if the proper technique is used the operation is never difficult in the infants at term. [A comparatively small personal experience inclines the reviewer to agree with this statement.]

Budin reports three cases in which, after all other methods had failed, aspiration through the tube extracted plugs of mucus and the infant then breathed spontaneously. [A bit of cloth may be placed over the end of the tube to prevent the mucus from entering the mouth of the operator.]

Bernheim[2] writes a long and interesting scientific article in support of the application of the method of Laborde to infants asphyxiated at birth. Laborde discovered accidentally in the case of an adult apparently dead from drowning, that respiration was excited by rhythmical tractions on the tongue. Bernheim thinks that this effect is due to a violent stimulation of the respiratory reflexes by the passive irritation of the normal respiratory excursions of the pharynx and larynx so produced.

The tongue should be seized by catch forceps, or by the finger and thumb through the medium of a dry bit of cloth, drawn strongly out of the mouth and allowed to fall back into its normal position. This manœuvre should be repeated about fifteen times to the minute. Laborde's method has been successful experimentally, upon a number of artificially asphyxiated new-born dogs and calves; clinically, upon a number of adults, and upon ten asphyxiated new-born infants. DeMinicis reports a successful case; Khristoyanaki reports two cases, in one of which he withdrew by aspiration with the tube of Ribemont a large quantity of mucus from the trachea, and subsequently worked for an hour by insufflation through the tube, and by a variety of other methods, without success. He then tried the method of Laborde with most gratifying results. The infant breathed after a very few tractions had been made and normal respiration was established within a few minutes. The child was premature, at eight months, weighed less than four pounds, was put into a couveuse and fed with a spoon, and eventually survived. Peronne reports success by the method of Laborde in three apparently desperate cases. Escande, Roux, Aubin, and Gouzon, each report one successful case.

SYMPHYSEOTOMY.

Pinard[3] reports the symphyseotomies of the preceding year at the clinique de Baudelocque,— thirteen in all; two by LePage, two by Varnier, nine by himself; twelve women lived, one died; all the children survived. Four minor accidents occurred during the operations. Twice the anterior vaginal wall was torn into connection with the operative wound during the delivery. In both cases, tamponade of the vagina by iodoform gauze, without suture, resulted in first intention. In one case a vesico-vaginal fistula followed severe bruising of the septum during delivery; but this accident happened in a case in which one sacro-iliac synchondrosis was completely ossified and the bladder was injured by pressure against the sharp edge of the unyielding symphysis on the rigid side. [It may well be doubted whether this was a proper case for symphyseotomy.] The symphysis healed by first intention;

---

[1] Arch. de Toc. et de Gyn.

[2] Nouv. Arch. d'Obst. et de Gyn., 1893, v. viii, p. 397.

[3] Annales de Gyn., January, 1894.

the fistula was still waiting for a plastic operation at the time of the report. In one case the recovery was marked by incontinence of urine, without apparent lesion, but this was cured by a few electrical treatments. The patient's locomotion was not interfered with in any case.

In the one fatal case, death occurred on the ninth day from staphylococcus infection, but at the time this patient entered the clinic she had been in labor three days, and in the second stage sixty-six hours: the liquor amnii [vaginal discharge ?] was green, thick, and extremely offensive. Pinard thought the mother seriously septic at the time of her entrance. He thought that the septic condition of the uterus absolutely ruled out the Cæsarean section, that symphyseotomy would save the child, and would not essentially alter the already serious prognosis for the mother. He considers the operation a success, in spite of the death of the mother, because it was done, practically, in the interest of the child, and it survived.

He questions the advisability of applying the forceps, after symphyseotomy, to unengaged heads, and in future intends to leave such cases to natural labor, for a time at least.

The conclusions which he draws from his experience are; (1) Symphyseotomy at term should be preferred to an induction of labor, in all cases in which the size of the pelvis will permit the passage of the head after symphyseotomy. (2) In the interests of the child symphyseotomy should be preferred to forceps, either high or low, in all cases in which arrest is due to osseous resistance. (3) Craniotomy to the living child is never justifiable. (4) He advocates the use of symphyseotomy whenever the well-flexed [anterior] occiput does not engage at the brim and when calculation shows that symphyseotomy would permit the passage of the head. (6) He recommends Porro's operation whenever the degree of contraction excludes symphyseotomy.

[Pinard's conclusions are certainly far more radical than even his experience warrants; but the complete experience of a single clinic is of far more value than statistical collections of scattered successful cases, which may or may not be balanced by unpublished fatal cases; and the publication of such results as these of the Baudelocque clinic, certainly places symphyseotomy upon the footing of a successful operation, which, at least in the hands of skilled operators, has probably a large field of value.]

THE USE OF LYSOL.

Rossa[4] reports the results of the use of lysol in Rokitansky's clinic for six months. He describes it as an exceedingly powerful antiseptic, and but slightly toxic; though he admits the necessity of precautions, since several cases of poisoning have been reported by other observers.

Lysol is a yellow, brownish fluid of not unpleasant odor, and freely soluble in water; in which it forms a very slightly turbid, greenish-brown solution. The appearance of the solution closely resembles that of a strong solution of soap in water, and like the latter it forms foamy suds on being agitated. It should be used in strengths of from one to two per cent. It is highly cleansative, dissolves vaginal mucus, and leaves behind it a slippery surface, all of which are great advantages for obstetrical or gynecological work. It does not roughen the hands, unless in very strong solutions. Rubber catheters and drainage-tubes are roughened by long contact with a lysol solution. It is highly irritative to the bladder, and produces cystitis in solutions of even half of one per cent. Rossa reports a decreased mortality and febrility, since lysol was substituted for corrosive sublimate, in the Rokitansky clinic.

DERMOID TUMOR IN THE PELVIS.

Fischer[5] reports the case of a IV-para, thirty-seven years old, whose labor was obstructed by the presence of a dermoid tumor in the pelvis. The lower uterine segment was tense during the pains, and the retraction ring could be felt by palpation at the level of the umbilicus. The posterior vaginal cul-de-sac was distended by a smooth, elastic, rounded, indistinctly fluctuating tumor. The os was high and tonically contracted. The bladder was much distended. No fetal heart could be heard. Aspiration of the tumor through the cul-de-sac yielded a curdy fluid mixed with hair. Cæsarean section was then performed, and the patient was discharged well on the tenth day. Two months later she returned, complaining of much pain and swelling in the abdomen. The uterus was found much enlarged and fixed by adhesions; on the right side of the pelvis there was an adherent tumor of the size of a child's head. The abdomen was reopened, and a large pus cavity containing hair was thoroughly drained, and packed with gauze. The patient recovered, but was afflicted by a long and troublesome sinus which remained open till more hair escaped. In this case the contents of the tumor were more fluid and the Cæsarean section was not necessary. The subsequent history was almost exactly similar to Fischer's case, except that the patient developed a pulmonary tuberculosis, during the prolonged suppuration. The result of this case is interesting in comparison with the case of Dr. A. F. King, "Transactions of the American Gynecological Society," 1893, p. 217.

OBSTETRIC SEPTICEMIA.

Bumm,[6] in a full and interesting article upon obstetric septicemia, divides the cases into sepsis of vaginal or cervical origin, putrid intoxication from decomposition of retained secundines, and true constitutional septicemia due to infection by streptococci, staphylococci, or other less common organisms.

The first class of cases he believes to be comparatively rare, usually strictly localized, and easily treated.

In the second class of case he has found that the early removal of the secundines, followed by abundant flushing of the uterine cavity with boiled water, always yields promptly satisfactory results; but that after a few days have elapsed without relief, a thorough curetting of the uterine cavity with a sharp curette, and the subsequent use of fixed antiseptics within the uterine cavity, is the only treatment which is likely to be successful.

In the third class he believes that local treatment may sometimes be useful but is seldom of great value, and that the results of the infection depend wholly on the original virulence of the infecting organisms. They are absorbed into the general circulation with great rapidity; he has demonstrated them in the periuterine tissues of animals, within a few hours after experimental infections. If they are of low virulence they, however, tend to localize themselves in the pelvis, or in other portions of the body, and with active surgical treatment of the resulting pus collections the patients may do well. If the bacteria are of high virulence they do not tend to localize, and the patients die in spite of treatment.

---

[4] Wien. Klin. Woch., 1893, No. 24.

[5] Präge, Med. Woch., 1893, p. 285.

[6] Centralblatt. Fü., 1893, No. 42.

He highly recommends the continued use of the ergot of rye, from the time when the infection is first diagnosed. Microscopical examinations of infected uteri have shown that the bacteria are most abundant in spots where the tissue is loose, and the intercellular spaces large; on theoretical grounds, then, the extension of the infection should be least in patients whose uteri are in a state of tonic contraction. He thinks that the limitation of obstetric infection, which he claims is accomplished by the use of ergot, is analogous to the limitation of erysipelas by contractile collodium; and he affirms its value not only upon the foregoing theoretical grounds, but as the result of his large clinical experience.

◆

Reports of Societies.

HARVARD MEDICAL ALUMNI ASSOCIATION.

Business Meeting. — Report on the Condition of the Medical School.

The annual meeting of the Harvard Medical Alumni Association was held at the Harvard Medical School, Boston, on Tuesday, June 26, 1894, at 12 o'clock, the President, Dr. J. R. Chadwick, in the chair. There were present about eighty members.

The Secretary's Report was read and adopted. After giving a synopsis of the action of the Council during the year, it stated that there are now 1,132 members of the Association, and that eighteen members had died since the last annual meeting.

The Treasurer's Report was read by Dr. Walter Ela, of Cambridge, the Treasurer. The receipts, including the balance of last year, were $2,648.75; and the expenses have been such that there is a balance on hand of $1,536.83. That balance is made up of $600 Life Membership Fund, a General Fund of $308.56 which is in the Savings Bank, as is the Life Membership Fund, and $628.27 which is on deposit with the Old Colony Trust Company.

The reports were adopted.

The Committee on Nominations, Drs. Folsom, Coolidge, Farlow, Galloupe and Broughton, presented the following list of officers, who were elected to serve for three years, as follows:

President: George Brune Shattuck, of Boston, Mass. Treasurer: Walter Ela, of Cambridge, Mass. Vice-Presidents: Zabdiel Boylston Adams, of Framingham, Mass.; Israel Thorndike Dana, of Portland, Me.; Richard Henry Derby, of New York City; Samuel Augustus Fiske, of Denver, Col.; John Green, of St. Louis, Mo.; Henry Hun, of Albany, N. Y.; Horace George Miller, of Providence, R. I.; John Lombard Robinson, of Manchester, N. H.; John Brooks Wheeler, of Burlington, Vt.; William Scollay Whitwell, of San Francisco, Cal. Councillors: Theodore Frelinghuysen Breck, of Springfield, Mass.; James Read Chadwick, of Boston, Mass.; Charles Ellery Stedman, of Dorchester, Mass.

The following names were recommended by the Council for honorary membership, and were duly elected: Dr. James K. Paddock, of Pittsfield; Professor Howell, of Johns Hopkins University; and Dr. Wm. T. Porter, Assistant Professor of Physiology at the Harvard Medical School.

The Association then adjourned to meet at dinner at the Hotel Vendome at 1 p. m.

Dr. Samuel W. Langmaid, Chairman of the Committee on the Medical School, presented a

REPORT ON THE CONDITION OF THE MEDICAL SCHOOL.

The committee this year has to report steady progress and improvement in the work of the school and in the methods of instruction. The three years' course may now be regarded as a thing of the past. The last class graduates this year, and the requirement of four full years of medical study for the Harvard degree of M.D. is fully established. The first of the required four-years' classes has just completed its second year, so that a year hence there will be no regular graduating class except the last voluntary fourth class. This lengthening of the required course of study makes necessary a system of changes in some of the courses and their arrangement, the whole of which has not yet gone into effect.

Except to congratulate the alumni upon the death(?) of the three years' course, the committee do not intend to repeat what has already been said before on the requirements of four years. The fear that the number of students would be much diminished by its introduction has been proved unfounded. A new danger, that the general financial depression will reduce the number of students materially, has arisen. We can hope and trust that this is no more likely to be fulfilled than the other.

Last year the committee spoke of the advisability of increasing the requirements for admission, looking forward to a time in the future when it would be possible to require the degree of A.B., or its equivalent, for admission to the Medical School. A step in this direction has already been taken by the Faculty, by voting that after June, 1896, a new set of requirements will be demanded. Six subjects will then be required: English, Latin, physics, chemistry, either French or German, and either algebra, geometry or botany. The amount of knowledge required in these subjects will be considerably greater than that now required.

The number of college graduates in recent classes has been diminishing. In the last entering class it is unusually low, less than 25 per cent. The constantly increasing age at which young men enter college, the necessity of spending eight years in obtaining the degrees of A.B. and M.D., and the great desirability of a year's service in a hospital at the end of the medical course takes so much time that a man may be twenty-seven or twenty-eight years old before beginning the practice of medicine.

In connection with the Pan-American Congress held last autumn in Washington, it is interesting to note that a section was established on Medical Pedagogics, in which several subjects connected with teaching were discussed. This shows an increasing appreciation of the importance of studying the best methods of teaching. The formation of such sections in connection with medical societies and congresses cannot fail to be of benefit to medical schools. The demonstration before that congress of what our school was doing was very gratifying, and it may well be considered one of the aims of such a school as ours to teach other institutions how to teach. In this connection the exhibit of the Harvard Medical School at the World's Fair in Chicago, was a revelation to those who studied it carefully, of the enormous amount of work which is constantly being done in its different departments.

The annual catalogue shows a teaching staff of 86 men, not including those connected with the Summer School. The number of students is 446, and the number of courses prescribed for undergraduate students about 65, not including a large number of clinical exercises. The summer courses of instruction have largely increased, the number offered for the coming summer being 57. In addition to the teaching of undergraduates, the opportunities offered to graduates in special courses and for original investigation in different laboratories are constantly increasing, and already take the place of what many physicians in the past have sought in Europe.

During the past year a system of weekly lectures in the Medical School has been inaugurated and very successfully carried out. Several gentlemen have given one or more lectures on subjects in which they are authorities, to those of the medical profession who chose to avail themselves of them. Too much cannot be said in praise of this undertaking, and it is to be hoped that it will become a regular feature in the educational work of the school.

The Faculty has, as far as possible, encouraged the giving out of special cases in different departments to individual students; the patient to be visited at his home and a general supervision kept of the progress and care of the case. In this way a student becomes acquainted with disease in a different and much more thorough manner than is possible in an out-patient clinic alone, and a further development of such a system is to be hoped for and encouraged.

Without attempting to go into the details of all the improvements and additions in the different departments and laboratories, we may mention a few to show the constant advance and the care which is being taken to maintain the high standards. With the four years' course, instruction is provided in clinical medicine for the students of the second, third and fourth classes separately, beginning in the second year with simple subjects and cases and advancing in the latter years to the more complex. In the fourth year particular attention will be devoted to clinical therapeutics.

The work of the pathological department of the school has been much assisted by the gift of $1,000 yearly from Miss Ellis. This has been devoted to the subject of pathological bacteriology. During the year original investigations have been pursued in the pathology of infectious diseases, the results of which will shortly be published. The efficiency of this department in the school will also be increased by the erection of a pathological laboratory at the City Hospital. This laboratory is being built on the most approved plan, and will be complete in all its appointments.

During the coming year special courses on the pathology of infectious diseases, on the pathology of the nervous system and on subjects in surgical pathology, consisting chiefly of laboratory work, will be given by some of the assistants in the department. The course in pathological histology has been made obligatory instead of optional as heretofore, and the change has been found to be a good one.

The progress which has been made in the department of the Medical School devoted to children in the last two years has been marked by great advances. Not only has it been made one of the leading features of the school's new work, through the establishment of a full professorship and a required examination for the Harvard degree by the whole class, but something of far greater value to the medical world has emanated directly from this department. An absolutely new era in the great subject of infant feeding has been established by means of a thoroughly equipped milk-laboratory, where physician's prescriptions can be sent and the different elements of milk combined in any proportions which may be ordered. This laboratory is the first of its kind that has appeared in the world.

In anatomy there has been given an excellent course on the brain, which has been demonstrated to small sections of the class. This system of demonstrations to sections is to be further developed next year, and the course will be made both as thorough and as practical as possible.

The principal investigations carried on in the physiological laboratory during the past year were: A study of the course of respiratory impulses in the cervical cord; a study of the circulation time in organs by new and improved methods; and a study of the influence of continued nerve stimulation on the rate of transmission of the nerve impulse.

This year, for the first time, the subject of general chemistry has been entirely taken out of the school, and made a requirement for admission. The course formerly known as medical chemistry has been subdivided into medical chemistry proper and clinical chemistry, the latter including the diagnosis of urine and toxicology.

During the past year the most important work in the museum has been the commencement of an index card-catalogue. And as preliminary to this the specimens have all to be renumbered, since they have come from two or three collections, each with its own number. It is hoped that the cataloguing proper can begin early in the coming year. As the collection is essentially one for teaching, the specimens which are mostly used in one department are best arranged by themselves. And whenever any of the instructors have desired it, cases have been set apart for them. During the last year the nucleus of a collection especially for orthopedic surgery and diseases of children has been begun. The museum has been open daily, except Sunday, during the week to students and graduates, and an increasing use of the collection has been noted.

The working space in the bacteriological laboratory has been entirely taken up by students during the past year. Nine graduates have been able to avail themselves of the opportunities for study and original investigation in bacteriology. Others had to be refused because there was no room for them. The discoveries which have been made by medical men working in the laboratory, have already proved to be most important; and it is to be hoped that the money, without which such lines of study cannot be pursued, may not be lacking.

(To be continued.)

A CRIMINAL lawyer of Cincinnati boasts that he is able at a glance to tell a criminal from an innocent person. Clearly this is just the kind of man required for lynch-law practice.

AMERICAN PEDIATRIC SOCIETY.

SIXTH ANNUAL MEETING, WASHINGTON, D. C., MAY 29, JUNE 1, 1894.

FIRST DAY. — TUESDAY.

The meeting was called to order by the First Vice-President, **Dr. F. Forchheimer**, of Cincinnati, O.

Dr. B. K. Rachford, of Newport, Ky., read a paper entitled

THE INFLUENCE OF VENOUS CONGESTION ON THE SPINAL REFLEX CENTRES.

He said there were three important blood changes etiologically related to the neuroses of childhood, namely: (1) toxines in the blood; (2) simple anemia, acute and chronic; and (3) venous congestion, acute and chronic. There were other toxines in the blood of bacterial origin; thus, paroxanthine, a poisonous leucomaine of the uric-acid group was accountable for many symptoms formerly attributed to uric acid itself. He said that the best way to study the influence of simple anemia on the nervous centres in an animal was by repeated bleeding or by starvation, or by both combined. Following out this line of research, he had been led to suspect that the blood changes in scrofula, malaria, rheumatism, etc., might not be due simply to anemia, but that the blood might also contain effete and poisonous products which would also tend to keep the nervous system in a state of chronic irritability. This opinion had been still further confirmed by experiments in ligating the vena cava in rabbits. The reflex phenomena produced by starvation was very slight indeed compared with those produced by venous congestion or arterial anemia. It might be concluded, therefore, that venous congestion and arterial anemia did not act solely by causing malnutrition, but that other factors, such as the retention of effete products, should by irritation of the nervous system act as additional factors. It seemed probable that here we might find an explanation of the manner in which endocarditis and pericarditis produce chorea and other nervous affections in children by the retardation of the capillary circulation in the nerve centres.

Dr. T. M. Rotch, of Boston, said that from a clinical standpoint he could indorse the views expressed in the paper. All must have noticed clinically the relation between a feeble circulation and the existence of nervous disorders. He had been especially interested in facts brought out regarding the influence of endocarditis in chorea.

Dr. J. Henry Fruitnight, of New York City, said that it was very important to remember that malnutrition and its phenomena were not directly the result of anemia, but rather due to a toxine following anemia.

Dr. Augustus Caille, of New York City, read a paper on

TONSILLOTOMY FOLLOWED BY DIPHTHERIA AND CROUP.

He reported the case of a boy, four years of age, who had been brought to him for the removal of hypertrophied tonsils. At the urgent request of the parents, who lived some distance from New York, he had removed the tonsils without his usual prophylactic treatment. The parents had been instructed to use Labarraque's solution; and as the boy was unwilling to gargle his throat, he had been given frequent doses of potassium chlorate internally. The next day the boy was violently ill, and both tonsils were found to be covered with a pseudo-membrane. A culture from the throat showed the presence of diphtheria bacilli and streptococci. He was given internally the bichloride of mercury. Within twenty-four hours the larynx became involved and it was necessary to resort to intubation. The boy ultimately recovered, and three weeks afterwards the adenoid vegetations were removed from the pharynx. The author said that the naso-pharyngeal toilet was indicated in catarrh, pertussis, scarlatina and measles, and before the removal of adenoids and vegetation. Mild antiseptic washes should be used. It was advisable to ascertain previously the presence or absence of diphtheria bacilli before operation on the tonsils.

Dr. A. Jacobi, of New York City, said that for the past thirty years he had been teaching this doctrine, that during the presence of diphtheria in a community, no wound should be made and no tonsil exsected if the operation could possibly be postponed. He had many, many times seen the wound of exsected tonsils covered with a thick pseudo-membrane and in many instances this had been followed by general diphtheria. Notwithstanding his repeated warnings on this subject, few physicians paid any attention to it, and few parents knew anything about it.

Dr. H. Koplik, of New York City, said that it was surprising how very many tonsils harbored the Löffler bacilli in the very depths of the lacunæ. It was a very simple matter to take a culture from the throat before resorting to tonsillotomy and thus be sure of the presence or absence of the diphtheria bacilli. If diphtheria resulted after tonsillotomy, we might be sure that the diphtheria was in the tonsil at the time of the operation, providing that the patient had not been subsequently exposed to the disease in some other way. After the diphtheria bacilli had remained in the lacunæ of the tonsil for a period of several weeks, they became converted into non-virulent bacilli.

Dr. Dillon Brown, of New York City, said that he fully agreed with the author of the paper as to the importance and necessity of using antiseptic lotions in naso-pharyngeal operations, both before and after the operation; yet it should be said that in a certain proportion of cases, owing to the objections of the parents and children, this method of treatment was extremely difficult to carry out. He proposed under such circumstances the use of sublimed calomel.

Dr. F. Huber, of New York City, then read a paper on

CONGENITAL CONSTIPATION.

A case was reported of a boy, five weeks of age, who since birth had been troubled with constipation and colic. When first seen by the author he was suffering great pain, straining and kicking. The abdomen was swollen and tympanitic and the child had been vomiting for two days. The temperature was 102° F. By a process of elimination the diagnosis of acute intestinal obstruction since birth was arrived at. It was due to an impaction of feces in the reduplication of the sigmoid flexure of the colon, a condition frequently misunderstood or entirely overlooked. While in many cases it was a very trivial matter, still it was not uncommon for it to lead to serious illness and even to seriously jeopardize life. In infancy, the descending portion of the colon was proportionately long, and by being crowded down into the narrow pelvis it formed a number of curvatures instead of one sigmoid flexure. The treatment consisted in giving high rectal injections until the proper relation had been established between the colon and the sigmoid flexure. It was, of course, often necessary to continue the treatment for years.

Dr. W. L. Stowell, of New York City, said that he had used with satisfaction enemata consisting of ox-gall and sweet oil.

Dr. Fruitnight remarked that, as many of these cases of constipation were due to an unusual dryness of the feces, the free administration of water should not be neglected.

Dr. Forchheimer indorsed this suggestion of the last speaker, and said that much more could be accomplished in children by the administration of water than in adults.

Dr. J. C. Wilson, of Philadelphia, read a paper entitled

A CASE OF MALIGNANT MEASLES.

The patient was a strong man, thirty-seven years of age, whose children had just recovered from measles. After feeling ill for two or three days, the skin became covered with numerous petechiæ, from one to eight millimetres in diameter, mostly oval in shape. There were no hemorrhages from the mucous surfaces. His condition became very much worse soon after the appearance of this eruption. His temperature continued to rise; and shortly before his death, three days later, it reached 105.6°. No autopsy was permitted. During his illness, a specimen of blood was taken from a large petechia and examined by Dr. A. C. Abbott, but neither bacteria or other form of parasite were discovered. The direct diagnosis of measles, the speaker said, rested upon the exposure, the faint and limited, but distinct maculo-vascular rash, the crescentic arrangement of the petechiæ and the febrile movement.

In the course of the discussion of this paper, the question was raised as to the occurrence of measles a second or third time in the same individual. Drs. Rotch, Stowell and Forchheimer expressed themselves as believing firmly in the occurrence of measles more than once in the same individual; whereas Dr. A. Seibert said that in an extensive tenement-house practice, and in his own private practice, he had never made the diagnosis of measles twice in the same child. He therefore thought that it was a decidedly rare occurrence.

Dr. Wilson, in closing the discussion, said that he had had associated with him in consultation over the case he had reported, Drs. Heffer and DaCosta, and they had all agreed as to the diagnosis.

SECOND DAY. — WEDNESDAY.

THE ETIOLOGY, PREVENTION AND TREATMENT OF RICKETS.

As part of the discussion on this subject, Dr. Irving N. Snow, of Buffalo, read a paper on

THE INFLUENCE OF RACE, ESPECIALLY THE ITALIAN RACE.

He said that in his experience rickets had been six times more frequent among the Italians than among other races, and he attributed this to the great change of climate and environment to which they had been subjected. He said that rickets was seldom developed among the natives of Southern Italy, Egypt, and India, and explained this fact by saying that the out-door life, the bright sunshine, tended to prevent its development.

Dr. George N. Acker, of Washington, D. C., followed with remarks on the influence of the negro race. He said that the negro race was undergoing serious decay, as a result of change of environment since their emancipation from slavery. Since they had been free, they had become shiftless; they lived in entire disregard of all sanitary regulations and requirements, and were often intemperate. The negroes were often weaned at a very early age to allow of their mothers going out to work, and at best they had but very little attention and much improper food. As a result of this general inattention, they were liable to develop pulmonary disorders between the sixth and eighteenth months of life; and diseases of the respiratory organs, by lowering the vitality, tended to the production of rickets. In his experience, cranio-tabes was rare in the negro; and as negroes have less susceptible nervous systems than whites, they were less liable to nervous affections. When these rickety children were placed in more favorable surroundings, the disease usually yielded readily to treatment.

Dr. C. W. Townsend, of Boston, then reported

A CASE OF CONGENITAL RICKETS.

The subject of the report was a male child, born prematurely of healthy parents, but wretchedly poor. There was no history of syphilis. The evidence of rickets was very marked and characteristic. There were even fractures present, due to the extreme brittleness of the bones, usually a late phase in the rachitic process, and consequently must have been produced by muscular action within the uterus. The child died on the ninth day. There was no autopsy.

Dr. J. C. Griffith, of Philadelphia, remarked that he had not been able to observe any difference in the causation of rickets in the colored and in the white race. It seemed to him reasonable to suppose that at least the colored children of Philadelphia should have become acclimated by this time.

Dr. L. Emmet Holt, of New York City, said that he had been led to about the same conclusions as those arrived at by Dr. Snow. There could be no question about the predisposition of the negroes and Italians to rickets.

Dr. J. Henry Fruitnight, of New York City, said that it would seem that the nations of continental Europe were more prone to this disease than were the inhabitants of the British Islands. He also mentioned a case of congenital rickets which he had seen, thus making four cases on record in this country.

Dr. A. Seibert, of New York City, said that since his attention had been called to cranio-tabes, he had found that it was present in the large majority of cases of rickets. It was a condition to be especially looked for in cases giving a history of eclampsia.

Dr. Samuel S. Adams, of Washington, D. C., said that he agreed with the author of the paper as to the etiology of rickets, that is, that it was due to improper feeding.

Dr. J. E. Winters, of New York City, said that climate affected the question of the production chiefly through its influence over digestion and assimilation. He had yet to see a tuberculous child become rickety.

Dr. Koplik, of New York City, said, with reference to the value of drugs in the treatment of rickets, that he thought if nascent phosphorus was given in a daily dose of a hundred-and-twentieth of a grain, and this treatment were continued conscientiously, encouraging results would follow.

Dr. Acker, in closing the discussion, said that he believed if the negro were placed under proper surroundings the rickets would be cured without resort to any drug.

Dr. A. Seibert, of New York City, read a paper entitled

AN AID TO THE STERILIZATION OF MILK IN ARTIFICIAL INFANT FEEDING.

The method he advocated consisted briefly in filtering out the gross filth of milk by passing it through a half-inch layer of moistened and compressed absorbent cotton. He said that bacteriological experiments had been made for him by Dr. Otto Kiliano, of New York, and these had shown that by such filtration the germinating capacity of the milk had been considerably diminished. When the cotton was previously moistened, it was found roughly that about seven-eighths of the germs contained in the milk were removed by this process of filtration.

Dr. J. Henry Fruitnight, of New York City, read a paper entitled

INFANTILE SCURVY, ESPECIALLY ITS DIFFERENTIAL DIAGNOSIS.

After reporting a case of this kind, he stated that it was his opinion that the condition of malnutrition present in scorbutus must exert a special influence on the blood-vessels. It was an error to suppose that scurvy never occurred in breast-fed children. The diagnosis of scurvy was made by the swelling and tenderness of the ends of the femur, the swollen and spongy condition of the gum, and by the rapid and complete cure resulting from anti-scorbutic treatment. The condition was sometimes confounded with acute rheumatism. In scurvy, the joints were white, and tense, but not puffy; in rheumatism, the joints were red and puffy, and the tenderness was localized at certain points. In scurvy there was no local elevation of temperature. If joint symptoms alone were present and were not very marked, the therapeutic test would decide the question of diagnosis. In conclusion, he would say that scurvy was the result of a faulty nutrition which led to deviation of the normal chemical constitution of the blood, probably deficiency in its alkalinity. It was associated with changes in the blood-vessels. The bone lesions, the spongy condition of the gums, and the petechiæ form the triad of symptoms. The symptoms developed first in the lower extremities, then in the gum, and lastly the hemorrhages and extravasations appeared. Under proper dietetic treatment the course of the disease was usually favorable.

(To be continued.)

The Swiss Statistical Bureau gives the following facts as to the medical profession in Switzerland; In 1890, the total number of medical practitioners was 1,530, being a proportion of 5.2 per 10,000 of the population; in 1891, the number was 1,557, or 5.3; and in 1893, 1,634, or 5.5 per 10,000 inhabitants. In 1893, the total number of doctors was 1,656, or 5.5 per 10,000 of population.

Recent Literature.

A Manual of Diseases of the Nervous System. By W. R. Gowers, M.D., F.R.C.P., F.R.S. Second edition, revised and enlarged. Volume II: Diseases of the Brain and Cranial Nerves, General and Functional Diseases of the Nervous System. 8vo, pp. xvi, 1069, with 182 illustrations. Philadelphia: P. Blakiston, Son & Co. 1893.

The completion of the second edition of this great work has been anticipated with interest by all who were familiar with the previous edition. The changes have not been so great as in the first volume, the additions amounting to only about a hundred pages, but evidences of revision and addition are manifested throughout the work. Only two entirely new chapters have been added — on chronic adult chorea, and astasia-abasia, but several other sections are practically rewritten and greatly enlarged. The arrangement is the same; something over half the book is taken up with the consideration of the anatomy and functions of the brain, the diseases of the brain, the localization of disease, the diseases of the meninges, and the organic diseases and degenerations. The rest of the book discusses the general and functional diseases.

It becomes somewhat monotonous to repeat what has been said of the first edition of the work and of the previous volume, that it is the best and most complete treatise on the subject in any language, but it is merely the statement of a very evident fact. The enormous amount of research and erudition displayed in these two volumes is almost appalling, and many of the chapters are in themselves complete monographs in which may be found not only a summing up of the latest facts, but the results of an enormous personal clinical experience.

It view of all this criticism might seem not only uncalled for but unjust. Nevertheless a word or two of criticism seems necessary. We have finished this second volume with a distinct feeling of disappointment. Admirable as it is in many ways, the last half of it more especially falls short of the standard set by the first volume; it is less complete, and less fully abreast of our present knowledge. It may seem absurd in a work of over two thousand pages to speak of omissions, but serious omissions exist. Acromegaly and myxedema have as much right to a place in such a work as exophthalmic goitre; paretic dementia might well be considered, and, in view of the author's Lettsomian lectures, a special chapter on syphilis of the nervous system might not be out of place; the traumatic neuroses deserve some sort of notice; and when affections like tetanoid chorea are described at length (based on a single case), Gilles de la Tourette's maladie des tics and Gerlier's disease deserve something better than a foot-note, especially when the latter much-discussed affection is incorrectly described.

The section on the general and functional diseases is, on the whole, the most disappointing feature of the book, and in many of its chapters it falls far below the rest. In many cases there is, in comparison with the rest of the work, an astonishing failure to note the results recent work. Too little weight is laid on the results of recent autopsies on paralysis agitans; in the effort to prove that neuralgia is due to central disturbances, the changes in the nerves in tic douloureux found by Putnam, Dana and Rose are neglected. The description of astasia-abasia is utterly at variance with Blocq's definition or the symptoms described in the reported cases. By far the worst chapters are those on hysteria and neurasthenia. Much has been added in this edition from Richer's famous work, but the later work of Charcot and the researches of Guinon, Pitres, Janet and Gilles de la Tourette are wholly neglected. Hypnotism receives no recognition, beyond the description of Charcot's three stages, and the influence of suggestion is ignored. Neurasthenia receives five pages of consideration, instead of the scanty half-page in the first edition, but even yet Gowers is unwilling to assign to it any place in nosology, and the discussion is wholly inadequate. There is, moreover, here and there, something too much of diffuseness and of theorizing which might well be condensed or omitted.

These defects, however, are but minor flaws, and the work as a whole remains the leading work on the subject, indispensable to every student.

Lectures on Genito-Urinary Diseases. By J. C. OGILVIE WILL, M.D., C.M., F.R.S.E., etc. London: The Scientific Press (limited). 1894.

Under the above title the author presents six lectures on the following subjects: (1) "Urethral and Catheter Fever." (2) "Treatment of Retention of Urine." (3) "Gleet and its Treatment." (4) "On Varicocele." (5) "On Hydrocele. (6) "The Treatment of Syphilis."

These lectures are instructive, practical talks to students, containing much sound advice, and will serve as safe guides in practice. The best methods of treating gleet and the various phases of syphilis are especially fully and clearly detailed; and the appendix contains a number of prescriptions that will be found useful in the treatment of special manifestations of the latter disease. The chapter on the treatment of gleet has an excellent description of the endoscope and its use.

In the first lecture we note that the author makes an emphatic distinction between urethral and catheter fever, the former term being used to designate the "irritative" fever which sometimes follows even the gentlest instrumental examination of the urethra alone, while the latter is applied to the febrile and other symptoms occurring in connection with the emptying by a catheter of a distended bladder, such as is so frequently seen in cases of prostatic hypertrophy. The phenomena of urethral fever are believed by the author to be due to "disordered reflex action"; those of catheter fever to the introduction into the bladder of putrefactive germs.

Lehrbuch der Histologie. Berlin: S. Karger. 1894.

Dr. Rawitz, Privat-docent at the University of Berlin, has published a meritorious manual of histology, which in 284 pages, illustrated with 204 engravings, presents a satisfactory outline of the science in a manner adapted to the requirements of the medical student.

His descriptions are clear, well arranged, and in the main accurate. We miss an adequate account of the uterus, and note that the description of the course of the renal tubules is incorrect. The illustrations are rather coarse "process" cuts, and quite diagrammatic. No directions for the technical methods are included; for these the author refers to another manual published by himself some years ago.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, AUGUST 2, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 WASHINGTON STREET, BOSTON, MASS.

LEGISLATION RELATING TO MEDICAL MATTERS IN MASSACHUSETTS.

THE Massachusetts State Legislature of 1894 has passed several laws of interest to the medical profession of the State. The most important of these is the law requiring the registration of all physicians, the text of which has already been published.[1]

In spite of protests by opponents of vaccination, a law was passed requiring parents and guardians to have their children or wards vaccinated before they are two years old, under penalty of five dollars' fine for each subsequent year of neglect. As a compromise with the opponents of the bill, it is provided that all children who obtain a certificate signed by a regular practising physician that they are unfit subjects for vaccination, shall be exempt from the provisions of this act, and of the act requiring school children to be vaccinated. The board of health in any city or town shall enforce the vaccination and re-vaccination of all the inhabitants whenever in their opinion the public health requires it, and shall furnish the means of free vaccination. Manufacturing companies and officers of institutions supported or aided by the State, shall cause the inmates to be vaccinated whenever in the opinion of the board of health the health of the inmates or the public safety requires such action. All vaccine institutions in the State are placed under the supervision of the State Board of Health.

The laws relating to contagious diseases among domestic animals are codified and consolidated. General supervision and the making of regulations is given to the State Board of Cattle Commissioners, the number of the board being increased to five. Also local boards of health may take measures necessary to suppress or prevent contagion in their districts. The mayors and aldermen of cities, and the selectmen of towns are required to appoint one or more inspectors of animals and provisions. It is the duty of these inspectors to examine all neat-cattle, and in case of suspicion other animals; to supervise all slaughtering; to quarantine suspected animals, and to seize diseased meat. They may also, and must if so ordered, inspect all meats, fish, vegetables, produce, fruits or other provisions. All slaughter-houses, and establishments manufacturing foods from meat, must be licensed by the city or town, and be supervised by the inspectors.

---

[1] See page 426 of the Journal of April 26, 1894.

A law against vivisection provides that no teacher in any public school shall, in the presence of any scholar, practice vivisection, nor exhibit any animal upon which vivisection has been practised. Dissection of dead animals or of any portions thereof, in the public schools, shall in no instance be for the purpose of exhibition, but shall be confined to the class-room and to the presence of pupils engaged in the study to be illustrated by such dissection.

A law regulating the employment of labor includes a provision, that every factory in which five or more persons are employed, and every factory, workshop, mercantile or other establishment or office in which two or more children, young persons or women are employed, shall be kept in a cleanly state, and shall be provided with a sufficient number of water-closets or privies; and wherever two or more male persons and two or more female persons are employed together, a sufficient number of separate and distinct water-closets or privies shall be provided for the use of each sex. The same law provides for proper ventilation of workshops, and for the inspection of places where clothing is made.

In any city in which no suitable hospital accommodations have been provided for the care and treatment of persons suffering from contagious diseases, the board of health may address a communication to the mayor, stating that in the opinion of the board the safety of the inhabitants of the city demands that suitable hospital accommodations should be provided for the reception and treatment of persons suffering from such diseases, other than small-pox and those of a venereal nature. The mayor shall transmit such communication to the city council, and the city council shall order such hospital accommodations to be provided, and shall make the necessary appropriations therefor. No discrimination shall be made against the treatment of venereal diseases in the out-patient department of any general hospital supported by taxation in any city where special hospitals, excluding hospitals connected with penal institutions, are not provided for the treatment of such diseases at public expense, and said hospital may establish a separate ward for the treatment of such cases.

Every town in the State may elect a board of health of three persons; if it does not do so, the selectmen of the town shall constitute the board of health. In cities and towns of over five thousand inhabitants one member of the board must be a physician.

The licensing of plumbers and the inspection of plumbing is put more or less under control of boards of health.

The Boston City Board of Health may require private alleyways or passages to be cleaned or paved where they consider it expedient.

Other acts of local interest or amendments of old laws add to the list of subjects connected with public health which our late legislature has left us.

◆

THE WOUND OF PRESIDENT CARNOT.

The official report of the wound of the late President of the French Republic, and of the surgical management of the case by Dr. A. Poncet, assisted by Drs. Lacassagne, Coutagne, Ollier, Lépine and others, has been published.

M. Carnot was assassinated at 9.30 P. M., on the 24th of June. The poniard was forcibly thrust below the right false ribs, an inch outside of the xiphoid appendix, completely dividing the corresponding costal cartilage; it penetrated the left lobe of the liver near the suspensory ligament, perforating the organ from left to right and from above downwards, wounding in its course the portal vein in two places. The depth of the liver wound was from three to four inches, and a severe intra-peritoneal hemorrhage followed, from which M. Carnot succumbed in about three hours.

Dr. Poncet arrived within a few minutes, and found the president in a collapse. The hands were cold and the pulse could scarcely be felt. There was soon a partial rallying under champagne and injections of ether. On examination there was found a clean, penetrating cut about three-quarters of an inch long, oblique in its course, and of uncertain depth, outside of right border of xiphoid. The vest and shirt were wet with blood, of which somewhat less than three-fourths of a tumblerful had escaped.

A compress was placed over the wound, and the president in a recumbent posture, head lowered, was taken to his rooms at the Prefecture. Poncet, convinced that the liver was wounded, and that the real danger was from internal hemorrhage, undertook a "lateral laparotomy." Without resorting to ether, which was contraindicated by the state of collapse, he proceeded with the index finger of the left hand in the incision to enlarge the wound, by from two to three inches, cutting from below upwards. This incision gave him a fairly good view of the situation, and enabled him to introduce gauze pledgets with the aim of stopping the bleeding. The left lobe of the liver was brought into view, and it was seen to be bleeding from its convex surface. A clear, smooth wound, eighteen to twenty millimetres in length, corresponding in its form and direction to that of the skin, and invading the substance of the liver, was detected.

This wound was readily explored by the finger, and found to be funnel-shaped. During these manœuvres of exploration, the hemorrhage stopped. Then the attending surgeons packed the wound with iodoform gauze, with a sterilized compress externally, which was kept in place by pressure with the palm of the hand made by M. Poncet. The hemorrhage, at first completely arrested, returned in a short time, and death speedily followed. At the autopsy it was found that the principal hemorrhage came from the portal vein, which was wounded in two places.

It is evident that the prostrated and moribund condition of the patient precluded any more extensive operation than the partial laparotomy performed, and that, under the circumstances, the administration of ether and further cutting in order to find and to tie the bleeding vessel, was not to be thought of. The surgeons in attendance are of opinion that the life of the president was somewhat prolonged by their manipulations.

◆

MEDICAL NOTES.

The Plague in China. — The cases of plague are much diminishing in Hong Kong, and it is thought that the epidemic is about over. In Canton there is still a very large number of new cases each day, while the death-rate is but little lower.

The Cholera. — The epidemic of cholera is still confined chiefly to St. Petersburg, but the situation there is most serious and menacing. The new cases number over two hundred every day, while there are from fifty to eighty deaths. There are over five hundred cases in the hospital at present. The disease has appeared in the infantry barracks at Krasnoeselo, a short way out of the city, while no section of the capital is wholly free from the disease. Many cases have occurred at Cronstadt and at Warsaw, while the provinces each report a few cases but no especial increase in the outbreak. The scattered cases reported from Belgium, the Hague and Brittany have not been followed by any epidemic, and there have been no further cases reported from Adrianople. It is reported that the disease has appeared with some severity at Marseilles. The United States Consul at Bagdad reports an extensive outbreak of disease following the severe floods. The disease is reported as of a paludal nature and due to the filth and stagnant water. The conditions described certainly are such as to invite an epidemic of cholera.

Small-Pox at Rutherford, N. J. — In the first week in July three cases of small-pox were discovered in a family in Rutherford, N. J. They were promptly isolated, but during the last two weeks a considerable epidemic has broken out. In the week ending July 26th there were some fifteen cases reported to the board of health, most of them being among the Italian population and all in one tenement district.

Dengue Fever at Key West. — An epidemic of "dengue fever" has occurred at Key West. The troops in garrison there were first affected, and there have already been fifty-five men affected out of a total troop of one hundred and fifteen. There are also many cases among the residents of the city, there having been a total of over seventy-five cases reported to the Board of Health. There have been no deaths.

The Death of General Pleasonton. — The death last week of General A. J. Pleasonton of Philadelphia recalls the blue-glass craze of twenty years ago. After graduating from West Point he devoted much time to various scientific experiments, the best known being those on the effect of blue light on animal life. After some ten years' observations he embodied his results in a lecture before the Philadelphia Society for Promoting Agriculture, in May, 1871, and subsequently in a book upon the "Influence of the Blue Color of the Sky in Developing Animal and Vegetable Life." The announcements made by General Pleasonton were followed by the well-remembered "blue-glass craze," under the influence of which people had blue glass in all their windows and even in the tops of their hats that they might always exist under the beneficent influence of a pale azure light. General Pleasonton was eighty-six years old.

American Electro-Therapeutic Association. — The fourth annual meeting of the American Electro-Therapeutic Association will be held at the Academy of Medicine in New York, on September 25th, 26th and 27th.

The American Association of Obstetricians and Gynecologists. — The American Association of Obstetricians and Gynecologists will hold its seventh annual meeting at Toronto, Ont., Wednesday, Thursday and Friday, September 19, 20 and 21, 1894, to which a cordial invitation is extended to the medical profession.

An American Doctor a Mandarin. — The *Lancet-Clinic* reports that Dr. William H. Park, a medical missionary and surgeon in charge of the Methodist Hospital at Foo Chow, China, has been given the rank of mandarin. The honor was bestowed on account of Dr. Park having successfully treated a Chinese general for his wounds.

The American Journal of Insanity. — The *American Journal of Insanity*, which has been edited and published at the Utica State Hospital for the past fifty years, has lately been sold and transferred to the American Medico-Psychological Association, of which society it will henceforth be the accredited organ. The journal will be edited *ad interim* by a publication committee consisting of Dr. Edward Cowles, President of the Association, Boston, Mass.; Dr. Henry M. Hurd, Secretary of the Association, Johns Hopkins Hospital, Baltimore, Md.; and Dr. Richard Dewey, Chicago, Ill. Dr. Dewey will have the immediate editorial care for the present.

Canadian Medical Association. — The Canadian Medical Association will hold its meeting this year at St. John, N. B., on August 22d and 23d, and there is every prospect of a largely attended meeting. The address in medicine will be given by Dr. Wm. Bayard, of St. John, and the address in surgery by Dr. S. F. Black, of Halifax. A cordial invitation is extended to physicians to visit the Association during its sessions.

Resignation of Professor Pettenkofer. — Dr. Pettenkofer has resigned his professorship at the University of Munich. Considerable public comment has been made, as it is understood that the action was brought about by pressure from Berlin, owing to Pettenkofer's opposition to Koch's investigations. Professor Dr. Hans Buchner has been named as Pettenkofer's successor, with the rank of ordinary professor.

An Ophiological Laboratory. — A snake laboratory, for the study, under strictly scientific conditions, of snake poisons and cures for snake bites, is to be established in Calcutta by a native of the province.

Physiology and the Progress of Woman.— The effect of physiological knowledge on a woman's mind is not always to be calculated. The *Lancet* quotes the following letter which was received by one of the examiners at a recent examination for a medical diploma. and was written by a feminine student of medicine:

> "Sir, — Don't you dare refuse me again in physiology when you *know* I know *all about* physiology; I very likely know more than you do. I shall write to Mr. —— if you do about it. Very soon Doctors will be drawn only from we *pure noble-minded women*, and you *vile drunken filthy* men expelled for ever."

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, July 25, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 24, scarlet fever 20, measles 11, typhoid fever 11.

Secretary of the Boston Medical Association. — At the last annual meeting of the Boston Medical Association, Dr. H. L. Smith, Newbury Street, Boston, was elected Secretary and Treasurer of the Association for the ensuing year, in place of Dr. Charles L. Scudder, resigned.

A "Babies' Hospital" in Boston Harbor.— The old hospital building on Rainsford Island in Boston Harbor, which has been unused since the new building has been finished, has been offered by the Commissioners of Public Institutions to Dr. H. C. Ernst for use during the next two months as a hospital for babies where they can be cared for away from the heat of the city. The building has been thoroughly cleaned, and is well equipped with utensils and water-supply. It will accommodate from fifty to seventy-five patients, and the medical attendance, superintendence and nursing has all been provided for by friends of the new charity. The nursing is to be in charge of the Sisters of St. Margaret. Transportation has been offered, and the only appeal for so worthy an object to the public is for the funds to provide sustenance for the patients. The undertaking is a most needed and worthy one and deserves to have a full measure of success.

The Floating Hospital at Boston.— The long-advocated plan of a floating hospital for sick children in Boston has this summer been put into active trial under the auspices of the Berkeley Temple. The first trip of the barge was made on the 25th of the month, when seventy-five sick babies and young children were taken out for the day with fifty mothers or attendants. The funds do not yet permit of daily trips and the hospital barge is used from time to time, the second day's trial being last Tuesday. The barge is intended for mothers with sick babies and small children, who must accompany them; and its trips are in no way intended as excursions. No child over six years of age is taken, and none with contagious disease. The privilege of a day's outing is obtained by tickets, which must be signed by a physician who has seen the child and must bear the doctor's diagnosis. The mothers are expected to bring with them a clean nursing-bottle and nipple. Each adult is given one warm meal, and milk is furnished free for the children twice in the day. It is hoped that this summer's work may show such good results as to give the hospital a fuller means for usefulness another year and put it on a permanent basis.

Vermont State Medical Society.— The eighty-first annual meeting of the Vermont State Medical Society will be held in Montpelier, Vt., October 11th and 12th.

Dysentery at Norwalk, Conn. — A moderate epidemic of dysentery is reported from Norwalk, Conn., there being some eight or ten new cases daily, and on one day last week as many as five deaths attributed to the disease.

Conjoined Meeting of the White Mountain, Connecticut River Valley and White River Medical Societies.— The annual conjoined meeting of the White Mountain Medical Society, Connecticut River Valley Medical Society and the White River Medical Society was held at Hanover, N. H., July 31 and August 1, 1894. Papers were read by Drs. P. S. Conner, George W. Gay, Paul Mundé, David Webster, W. H. Parish, G. A. Leland and Edward Cowles.

NEW YORK.

A New School of Clinical Instruction. — The New York School of Clinical Medicine is the name of a new institution for clinical instruction which has just been incorporated by the trustees of the West Side German Dispensary. Among the corps of instructors will be the following members of the Dispensary Staff: Dr. A. H. Goelet, gynecology; Dr. J. Mount Bleyer, laryngology and rhinology; Drs. Richard Kalish and James A. Meek, opthalmology and otology.

An Improved Water-Supply for Brooklyn.— At a special meeting of the Brooklyn Board of Aldermen, which was called on July 23d, to consider the question of giving the city an increase in its water-supply, a resolution was adopted making an appropriation of $750,000. At the meeting a communication was read from the mayor, which was accompanied by reports from Health Commissioner Emery and the engineer of the Department of City Works, favoring the plan adopted. By this extension of the water-works system, 25,000 gallons a day will be added to the city's supply. An additional benefit will be that it will enable the authorities to cut off the supply from two streams now in use which recent investigations have shown to be notoriously impure.

The Distribution of Sterilized Milk. — The sterilized milk charity organized by Mr. Nathan Strauss, is proving a great boon to the poor this season. There are now six depots in operation in the tenement-house districts and nearly a dozen stands for disbursing the milk in the various city parks. The principal depot is at the foot of East Third Street, and at this point Mr. Strauss has provided a large tent covering the pier extending out into the river, underneath which there are benches where mothers can sit with their children and get the benefit of the fresh air.

An Unusual Case of Sunstroke. — A case of sunstroke of unusual interest was recently treated at Bellevue Hospital. The patient was a powerful man in the prime of life, whose vitality proved to be very remarkable. When taken to the hospital he was unconscious, and from the extreme high temperature and the marked edema of the lungs present, it was not supposed that he could survive an hour. The degree of temperature could not be ascertained, as it is only known that it exceeded the registering capacity of the thermometer used, 110.8°. Under the active treatment resorted to, the temperature gradually fell, however, to 101° in the course of the night. On the following day it rose to 103°, in spite of treatment, and remained at this point for a number of hours. For two days the patient remained unconscious, but on the third day he regained consciousness, and as his temperature had by this time become reduced to normal there seemed a fair chance of his recovery. Later, however, a reaction set in, and on the fifth day he died, the temperature rising just before death to 109°. It was ascertained that the man's name was Joseph Kenny, and that he was forty-two years of age. It is stated that in August, 1887, a cab-driver was admitted to Bellevue suffering from insolation, who had a temperature of 110.2°. In his case treatment proved successful, and he is to-day pursuing his avocation.

◆

Miscellany.

"CHARAKA SAMHITA." — OBSERVATIONS ON DIET.

The relation of food to health and disease is an old topic of discussion; and it is not a little interesting to compare some of our modern theories with the conclusions reached by the illustrious son of Atri who in the twenty-fifth chapter of the "Charaka-Samhita" reviews the articles of food that are used in the well-known (curative) operations and in medicines. They are as follows:

Food is the foremost of all articles that support life.

Of all articles that are assuring, water is the foremost.

Of all articles that dispel fatigue or exhaustion, the best is wine.

Of all articles that prolong life, milk is the best.

Of all articles that promote nutrition and lead to increase of flesh, the best is meat.

Of all articles that are soothing, the best is juice.

Of all articles that promote the relish of food, the best is salt.

Of all articles that are agreeable to the taste the best are those that have a sour taste.

Of all things that promote strength the best is the flesh of the cock.

Of all things that increase the semen the best is the vital seed of the alligator.

Of all things that allay phlegm and bile, the best is honey.

Of all things that allay wind and bile, the best is ghee.

Of all things that allay wind and phlegm the best is oil.

Of all things that are destructive of phlegm the best is vomiting induced by emetics.

Of all things that are destructive of bile, purging is the best.

Of all things that are destructive of wind, the best are enemata.

Of all things that soften the body the best are the operations called Swedana (which induce perspiration).

Of all things that make the body firm the best is physical exercise.

Of all things that reduce corpulency the best is sexual intercourse.

Of all things that are destructive of consumption, that promote secretion of milk, that are agreeable to the constitution, that prevent the fluidity of the blood and that allay hemorrhages, the foremost is the ghee of goat's milk.

Of all things that promote phlegm and bile the foremost is sheep's milk.

Of all things that promote sleep, the foremost is the milk of the buffalo.

◆

THERAPEUTIC NOTE.

The Therapeutic Use of Strontium Salts. — Adolf Ried reports[1] a series of cases of severe albuminuria treated with strontium salts in Drasche's clinic at Vienna. The experiments of Constantin Paul and Dujardin-Beaumetz have shown the salts of strontium to have a marked influence upon the albuminuria of renal disease, but have not pointed to any especial diuretic action from the drug. The cases reported were of various causes, and all received while under treatment a mixed diet. The lactate of strontium was used in all instances. An increase in the amount of urine was noticed, especially in cases of Bright's disease, with scanty urine and anasarca. The increase in the urine was often rapid, while the diminution of dropsy, though slower, was continuous. The action on the amount of albumin was less regular, but in one instance there was a diminution from six per cent. to one per cent. within a week; and in another, from eight per cent. to one and one-half per cent. in seventeen days. The following conclusions were reached; (1) Lactate of strontium reduces the amount of albumin in the urine in many cases of Bright's disease to a noticeable degree, but has not any such effect on contracted kidneys. (2) The manner of action is not certain. Dujardin-Beaumetz's theory of its exerting a favorable action on the digestion, and so reducing the toxine formation, cannot be accepted, as the exhibition of the drug in powder form apparently interfered with digestion, causing distress and vomiting.

---

[1] Wiener Klin. Woch., No. 17, 1894.

The best form of administering it appears to be solution

℞ Strontii lactatis 25.00
Aquæ . . . . 150.00 M.
Sig. A teaspoonful three or four times a day.

(3) The use of the drug in the above dose has a decided diuretic action. Like any other diuretic drug it may fail in single cases. (4) On account of its diuretic action lactate of strontium is recommended in pleuritic effusion as a substitute and alternate for salicyl, since it can be given for long periods without any ill effects.

◆

Correspondence.

THE STUDY OF PATHOLOGY IN GERMANY.

Göttingen. — Compulsory Autopsies at the Hospital. — Orth's Laboratory and Teaching. — American Medical Students and Elementary Courses.

Berlin, June 20, 1894.

Mr. Editor: I enjoyed my visit to Göttingen very much. The pathological institute and the various hospital buildings are all new, and present a very pleasing appearance in their enclosed grounds in the outskirts of the town. In a book entitled "Arbeiten aus dem pathologischen Institut in Göttingen," published by Orth last October in honor of the fiftieth anniversary of Virchow's degree of M.D., he describes the former and present methods of instruction in pathology in Göttingen, and gives an account, with full plans, of the new pathological institute.

I noted with interest that in 1840, inasmuch as, on account of the superstition and prejudice of the people, it was almost impossible to obtain permission from relatives or friends for any autopsies, it was decreed through the influence of the clinical men who realized the importance to themselves and to their students of post-mortem examinations that in the future autopsies should be made on all who died in the hospital. This decree is still in force. It was not, however, until 1875 that the pathologist had full direction of the pathological institute including the pathological collection, and the duty as well as the right to make the post-mortem examinations of all the cases dying in all of the various hospital clinics. Previously many of the clinicians had insisted on performing the autopsies on their own cases.

I shall not bother you with a description of Orth's laboratory. It is very conveniently arranged, and all of the rooms are connected by telephone. The assistants have each a large room fitted up with a writing-desk and everything necessary for their work. The rooms for the special students are very attractive, and are supplied among other things with microtomes and knives for the free use of the occupants. At present, outside of the two volunteer assistants, there is but one special student, an American doing general work. I have been surprised not to find more men in the various pathological laboratories doing special work, for every inducement is held out to them.

Orth is aided in his teaching and work by two assistants and two volunteers. Think of five instructors for a class of twenty-six in pathological histology! The class in pathology in the winter semester averages twenty-five, in the summer semester not over thirty. It is evident, of course, that more personal attention can be given each student under such circumstances. With large classes and few assistants the instructor must largely adopt methods by which he can hold the attention of the class as a whole.

Orth is a capital teacher; in the demonstrations, and in the instruction in the making of autopsies, he might almost be called a perfect drill-master. Every man receives his due share of attention from him, and Orth himself is the last to leave the autopsy-room. I shall now be able, after having followed him in his courses, much better to appreciate his "Diagnostik," of which the last edition has just appeared; and I am not surprised, after seeing the amount of his time taken up by routine duties, that his work on pathology is not yet finished.

I have been more or less interested in observing the American medical students in Germany. The greater proportion of them come from the Western States, and they are to be found mostly in Vienna and Berlin. In the former city there were about a hundred this winter, about half the usual number; and it was claimed by an assistant there that many of the men went to Berlin nowadays instead of to Vienna. But in Berlin the number was also less than usual; and it was said there that on account of the hard times many of the men had gone home. I met but three Americans in Prague, two in Strasburg and one in Göttingen.

The men for the greater part, I think, come to broaden their clinical knowledge or work up a specialty; but — and it was this fact about them which particularly interested me — the great majority of them take courses in pathology and bacteriology. Indeed, it is from these courses to the Americans that the assistants in pathology in Vienna (with whom especially I talked in regard to the matter) derived the greater part of their income.

To me it seemed a pity to see even some of our own graduates who have been house-officers in the Massachusetts General and City Hospitals taking the elementary, introductory courses in bacteriology and pathological histology because they had neglected their opportunities at home. They could have put in their time to so much better advantage in advanced courses in these subjects or at such clinics as they cannot get at home. Günther's course in bacteriology, for instance, which is very popular, is a beginner's course which takes up the principles of bacteriology. It occupies all of a man's time for four weeks. A course in pathological histology must consume about as much time, so that nearly two months are thus wasted on elementary work which should be required of every student who graduates in medicine. They could then more fully appreciate such an advanced course as, for instance, in Vienna, Kolisko's demonstrations of his very abundant supply of pathological material.

Men, however, who wish to work up the pathology of the special branch of medicine in which they are interested will do better to go to the smaller universities, where they can receive instruction and help from the head of the department himself. Very sincerely yours,

F. B. Mallory, M.D.

◆

A READY CULTURE MEDIUM FOR THE GONOCOCCUS.

Boston, July 30, 1894.

Mr. Editor: — The attention of the readers of the Journal is invited to the fact that in a very recent No. of the *Centralblatt für Bakteriologie und Parasitenkunde*, Dr. R. Turro, of Barcelona, in a report of progress in his researches on the gonococcus, makes the statement that this organism grows readily on ordinary nutrient gelatine, *which has not been neutralized subsequent to the addition of the gelatine.*

I can confirm this observation, as also his statement that this organism can thus be (apparently) readily obtained in pure culture. I say "apparently," because the strict rules of bacteriology have not yet been applied to these cultures, though preparations made from twelve different colonies show only biscuit-cocci, which have the staining reactions of the gonococcus.

This method is much simpler than any of those previously proposed for the culture of this organism, the materials can be procured without difficulty; and thus far I have found the statement of Dr. Turro correct that the other organisms ordinarily associated with the gonococcus do not grow on this acid medium. M. W. Wood, M.D.,

Major and Surgeon, U. S. Army.

Bacteriological Laboratory,
Harvard Medical School.

METEOROLOGICAL RECORD,

For the week ending July 21st, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..15	30.00	72	79	65	64	90	77	N.W.	E.	5	12	C.	C.	
M..16	30.11	64	67	61	90	100	95	N.	E.	4	3	C.	G.	
T..17	30.19	64	70	59	94	88	91	E.	E.	3	4	O.	O.	
W.18	30.16	74	82	65	83	84	84	S.W.	S.W.	6	11	O.	C.	
T..19	29.98	78	87	68	76	69	72	S.W.	S.W.	4	10	O.	C.	
F..20	29.82	84	95	72	62	68	65	W.	S.W.	2	9	C.	C.	
S..21	29.81	76	87	65	60	87	74	N.W.	S.E.	6	16	C.	O.	.73
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, July 21, 1894

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Whooping-cough.	Diphtheria and croup.
New York	1,956,000	1106	629	33.66	9.36	26.01	.81	4.05
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,139,457	582	307	31.11	7.48	24.65	1.36	3.23
Brooklyn	1,043,000	612	365	40.28	7.84	31.68	1.28	5.12
St. Louis	540,800	—	—	—	—	—	—	—
Boston	501,107	266	132	39.64	9.36	27.72	1.80	2.88
Baltimore	500,000	—	—	—	—	—	—	—
Washington	285,000	125	51	35.20	10.40	18.40	6.40	.80
Cincinnati	325,000	128	50	17.16	7.80	12.54	—	.78
Cleveland	325,000	204	83	43.12	3.92	34.79	1.96	3.43
Pittsburg	272,000	137	76	43.80	2.19	34.31	3.65	.73
Milwaukee	265,000	—	—	—	—	—	—	—
Nashville	87,754	38	14	21.04	18.41	13.15	—	—
Charleston	65,165	30	12	6.66	14.44	6.66	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	100,410	58	22	32.68	5.16	32.68	—	—
Fall River	92,233	63	48	50.24	6.28	47.10	1.57	—
Lowell	90,613	51	39	60.76	9.80	60.76	—	—
Cambridge	79,607	52	34	48.00	5.76	40.32	1.96	5.88
Lynn	65,123	12	7	58.51	—	50.00	—	—
Springfield	50,284	25	17	44.00	12.00	40.00	4.00	—
Lawrence	49,900	—	—	—	—	—	—	—
New Bedford	47,741	28	20	42.84	3.57	42.84	—	—
Holyoke	43,348	—	—	—	—	—	—	—
Brockton	33,939	13	4	—	15.38	—	—	—
Salem	33,155	15	10	46.66	6.66	46.66	—	—
Haverhill	32,925	5	3	20.00	20.00	20.00	—	—
Malden	30,209	9	2	33.33	11.11	22.22	—	11.11
Chelsea	29,806	22	15	31.85	4.55	18.20	—	—
Fitchburg	29,383	10	6	20.00	10.00	20.00	—	—
Newton	28,837	12	8	—	—	—	—	—
Gloucester	27,293	—	—	—	—	—	—	—
Taunton	26,955	10	7	70.00	10.00	60.00	—	10.00
Waltham	22,058	3	3	66.66	—	66.66	—	—
Quincy	19,642	—	—	—	—	—	—	—
Pittsfield	18,802	6	2	66.66	—	33.33	—	—
Everett	16,585	9	6	—	—	—	—	—
Northampton	16,331	9	6	55.55	—	55.55	—	—
Newburyport	14,073	3	2	33.33	—	33.33	—	—
Amesbury	10,920	2	1	—	—	—	—	—

Deaths reported 3,674: under five years of age 2,014; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fever) 1,334, diarrheal diseases 1,046, consumption 302, acute lung diseases 191, diphtheria and croup 121, whooping-cough 51, typhoid fever 40, scarlet fever 25, cerebro-spinal meningitis 20, measles 15, malarial fever 10, small-pox 3.

From typhoid fever Philadelphia and Washington 9 each, Pittsburg 7, New York and Brooklyn 4 each, Cincinnati 2, Boston, Nashville, Chelsea, North Adams and Newburyport 1 each. From scarlet fever New York 9, Boston 6, Cleveland 4, Brooklyn and Somerville 2 each, Fall River and North Adams 1 each. From cerebro-spinal meningitis New York 8, Washington and Cincinnati 3 each, Chelsea and Pittsfield 2 each, Boston and Somerville 1 each. From measles Brooklyn 7, New York 5, Cleveland 2, Philadelphia 1. From malarial fever Brooklyn 5, New York and Nashville 2 each, Philadelphia 1. From small-pox New York 2, Brooklyn 1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 21, 1894, TO JULY 27, 1894.

By direction of the Secretary of War, the order assigning **Major Curtis E. Price**, surgeon, to duty at Fort Custer, Montana, is revoked, and he is granted leave of absence for one month, to take effect upon being relieved from duty at Fort Porter, New York.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 28, 1894.

B. H. Kidder, medical inspector, ordered as member of Board of Medical Examiners, Navy Department.

C. G. Herndon, surgeon, detached from Board of Medical Examiners, Navy Department.

G. P. Bradley, surgeon, detached from Receiving-ship "Wabash" and to the Navy Yard, Mare Island, Cal.

E. P. Stone, passed assistant surgeon, detached from Marine Recruiting Rendezvous, Boston, and to the "Wabash."

F. B. Stephenson, surgeon, ordered to the Marine Recruiting Rendezvous, Boston, Mass.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOUR WEEKS ENDING JULY 21, 1894.

Carmichael, D. A., passed assistant surgeon. Granted leave of absence for thirty days. July 20, 1894.

Glennan, A. H., passed assistant surgeon. To inspect unserviceable property at Delaware Breakwater Quarantine. July 6, 1894.

Bratton, W. D., passed assistant surgeon. To report at Bureau for temporary duty. June 27, 1894.

Kinyoun, J. J., passed assistant surgeon. To proceed to Cape Charles Quarantine for special temporary duty. June 30, 1894. Designated to represent Department at International Congress of Hygiene and Demography. July 9, 1894. To inspect unserviceable property at Boston, Mass. July 17, 1894.

Geddings, H. D., passed assistant surgeon. To report at Bureau for temporary duty. July 20, 1894.

Wertenbaker, C. P., passed assistant surgeon. To proceed to Delaware Breakwater Quarantine for special temporary duty. June 30, 1894.

Young, G. B., passed assistant surgeon. To inspect quarantine stations. July 20, 1894.

PROMOTION.

Brown, B. W., assistant surgeon. Commissioned as passed assistant surgeon. July 19, 1894.

RECENT DEATHS.

Wesley Everett Brown, M.D., M.M.S.S., died in Gilbertville, Mass., July 30th, aged forty-two years. He graduated from the University of Vermont in 1878.

Dr. Adolph Hannover, a noted Danish physician and naturalist, and at one time professor of medicine at the University of Copenhagen, died July 7th, aged eighty years.

Commendatore Egisto Paolo Fabbri, died in Florence, Italy, on June 25th. Having acquired a fortune in the silk industry he devoted large sums to the advancement of medical knowledge and art. He gave to Florence the amphitheatre at the Institut di Studi Superiori, the laboratory for the surgical clinic and the equipment for the Laboratorio d'Igiene. He rebuilt many hospitals and asylums and organized the Guardia Medica Permanente for the relief of the sick poor and the sanitary improvement of Florence.

BOOKS AND PAMPHLETS RECEIVED.

Chaucer's "Doctour of Phisyk." Reprint from Bristol Medico-Chirurgical Journal.

Twelfth Annual Announcement of the Medical Department of Niagara University, 1894–95.

Bellevue Hospital Medical College of the City of New York, Circular of Information, 1894–95.

The Colorado School of Medicine, Medical Department of the University of Colorado, Boulder, 1894–95.

Einige Worte zur Tuberculose und Krebsbehandlungsfrage. Von Dr. Severin Robinski. Berlin. 1894.

Typhoid Fever, with Special Reference to Treatment by Antiseptics. By Adolph Kœnig, M.D., Pittsburgh. Reprint. 1894.

Address.

HYGIENE IN UNIVERSITY EDUCATION.[1]

BY JOHN S. BILLINGS, M.D., D.C.L. (OXON.),
Deputy Surgeon-General U. S. Army.

The division and specialization of labor, which are characteristic of modern civilization, are applied in educational affairs, as well as in the supply of clothing, food and habitations for the people. Your beds and houses, bread and shoes, are such as they are, and not such as men had when the first students gathered at Oxford — and it is within your power to obtain, as necessities of your daily life, conditions which the Tudor kings could not command as luxuries — because a few men have discovered methods of controlling and using the forces of wind, heat, gravitation and electricity; because a larger number of men have applied their capital and brains to bringing these methods into use in collecting material, and in manufacturing and distributing the products; and because a multitude of other men have given bodily labor, for daily wages, to carry out the plans of their employers, each laborer doing but a very limited kind of work. In like manner the fact that you are about to receive practical, useful information as to the laws of life and death, the causes of certain unnecessary disease and suffering, and the means whereby these may be averted or prevented, depends on the fact that about half-a-dozen men have spent years in making observations and experiments, and in devising methods for the determination of the nature of these causes, that a hundred other men have made it their life work to apply these methods of investigation to the details of particular diseases, and that a much larger number of men have studied the results thus obtained and are engaged in their practical application and in teaching others how to use them. All of these agencies are necessary to obtain the end desired, but they are not all equally important, because some of them are more easily obtained than others, yet we need them all. We must have means to provide for increase of knowledge in hygiene, as well as to provide for the diffusion of such knowledge by means of university extension lectures and other agencies, because, as I shall try to show you, there are many things of great importance in practical hygiene which are as yet unknown.

When I had accepted the honor conferred upon me by the request to give this lecture, it became a serious question as to what I should talk about. I could only guess at the character and needs of an audience of university extension students, and as to what your lecturer on hygiene would include in his course; but on thinking over the matter, it occurred to me that some of the relations of hygiene to university education might serve as a nominal thread upon which to string a few suggestions which may be of interest to you just at the present time. University education in hygiene is another matter, including but a part of the field covered by my broader title, and if we were to limit it to the present condition of things — that is, to answering the question, "What does a university education in hygiene include?" — the answer would be a brief one. The older universities are conservative institutions, slow to change the scope and character of their work; and it is desirable that it should be so, for upon this depends a considerable part of the influence which they exercise. Scientific hygiene is a comparatively new branch of study, which, thus far, has been chiefly taken up as a part of the course in medical and technological schools; but there are now several universities which have professors and laboratories of hygiene, whose work is not confined to the pupils in their medical departments only, and it is safe to predict that this plan will soon be adopted by all the real universities.

What should a university education in hygiene include? Wherein should it differ from the course in hygiene in a technological or medical school intended to train sanitary engineers or medical officers of health? What should be its special objects? I will not try to formulate what I suppose your answers to these questions would be now, nor yet what the answers should be if you found the questions on an examination paper, but will try to suggest one or two points which, perhaps, may not have occurred to you.

The phrase "university education" implies breadth as well as depth of culture; and a man who has received such an education in any field of science should have some definite ideas as to what questions are still *sub judice* in that field — as to what additional data are still wanted, as to what original investigators and observers are working at; in short, he should know the boundaries of our present scientific knowledge on that subject, as well as the part which has been thoroughly explored.

He cannot get this information from manuals or handbooks, nor can a short course of lectures include much of it; it is to be obtained for the most part only by actual work in investigating, which is the best of all methods to demonstrate to a man what and how much there is that he does not know. A university education in hygiene should not only include information as to the nature and relative importance of the principal known causes of disease and death, immediate and remote, but also as to the cost of the means of partially or entirely doing away with these causes, as compared with the value of the results which may be thus obtained. It is not always worth while to be careful to avoid a danger; one may pay too much for a life insurance; there are times when one should go to battle, or meet a pestilence, or live in an unhealthy locality, when it is merely one's own life that is at stake; and there are also occasions when one should take the responsibility of leaving, or putting, in danger the lives of a few to preserve the welfare of the many. The importance and value of long life is always taken for granted in discourses upon hygiene; but if it were in your power to prolong the life of every one in England to one hundred years, would you do it? If you were offered as a gift that you should not die until you were a hundred years old, would you accept it without conditions? Why do we expend time and money to secure at public expense the preservation of the health and prolongation of the lives of congenital idiots, of the hopelessly insane, of hereditary and confirmed criminals?

If there is truth in the doctrine of the survival of the fittest, why do we interfere in the struggle for existence, and try to shift the inevitable penalties for the violation of Nature's laws upon those who have not violated them? Was Carlyle right when he said, "Let wastefulness, idleness and improvidence take the fate which God has appointed them, that, their opposites may have a chance for *their* fate. He that will not work according to his faculty, let him perish according to his necessity?" When you come to consider these and similar questions, you will see that the problems of hygiene are not merely mechanical, chemical, bacteriological, and medical; they embrace, also, sociological, political, and ethical considerations, and the world needs some "all-round men" to study them. Such men the great universities should endeavor to equip for this work.

---

[1] Address given to the University Extension Classes, Oxford, England, August 7, 1894.

The part which epidemic diseases have played in shaping the destinies of cities and of nations has rarely been investigated by historians. Even the two greatest epidemics of which we have any record, the Justinian plague and the Black Death, have received little more than a brief mention in the leading English histories; and yet each of these not only changed the map of Europe, but also exercised a profound influence upon the social customs and the religion of the people, an influence which has affected the new world as well as the old. In this connection some interesting data are given in a recent work, "The Great Pestilence (A. D. 1348–9)" by Francis Aiden Gasquet, 8vo, London, 1893, wherein the effects of the Black Death upon the Church in England are specially dwelt upon, and its results in the formation of trade guilds are briefly indicated.

The influence of epidemics on the progress of nations and communities is by no means merely a matter of ancient history.

Yellow fever has, to a considerable extent, shaped the present commercial, social, and political condition of the West Indies and Central America, of New Orleans and Rio de Janeiro. Cholera was the immediate cause of modern hygiene: its ravages have been closely connected with certain religious observances, and its prevention is still a problem which must be solved by British statesmen; while the future of the continent of Africa depends quite as much upon progress in hygiene as upon political considerations. The International Conference at Paris, only four months ago, shows that questions of hygiene play an important part in matters of international comity, and the International Congress of Hygiene and Demography which last met in London, and is to meet again next September in Buda Pesth, is exercising an increasing influence upon public health legislation in all countries, an influence none the less powerful because it is persuasive and not compulsory.

Your teachers in hygiene can tell you what is known with regard to the causes of disease and methods of prevention, and that is much; for if we could induce every one to act in accordance with the teachings of the hygiene of to-day, there would be a great diminution of disease and a lengthening of life among men. But I am more concerned in this lecture to call your attention to the many things that are yet unknown, and yet which probably might be known with a little work, in matters affecting practical hygiene.

Let us take a few concrete examples. What is the cause of measles? How is it communicated? What is the probability that the disease can be communicated by a person after the eruption has fully developed and the diagnosis is certain? We do not know. We know that the disease is most contagious during the three or four days preceding, and during the first day of the eruption, and that attempts to prevent the spread of the disease in a family by isolating the patient as soon as the eruption appears, rarely succeed, while the contrary is the case in scarlet fever and in small-pox. We suppose that the medium of contagion is the secretion from the upper air-passages, which is scattered in spray by the coughing and sneezing of the patient.

Does the susceptibility to measles diminish with advancing years, as does that of scarlet fever? We do not know; but the experience of the Faroe Islanders, and of the American recruits brought together at the beginning of our last war, indicates that while it is most fatal in children under five years of age, it may be quite as contagious and nearly as fatal among adults as among children. Now all these are questions to be considered in deciding as to whether notification and isolation of cases of measles are to be enforced in any particular locality. We have fairly good statistical evidence that the evil effects of scarlet fever, diphtheria and small-pox have been diminished by compulsory notification and isolation; but I know of no such evidence with regard to measles.

Measles appears to have caused at least twice as great a mortality in the large cities of England and Continental Europe during the last five years as it has in the United States; but why this is so I cannot tell. The death-rate from measles is small as compared with that from accidents, or from many other forms of disease; but its evil effects are not to be measured by its death-rate alone.

Dr. Hugh R. Jones,[3] in an interesting paper on the perils of infant life, presented to the Royal Statistical Society in December last, says: "The danger of measles has been very greatly underrated. There is no doubt but that the tuberculous diseases of childhood, whether local, as lupus and enlarged glands, or whether general and fatal, as pulmonary phthisis, are often rightly traced and attributed to an attack of measles." There is no definite evidence upon this point, which is an important one. In the United States a considerable proportion of cases of feeble-mindedness, deaf-mutism, and blindness, are attributed to measles, sometimes erroneously no doubt; but we must certainly consider this disease as of sufficient importance to warrant special precautions to prevent its evil cousequences. I doubt, however, whether it is worth while to expend much public money, or to interfere with home life, in order to prevent it among children over five years of age; and the true solution of the problem will probably be the production of a mild form of the disease in children, and thus making them immune for the rest of their lives. This is practically what has been done for centuries in China with regard to this disease; and, when I was a boy, I have known people to deliberately expose their children to the infection of a mild case of measles in warm weather, in order "to get the disease through the family without risk," as they said.

Something of the same sort used to be done by northern men settling in New Orleans, in purposely exposing themselves to yellow fever when it existed in a mild type, in order that they might become "acclimated," as the phrase went.

Let us next take typhoid fever. Typical cases of this disease are caused by a specific bacillus which gains entrance to the body through food or drink contaminated with the excreta of persons affected with the disease. Epidemics are due to contaminated water or milk. The stools of a typhoid case can be cheaply and easily disinfected so as to destroy the specific bacillus, and I presume that many persons think that we know all that need be known to stamp out typhoid fever or, as the English registrars call it, enteric fever. In the United States, however, we have many cases of mild continued fever, lasting from twenty to thirty days, which we presume to be typhoid fever, but which are certainly not typical, and which shade into continued malarial forms of fever in a very puzzling way. There are also several known varieties of the typhoid bacillus; and it is not quite certain that one or more of these varieties do not exist at times in the intestinal tract without producing a specific fever in the person bearing them.

---

[3] Journal of the Royal Statistical Society, lvii, 1894, p. 15.

Can the specific, active typhoid bacillus be developed from some of these, under certain circumstances, in privy vaults, cesspools, or sewage? Is the typhoid bacillus carried in currents of sewer air? Are not all the cases in which it has been supposed to have been thus carried to infect men, more easily explained in other ways, as, for example, by the supposition that it has been conveyed to articles of food or drink through the agency of flies and other insects? What degree and duration of immunity from subsequent attacks does an attack of typhoid fever confer on a man? Is there any difference between the immunity conferred by a mild, and that conferred by a severe, attack? Are there attenuated varieties of the typhoid organism? Can these be developed into more dangerous forms under certain conditions? Can they be used to produce immunity?

All of these are as yet unsolved, yet probably solvable problems: and there are similar ones connected with each of the known and unknown pathogenic micro-organisms upon which bacteriologists in various parts of the world are working. Tuberculosis causes, in England and the United States, much more suffering and loss of life than any other single form of disease; more than cholera, yellow fever, small-pox, scarlet fever, typhoid fever, measles and diphtheria put together. Its immediate or efficient cause, the bacillus, has been carefully studied; and some of the modes of its transmission, through dried sputa, milk, etc., are fairly understood. To what extent heredity is a factor in its transmission, we do not know. Quite recently, in many places in the United States, it has been proposed to limit its ravages by means of compulsory notification, isolation of the sick, disinfection of their surroundings, and official supervision of milk and meat supplies; and, in a few places, some of these methods are being tried. The results of these experiments will be watched with great interest; they are good examples of the steadily increasing tendency to interfere with the liberty of the individual for the supposed benefit of the community.

The death-rate from consumption has been diminishing for the last twenty years in the eastern portion of the United States, and in most countries from which we have reliable statistics. Part of this decrease in the death-rate is probably due to improvements in food supply and in general sanitation, involving greater cleanliness and more exposure to sunlight, which last is one of the most powerful agencies in destroying the infection of tuberculous sputa scattered in the streets; a part of it, during the last ten years, is due to the education of the people as to the necessity of promptly disinfecting the sputa of tuberculous patients; and a part is probably due to a gradual increase in the proportion of persons who are immune against small doses of the tubercle bacillus, which increase is brought about by the law of natural selection. I shall refer presently to this immunity as connected with race, in relation to consumption, and also to pneumonia, another very fatal disease due to micro-organisms.

Now let us take an entirely different field of hygiene, namely, the effects produced on the health and life of men by inhaling air which has recently been expired by themselves or other men, and which also contains the exhalations from their skins.

It is generally accepted as a truism that air thus vitiated is dangerous to health, and that ventilation of living-rooms, bedrooms, barracks, school-rooms, etc., is an important sanitary measure. Forty or fifty years ago the danger was supposed to be due to carbonic acid, and the popular ideas on the subject are contained in the school-boy's composition on "Breath." He said:

"Breath is made of air. We breathe always with our lungs, and sometimes with our livers, except at night, when our breath keeps life going through our noses while we are asleep.

"If it wasn't for our breath, we should die whenever we slept. Boys that stay in a room all day should not breathe; they should wait till they get out-doors. For a lot of boys staying in a room make carbonicide; and carbonicide is more poisonous than mad dogs, though not just the same way."

For the last thirty years the danger has generally been attributed to exhaled organic matter of unknown composition, but with poisonous properties, while within the last two years several experimenters have announced that the organic matter is not dangerous, and several researches are now going on to settle this important question.

Now, what are the effects upon men of exposing them for eight or ten hours a day to air rendered impure by their own exhalations, and to what particular change in the air are these effects due?

From the days of the English Barrack Commission down to about ten years ago the answer was, that such air produced consumption and other pulmonary diseases. Now that we know that consumption and croupous pneumonia are produced by specific bacteria, the question is whether, if these bacteria are destroyed and kept out of inhabited rooms, which can be done to a very great extent, the foul air of an ordinary room will produce disease, and if so, what sort of disease. We do not know — and, therefore, we cannot produce scientific demonstrative evidence to convince architects and engineers that each man ought to have a certain stated supply of fresh air per minute or per hour, and that it is worth the cost of special apparatus to ensure this. Much the same may be said about the supposed injurious effects of sewer air, since we have no accurate knowledge or satisfactory evidence with regard to these effects.

There are two or three times as much sickness, and two or three times as many deaths, in crowded tenement-houses as in single dwellings of the better class, and these tenement-houses are unventilated or badly ventilated; but how much has the bad ventilation, and how much the general want of cleanliness, insufficient and improper food, alcoholism, and vice of various kinds found among the tenement-house population, to do with this matter? And what are we to say about the low death-rate in tenement-houses occupied by Jews, except that race seems to exercise a powerful influence in producing this result?

In the course of lectures on hygiene which you are to have, you will no doubt hear much about the pathogenic bacteria, as causes of tuberculosis, typhoid fever, diphtheria, pneumonia, wound infections, cholera, etc., since an understanding of their nature, habits, and modes and conditions of growth is essential to the proper dealing with contagious and infectious diseases of all kinds, even those for which no specific micro-organisms have yet been discovered. But there are other things besides micro-organisms to be considered in matters of personal, national, or international health, because even for those diseases of which they are the immediate cause, there are remote causes of great importance, such as heredity, poverty, ignorance, climatic conditions, overcrowding, alcoholism, occupation, and other things which destroy many without the aid of specific bacteria, and do much to make possible the destructive work of such organisms.

My friend, Sir Henry Acland, suggested to me that I should take "Comparative National Health" as the subject for this lecture, and any suggestion from him is to me almost equivalent to a command; but it is beyond my power to indicate even the boundaries of so broad a field as this within the limits of a single lecture, and I can, therefore, only touch upon one point connected with it, namely, the relation of race to health.

During the twenty years ending in 1890, the annual death-rate in Austria was 30.6; in Italy 28.6; in Prussia 25.6; in France 22.8; in Belgium 21.4; in England and Wales 20.3; in Ireland 18; in the United States 18; and in Sweden 17.6, per 1,000 of living population.

Such figures, however, prove very little, for in comparing the vital statistics of different countries and nations, either as to general death-rates or death-rates due to particular diseases, it is impossible to say what proportion of the difference observed is due to differences in climate and food, and what to race peculiarities. This difficulty can be in part avoided by examining the vital statistics of different races living under the same conditions as to climate, etc.; and the data coming from certain portions of the United States, which is now the great mixing-ground of races, are especially valuable in this respect.

In 1890 the city of New York contained about 335,000 white persons whose mothers were born in America, and 25,000 colored; 400,000 whose mothers were born in Germany; 400,000 whose mothers were born in Ireland; 120,000 Russian and Polish Jews; 55,000 Englishmen; and 54,000 Italians. You will see that it had a larger Irish population than any city in Ireland, and that but three cities in Germany exceed it in the number of German population.

Taking the deaths among persons fifteen years old and upwards for the six years ending May 31, 1890, we find that the annual death-rates per 1,000 of population in these different races are as follows: Irish, 28; colored, 23.6: English, 20.8; Germans, 17.0; Americans 16.0; Italians, 12.3: Russian and Polish Jews, 6.2.

The low death-rate of the Jews has been noted in Germany and France also. In New York City they occupy some of the most crowded tenement-house districts. A considerable number of those reported as Germans were Jews with a low death-rate; and if these could be separated, the death-rate of the Germans would probably be over 19 per 1,000.

These are general death-rates only. Let us see what the figures are for certain causes of death. The annual death-rates for consumption were, for each 100,000 persons: colored, 774; Irish, 646; Germans, 329; Americans, 205; Russian and Polish Jews, 98. For pneumonia, the death-rates per 100,000 persons of all ages were: Italians, 456; colored, 390; Irish, 344; American whites, 273; English, 269; Germans, 214; Russian and Polish Jews, 170.

I will not weary you with further details of figures, which those of you who are specially interested in the subject will find in the Reports of the Vital Statistics of the Eleventh United States Census, but will merely say that the corresponding data from Boston, Philadelphia, Baltimore, Washington, and from the New England States as a whole, taken with those from New York State and New York City, and with those derived from a special investigation of over 10,000 Jewish families, including over 50,000 persons, lead to the following conclusions as being probable for the United States:

(1) The colored race is shorter-lived than the white; and has a very high infantile death-rate: it is specially liable to tuberculosis and pneumonia, but is less liable than the white race to malaria, yellow fever and cancer. (2) The Irish race has a rather low death-rate among its young children, but a very high one among adults, due to a considerable extent to the effects of tuberculosis, pneumonia and alcoholism. (3) The Germans appear to be particularly liable to disorders of the digestive organs and to cancer. (4) The Jews have a low death-rate and a more than average longevity; they are less affected than other races by consumption, pneumonia and alcoholism, but are especially liable to diabetes, locomotor ataxia and certain other diseases of the nervous system.

The effects of heredity upon liability to diseases and death appear to be due in part to difference in structure and composition of the tissues and fluids of the body, but to a much greater extent to differences in place and mode of life connected with relative poverty and ignorance.

The bacillus of tubercle and the micrococcus of pneumonia are affected as to their growth and development by hereditary peculiarities of structure of men; in other words, just as many individuals are more or less immune against these organisms under ordinary circumstances, so, also, are certain families and races; and the same is true as regards a large number of the contagious diseases, as well as some which are not contagious so far as we now know, such as cancer, diabetes, hystero-epilepsy, and scleroses of the brain and spinal cord.

Can this relative immunity be developed or increased in an individual or a family by artificial means, or by regulations of the habits and modes of life? And, if this can be done, what effect will the production of immunity against one micro-organism or disease have upon the effects of another micro-organism or cause of disease?

If we can produce a branch of the Irish race which will be as immune against the bacillus of tuberculosis as are the Jews, will that race be specially liable to diabetes or cancer?

As all men must die, the effect of stamping out one particular form of disease must be to increase the number of deaths from other causes, and in this sense it is true that vaccination has increased the number of deaths from accidents, from suicide and from consumption, because it has preserved children from small-pox to die at a later period from these other causes; but we have not a particle of evidence that the immunity against small-pox produced by vaccination is the cause of, or is accompanied by, a less immunity against some other disease.

It should be remembered that for all diseases of which one attack produces immunity, the tendency is, in the course of many generations, to make the whole population subjected to such an influence immune.

Perhaps some of you may think that such questions as I have suggested are purely theoretical, unanswerable, and, therefore, of no practical interest; but it is not so. Some of them, if not all, can be answered, and they ought to be answered. To do this, new lines of investigation must be opened — partly experimental, in well-appointed laboratories; partly by collective investigations by medical men and in hospitals; partly by new methods of statistical research based on disease, as well as on death-registration and the census.

And the universities should train some men to understand the importance of this work — the men who are to become legislators and heads of departments, and some other men who can do the work if means and opportunities are afforded them.

Observe that I say "should train some men," not "should train all their students." Of every hundred students at a university, not more than half-a-dozen can be developed into original investigators and thinkers, and probably not more than one in a thousand can ever be induced to devote himself seriously to such problems as I have indicated, because, as a rule, the only reward that can be expected is the satisfaction derived from the work itself. Such work requires much time, great skill and patience, and the opportunities which only a well-equipped laboratory or an official position can furnish.

The universities cannot produce the men qualified to do such work — "God alone can make an artist or a man of science"; but they can take care of such men when they appear, and can give them opportunity and encouragement.

If we accept the ordinary definition of hygiene as being the art of preserving and improving health, it is not so much this technological matter that a university education should include as the scientific foundations upon which the art rests. It does not appear desirable that every university man should know the proper gradient of a sewer, the best form of traps and house-drainage fixtures, the peculiarities of patent ventilators, or the proper construction of a hospital for contagious diseases, any more than he should know how to treat a case of pneumonia, or how to draw up a conveyance of a piece of real estate; but he should know where to go for accurate and reliable information and advice on these subjects.

It is now generally admitted that biology is a branch of science for which universities should provide the means of increase and of diffusion of knowledge; but it has not yet been generally understood that morphology and physiology, as ordinarily provided for in university work, do not cover the most important part of biology, that part to which they are merely necessary preliminaries, that part which is the main reason for their existence, and without which they rest on narrow scientific foundations, namely, pathology. We cannot be said to understand the structure and functions of an organ until we know what these are in its abnormal as well as in its normal condition. It is to experimental pathology in its broadest sense, including not only the study of lesions specially produced for the purpose, but also the study of the lesions produced in man and animals by disease, each case being one of nature's experiments, that we must look for the most valuable explanations of peculiarities of structure and function, for explanations of the mode of action of physical, chemical and vital agencies in the production of disease, for means to counteract the abnormal conditions and actions of organs and tissues; in short, for the scientific foundations of hygiene.

It appears to me that at the present time the majority of the English and American universities are in urgent need of a department of pathology properly equipped for original research and for teaching, not as a mere technological matter, or as merely a branch of the medical department, but as a department of general biology; and the organization of such a department should precede or accompany the organization of a department for the promotion of scientific hygiene.

A paper on "Hygiene in University Education" should certainly include something about the preservation of the health of teachers and pupils, the means by which they are to be kept most fit for their work, with due consideration of the influence of athletics, of cramming (whether mental or physical), of competition under pressure of examinations, etc., upon the complicated and curious mechanism of the human body; but I must leave this to others, and I do so with the less reluctance because I think that advice on these points is of little use in comparison with personal experience.

While I lay stress on the promotion of original research in problems of hygiene as one of the most important functions of a great university of the present day, it is by no means its only one. It is also to train teachers, men who can explain to others what is really known on these subjects, and the consequences thereof, in a fashion which will command attention, interest, and belief. It is knowledge of the truth about these things which frees a man from much unnecessary pain, causeless fears, and useless labor, and from being swindled in a thousand ways; and I presume that this university extension course in hygiene is intended to furnish knowledge, and also to create a thirst for more.

To one who has had little practical experience in sanitary matters, the importance of educating the people on this subject is not sufficiently apparent, although he may admit it as a matter of theory. He is too apt to suppose that the people at large can be made healthy by regulations enforced by officials employed for the purpose. He wants laws to suppress tuberculosis, puerperal fever, cerebro-spinal meningitis, etc., by means of enforced notification, isolation and disinfection. He would have a certain hourly supply of fresh air furnished by law to every sleeping-room; would compel every one to take a bath every day, or at least once a week; would have all food officially inspected, and prohibit the use of alcoholic drinks and tobacco to men under fifty years of age; would not allow the sale of corsets, or of shoes which do not conform to the natural shape of the foot; would regulate the hours of study and of exercise for school-children, and have inspectors examine their toys and picture books for dangerous colors; in short, it is difficult to foretell what he would not do by legal process, if he could, to prevent what he thinks is injurious to life and health, and as a general rule he will find plenty of people who will passively assent to such propositions.

Perhaps, on the same ground, may be advocated the refusal of permission to marry unless both parties to the contract have been approved by skilled inspectors, or the official assignment of persons to particular occupations best suited to their health. It is possible that (by these and other regulations which will no doubt occur to you) a healthy community might be produced in time, provided that great care was taken to prevent any one from getting away.

And no doubt the civilized part of the world is at present tending to increasing interference with the liberty of the individual for the real or supposed benefit of the community; but attempts to hasten this progress in advance of the education of the community, or without due consideration of the manifold social, commercial and professional, as well as the sanitary, interests involved are not likely to produce good results; on the contrary, it is probable that their remote effects may be the injury of the very cause which their enthusiastic advocates are trying to promote. You cannot legislate a new layer of cortical gray matter into, or a cirrhosed liver out of, a man.

It has been said that the car of progress has square wheels; at all events, it bumps horribly sometimes, and the results of going too fast may be very unpleasant, even if they are necessary.

Thirty years ago Dr. Parkes remarked that "in the scheme of Providence it may not be meant that men shall be healthy," and asked whether the belief that in the future there may be an art of hygiene which will keep the body, mind and soul in perfect order is merely "one of those dreams which breathe a blind hope into us, a hope born of our longings and destined to die of our experience."

> "After all the stormy changes, shall we find a
> changeless May?
> All diseases quenched by Science; no man
> halt, or deaf, or blind;
> Stronger ever born of weaker; lustier body;
> larger mind?"

The scientific foundations of practical hygiene have been immensely broadened and strengthened within these thirty years; and within the same period, in most civilized countries, the death-rates have been lowered, the average duration of life increased, and life, while yet it endures, has been freed from some of its pains and terrors. But the community of perfectly healthy men and women does not yet exist, nor is it possible that such a community, if found, could continue to exist indefinitely if the present rate of increase of population of the earth shall continue.

Sewage is inseparable from humanity; and each one of us carries about within himself millions of bacteria, which usually help him to digest his food, but which at times wander into his tissues and produce mixed infections which tax the utmost skill of the physician and surgeon to treat.

In studying medical and vital statistics to determine the influence of sanitary work in obtaining purer water-supplies, better drainage, greater isolation and restriction of contagious diseases, etc., we are "somewhat in the position of a man on the deck of a large Atlantic steamer out of sight of land, and gazing on the troubled ocean. He sees many waves, large and small, apparently moving in very different directions; and it is not until he has by careful examination and repeated comparison learned to distinguish the ripples due to the wind now blowing, the larger cross-seas resulting from forces which were acting a few hours before, and the long, rolling swells which indicate to some extent the direction and force of the tempest of yesterday, that he can begin to understand the roll of the ship on which he stands: while to appreciate the force and direction of the great current which is sweeping with it all the troubled water and the ship itself, requires skilled observation with special instruments, and the use of charts which embody the experience of hundreds of voyages. So, also, in viewing the records of human life, disease and death, the variations which are at first most perceptible are often those which are most superficial, and which give little or no indication of the magnitude and direction of the movement of the great masses beneath."[3]

During recent years the birth-rate has been diminishing in proportion to population in most civilized countries, as will be seen by the following table.

BIRTH-RATES PER 1,000 POPULATION.

Country.	1880.	1890.
United States	36.0	30.7
England and Wales	34.2	30.2
Scotland	33.6	30.3
Ireland	24.7	22.3
France	24.5	21.8
Belgium	31.1	28.7
German Empire	37.6	35.7
Austria	38.0	36.7
Switzerland	29.6	26.6
Denmark	31.8	30.6
Norway	30.7	30.0
Netherlands	35.5	32.9

This diminution of the birth-rate began in most countries in 1876, and is a matter of considerable importance in the sanitary as well as in the sociological problems of the future, for it must be given due consideration in making plans for regulating by law the health, the labor, and the lives of men.

What are the relations between diminishing death-rates, diminishing birth rates, and diminishing marriage-rates? How much of the lowering of the death-rate in recent years is due to public sanitation? how much to improvements in medicine and surgery? how much to increasing immunity of the great mass of the people to certain forms of disease? how much to better and cheaper food-supplies? Is it more probable that twenty years hence the death-rates will be lower, or that they will be higher than they now are?

It seems to me that a great university which is worthy of its name should provide for the training and equipment of a few men to consider these and similar questions, and for the training of many men who are to be the future legislators for, and advisers of, the people, in such fashion that they can appreciate, and make practical applications of, the conclusions to which the special students shall arrive.

Just at present the practical problems of public hygiene relate mainly to masses of men, to cities, bound together by the iron lines of the railway and the telegraph; but as the coal supply diminishes, the cities will begin to diminish also, unless our engineers will give us some new means of storing the forces of the sun's rays, of the winds, or of the tides, and when that happens, sanitary questions will become of the first importance for all countries. "As of the leaves on a thick tree, some fall and some grow; so is the generation of flesh and blood, one cometh to an end and another is born."

---

[3] Cartwright Lectures on Medical and Vital Statistics, New York 1889.

Whatever happens, we must all continue to live in the shadow of the hawk's wing, as our forefathers have done, since each has but a certain span of life, which he cannot lengthen, although he may easily shorten it. He can, however, learn not to be afraid of this shadow — learn to look up and not down, to look out and not in; and one of the best means of doing this is to devote time and thought and labor to the helping of others to help themselves, which is the essence of public hygiene, as it is of true charity and of all real human progress.

This is a part of that wisdom of which we are all seekers, and of which such knowledge as can be gained in university halls is but a means and not an end, — that wisdom which, speaking through the poet, has said:

"I wear no garment, drop no shade
  Before the eyes that all things see;
My worshippers, howe'er arrayed,
  Come in their nakedness to me.
The forms of life like gilded towers
  May soar, in air and sunshine drest,
The home of Passions and of Powers,
  Yet mine the crypts whereon they rest.

"Embracing all, sustaining all,
  Consoling with unuttered lore,
Who finds me in my voiceless hall
  Shall need the oracle no more.
I am the knowledge that ensures
  Peace, after thought's bewildering range,
I am the patience that endures;
  I am the truth that cannot change."

Original Articles.

SURGICAL DEMANDS IN COUNTRY PRACTICE.[1]

BY W. P. GIDDINGS, M.D., GARDINER, ME.

To succeed in any business in life two things are essential, namely, natural aptitude and acquired fitness. The varying features of these pre-requisites are naturally suggested at mere mention. Innate qualities cannot in any way be acquired, nor can acquirement, however great, be made fully compensatory for the deficiency of native taste and talent. Surgeons, in a broad sense, like poets, are born not made. This implies mechanical genius, a quick eye, steady hand, sound judgment and calm deliberation. Possessing these, natural inclination, perseverance, industry and fidelity will place one in the front rank and open up the avenues to all emoluments of name and fame. There is no place for the timid, hesitating man in the field of surgery, where emergencies call for ready courage and quick decision.

The accidents of life are too numerous, the necessity for immediate action too great, the demand for nerve too imperative and the appeal for relief too urgent, in many cases, to permit delay, and call for knowledge, skill and pluck to carry to a successful issue cases occurring in the experience of every medical man in country as well as in city practice. The field of surgery has so broadened within the last decade as to make it incumbent upon every practitioner who settles in rural districts to add to his knowledge of general medicine that of surgery sufficient to make him capable of meeting for the time any emergencies liable to arise at any hour. While the graver accidents are much more numerous in large railroad centres and manufacturing towns, they do occur in remote places and thus no man is left exempt from call, responsibility and obligation to make himself proficient to the extent of acting quickly and intelligently until counsel and assistance can be obtained.

It is in such emergencies that the advantage of having cultivated one's native talent appears in dexterity of action. Common sense may suggest plans to pursue, but trained judgment, the offspring of study, lays the line and maps the true, safe and successful course. "No man," says Wise, "ever soared to eminence on the lazy wings of genius," which truth is repeated in another form that, "we rise from our dead selves to nobler things" only by seizing upon all opportunities and possessing ourselves of the knowledge and experience of the surgeons of the past and present. While the facility for acquirement of abstruse facts varies greatly in different individuals, and the simple to some is the complex to others, diligent, persistent effort carries the plodder to the goal of respectable attainment and fills the demands of country surgeons. By this statement I do not mean to be understood that the country doctor or surgeon is by nature inferior in ability or courage to his city *confrère*, but the stimulus to dig and delve in those branches for knowledge so essential to surgical success is less, and the natural tendency is to lapse into indifference towards subjects so seldom required. All understand that knowledge begets courage, and courage confidence; that the combination makes heroes and conservators, men who are ready in emergencies and conservative to wait when waiting is full of hope.

In injuries of the hands and feet, especially in crushing or mangling accidents, delay for a sufficient time to determine the vitality of tissue is often the salvation of the entire member. Though the bruised and lacerated parts may appear injured beyond nature's ability to repair when first seen, cautious waiting is repaid in seeing the system assert its force in returning circulation into parts apparently dead, and marks the boundary line for operation, or shows function for full repair by granulation. I have myself saved three feet entire by advising delay when I had been sent for expressly to amputate. I have through my practice adhered strictly to the advice given upon this subject in Holmes's "System of Surgery" and in no instance have I regretted it. Fortunately the opportunities to learn and practise the best and most approved methods are as free to the country practitioner as to those in large centres, and are determined largely by desire and will; defect is in carelessness of habit and thought. There is no patent on methods of mental amplitude nor is its exercise confined to a favored few in metropolitan practice. It is the prerogative of every man to use his highest powers to his personal advantage so they be directed in legitimate channels and to work out for himself the greatest results attainable. Conception of duty and the best methods to fulfil it, is the natural offspring of broad culture, and by this high standard the communities in which we severally practice our profession measure us. The importance of every man is in proportion to the impression he makes upon the people through personal association or influence reflected by others. Study and thought crystallize into habit that makes action easy and natural, and this self-possession inspires the confidence of our patients, thus giving to us the most potent therapeutic agent known to man. True personal influence depends in a measure upon our manners independent of attainments, but these alone cannot hold patients to us long unless they are backed and fortified by other qualities of which the public soon learn by observation. Deception usually dies an infant; but if it survives a little longer, its age is limited, and at best it is never more than a dwarf; in fact, in many lines of surgical requirement deception has no birth.

---

[1] A paper read before the Maine Medical Association, June 14, 1894.

Accidental hemorrhages from large and important vessels threatening speedy death do not permit delay of interference, or allow a fraction of time to learn anatomy or study the surgical methods for its arrest. Here knowledge, forethought and action count double; first, the saving of the patient, and, second, the saving or making of a reputation. Awkward hesitancy before anxious bystanders is quickly interpreted as ignorance and incompetency, nor are they slow in bringing their verdict or imposing sentence without mercy. The people expect, as is their right, that the man who settles among them, advertises himself as "Physician and Surgeon," and thus asks of them their confidence and support, possesses a reasonable degree of knowledge and skill, that he *should* be qualified to meet the usual, or if necessary the formidable accidents of life intelligently and effectively for the time being at least. The only way to disarm criticism is proving competency in doing, and the best way to avoid suits for malpractice is proficiency in diagnosis and correct treatment of the ordinary accidents, such as fractures, dislocations, hemorrhages, etc. It is of the first importance to learn anatomy in a practical way so as to keep in mind the relationship of the various parts of the organism.

One, and the *main* reason, I apprehend, why practitioners grow rusty in their anatomy, physiology and pathology is, they read without study; that is, their reading is cursory, and is not mentally reviewed sufficiently to incorporate the minute with the general. Speaking from personal experience, it is much easier to forget than to retain; and the only way to hold permanently useful and needed knowledge is by first carefully reading, thoroughly reviewing and mentally digesting afterward. One may argue that it is not essential to remember the histological element of organs; that of the bones, the lamellæ, Haversian canals, lacunæ and bone corpuscles are of no practical value in the ordinary injuries and diseases to which they are so subject. Yet none will deny it is necessary to good surgery to remember all about the diaphyses and epiphyses, the medullary structure and bone composition.

The practical utility of specific knowledge is often as apparent to the layman as to the professional, and counts immensely in favor of its possessor. I have always thought it good policy to be on more familiar terms with one's business than with one's patients. Between the needs of our patrons and their demand of us to serve them well and faithfully there is little time for other matters, except the well-earned and needed respite which every physician should take once, or better, twice each year. While the people who employ us have a rightful demand upon our time and service, they in turn are under obligation to us to consider our needs and Nature's demands for rest and recreation that we may recuperate in mind and body and come to serve each with alertness of faculty well trained, and unwearied because of timely broken toil. With these balanced conditions our duties are plain, and follow each other in regular and natural sequence. First, primary preparation in a well-founded knowledge of the natural and healthy system, anatomy being the basis of the whole, with physiology making clear to us the combined and separate functions of the various organs of the body in a normal state. All other allied branches of medical and surgical science rest upon these, and form the only means of comparison between the natural and unnatural. Intelligent appreciation of diseases and injuries are possible only as these are understood, and the mastery of them gives easy acquirement of collateral branches. Habits of study set in motion faculties of human reason, which give facility of acquiring and doing.

The numerous and manifold duties of the country doctor are calculated to develop the whole man, making him independent, self-reliant and capable. Removed from large centres, and beyond the reach of immediate call upon brother practitioners, he is thrown upon his own resources and forced to think and act for himself. The work performed is the measure of original and acquired ability. In these times, when progress is the order of the day, the question naturally arises "by what means can I keep pace with advanced thought and practice?" In the multiplicity of new books, one is often at a loss to know what to purchase and read. My own conviction is, that having a few well-recognized standard authorities, exhaustive in scope, on surgery and also on medicine, since the two are often inseparably combined, it is better to depend upon the medical and surgical journals for descriptions of new operations, methods of performing them and after-treatment. In all our recent surgical works, the excellent chapters on inflammations, micro-organisms and antisepsis give one a clear understanding of the status of surgical science up to the present time, and the weekly or monthly periodicals carry us forward in the onward march, keeping us always abreast with the advance guard and in touch with the best thought and talent of the day. Each year, in fact almost monthly, new devices or remedies are thus brought to notice by our progressive men covering the entire field of professional duties, demanding investigation, trial and conclusions as to their results and value as adjuncts to the old and tried armamentarium proven beyond cavil. In reading these pithy, clear articles upon the use of new methods, one gets fresh ideas, and reflection is stimulated, by which the mind is fitted to judge of innovations in surgery, or the therapeutic value of new remedies. The multiplication of the synthetic or coal-tar products are known largely through the journals, and in the same way competent men make known their indications for use, and their therapeutic or toxic effects. In this paper, however, we confine ourselves chiefly to surgical demands, as they arise in country practice, but as the therapeutics of surgery and forms of sickness are often identical it is incidentally referred to.

Just here I wish to refer again and in a more extended way to antisepsis, the importance of which is now universally admitted. The numerous agents, or any of them at times may not be within reach of the surgeon when necessity or better convenience calls for them. It is not to my mind absolutely necessary that one should have carbolic acid, bichloride or biniodide of mercury, or any other of the agents in common use to secure sufficient cleanliness compatible with healing of wounds by first intention. I have so often used boiled strained water, and dressings heated to a degree sufficient to destroy pyogenic germs, and had perfect results follow, that I have come to regard these means *alone* as being as efficient within certain limits as with the germicides in combination. It goes without saying that heat is the all important agent in the preparation of instruments and dressings, and this preferably moist. It is always available and by far the most valuable, but in cleansing the field for operation, or the hands of the operator in a satisfactory way, we are unable to use it at a high enough temperature to effectually destroy the germs, hence the added value of such distinct germicides as will destroy bacteria, and yet be tolerated by the tissues. In case, however, these are *not* at hand, instruments and dressings can be made perfectly aseptic by boiling water and by *straining* it; and allowing it to cool sufficiently under a cover one can safely use it for cleansing either accidental wounds or those made by the surgeon's knife. With soap, boiled water, and a good clean nail-brush, which every man who attends upon or inflicts a wound should always have in his grip, he may, in my judgment, undertake the care of a surgical case with the assurance of success in the majority. In what has preceded it has been premised that special parts of the body, such as the head, the armpits, the genitalia, etc., will in accidents or operations receive that extra precaution demanded by reason of the hair serving as a favorite nidus for the lodgement and retention of infective germs. Keeping in mind these few general principles, and observing them strictly, the minor but no less important duties will naturally receive attention.

So far, we have referred more to general than to special demands of the country surgeon, only briefly mentioning those injuries by far the most frequent and important since, too often, from unsatisfactory results, suits in malpractice grow out of them. I hardly need say I refer to fractures and dislocations. That they should possess an especial interest and importance is made manifest by the records of our courts of law, personal knowledge or perchance bitter experience. That these suits are usually unjust is a matter for professional congratulation, but that bad results have occasionally been due to carelessness and incompetency, honesty compels us to regretfully admit. That sometimes, owing to peculiar and unusual conditions attending these accidents, a positive diagnosis cannot at first be made, shows the absolute necessity of studying and examining each one from all sides. In simple uncomplicated fractures — fortunately the most common — small difficulty is encountered, but with serious complications it is a different matter entirely when duties are onerous and demands imperative.

It is not necessary to classify the varieties in nosological order to show the scope of knowledge and skill required, or review in detail any particular forms of fractures or dislocations with complications, in order that the lessons of need be impressed. If the *possible* or probable demands of the common accidents are duly considered, they of themselves indicate the line of inquiry which insures proficiency in diagnosis and treatment. The axiom that "a little knowledge is a dangerous thing," is too often forced upon us by unsightly results and bitter consequences. The means of avoidance are obvious; in knowing first what rational course should be adopted in the beginning, continued or varied as needs require to the end. Second, apprising the patient or friends, before good evidence, of the dangers of imperfect form or function to the seriously injured member however much is done. What is true of fractures is equally true of any severe injury requiring skill and judgment in treatment. In closing, we may say that it is also true that the demand for intelligent consideration of the surgeon's limitation of power by the patient is equal to that required by the patient from the surgeon, and it becomes the duty of every practitioner to enforce upon his patient's mind these mutual demands that he may avoid unjust censure to himself, and command that appreciation and gratitude from his patrons which intelligent, faithful service rightfully merits.

LEUKEMIA IN INFANTS.

BY JOHN LOVETT MORSE, A.M., M.D.,
Physician to Out-Patients at the Boston City Hospital and at the West End Nursery and Infants' Hospital.

Little is known concerning the etiology of this disease. Several cases are on record which prove that a pregnant woman with leukemia cannot directly transmit it to her offspring. Cameron [1] reports a case where the child of a leukemic mother died on the fourth day, and the autopsy failed to reveal any evidences of leukemia. Greene,[2] also, reports a case in which a leukemic mother was delivered of a healthy child. Sänger [3] had a case where a leukemic mother gave birth to a healthy child which did not develop leukemia, although kept under observation for some time, while in Degle's [4] case the child was feeble but showed no signs of leukemia. Askanazy [5] also reports a case where a woman with myelogenous leukemia was delivered at full term of a slightly macerated fetus, which, on autopsy, showed no evidence of leukemia. On the other hand, Sänger [3] reports a case in which a healthy woman was delivered of a deadborn fetus at the thirty-second week, which, on autopsy, showed well-marked signs of leukemia. It is possible, however, that the tendency to the disease may be transmitted. Several cases are on record of its occurrence in more than one member of the same family. Griffith [6] quotes cases of Casati [7] and Eichhorst [8] bearing on this point; while Osler [9] relates a very interesting case of Cameron's in which the disease was present in three generations. Biermer [10] reports its occurrence in sisters, but it is hardly possible to rule out rhachitis in this instance. Senator's [11] cases in twins are also open to the suspicion of anemia infantum pseudoleukemica. Ortner,[12] also, saw the disease in sisters.

Rhachitis is supposed to have some etiological connection with the disease in children, but its influence is probably not as great as has been supposed. It must be remembered in this connection that very few of the so-called cases of leukemia in children have been carefully worked up and reported. In very few has a blood count been made, and in only one or two has there been a differential count of the white corpuscles. Fox and Ball [13] in several hundred cases of rhachitis found the spleen enlarged in twenty-five per cent. In sixty-three cases of splenic tumor in infants, which they examined, rhachitis could not be positively excluded in one, and in almost all was very marked. In the few cases in which an examination of the blood was made nothing more than a slight leucocytosis was ever found. Carr[14] obtained the same results in a few cases which he examined. Kultner,[15] also, speaks of the frequency of splenic tumor in rhachitis and calls attention to the ease with which splenic enlargement takes place in children. He examined the blood in ten cases, and in none of them found any evidence of leukemia. This frequent association of splenic tumor with rhachitis is undoubtedly the source of the common acceptation of rhachitis as a cause of leukemia. It must be said, however, that rhachitis has been present in nearly all of the more carefully reported cases of leukemia in children. Its true relation, however, can only be determined by the examination of the blood by modern methods in a large number of cases.

The same doubt hangs about the relation of syphilis to leukemia in children. Fox and Ball[18] found the spleen enlarged in forty-eight per cent. of their cases of inherited syphilis, and in sixty-three cases of splenic tumor in infants, forty-one had inherited syphilis. The examination of the blood in these cases also showed at most a slight leucocytosis.

Leukemia has sometimes developed in adults after trauma. Mosler[16] has reported a rather doubtful case of this sort in a child.

The disease is most common in middle-life. Birch-Hirschfeld,[17] in 1878, out of 201 cases collected by him, found only four under one year. Hayem,[18] in 1879, expressed the opinion that only four or five cases had been seen in children under one year. Baginsky,[19] on the other hand, thinks that from fifteen to twenty per cent. of the cases are seen in children under ten years, and Gerhardt[20] thinks it is as frequent in children as it is later in life. But little reliance can be placed on these figures, however, because of the possibilities of errors in diagnosis.

Males are generally more prone to the disease than females. This rule seems to hold good, also, as regards children, so far as the figures are of use in so small a number of cases.

I have been able to collect 20 cases of leukemia in infants out of literature. The diagnosis in the majority, however, must be regarded as doubtful. In the earlier cases no examination of the blood was made, and in some of these the diagnosis rests entirely on the clinical picture, no autopsy having been made. In many of the later cases a blood count was made, but in very few has the character of the white corpuscles been noted, and in only one has a differential count of them been made. The doubt that surrounds them is well shown by the fact that each author in turn has been sceptical as to the accuracy of the diagnosis in most of the cases of his predecessors. It is highly probable that many of them were cases of rhachitis with splenic tumor and anemia, or of anemia with leucocytosis — the anemia infantum pseudoleukemica of v. Jaksch.[21] In the future no such confusion will be possible, as a differential count of the white corpuscles makes the diagnosis positive.

The cases, with dates and ages, are as follows: Golitzinsky,[22] 1861, two cases, eleven months and two weeks respectively; Mosler,[16] 1864, six months; Seitz,[23] 1866, one year; Stilling,[24] 1880, one year; Fagge,[25] 1881, twenty months; Senator,[11] 1882, twins of eighteen months; Ballowitz,[26] 1884, five months; Litten,[27] 1887, eighteen months; Hochsinger and Schiff,[28] 1887, sixteen months; Sänger,[8] 1888, fetus at thirty-second week; v. Jaksch,[21] 1889, fourteen months; Hayem,[18] 1889, ten months; Mayer,[29] 1890, sixteen months; Chaumier,[30] 1890, sixteen months; Ortner,[12] 1891, eight and a half months; Middleton,[31] 1893, sixteen months; Osler,[9] 1893, eight months; Engel,[32] 1894, thirteen months. It is highly probable, however, that not more than half, perhaps not more than a third, of these were really cases of leukemia.

My own case follows: Joe K., one year old, came to the West End Nursery on April 26, 1894, as an out-patient. His parents were both Russians, and, although very poor, seemed well and strong. As far as they knew, no relatives had had any disease of this nature. No history of syphilis could be obtained. Four other children were alive, well and not rhachitic. Two had died of acute disease in Russia. No very definite history of his illness could be obtained. He was weaned at three months, and had been fed exclusively on condensed milk for the last six months. He had been failing gradually for some months, his belly had been large for two months, and he had been unable to lie on his left side for a month. Never had nose-bleed or hemorrhages from stomach or bowels. Never had any eruption on body. Vomited occasionally, bowels were somewhat constipated, the dejections being light-colored. No cough or pain.

Physical examination showed a markedly atrophic child, very anemic. The head was large, forehead prominent, and anterior fontanelle widely open. Moderate rosary and enlargement of epiphyses, with slight bow-legs. Marked enlargement of glands in neck, axillæ and groins. Heart and lungs normal. Abdomen was very much enlarged but contained no fluid; superficial veins distended. Liver dulness began at upper border of fifth rib in nipple line, and the lower border could be felt round and smooth about two fingers' breadth below the costal border in the same line. The spleen was very much enlarged, coming from beneath the costal margin just outside the parasternal line, running just outside the umbilicus, then beyond the middle line, filling up almost the whole left iliac region. The notch could be plainly felt. Spleen and abdomen not at all tender. No hemorrhagic spots on skin. The blood examination made at this time is given below.

It was impossible to keep the child under observation, but he was seen again on May 28. He had failed rapidly during the month. His skin was very pale with a decided yellow tinge, the face, body and extremities being thickly covered with purpuric spots, varying in size from that of a pin-head to that of a lead-pencil. These spots had appeared two days before, at which time he developed a cough, and refused to eat. Had had no other hemorrhages, bowels were loose, dejections of normal color, no vomiting. Examination of the chest showed a broncho-pneumonia, involving the lower two-thirds of the left lung, and a well-marked bronchitis in the right. The heart was normal. Abdomen rather more distended, not tender, no fluid. There was a slight increase in the size of both liver and spleen. He was almost moribund, and probably survived but a few days.

The usual association of leukemia with rickets was present in this case, the leukemia probably having developed subsequent to the rhachitis. The latter was undoubtedly due to improper food and surroundings, and it seems more reasonable, in the present state of our knowledge, to consider the leukemia as arising from the same cause rather than as secondary to the rhachitis.

The blood-count, made on April 26th, showed 2,900,000 red corpuscles and 48,000 white per cubic millimetre, giving a proportion of one to sixty. A differential count of 1,000 white corpuscles on slips, dried and stained with Ehrlich's *triple* stain, resulted as follows:

Small lymphocytes	234 = 23.4 %
Large lymphocytes and transition forms . .	81 = 8.1 %
Myelocytes	214 = 21.4 %
Polynuclear neutrophiles	465 = 46.5 %
Eosinophiles	6 = .6 %

The classification is that recommended by Thayer.[33] Slips stained with eosin and methylene-blue showed numerous mononuclear and polynuclear cells with fine granulations which took the eosinophile stain feebly. Slips stained with dahlia showed the presence of a very few "mastzellen." Numerous partially destroyed cells, both mononuclear and polynuclear, were met with.

The red corpuscles were also of much interest, many forms being met with. There was a very marked poikilocytosis, a moderate number of microcytes, and many macrocytes, many of these being three times the diameter of a normal red corpuscle. Many of all these forms lacked the normal concavity. Nucleated red corpuscles were present in great abundance. No microblasts were seen, however. Many cells, the size of normal corpuscles, were met with in which the nucleus was small, feebly stained, and with little nuclear structure, the protoplasm being not quite homogeneous — "wrinkled," as it were — and staining a reddish-violet. These may, perhaps, be regarded as undeveloped normoblasts. Normoblasts were very abundant, always with one nucleus, which showed a well-developed nuclear structure, and which occasionally presented indentations, as if division was beginning. The nucleus was rarely in the centre, often on the side, sometimes half way out of the cell, and occasionally free. The protoplasm was ordinarily narrow, but sometimes wide. A few cells were met with from which the nucleus had probably escaped. Megaloblasts were quite numerous and presented the same variations as the normoblasts. In addition to these, a number of large oval cells were seen, which contained two nuclei, the long diameter of the cell being about four times that of a normal red corpuscle. In several of these well-marked karyokinetic figures were present. These variations in the erythrocytes of course merely show a severe grade of secondary anemia. The presence of myelocytes in conjunction with the general glandular enlargement and the increased relative proportion of lymphocytes plainly places the case among the mixed forms of leukemia.

REFERENCES.

[1] Cameron: International Journal of the Medical Sciences, January, 1888, i, 1.
[2] Greene: New York Medical Journal, February, 1888, xlvii. No. 6.
[3] Sanger: Archiv. f. Gynakol, 1888, Bd. 33, Heft 2.
[4] Degle: Wiener Med. Presse, 1891, xxxii, 416.
[5] Askanazy: Archiv. f. Patholog. Anat. u. Phys., 1894, Bd. 137, Heft 1.
[6] Griffith: Keating's Cyclopedia, iii. 783.
[7] Casati: Rivista Clinica, 2a ser., ii, 1872.
[8] Eichhorst: Spec. Path. u. Therap., 1885, iv, 3.
[9] Osler: Practice of Medicine, 1893, 696.
[10] Biermer: Virchow's Archiv., 1862, xxv, 142.
[11] Senator: Berlin klin. Woch., 1882, No. 35.
[12] Ortner: Archiv. f. Kinderheilk, 1891, xxxii, 252.
[13] Fox and Ball: British Medical Journal, 1892, i, 854.
[14] Carr: Lancet, 1892, i, 362.
[15] Kultner: Berlin. klin. Woch., 1892, 1109.
[16] Mosler: Berlin. klin. Woch., 1864, No. 12.
[17] Birch-Hirschfeld: Gerhardt's Handb. d. Kindekr., 1878, iii, i, 309.
[18] Hayem: Du Sang, 1889, 864.
[19] Baginsky: Lehrb. d. Kinderkr., 1887, 292.
[20] Gerhardt: Lehrb. f. Kinderkr., 1881, 276.
[21] V. Jaksch: Wien. klin. Woch., 1889, Nos. 22 and 23.
[22] Golitzinsky: Jahrb. f. Kinderheilk., 1861, 90.
[23] Seitz; Deutsche Klinik, 1866, Nos. 15, 16.
[24] Stilling: Virchow's Archiv., 1880, 80, 475.
[25] Fagge: Gerhardt's Lehrb. f. Kinderkr., 1881, 276.
[26] Ballowitz: Inaug. Diss., Greifswald, 1884.
[27] Litten: Berlin. klin. Woch., 1887, No. 35.
[28] Hochsinger and Schiff: Vierteljahrschr. f. Dermat. u. Syphilis, 1887, 14, 779.
[29] Mayer: Centralblatt. f. klin. Med., 1890, 21.
[30] Chaumier: Poitou Méd., Poitiers, 1890, iv, 193–205.
[31] Middleton: Glasgow Medical Journal, 1893, xxxix, 356.
[32] Engel: Virchow's Archiv., 1894, Bd. 135, s. 369.
[33] Thayer: Boston Medical and Surgical Journal, 1893, i, 156.

◆

Clinical Department.

AN OVARIAN DERMOID THAT DISCHARGED THROUGH THE BLADDER FOR THREE YEARS BEFORE OPERATION AND CURE.[1]

BY C. H. HARE, M.D., BOSTON.

Greig Smith tells us that "about one of ten ovarian tumors is either entirely or partially dermoid." Though this is a rather larger ratio than that stated by most authors, they are certainly very common. Numerous cases have been reported which have discharged into the vagina and rectum, but a limited search of the literature fails to bring to notice one which has opened into the bladder, though no doubt some have existed. It is therefore with the hope of putting on record another rather rare case, and of learning from you of such cases, that this one is presented for your criticism.

Miss F., living about forty miles from Boston, a book-keeper by occupation and never married, was twenty-four years old at the time of the operation. Her menstrual life began at fourteen, but had never been regular, the periods, as a rule, occurring every six to twelve weeks, with a flow lasting six days (though the last three were barely more than a staining), and the amount being eight or ten napkins in all. There was no dysmenorrhea.

From a child she remembers hearing different individuals speak of her abdomen as being larger than that of most children.

In the summer of 1887 she discovered what she termed a "movable bunch" in the lower abdomen, but which she could feel only when lying upon the back. She at once consulted her family physician, who paid little attention to her story, attributed the swelling to flatus, and gave drugs. This, however, did not remove the mass from her own palpation; and a few months later, after a vaginal examination, he told her it was a fibroid, and referred her to a surgeon here in Boston whom she failed to find on her first visit, and did not seek a second time.

A few months later she consulted another physician in her own town, who told her it was only constipation, but later told her friends that she was pregnant.

In May, 1888, after there had been no menstruation for twelve months, this physician also decided she had a fibroid, and sent her to one of our most loved and most respected general practitioners, whom she saw in July. His surprise at the rapidity of the growth was not concealed from her; but he agreed in the diagnosis of fibroid, yet counselled against operation, telling her that many women had the same trouble without any ill-results during a long life. She now went home resigned to her condition, and, as she termed it, expecting to be an invalid forever.

---

[1] Read before the Boston Society for Medical Observation, April ., 1894.

Her physician was next needed August 28th, when, following a sea-bath, she had an acute illness accompanied with fever, and excessive tenderness and pain over the whole lower abdomen; for which she was in bed over two weeks, and under medical care five or six weeks, for so-called inflammation of the bowels.

Recovering from this illness, she, on October 20th, when very hungry, ate a large quantity of beans, which was followed during the afternoon by repeated vomiting, some diarrhea and several attacks of nose bleed. Within an hour or two after vomiting she noticed a peculiar discharge which she supposed came from the vagina, though it only occurred on urinating. Frequency of urination was greatly increased. The amount of urine is not remembered to have been much changed. The character of the urine was abnormal to her eye continuously for several months, but subsequently there were a few periods, lasting a day or two, when the urine was clear and normal to her. Slight vesical tenesmus, occasional incontinence, and almost persistent foul odor to the urine appeared in a few weeks, and were increasingly troublesome until after the operation.

No explanation of these troubles had been given her until they had persisted for eight or nine months, when her family physician was surprised to find that the discharge came from the bladder rather than the vagina; and he proceeded to treat her by irrigating for what was called "thickening of the bladder."

No improvement followed; and, disgusted with doctors, she had no further medical advice until two years later, when she sought a fifth medical adviser in an adjoining town, who was the first to make what proved to be a correct diagnosis, telling her that she had an ovarian dermoid which had suppurated into and was discharging through the bladder. He advised operation, and referred her to Dr. Baker.

Dr. Baker did coliotomy October 30, 1891, three years and ten days after the first discharge from the bladder, removing a cyst-sac originating from the right ovary, the size of a large cocoanut in its collapsed condition. The cyst had a large number of adhesions to the bladder and a few to the other viscera and to the abdominal walls, several of which required ligating. Two of the adhesions to the bladder were about the diameter of a nickel, and so firm and cordlike that we could not tell which one, or whether both did not contain an opening into the bladder until they had been clamped and cut. Only one, however, did contain an opening into the bladder and this would easily admit the finger. The denuded edges of this opening were brought together with interrupted catgut sutures, and this seam of union rolled in and covered by uniting with a continuous catgut suture the peritoneum from either side of the opening. The cyst wall was thick and suppurating on its inner surface; the contents were exceedingly foul, and consisted of several rolls of hair, a few irregularly shaped pieces of bone, and the suppurating products.

Excepting a mural abscess, the patient had a perfect convalescence. The bladder received no further treatment. The patient returned to her home in six weeks, without any complaints.

This woman gives a history of perfect health up to the time her increasing abdominal size began to be a discomfort. She had no real pain until the time of her so-called attack of inflammation of the bowels in August, 1888. Her discomfort was from pressure alone up to this time. At the time of rupture her physician described the enlargement as fully the size of a woman at the end of a full-termed pregnancy. There was no marked weakness. She continued her work until the attack of pain, tenderness and fever. After rupture into the bladder the abdominal enlargement decreased gradually for two to three weeks, when the abdomen appeared of normal size to her. Yet on the first day she noticed a perceptible loosening of the skin which had been perfectly tight. Her relief was solely the relief from pressure.

She soon returned to her work; but in the following April the bladder became so troublesome that she took an easier position in the same line of work where she continued until the operation. She returned to this same position of book-keeper eleven weeks after operation, and has continued her work without a day's interruption by illness. The menstrual periods soon returned, and have recurred regularly every month, with a flow of three or four days and the use of six or eight napkins. There is a very little dysmenorrhea for twenty-four hours before and after flow begins.

She has been seen twice since the operation, the last time being two weeks ago, when she told me that she had had no complaints to make since her return home.

◆

Reports of Societies.

HARVARD MEDICAL ALUMNI ASSOCIATION.

(Concluded from No. 5, p. 114.)

ANNUAL DINNER.

There were present 160 members and four invited guests. At the close of the dinner the meeting was addressed by the President, as follows:

THE PRESIDENT'S ADDRESS.

FELLOW ALUMNI OF THE HARVARD MEDICAL SCHOOL: — The most important event of interest to the medical profession of this State, and *pari passu*, to this Association, is the passage, since our last meeting, by the Legislature of Massachusetts, of an act to provide for the "Registration of Physicians and Surgeons." Although the omniscient Washington sought to indicate to this community in 1775 the wise course to pursue towards the medical profession by appointing persons to examine the surgeons and surgeons' mates in his army here, and thus instituted the first medical examination of candidates for practice in this State, we, forgetful of his precepts, have been one of the last of the States and Territories of the Union to take a meagre step to preserve the health of our citizens from the insidious attacks of the human sharks who have for so long been unrestrained in their attacks upon the health and wealth of our people. The law does not go very far, but it provides penalties for the assumption of the title of Doctor (of Medicine) or M.D. by those who are not entitled to these designations. It does not interfere otherwise with the plying of their trade by "clairvoyants, or persons practising hypnotism, magnetic healing, mind-cure, massage methods, Christian science, cosmopathic or any other method of healing." We have, therefore, advanced a little from our former condition, which was comparable to that prevailing among the ancient Babylonians who, according to Herodotus, "carried their sick into the market that all who passed by and had ever had or seen the like distemper might give their advice and encourage them to try what themselves or others had used with success in the like case." The passage of this medical act was, of course, chiefly due to the exertions of the medical profession which, as a body, is always ready and eager to work for the preservation of the health of the community, even though they clearly see that success means to them a diminution in their opportunity to earn a livelihood. While I would not venture to affirm that physicians individually differ in their motives or natures from the rest of mankind, they certainly do manifest a marked indifference to their personal interests when confronted by problems affecting the health of the community. Witness their insistence on compulsory vaccination, on the purification of the water-supply, on the safe disposal of sewerage, on the drainage of swamps to diminish malaria, on the sequestration of those afflicted with contagious diseases such as cholera, yellow fever, diphtheria, scarlet fever, etc. I maintain that the disinterestedness of the medical profession in seeking to expel from our State the herd of quacks that maltreat our citizens is just as genuine as though they were dealing with a plague of locusts. We must learn to disregard the ignoble motives attributed to us by those whose only guides are their own guilty consciences. What a contrast was presented four weeks ago in Washington. In the capitol of this country the *élite* of the nation, those elected by the people to guard their interests as a whole and see that in measures taken for the public good no injustice was done to individuals or classes, were bartering their votes, were deciding public measures which meant disaster and ruin to hundreds of their fellow countrymen, not on the merit of the questions, but on the effect the publication of their votes would have upon their subsequent political careers. Before them in committee were appearing representatives of nearly every industry and trade of the country, and not a few professions, pressing their claims for favoritism in tariff duties by which each might extort a little more profit from the pockets of the people. Finally a committee was taking evidence to show whether or not the representatives of the people had made dishonest use of their positions to enrich themselves at the expense of their constituents.

At the other end of Pennsylvania Avenue, in the Congress of American Physicians and Surgeons, the leading members of the medical profession of the whole country were discussing measures, not only for the advancement of science, not only for the cure of disease, but for the *prevention* of disease; in other words, they were devising and disseminating means for reducing the volume of their business and its attendant profits. To be specific, on the second page of the programme, there were three papers read to demonstrate the dangers to health of sewer gas and the means of avoiding them, and three papers on the means of controlling the spread of leprosy. Further illustration is needless.

To return from this digression to the immediate object of our concern, the Medical Department of Harvard University, so-called. I can report a prosperous year, but dare not dilate in detail upon this theme lest I forestall the report of your committee, as I did in a measure last year.

A few changes have taken place in the faculty, Prof. H. P. Bowditch, after serving as Dean for many years has been succeeded in office by Prof. Wm. L. Richardson.

Two new scholarships have been established during the year, one to be known as the Charles Pratt Strong Scholarship, amounting to $3,700, made up by the contributions of the friends and patients of the late assistant in gynecology; and one to be known as the Lewis and Harriet Hayden Scholarship, from a fund of $5,000 received by bequest for the benefit of any colored student. That more such scholarships are greatly needed is manifested by the fact that forty-two applications are now on file for the twelve scholarships at the disposition of the Faculty.

Commencement Day, to-morrow, marks the completion of the quarter-century since the installation of Charles W. Eliot as President of Harvard University. I cannot set forth adequately the details of the complete revolution in the system of education which his keen insight and indomitable energy have effected throughout the whole university, but must refer you to the number of the *Harvard Graduates' Magazine* for June, 1894, where may be found an admirable contrast of the former and the present conditions of education in the Medical School, by the present Dean, Dr. W. L. Richardson.

To illustrate still further the immense contributions made to the funds of the different departments of the university since President Eliot's installation, I have had these tables compiled from the Treasurer's books, showing, as has never been done before, the proportion which each department has received from 1869 to 1893 inclusive, twenty-five years. The Medical School received in

1871	$5,000.00
1872	1,422.13
1873	4,200.00
1879	2,000.00
1880	54,545.20
1881	175,224.60
1882	15,600.00
1883	31,259.53
1884	16,969.66
1885	36,265.11
1886	3,259.41
1889	14,760.00
1890	52,345.00
1891	22,570.00
1892	7,000.00
1893	49,071.25

The total receipts from gifts and bequests for all branches of the university during these twenty-five years may be summarized as follows:

College	$6,126,932.54
Medical School	491,469.29
Lawrence Scientific School	116,668.48
Divinity School	243,918.63
Law School	278,321.25
Dental School	22,070.85
Veterinary School	2,860.00

The continued decline in number of college and scientific-school graduates in the entering classes of the school is again emphasized by the President in his annual report by the publication of the following table:

	Graduates.
1884	53.9 %
1885	53.3
1886	46.8
1887	45.
1888	38.8
1889	34.4
1890	38.
1891	36.8
1892	28.2
1893	23.

This can only be intrepreted as showing that the governing boards of the university have not properly considered the reciprocal needs of the college and the professional schools. The former is losing students, the latter are being forced to admit students less well prepared to begin their strictly professional duties.

I have the pleasure of introducing Dr. W. W. Keen, Professor of the Principles of Surgery and of Clinical Surgery in the Jefferson Medical College of Philadelphia.

DR. W. W. KEEN.

Your President was kind enough to ask me to speak on the subject of Medical Education. It is a well-worn theme, especially before you, where you have such elaborate reports — and I am glad to say such encouraging reports — from year to year of the progress of this great school; but there are still some points, it seems to me, of value which we can consider here.

I remember very well indeed, in the days of the elder Gross, hearing *ad nauseam* of medical education and the progress that we ought to have — bushels of talk and thimblefuls of action; but, after all, these discussions were not without their results. They were leavening the whole lump of the profession. They were making the profession the backing of all the progress that we have seen within the last few years; and I am sure that the medical schools — even, I believe, Harvard University itself — would never have taken these remarkable steps in advance in the last few years were it not for that very constant talk, that very constant working of the leaven throughout the profession.

There has been certainly a remarkable wave of medical progress going over this country in the matter of education. It has been demonstrated, first of all, by the creation of the State boards of health, and especially by the noble Illinois State Board of Health, a board which has done more for medical education than any other instrumentality, I believe, in this country, because it has set the pace. These boards have now been established throughout almost all the States, and they have been followed by a still more notable advance, namely, the establishment of boards of medical examiners, wholly independent, as they ought to be, of the medical schools themselves. Another very remarkable indication is the adaptation that our universities and colleges are making to the various professional schools, medicine among them. Look at the large number of schools of biology, of courses in various colleges leading up to the study of medicine; and what does this mean but that the medical schools want better men and that the colleges are going to furnish them? In addition to this a Department of Pedagogics was established in connection with the Pan-American Medical Congress; and I hailed it with great delight, when I saw on the programme of the last American Surgical Association in Washington, that one of the leading papers was by our friend Dr. Billings, on "Methods of Teaching Surgery."[1] It developed what to my mind was one of the most fruitful, and to me personally one of the most useful, debates ever held in that body. Dr. Billings considered three points: who were to be taught, what was to be taught, and how it was to be taught. The very scope of his paper prevented what is, I think, of as much importance as the methods of teaching, namely, the consideration of the men who teach. I would like much to see delivered before all of the boards of trustees of our medical schools in this country — and I think the faculties might benefit quite as much — a course of lectures on how to run a medical school and who ought to be made professors in it. They should not select men because they were their friends, not because they were their family physicians, not because they were related to them in any way; but there should be one sole requisite for the position of a teacher, and that is the best man to teach that department. Moreover, I should be very sorry indeed to see the day when the practitioner and the professor are to be divorced. I do not know anything that is more enlivening, that renders a man's lectures more juicy, more meaty, than to have the varied successes, failures, perplexities and responsibilities of an active practice. The men on the benches before him are those that are to follow him and his colleagues in the actual practice of the profession, and what they need is not only the science but the application of that science. I care not in what department — be it chemistry, be it anatomy, be it pathological anatomy, be it any of even the purely scientific departments, except possibly physiology — if a man wants to teach it in a live way, in a way that will make it stick, in a way that will make it interesting and attractive, he must make the application of almost every fact in his scientific teaching to practice; he must show their practical bearings by cases drawn from his own practice. Along with that, however, I believe that the time will come when the men who are professors in our schools and at the same time practitioners, will largely change their methods. A man who is engrossed in a large private practice often finds it difficult to give that amount of time which the newer education and the newer method of instructing classes in small sections requires; and I believe that in the future the professors in our medical schools will be more and more restricted in their private practice until eventually they will practice in the hospital and give their lectures, and do little or no outside practice. This will require, of course, very much larger salaries than now can be given where the income of the school is derived from fees, and in order to do this it is requisite to have larger endowments of the medical schools.

Dr. Keen then alluded to the poverty of American medical schools in laboratories; this was due to lack of funds. He quoted in support of his assertion some figures from a recent address by Professor Welch, of Johns Hopkins University, to show that, in 1893, the permanent investments independent of buildings, yielding revenue to all the medical schools in this country were but little over $600,000, and the endowments yielding revenue to theological schools were $17,000,000. These figures apply to medical schools, not hospitals, for there the community has been wonderfully and praiseworthily generous.

One other, I think, of the most important things in connection with such professors, also, in the medical schools and one that ought to be a duty, is that of visiting other great medical centres and seeing other men, surgeons and physicians and bacteriologists and pathologists and chemists and clinicians do their work. It ought to be a duty, as well as a pleasure, to every man who is a teacher, to see other men teach; and he will learn either one of two things, how to teach better, or, in some cases, how not to teach.

---

[1] See Journal, vol. cxxx, p. 535.

I do not know a better indication for the future of the medical profession in this country than the very fact of the increased requirements for admission that were put down for 1896 in this ancient and honorable school. Now it is perfectly true, as has been urged and as was urged in Washington, that we must remember that medical education is for the average medical student, that it is for the medical students who are going to the country cross-roads to settle, as well as for the men who are going to settle on Beacon Street. Harvard College can afford to take an advanced standing. She can afford to do so, because she is Harvard College, and for that reason she can set the pace. You need not fear but that there will be all over the country plenty of other schools that will educate the cross-roads doctor, plenty of them.

I believe it will be only a short time when you will fling your banner to the breeze and say that A. B. or its equivalent shall be the absolute requirement for admission to Harvard Medical School. The best evidence of this is the large number of colleges that, within the last two years, are insisting upon a four-years' course. It was but last week, in reading in the medical journals, that I found, way off in distant Oregon, that the State Board of Medical Examiners had issued notice that after 1898 no person would be admitted to practice in the State of Oregon who had not had four years of medical study. We must look to it that in the East we are not outdone by the West and our States must exact this definite requirement, or we will be over-run with the horde of doctors that cannot find a place in the West.

Among the methods of study I can only allude to two. One is that we have not in this country such service as there is abroad by the *chef de clinique*, at least, not so far as I know. Only the other day I was reading a report by Dr. Laurent, of Brussels, of his observations in the medical schools of this country. He remarked, in the very beginning, that some people thought there was not very much to learn from this country; but he added very significantly, "*On marche là-bas à pas de géant.*" I believe that another giant stride is going to carry us to a position where men from abroad will be able to come here and get in our schools what our students get to a large extent abroad from the *chefs de clinique.*

In conclusion, Dr. Keen said: I believe thoroughly in recitations. I am glad to see that Harvard has established recitations. I believe they ought to be official, they ought to be compulsory. Every man of the class should go before the examiner from day to day, and not merely before the professor for an examination at the end of his term; and he should be marked on those, and his standing should be determined by his recitations as well as by his final examination. But, gentlemen, I do not believe that the time will ever come when the living voice, when the personality of the speaker is going to be forgotten and to be discontinued. I shall never forget, for instance, one story that was told by dear old Charles D. Meigs, whom you remember, perhaps, as being rather worsted in the fight with Dr. Holmes over the contagiousness of puerperal fever. I shall never forget one illustration he made of the point which he wished to inculcate in his obstetrical lectures, that the child should be put to the breast very early. He gave a description, which I will not attempt to rival, for it is one of the most beautiful pieces of poetry in prose that I ever heard, of the birth of Cain. He described the beautiful bower to which Eve retired, and the pains that she suddenly felt, which, for it was rather a novel experience to her, she thought must be due to some grapes that she had eaten the day before that had disagreed with her. After describing the increasing pains, he told how, finally, she had fainted away for a moment, and awoke to find her slippery little Cain, and, lifting him up in surprise, he fell into nature's cradle and immediately took the breast. It was a very simple little story; but it was beautifully told, and to this day, the description is as fresh as ever to me in its lesson and in its grace. Again, I shall never forget the expression and the power of Samuel D. Gross. When lecturing on diseases of the joints, he began with the question of treatment, and said, looking around the amphitheatre very quietly, "The first requisite, gentlemen, in the treatment of inflammation of a joint is rest, *rest*," — and, rising to his full height and folding his arms, he swept forward majestically and said, "In the name of God, REST!" Now, you might write that fifty times in a book, and you would forget it the next minute; but once hear it from the lips of Gross, and I would defy you to forget it.

DR. WILLIAM OSLER.

Dr. Chadwick asked me to come prepared to tell you what we are doing in the way of medical education at the Johns Hopkins. As you know, that institution was started under somewhat peculiar circumstances. Although the grant was large, both to the hospital and to the university, it was not found sufficient, as time went on, to warrant the establishment of all branches of a medical school. A special fund of half a million of dollars was raised by the ladies, and with this we were able to organize. For the first time in the history of medical education in this country a school was established almost independent of the fees of the students; and in that blissful condition we are at present, though we still have large wants for building purposes.

There are two points in which the Johns Hopkins Medical School differs from the other schools in the East. First, as to the preliminary requirements. We require the degree in arts or in sciences as evidence of a liberal education; and we require also a specified amount of training in physics, chemistry and biology, with a reading knowledge of German and French. The instruction in physics, chemistry and biology is required to be of such a character that the student must have spent two years at each, with somewhat extended laboratory courses. Here is, in reality, the only essential difference between the Hopkins School and the other schools. I think myself that the time required to enable a student to get that amount of knowledge may be too long. The ideal arrangement is such as prevails at the University of Cambridge in England, in which the men pass into the university, finishing practically at the entrance examination their classics, their general literature, and a certain amount of their elementary biology. Then, the first two years are devoted to the sciences. A man graduates A.B. in the natural science tripos at the end of his three years; and at the end of his five years receives his M.D., so that his courses may run concurrently. At present, as we have arranged the curriculum, it is seven years — three years in the chemical-biological course of the university and four years in the medical school. That, it seems to me, is altogether too long. Some such arrangement as exists at Cambridge will become ultimately, I believe, the arrangement of the medical schools connected with the universities in this country; students will be able to take in the academical department certain of their scientific courses, which will count for the medical degree.

I hardly know how to deal with the other question, the second point to which I refer — it is an extremely delicate one — namely the subject of coeducation. I was warmly in favor of it, particularly when the ladies came forward and offered half a million of dollars. I come here to-day, with tears in my eyes and sorrow at my heart, to tell you that coeducation has proved an absolute failure, from one standpoint. When I tell you that 33.3 per cent. of the ladies, students, admitted to the Johns Hopkins Hospital at the end of one short session are to be married, then I tell you that coeducation is a failure. If 33.3 per cent. fall victims at the end of one session, what will happen at the end of the fourth?

DR. WILLIAM M. POLK.

It appears that the subject for discussion before every alumni association is that of medical education, be it coeducation or not. It would appear, then, that I am expected to say something upon this subject before the alumni of an institution which has the proud consciousness of standing at the fore upon this subject. The position occupied by the distinguished gentlemen who have preceded me forbids perhaps my standing before you in such a rôle; but I may perhaps take a cue from a hint dropped by Dr. Keen. It would appear from what has been said that this matter of the education of the people, that this four years' course is a thing which must be taken up and pushed to the fore in such a way as to give to us all that the most jealous advocate of medical ascendency can desire. But the question suggests itself as to whether this is to be managed along the old lines, or whether new methods are to be introduced. We all know what the old lines were, the repetition, the endless repetition deemed necessary, perhaps because of the untrained mental condition in which many of those who came up before us found themselves. Now, if this sort of thing is to prevail here, at Harvard College, I can only say that it will prove a bitter, a most dismal failure; but, on the contrary, if there is a merging, a proper merging, into the general system of education which is given forth by the university, then I can see naught in it but the intimation of the very highest point of educational attainment that can be wished for by any of us.

The question of preliminary preparation, it seems, is one which should be held to the fore as firmly as possible. While it may be true that there are portions of our country which, needing only fifty-cent doctors, cannot afford to acquire the five-dollar education, still that is no reason why science should be converted or used as a milch cow, as one of my predecessors suggested. We must ever have the best to the fore. We must ever have the best interpretation of our science if we wish to bring the mass up to its proper place in viewing the problems of medical education. Therefore, if you pretend here to erect and to conduct a medical school upon the highest plane, then let me beg of you, let me urge upon you, never to cease your agitation until such time as you can force the authorities of your university to give you a proper footing within its portals. You should be no mere annex; you should be one of the spires of that grand cathedral building which, embodying within the walls of its mainer portions the science of the best general education, has as its spires those that lead up to the development of the very highest kind of training in the several directions towards which it improves, medicine on the one hand, the law upon the other, general excellence in literary work upon the other. And yet, if medical education is to be conducted with all of this elaboration, what will be the condition of the individual who begins to depart from the highest points of that medical spire which we propose to erect? Will he find himself in touch with the plane upon which he is compelled to live? That depends entirely upon the view which he takes of the mission which is before him. If he believes that he starts forth upon his mission of life rather to guide people than to gull them, he will find in that which is around him every incentive to a continuation of his work upon the highest possible plane that Harvard or any other institution can erect.

DR. JOHN S. BILLINGS.

For the last six years I have had the honor of being one of the visitors of the medical school appointed by the Board of Overseers. I do not suppose that it would be altogether proper to tell you about the arduous labors of that committee or of the probable influence which it has had in bringing about the millenium, immediate and prospective, which you have heard described by the other speakers; nevertheless it has given me some insight into what has been going on here, into the problems which have been before the Faculty, and which have interested all the graduates of the school, and therefore I feel as though I knew a little about what had been going on at Harvard. I do not propose to enter into an eulogium of what has been done. That is entirely unnecessary. It is sufficient to say that Harvard is now, as she has been, in the very front of the medical schools of this country in all the improvements that have been made.

You know, perhaps, that for the last fifteen years the death-rate and the birth-rate have been diminishing in all civilized countries. Whether that has any definite relations to the improvements in medical education, and what its connections are with the improved results of abdominal section, is a matter of very considerable interest, which I understand that my friend Professor Polk is making a study of, and I await his conclusions with a great deal of interest.

You have heard — not to-day, except inferentially in previous speeches — a very common phrase, that there are too many schools, too many doctors, too many students. Also, I hear in other quarters that there are too many lawyers, too many tailors, too many, in fact, in almost every trade and occupation in the land, in the opinion of the doctors and of the tailors and of the lawyers and so on, each for his own group. It does not appear to me that there is likely to be any very great change in that respect by improvements in medical education, here or elsewhere. It is perfectly clear that it is the duty of a great university like Harvard — of the Medical School — to carry its standard to the highest possible point; and with all that has been said about the necessity for preliminary education I very cordially agree. Man can, as you all know, only judge of these things from his own little experience. He has to apply his own measure to it. Well, some thirty-three years ago, a long time ago, "in the days when Plancus was consul," I graduated in medicine in a two-years' course of five-months' lectures each, the lectures being precisely the same for each year. I had become a resident in the hospital at the end of the first year's studies. There was I a resident of the City Hospital of one hundred and fifty beds, where I was left practically alone for the next six months, the staff not troubling themselves very much to come during the summer time, when there was no teaching. Remember this was a long time ago, "when Plancus was consul." In those two years I did not attend the systematic lectures very regularly. I found that by reading the text-books, I could get more in the same time and with very much less trouble. I practically lived in the dissecting-room and in the clinics, and the very first lecture I ever heard was a clinical lecture. The systematic teaching of those times I have had to unlearn for the most part. There is a new chemistry, a new physiology, a new pathology. What has remained is what I got in the dissecting-room and in the clinics. The only advantage that I can see that I had, was the fact that I had had four years in college before I commenced to study medicine, that I knew Latin and Greek and French and German after a fashion. It is very true that in my subsequent experience the Latin and the Greek has been of very much more use to me than it is to the average physician. Nevertheless, I feel inclined to insist more upon the advantage of the old-fashioned classical studies, the regular course for the A.B., without any special tinkering to fit it to a medical degree than perhaps many others now do, believing that it is peculiarly well suited to enable the man to come to his medical studies knowing how to study and how to quickly separate the wheat from the chaff.

Walter Besant tells a story of a girl who was brought up in a gardener's lodge in a large cemetery near London. She had never been out of that cemetery. All that she knew of the outside world was a large dusty road that led away from it over the hill, on which, at certain times of day, processions came up and entered the cemetery. She supposed that all people outside were engaged in something that had relation to the undertaking business; that some of them made coffins, some of them black coats — everybody, she presumed, wore black outside. The head undertaker was probably the prime minister or chief governor outside, and, in fact, everything bore relation to what she saw in the cemetery. Such a mode of thinking is apt to prevail in all men for the greater part of the time so long as they confine their view to their own immediate interests. So long as the doctors consider only the interests of the medical profession, the privileges of the medical profession, and the relations which they would like to have the medical profession bear to the rest of the country and the legislation which they desire for its benefit, so long will they remain in the position of the little girl in the cemetery. It is desirable to have broader views. And it is fortunately the case that a practising physician, brought as he is into relations with all classes of the community, does, usually take very much broader views. He sees more of the many-sidedness of human life and of human nature than any other professional man.

The education of the doctor which goes on after he has his degree is, after all, the most important part of his education, for even at the end of your four-years' course, given to men who come to you with the degree of A.B., it will be what he learns in the next two years after he gets his medical degree that will probably be of the greatest importance to him for his practical success in life.

We have found, as the result of our experience in the army and navy medical examining boards, that the men who have had a college degree before they began their study of medicine are a little more successful than those who have not, probably in the proportion of about 30 to 25; but the men who have had one year's residence in a hospital after they have got their medical degree pass the army and navy boards in twice as great proportion as those who have not, but who come directly from the benches of the school or from the halls of the crammer without the clinical work. In the interests of the community, and from the purely practical side of the matter, for the benefit of the sick and suffering, it is the clinical teaching which is of the greatest advantage and importance. The securing of the best facilities for clinical teaching by thoroughly competent men is the most important thing in the organization of a medical school. Two or three schools in this country have their own hospitals and control them. The majority of them, however, must make use of the city hospitals or of private hospitals, and must take as teachers men who have appointments in those hospitals. As a rule, those appointments are good, and are made with reference to the teaching ability of the men: but it is not always so.

It seems to me that these annual gatherings of the Harvard Medical Alumni are not only very useful but very delightful and very interesting things. Here the young enthusiast, filled with ideas of reform and progress, can come and have it out with the conservative elders who prefer to see what they consider to be high kicking and skirt dancing carried on in some other quarters. It is very good to come back to the old scenes of youthful ambitions and dreams and labors, to see the old halls and the teachers, and then to take a fresh start, realizing the tilt and swing of the song of the old trail. Do you all know that song of the old trail? Perhaps not.

"To see the old stars wheel back once more
And blaze in the velvet blue
Where the blindest bluffs hold good, my friends,
And the wildest tales are true.
And the men bulk big on the old trail,
Our own trail, the out trail; and life runs large
On the long trail, the trail that is always new.

"There's a whisper down the field, where the year has shot her yield
And the rick stands gray to the sun,
Singing, 'Over then, come over; for the bee has quit the clover,
And your spring and summer's done.'
We have heard the call of the off-shore wind
And the voice of the deep-sea rain;
We have heard the song, 'How long, how long?'
Fall out on the trail again.

"The Lord knows what we may find, my friends,
And the deuce knows what we may do,
But it's time to turn on the old trail, our own trail, the out trail.
Pull out, pull out on the long trail, the trail that is always new."

DR. GEORGE B. SHATTUCK.

I would like to condole with you over the position which your nominating committee have put you in. I know a few things which probably you don't know. You may be surprised to hear it, but I was in Washington with your distinguished President and at the time that we were both studying the inferiority of senators to doctors. In a moment of indiscreet and ebullient enthusiasm — I think your President at that moment had just procured a promise from Dr. Polk that he would come on and speak to you on this occasion — he did not forsee the official position which I was to be called upon to occupy, and said to me, "I tell you what it is, I have got some mighty good speakers for the Alumni Association dinner, and what is more to the point, there are not any more left in the country. I am going to get out, and it is going to be a mighty poor business for my successor." Well, your excellent President came to me about eleven o'clock this morning, having evidently forgotten this, and he said: "I would like you to be punctual at the dinner to-day, because there is a possibility that you may succeed me in the chair, and if that should turn out to be the case I want you to be there so that I can present you." I said, "Thunder!" He said: "Oh, well, you need not bother. I shall not want you to speak. I have got some really good speakers, and plenty of them. You need not trouble yourself." Now, gentlemen, it is only fair that I should tell you this. But I don't want you to be altogether discouraged. If he has exhausted all the good speakers in this country, I am not going to give up. I am going to sail for Europe the middle of next month, and we will import some.

Then the company dispersed.

◆

AMERICAN PEDIATRIC SOCIETY.

Sixth Annual Meeting, Washington, D. C., May 29, June 1, 1894.

(Concluded from No. 5, p. 117.)

THIRD DAY. — THURSDAY.

Dr. W. S. Christopher, of Chicago, read a paper entitled

THE NUTRITIONAL ELEMENT IN THE CAUSATION OF NEUROSES.

He said the following positive factors were present in all neuroses: (1) heredity, (2) anemia, (3) some local condition acting reflexly as the immediate exciting cause. He preferred the use of the term "malnutrition" to that of "anemia." The only clinical estimate of the nutritive value of the blood was that obtained from examination into the quantity of hemoglobin, and the number of blood corpuscles; yet such an examination did not give satisfactory evidence. He would define a neurosis as a group of phenomena resulting from such abnormal action of tissue or tissues as might be dependent upon one or more of the following conditions: (1) abnormal chemical construction of the tissues, (2) abnormal chemical composition of the nutritive element supplying the tissues, (3) derangement of the nerves. Each individual requires not only a certain bulk of food, but also a certain variety to meet the various chemical requirements of the organism. If food were sufficient in kind but deficient in quantity, the result would be complete starvation. Incomplete or partial starvation occurred when the food was deficient in variety. This partial starvation was an important factor in the production of neuroses. It was more commonly observed in infants than adults. In infants it presented itself most often in the form of fat starvation, which need not be a matter of surprise in view of the very large consumption at the present time of commercial infant foods. Proteid starvation was much less common. In addition to interference with the food-supply as a factor in producing the changes in the tissues, there were other factors, such as abnormal nerve impulses, direct toxic action and pathological conditions affecting the organism (such as syphilis). In conclusion he stated that neuroses were always dependent upon abnormal chemical structure of the tissues, and such structure might result from one of three factors: (1) heredity; (2) deficient constructive metabolism, which might follow from insufficient food-supply; and (3) deficient destructive metabolism.

Dr. Rotch, of Boston, indorsed what had been said in the paper about fat starvation, and remarked that infants varied greatly in their individual requirements in regard to the quantity of fat needed by the organism.

Dr. William T. Northrup, of New York City, next read a paper entitled

A CASE OF CYANOSIS.

The case was of interest because it tallied exactly with the description usually given in the books. The patient was a boy, four and a half years of age, who, although appearing well nourished, had pale cheeks and dusky lips and finger-tips. He was subject to attacks of dyspnea and cyanosis after meals, and three or four times each week he would have very severe attacks of dyspnea. Physical examination showed a fine wave at the left third interspace on palpation; a soft, purring thrill over the base of the heart; apex beat half an inch outside of the left nipple line; cardiac dulness extended from the right sternal border to the left nipple; no dulness to the right of the sternum; a loud, harsh and systolic murmur along the left margin of the sternum distinctly localized at the second left interspace and third rib; the murmur not transmitted to the left nor along the aorta. The second sound of the heart was almost inaudible. At the autopsy, the right ventricle was found to be markedly hypertrophied, tilting the heart to the left. The apex was to the outside of the nipple line and no part of the heart was to the right of the sternum. The aorta was distended; the pulmonary artery was smaller than normal, the ductus arteriosus impervious; the foramen ovale practically closed; the left ventricle normal; the walls of the right ventricle thicker than those of the left; the septum incomplete at the auricular end; the conus arteriosus constricted. A probe could not be readily passed from the pulmonary artery into the right ventricle because the pulmonary orifice was at right angles to the axis of the artery, and was very small. The little finger could be passed from either ventricle into the aorta. The case was one of early fetal endocarditis constricting the conus arteriosus. The endocarditis must have occurred early in development before the septum was completed, so that Nature could elect the very best point to effect a compensatory circulation. The aorta, receiving a direct stream of blood from both ventricles, was distended. The pulmonary artery was receiving little blood, and remained small.

REPORTS OF COMMITTEES ON NOMENCLATURE OF DISEASES OF THE MOUTH AND OF THE GASTRO-ENTERIC TRACT.

Dr. T. M. Rotch, the Chairman of the Committee on the Nomenclature of Diseases of the Mouth, then presented the report of the Committee. He said that there should be uniformity in the designation of diseases, so that a disease would be called by the same name wherever written or spoken about, and the nomenclature offered by the Committee was intended to aid in accomplishing this result. The term "stomatitis" was taken as a basis. From this four divisions were made: (1) stomatitis catarrhalis, (2) stomatitis herpetica or aphthosa, (3) stomatitis ulcerosa, and (4) stomatitis mycetogenetica. These were again subdivided, as, for example, stomatitis catarrhalis into (1) stomatitis secondary to the exanthemata, and (2) traumatic stomatitis.

The report of the Committee was accepted.

The Committee on the Nomenclature of Diseases of the Gastro-Enteric Tract presented its report. This report consisted of a schematic classification of these diseases. Two grand divisions were made — gastric and enteric; and each of these divisions were subdivided into (1) developmental, (2) functional, (3) organic. These were subdivided more or less minutely. This report was accepted after some slight opposition on the part of two or three of the members.

Dr. Dillon Brown, of New York City, read a paper on

THE EARLY DIAGNOSIS OF POTT'S DISEASE OF THE SPINE IN CHILDREN.

He said that the importance of an early diagnosis could hardly be overestimated, as on it depended very largely the future welfare and comfort of the child. The symptoms might be considered under three groups: (1) the symptoms of all cases of tuberculosis, such as peculiar night-cries and evening rise of temperature; (2) a constant symptom of vertebral caries, such as peculiar attitude and rigidity of the spine; (3) the symptoms secondary to interference with the spinal cord and nerve, such as paralysis, dyspnea. It would sometimes be difficult to exclude cerebral disease and rheumatism. In all cases of curvature of the spine, the deformity was rounded in shape. Psoas contraction was almost pathognomic of spinal caries. It was the only cause of psoas contraction in which there was a kyphosis of the spine and limitation of movement in every direction. In fracture of the spine, in addition to a history of a sudden deformity, there was absence of all the characteristic signs except the deformity.

FOURTH DAY. — FRIDAY.

Dr. William T. Northrup, of New York City, read a preliminary paper on

INFANTILE MYXEDEMA,

as illustrated by two cases.

The first case was that of a female, nine years old, the fifth child of healthy Irish-American parents. Its development had practically ceased at the age of nine months, and at the age of nine years it was mentally no older. The head was large, the complexion of a peculiar tallow-like appearance, the hair thin, the tongue swollen and protruding, the lips pale, and the soles of the feet dry and parchment-like. There was the characteristic flattening of the bridge of the nose, and a tilting back of the nostrils. The thyroid gland did not seem to be notably enlarged. The only word the child said was "Dada," and it would sit placidly for a long time in a chair. It presented some evidences of rickets. After observing the natural course of the temperature for four days, it was found that this varied between 97.5° and 99.5°. Treatment was then begun with a reliable glycerine extract of the sheep thyroid, and the doses regulated so as to keep the temperature just below 100° in the rectum. Four minims of the extract was the highest daily dose. After a few days of the treatment it was noticed that the tongue was unmistakably smaller; and at the end of three months, the child was found to have improved considerably. The countenance was brighter; the child was good-natured; there was no excessive perspiration; and there had been some increase in height.

The second case was that of a child twelve years of age, and was not so typical in appearance. It would answer very slowly when asked its name, and beyond this rarely spoke. The child was still under treatment.

Dr. William Mosler, of Baltimore, next read a paper on

THE SUCCESSFUL TREATMENT OF A CASE OF INFANTILE MYXEDEMA WITH THYROID EXTRACT.

This case had been under treatment since March of last year. The patient was three years of age, and a typical cretin. There was no thyroid enlargement. At first the child took an amount corresponding to about one-fourth of a gland in the twenty-four hours. When seen about one month ago a remarkable change was apparent. There was an entire loss of the cretinoid aspect; the flesh was firm; the nutrition was much improved; and the improvement in the mental condition and in the speech was remarkable. A second case was reported in which the result was not nearly so favorable. In this one, the patient was a cretin, nineteen years of age. The treatment had not been continued so systematically, and no very decided improvement had been noticed.

Dr. W. L. Carr, of New York City, referred to a case seen by him two months ago, in which there had been decided improvement in the mental condition and in general nutrition.

Dr. Forchheimer, of Cincinnati, referred to a case in which the treatment with the thyroid extract had resulted in producing a condition of excitement akin to mania.

Dr. M. Emmet Holt, of New York City, then read a paper on

ACUTE PYELITIS IN INFANCY.

The first case reported was that of a male infant, eighteen months old, who had been taken suddenly ill with a temperature of 103.5°. There was a marked febrile movement for about five days. An examination of the urine showed an abundant deposit of pus, but no casts. The pus gradually diminished, and at the end of three weeks had disappeared. Twenty months later, it was found that there was no return of the urinary symptoms, and the child was in all respects well. The second case was a female infant, eight months of age, in whom the first symptom was chill and a marked rise of temperature, the temperature reaching 105°. Pneumonia was positively excluded. Here also the urine contained considerable pus, which, however, slowly disappeared under the administration of two-grain doses of the citrate of potash. The pus disappeared in the course of about three weeks, and sixteen months later the patient was in good general condition and free from urinary symptoms. In the third case, after the initial chill and rise of temperature, there was a very irregularly remittent temperature, which did not yield to the administration of very large doses of quinine. The spleen was not enlarged. On the fourth day, slight straining and apparent pain on urination were noticed, and a specimen of urine was taken and found to be strongly acid and to contain considerable pus. The high elevations of temperature and the repeated chills were noteworthy features of this case. It was over three months before the child had thoroughly recovered. The urine was examined at intervals, and continued to show pus cells for some time.

Dr. Seibert asked Dr. Holt upon what he based his differential diagnosis in the first case between purulent cystitis and pyelitis, and in the other case between purulent inflammation of the kidneys and purulent pyelitis. He thought the first case was really one of cystitis.

Dr. Mosler remarked that when there was no enlargement of the spleen and the symptoms did not yield to quinine, malaria could be confidently excluded.

Dr. Forchheimer said that he had frequently seen cases of low grade intermittent fever which did not yield to quinine, and he had also found that in cases of malaria the spleen was not always enlarged.

Dr. Holt said that the absence of mucus, the fact that the urine was acid all the time, and that there was no evidence of vulvo-vaginitis, seemed sufficient to exclude cystitis in the first case. The second case might have been malaria. He agreed with Dr. Mosler regarding the diagnosis of malaria.

Dr. George N. Acker, of Washington, D. C., exhibited

A MIRROR WRITER

in the person of a colored boy, ten years of age, whose writing can only be read when reflected in a mirror. He had been born prematurely and was very dull during early infancy. He had many convulsions and when between two or three years of age, fell and injured his head. From that time there was an increase in the frequency and severity of the convulsions. He had also had chorea for a period of three years. He was naturally left-handed. The first formation of words was what was known as "mirror writing." He now wrote with equal dexterity with both hands. There was a history of insanity on the maternal side of the family, and the father was of a neurotic temperament.

Yellow Fever was imported into Brazil, says Dr. Carvalho, in the *Brazil-Medico*, from New Orleans in 1849, the first cases seen in Rio Janeiro being in 1850.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

J. G. MUMFORD, M.D., SECRETARY.

Regular meeting, Monday, April 2, 1894, Dr. Parks in the chair.

Dr. C. H. Hare read a paper describing

AN OVARIAN DERMOID DISCHARGING THROUGH THE BLADDER FOR THREE YEARS BEFORE OPERATION AND CURE.[1]

Dr. W. H. Baker: The subject of dermoid tumors of the ovary is full of interest to one who looks back twenty-five years in practice and sees the differences in the successes of the treatment of such tumors. Dr. Peaslee was among the early American authors who relinquished the old idea of fetation as a cause of dermoid tumors of the ovary. In his work published in 1872, he dates their origin to congenital trouble, although he does not go into explanation of their formation. It is interesting in such dermoids, with the years that have gone by to see the greater frequency with which we have found them existing. Dr. Peaslee estimates, in 1872, that they occur in about 2 per cent., or 2.5 per cent. of cases of ovarian tumors, but he intimates, also, that with more perfected diagnosis in small dermoids that that frequency might be increased. We hear to-night what Greig Smith estimates — that they occur in about 10 per cent. of all cases of ovarian tumors. It is interesting here as in other branches of surgery to note the frequency at times with which observers in their own practices will see cases of dermoids, and then a long interval will elapse without meeting with them. I think a year, or two years ago I should say, probably about 20 per cent of cases of pelvic tumors presenting themselves that particular year, happened to be in my experience cases of dermoids although that was exceptional in its frequency. Knowing the increased danger in operating twenty-five years ago, for instance, upon cases of dermoids of the ovary, various means were resorted to to try to cure the patient other than by its entire removal through abdominal section; one such method was through drainage of them, and subsequent injection into the cyst cavity. Dr. Peaslee describes the impossibility of curing a dermoid for instance by such drainage, on account of the difficulty of destroying the inner surface of such cyst even in its shrivelled condition. I remember presenting, I think to this Society, in 1878 or 1879, an interesting case of dermoid of the ovary that occurred at the Free Hospital for Women, where such drainage was resorted to through the vagina, stitching the cyst wall to the opening in the vagina, and after removing a large mass of hair and teeth, keeping the cyst wall syringed out, and finally the destruction of the whole interior of the tumor was effected by the actual cautery, — passing the Simm's speculum into the interior of the cyst and repeatedly going over the interior with the Pacquelin cautery, thus destroying its secreting surface, so that the patient was cured, and a few years ago continued to be well. I mention this as an interesting fact in this connection to show how we used to resort to destruction of such tumors sometimes.

Early in my practice I remember removing a dermoid, performing one of the early vaginal ovariotomies, the late Dr. Thornkike being present, she having been a patient of his. In those days it was particularly adaptable to those cases on account of the less risk to the patient. That leads me to speak of the importance of the removal of dermoids entire. One can scarcely imagine a more unsuitable case for aspiration than a dermoid cyst. However clean your aspirating needle may be going into the cyst, it is going to be very unclean coming out and is going to soil the peritoneum; therefore much harm may be done in the withdrawal of the needle. The dangers of tapping a dermoid cyst years ago led some of the prominent authors of that time advising, whenever a cyst was aspirated or tapped, that the surgeon must be ready to perform an ovariotomy at once, in case inflammation of the tumor was established. This is one of the rules laid down by Peaslee twenty-three or twenty-four years ago.

---

[1] See page 135 of the Journal.

The case reported, I think, illustrates two or three things remarkably well. First of all it shows us the difficulty which the general practitioner oftentimes meets in making his diagnosis. Here is a patient presenting herself within a few years when it is supposed the profession should be reasonably skilled in diagnosis, and yet this poor girl passes through the hands of a number of general practitioners without receiving any correct diagnosis. You see how much the character of a young unmarried girl like this may be at stake by the diagnosis made in this instance, mistaking it for a case of pregnancy. This is not altogether infrequent, I am sorry to say. We can hardly underderstand any one of the profession making such a mistake in diagnosis in these days, as was done in this case.

We might look with much more charity, perhaps, upon the mistake in regard to the particular character of the ovarian tumor itself. This is a matter in these days of comparatjvely little importance, so far as the operation is concerned. But that it should be so entirely overlooked seems to be rather remarkable. Certainly, I should feel that our students were not receiving the instruction that they ought to receive if I thought that any of our graduates from our Medical School in the last number of years should make such mistakes as have been made in this case. It shows the importance of more careful examination on the part of the general practitioner, that he may save his patient an amount of suffering, and an amount of good character that certainly was impaired in this case.

The importance of removing the entire tumor at the time of the operation I think is one of considerable moment. The incision should be large enough in the case of dermoids to accomplish this object. The danger of soiling the peritoneum by evacuation of the cyst at the time of the operation I think is considerable, however well you may attempt to keep the edges of the cyst outside of the abdomen. I think the length of the incision is of little or no importance compared to the accomplishment of this result — getting the tumor outside of the abdomen. That accomplished, you have saved the soiling of the peritoneum with the contents of the dermoid. In many other forms of ovarian cysts it matters little, but inasmuch as we cannot tell in advance of the operation always the character of the contents of the cyst, it is well that the opening be made small at first and when the true nature of the tumor is learned, if a dermoid, the incision should be made large enough to remove it entire. When we remember that the size of these tumors is seldom larger than the adult head, although there are exceptions to this rule, the incision will not have to be so very large for its removal.

This case also presents another interesting feature. The cyst wall in these cases is usually thick so that there is comparatively little danger of rupture in shelling it out, although the adhesions may be greater than in other forms of cystoma. In this case, although the cyst wall had collapsed, still from the suppuration that had gone on within the wall itself it was considerably less tough, and was one that I felt would not well tolerate the manipulation of the separation of adhesions. It was also interesting to note the readiness with which the bladder symptoms disappeared with the removal of the tumor.

The case was interesting to me, and I think will be to the whole profession in so far as the rarity of the opening of such dermoids into the bladder was concerned.

Dr. Whitney: These dermoids are very interesting from the anatomical point of view, and they bring up several interesting questions of structure and cause of growth. The dermoids are usually divided into four classes: first the simple epidermoid tumors which are livid, with a cutaneous membrane, and correspond in every particular with the ordinary wen of the head. The next class comprises the simple dermoid tumors in which there is not only an epidermis, but also structures of the true skin, the sweat and sebaceous glands. Then the third class are the complex dermoids or simple teratomas, which are like the one the reader has described, and which, besides the presence of hair, sebaceous material, epidermoid scales and skin, have bone with complex structures, especially the teeth. Finally there are the complex teratomas in which are found not only the above mentioned constituents, but also various other structures of the body such as nerves, muscles, well-formed fingers, parts of extremities, intestines and even organs. The transition from one to the other is quite a gradual one. Of these the complex dermoids, with the hair and sebaceous material, are the more common among the dermoid tumors that are found in the ovary.

In the complex dermoids where bone is formed it is apt to be shell-like, resembling the immature bones of the fetal head, and Orth records one case where a child was born, the vagina was ruptured, a dermoid presented and the attending physician thought he had a case of twins. It was a very odd complication.

Various theories have been advanced to account for these growths. The ordinarily accepted idea of the way the epidermoid is formed is that the skin is infolded along the median line where the two halves of the body come together. It is hard to understand how this should occur in the ovary on one or both sides.

As regards the dermoid cyst and the others of more complex form several theories have been advanced. One is that the different layers of the embryo, from which the ovary is formed, are so close together that it was from inclusion of two of these layers that these complex structures arose. But it is argued against this that the testicle arises from exactly the same layers and is disposed in the same way, hence we should expect dermoids in the testicle as often as in the ovary. Another theory is that they are a fetal inclusion, a case of twins, in which a part of one was included in another. As these often occur on both sides at the same time it seems rather improbable that this should be the explanation. Another is that they are the results of an ovarian pregnancy that has taken place and of which the ovum has been fecundated but has failed to develop except in this abortive way. But they have been found before puberty in undoubted virgins. The theory now generally accepted is that they are to be ranked with the multilocular cystoma of the ovary in their formation, and arise from the follicular epithelium of the ovary which has a germinal property. Moreover, the fact that they are not infrequently associated with the ordinary multilocular cystoma of the ovary gives weight to the view that they are both formed in the same way but by a different process from the layer of germinal epithelium.

Dermoids are said to have more slender pedicles than the larger ovarian cystomata and more prone to inflammation, and that adhesions form about them more frequently than other tumors. There are one or two cases of multiple openings through the vagina, bladder and the abdominal wall all at the same time from one of these dermoids. It rather surprised me to hear Dr. Baker say the contents of these cysts are more liable to set up inflammation of the peritoneum than those of the ordinary multilocular cystoma. It is simply a question of fact. But why one, if perfectly sterile, should do this more than the other, I do not understand. Possibly there is something in the hair or in the sebaceous material, which is not capable of being absorbed, and acts as a direct irritant rather than as a septic one.

◆

Recent Literature.

An Illustrated Encyclopedic Medical Dictionary. Being a Dictionary of the Technical Terms used by Writers on Medicine and the Collateral Sciences, in the Latin, English, French and German Languages. By Frank P. Foster, M.D., etc., with the collaboration of eleven assistants. Vol. IV. With illustrations. New York: D. Appleton & Co. 1894.

This volume completes this fine work, which is a monument to the industry and erudition of its editor whilst it also reflects great credit upon the enterprise and skill of its publishers. The volume gives to the entire work 3,100 folio pages. The careful accuracy and minute detail which characterize these pages make themselves more evident by continued use. What we have said in regard to the previous parts may be repeated and emphasized in regard to this.

Appended are a supplement of sixteen pages, a list of abbreviations, a table of weights and measures, a list of works consulted, and a supplementary list of fifty-six collaborators, being the names of persons, in addition to those given on the title-page, who have taken part in the work, or from whom information has been obtained.

The press-work and illustrations, as far as the latter go, are worthy of the character of this book.

Essentials of Anatomy, including the Anatomy of the Viscera. Arranged in the form of Questions and Answers. By Charles B. Nancrede, M.D. Fifth edition. Philadelphia: W. B. Saunders. 1894.

A new edition of so well known a work calls for no additional comment.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, AUGUST 9, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

THE PREVENTION OF CONTAGIOUS DISEASE.

In this country, as in England, the difficulty of passing or enforcing any laws or regulations which seem to encroach upon the liberty of the individual has always been the greatest obstacle which health authorities have to overcome in checking the spread of contagion. By the insertion of metaphorical opening wedges, and by taking advantage of different epidemics to drive the wedges deeper, slow but sure advances are made. It is important to note these steps as they occur, in order that the medical profession may aid the authorities as much as possible in making the means effective.

Small-pox was in the past so formidable a plague that it is still possible to enforce more stringent regulations in dealing with it than with those diseases which we have with us always. A similar popular dread makes it practicably possible to attack cholera and leprosy with a strong hand. But diphtheria, scarlet fever, measles and typhoid fever; and, even more, tuberculosis and syphilis are too common to frighten society. Although in the case of the first four notification is enforced, public opinion does not allow the full benefit which could be derived from it. Although a public school is proved to be a kind of bacterial clearing-house, it is not easy to get appropriations for proper inspection.

Slight gains may be noted in the laws of Massachusetts passed by the last legislature, a summary of which was given in the Journal of last week.[1] In Boston the new wards for contagious diseases connected with the City Hospital will materially aid proper isolation.

The congregation of unhealthy persons waiting their turn in a large out-patient clinic has often been noted as a source of danger. That this danger is real has been proved at the Massachusetts General Hospital, where for the current year all new cases are inspected when they first come in, and three or four cases of contagion a day are held back and isolated.

---

[1] See page 118 of the Journal.

During the past year the prevention of tuberculosis has been the subject of especial discussion. For several reasons it is a particularly hard disease for boards of health to deal with. A few boards have issued regulations; but more generally they have tried to arouse the medical profession as a whole to take proper precautions. The American Climatological Association, after an excellent paper on the subject by Dr. F. I. Knight,[2] passed resolutions urging the medical profession to take the matter in hand. A short circular issued by the Massachusetts State Board of Health, recommending simple precautions has been endorsed and distributed by the Boston City Board.

A section added to a law concerning contagious diseases passed by the last legislature, that hospitals under certain conditions shall not refuse to treat venereal diseases in out-patient departments, shows that our law-makers are getting over the old Puritan feeling that it was aiding the devil to relieve his subjects of the results of their sins.

Practical results in the prevention of contagion are largely in the hands of the medical profession as a whole; and an enormous source of danger lies in the carelessness, or lack of sense of duty to the public, by individual physicians in individual cases.

◆

GRAHAM BREAD.

A writer (Dr. G. Bardet) in the *Bulletins et Memoires de la Société de Thérapeutique* eulogizes Graham bread as exceeding white bread in nutritive value, and concludes that this kind of bread should be used exclusively by those who from habit or from hygienic motives eat little or no meat, and especially by the constipated. He regards Graham bread as an indispensable part of the vegetarian regimen.

Analyzing the bran which is lost in the manufacture of white bread but which is retained in the fabrication of Graham flour, he affirms that "it contains more nutritive substance than fine flour, and that it is richer in azotized matters, fats and salts. . . . Moreover, it contains (by the germ) a notable proportion of soluble albuminoid matter and a small amount of a laxative oil which gives it a value to the constipated. In fact, it is this oil which makes Graham bread anti-constipating.

In Graham flour properly made, the bran is ground so fine that no coarse particles are visible, all the ingredients of the grain being intimately blended together. Bread made from such flour cannot irritate the intestines by the presence of the bran, and the nutritious properties of the latter are all utilized. It is well known that Bouchardat, who recognized the advantages of Graham bread, discarded it on account of the difficulty of obtaining unbolted flour in which the bran was ground to a sufficient degree of fineness. This objection, in view of the perfection of the miller's art to-day, can hardly be considered as valid now.

Graham flour, according to M. Bardet, should be made from hard wheat; what has given the best results is the Russian wheat, rich in gluten. In the process of grinding, the bran is first separated from the meal, then ground by two separate sets of stones to an almost impalpable powder, and the two products are then intimately mixed; such flour makes a bread which is quite brown. The kneading should be prolonged and thorough, in fact, more time and pains are necessary than in the fabrication of fine flour bread, and (according to Bardet) less yeast. The well-kneaded dough is left at rest for about fifteen minutes, then subjected to a prolonged baking (an hour and a half for a four-pound loaf, instead of forty-five minutes, the time requisite for white bread.) There is thus obtained a loaf "which is well raised, with a pronounced wheaten odor, of agreeable and sapid taste, of easy digestion, keeping well for several days, and much more palatable when it is stale." Such bread contains forty per cent. of azotized matter, instead of twenty-four to twenty-five per cent., the quantity in fine flour bread. It has also an excess of starch, which makes this kind of bread bad in dyspepsias which are purely stomachal, while on the contrary it is preferable to any other bread in dyspepsias that are intestinal and attended with constipation.

It will be remembered in this connection that Liebig, many years ago, remarked that "many millions more men could be daily fed in Germany if it were only possible to persuade the population of the advantage which bread made of unbolted flour has over that ordinarily eaten."

The conclusions of Dr. Bardet do not differ essentially from those obtained several years ago by Drs. Randolph and Roussel, who published in the *New York Medical Journal* an exhaustive study of the nutritive value of branny foods. From an economic standpoint the question of the nutritive value of bran is one of great importance, for the removal of this portion of the wheat implies a loss of from seventeen to twenty per cent. in the weight of the grain. The writers, in endeavoring to account for this custom of using the more expensive white bread instead of that which is more nutritious, if not more wholesome, emphasize the difficulty of obtaining a good product from the whole wheat and the greater ease with which really good, light and savory bread can be made from the finest flour. Moreover, in the earlier attempts to make unbolted flour bread, the presence of the rough bran scales made this bread relatively innutritious by increasing peristalsis, and so hastening the passage of the entire intestinal contents, that complete digestion and absorption were prevented.

Edward Smith has also closely studied the economic phase of the subject, and reports unfavorably upon the use of branny foods, stating that the diminished absorption of nutritive matters entailed by their use more than counterbalances the apparent gain in cheapness.[1]

---

[2] International Medical Magazine, May.

According to Drs. Randolph and Roussel, the end which popular hygiene attempts to effect by the retention of bran in bread-stuffs can be better attained by other means. Thus, the nutritive salts lost in the bran are readily restored by the ingestion of rich soups and broths; and the various fresh green vegetables used as salads yield in abundance those inorganic food stuffs the presence of which is indispensable to normal tissue activity. A further advantage of these and other succulent vegetables lies in the fact that their cellulose, while efficient in giving proper bulk and consistence to the stools, is, as compared with bran-scales, soft and unirritating to the digestive tract.

Doubtless, as Dr. Bardet has observed, the principal objection against the economical and widespread use of Graham breads will be removed when the more perfect methods of grinding the wheat are substituted for the faulty methods formerly in vogue. The Graham bread of to-day should be macroscopically and microscopically free from all coarse and branny particles. Such bread cannot be called irritant to the intestines, and should be about as easily digested and assimilated as white bread.

◆

MEDICAL NOTES.

The Cholera. — The cholera at St. Petersburg shows no sign of abating. There are still nearly two hundred new cases daily and over fifty deaths. In the province of Warsaw there have been nearly a thousand new cases the last week, with over three hundred deaths. The increased severity of the epidemic this year will be seen from the fact that last year the largest number of cases reported in St. Petersburg in any one day was sixty-three, on September 6th, and in 1892, 156 on August 16th. In Germany a few scattered cases have been reported, chiefly boatmen on the Spree and Vistula. In Belgium also there have been a few isolated cases. There were two deaths in Amsterdam and one in Dordrecht on August 7th.

Violent Interference with the Health Officers of Milwaukee. — The attempt of the Board of Health of Milwaukee, to remove a child ill with small-pox to the isolation hospital on August 7th, was prevented by the violence of a mob of neighbors which the police did not succeed in dispersing.

School-Boards and Vaccination. — The Supreme Court of Pennsylvania has confirmed the decree of a lower court to the effect that school-boards have the right to exclude from the public schools children who have not been vaccinated.

An Additional Honor for Sir John Williams. —Sir John Williams, M.D., F.R.C.P., has been elected Honorary Fellow of the Obstetrical and Gynecological Society of Berlin.

A Decision concerning Telegraph Messages of Illness. — The Court of Civil Appeals of Texas has ruled in the case of the Western Union Telegraph Company *vs.* Porter, decided May 3, 1894, that when the general nature of a communication is plainly described by its terms, and when it relates to sickness or death, if the agent receiving such dispatch desire information about the relationship of the parties concerned he should seek it from the sender, and, if he fail to do so, his principal is charged with the information which inquiries would have developed.

An Old Medical Protest Against Railroad Trains.— According to *La Médecine Moderne*, there is preserved at Nuremberg in the archives of the first railroad company built in Germany, a protest offered at the time of the construction of the line, by the physicians of Bavaria. Among other reasons given for opposing the scheme is this psychological one: "Travelling in vehicles drawn by a locomotive ought to be forbidden in the interest of public health. The rapid motion cannot fail to produce in the passengers the mental affection known as *delirium furiosum.* Even when travellers consent to expose themselves to this danger the government at least is in duty bound to protect the public. A single glance thrown upon a locomotive passing at great speed is sufficient to cause the same cerebral derangement. It is accordingly absolutely necessary to build a fence three metres high on each side of the railway tracks."

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, August 8, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 26, scarlet fever 23, measles 6, typhoid fever 10.

Appropriations for Public Institutions in Massachusetts. — Of the two or three hundred thousand dollars appropriated by the Massachusetts legislature for improvement on public institutions during the present year, over eighty-five thousand dollars are for institutions of a medical character. The Westboro' Hospital for the Insane will receive thirty-three thousand and five hundred dollars, the Northampton Hospital fifty thousand, and the Taunton Hospital about seven thousand dollars.

A Woman Appointed to the Staff of the Middletown, Conn., Hospital. — Dr. Jessie M. Weston has been elected to the medical staff of the Connecticut State Hospital for the Insane at Middletown, occupying the only medical position which that State has thrown open to women. She was a graduate of the Women's Medical College of Philadelphia.

NEW YORK.

Report of the State Board of Health. — The bulletin of the State Board of Health for the month of June, just issued, states that while June usually has the lowest mortality of any month in the year, the 9,800 deaths of the present month exceed the number for May by 500, that of June, 1893, a month of remarkably low death-rate, by 1,000, and of June, 1892, by 700. From zymotic diseases there were 1,790 deaths, or 500 more than in May; this increase being due to the mortality from diarrheal disease and principally confined to the cities of New York and Brooklyn. The deaths from all other zymotic diseases were less than in May. Diphtheria shows the least change, the mortality from it having continued about the same for the past six months, and not less than 200 deaths occurring above the average for June, in which month the mortality usually diminishes. Of the 575 deaths reported, all but 100 occurred in the maritime district of the State. The increase in the number of deaths from diarrheal disease is no doubt to be attributed to the unusually hot weather of June, the average temperature for the month being two degrees above the normal.

---

[1] Foods, 1875, p. 175.

Cases of Trichinosis. — On July 28th, a German, his wife and two small children were admitted to the Fordham Hospital in a critical condition, suffering from trichinosis, the result of eating pork bologna sausage. The disease had already lasted for some weeks, as its real character was not at first recognized by the physician who attended the family; but up to the latest report none of the cases had terminated fatally.

The New Hospital for the Insane at White Plains. — During the months of August and September, the patients of the department for the insane of the New York Hospital are to be gradually transferred from the old buildings at Bloomingdale to the new quarters of the institution now approaching completion at White Plains. These are intended to be model structures in every way, and no expense has been spared in their construction. When the work is finished there will be thirteen distinct buildings, connected by means of well-lighted corridors, and from all sides of the different sections the out-door view can be seen. The central administration building has not yet been put up, but the chapel building, which is now finished, will be temporarily used for the purposes of the latter. On its second floor there is a large assembly-room for Sunday services and the weekly entertainments given to the patients. The various pavilions will accommodate four hundred patients, although the average number up to the present time has been about three hundred. The group of buildings presents a very handsome appearance, and stands in the midst of beautiful grounds which have been laid out by the well-known landscape architect, Frederick Law Olmstead. They are constructed of brick, combined in light and dark shades, — with a gray stone basement, and the general style is that of the Spanish Renaissance.

Mortality. — During the week ending July 28th, for the first time in many months, no death from small-pox occurred in the city, although three cases of the disease were reported. The number of deaths from the other contagious diseases also was unusually small: — 38 from diphtheria, 4 from scarlet fever, and 5 from measles. The total deaths reported were 966, against 1,106 during the previous week. This represents an annual death-rate of 26.11 per thousand of the estimated population, and is 126 less than the average of the corresponding weeks for the past five years. The greatest mortality was naturally due to diarrheal diseases, the number of deaths from this cause being 256; but this was 38 less than in the preceding week, and 43 less than the average of the corresponding weeks of the past five years. There was also a marked falling off in the deaths from phthisis, the number of which was 77, against 104 during the previous week. On the other hand, the deaths from typhoid fever increased from 4 to 12, and those from sunstroke from 7 to 14. The number of births reported was 1,145, an excess of 179 over the deaths.

Miscellany.

MEDICAL ETIQUETTE AMONG THE ANCIENTS.

In an old Latin poem, the manuscript of which has been found in the National Library at Paris, occur some interesting pages in which the author, whose name is unknown, explains the proper conduct of a physician.[1]

"On approaching the patient you should assume a calm expression and avoid any gesture of greed or vanity; greet those who salute you with an humble voice and sit down when they do. Then, turning to the sick person, ask him how he is, and examine his pulse and his urine. To the patient you promise cure, but immediately on leaving the room you say to the relatives that the disease is grave. The result will be that, if you cure him, your merit is greater and you will receive the greater praise and fee; while, if he dies, they will say that you had no hope from the first."

This counsel has been well followed by some physicians to the present day. The directions for table manners are equally amusing:

"When those who preside over the house ask you to the table, conduct yourself in a seemly manner. Each time that a new dish is brought on, do not fail to ask for the condition of the patient. This will give him great confidence in you, as he sees that in the midst of the variety of the repast you do not forget him. On leaving the table, return to the patient, and tell him that you have dined most excellently, and that everything was served to perfection. The sick person who was anxious about these points will rejoice at your words."

◆

THE VICTIMS OF CANCER HOUSES.

Mr. Shattock, in his recent Morton Lecture, having again called attention to the fact that cancer like tubercle may repeatedly show itself in certain houses, as an argument in favor of a definite parasitic etiology, several communications have been made to the *British Medical Journal* of such interesting cases; so that it would appear to be a more common occurrence than has been supposed. A single example in a physician's practice might easily be considered coincidence unless confirmed by other cases. The collected evidence of many such authenticated cases, where family relationship and heredity can be ruled out, would be of great service in establishing data for further proof. Among the more striking of the cases reported are the following:

---

[1] La Medecine Moderne, No. 35, 1894.

Mr. D'Arcy Power, of St. Bartholomew's Hospital, reports this instance:[1] "Miss B., aged forty-five, lived in a certain house in a suburb of London for thirteen years, and died of cancer of the stomach in 1884. Miss T., aged forty-seven, then succeeded to her place and bedroom. She had lived in the house for twenty years, and died of cancer of the liver in 1885. Mrs. J., aged sixty-seven, who had lived in the house then for eight years, succeeded to the place, and took the bedroom successively occupied by Miss B. and Miss T. Mrs. J. died of cancer of the breast and uterus in 1893. Each of these patients appeared to be in perfect health until they took one another's place as housekeeper in the building in which they had lived so long."

Mr. Shattock has previously reported a series of four cases of cancer, three fatal, occurring within fourteen years, in persons unrelated by blood, who were living in a single house.

Mr. Blyth's cases were even more striking: "Three successive tenants of a house died of cancer. Mrs. V. frequently visited the last of these tenants, to whom she was not related, and subsequently died of cancer of the breast and lung. Her niece, a girl of fourteen, slept with her and nursed her. She, too, developed a mammary cancer, which was operated upon with success."

The following case was reported in 1892 by Drs. Fabre and Molliere: "In 1873 the owner of a well-built house in Lyons, occupied by well-to-do tenants, died of cancer of the stomach at the age of eighty. He had always lived on the first floor. Four years later a tailor, aged forty-five, who lived in the *entresol*, died of cancer of the stomach. Three years later the porter, who had always been strong and well, died, at the age of fifty-five, of gastric cancer. Two years later a man of thirty-five, living on the second floor, died of cancer of the cervical glands.

The latest series reported is equally interesting. Dr. Scott, of Glasgow,[2] attended three cases having this history: "J. K., aged fifty, employed as a night watchman, and occupying a house of two rooms, died of cancer of the liver. J. L., fifty-four, succeeded to house and work, and died within two years of cancer of the bladder. A. L., sixty, under similar promotion, died of cancer of the stomach in eighteen months. All were previously healthy, unrelated, and without any hereditary transmission.

Even more curious is Dr. Chapman's series of three successive unrelated occupants of a house who became affected with cancer of the rectum.

ODONTALGIA IN THE ARMY OF THE ARGENTINE REPUBLIC.[1]

Mario Capdevila publishes, in the *Boletin Mensual de la Sociedad de Sanidad Militar*, the following curious details concerning the occurrence of odontalgia in the army of the Argentine Republic:

In 1893, there were treated 712 cases among the different military grades, as follows: General, 1; colonels, 3; lieutenant colonels, 5; majors, 12; captains, 18; first lieutenants, 21; second lieutenants, 15; ensigns, 11; soldiers of all ranks, 626; total 712.

Classification by service: Of infantry, 248; cavalry, 84; artillery, 37; invalids, 9: national guards, 24; sanitary corps, 46; military hospital, central, 207; others, 42; in the navy, 8; prefecturas maritimas, 7.

Classification by diagnosis: Alveolar abscess, 15; abscess of maxillary sinus, 6; caries, first grade, 63; *id.* second grade, 21; *id.* third grade, 47; *id.* fourth grade, 116; salivary concretions, 8; denuding of the teeth, 4; exostasis, 12; erythematous stomatitis, 14; erythematous ulcero-membranosa, 6; epulis, 12; various erosions, 24; gingivo-cutaneous fistula, 12; mercurial gingivitis, 8; glossitis, 2; hypertrophy of the gums, 7; luxations of the teeth, 1; necrosis of the teeth, 27; necrosis of the superior maxillary bone, 15; *id.* of the inferior, 11; toothache, 32; acute periostitis, 38; chronic periostitis, 45; polipi of gums, 20; *id.* of the flesh, 19.

THE PHYSIOLOGY OF THE SPLEEN.[1]

Vulpius[2] has arrived at the following general conclusions concerning the physiology of the spleen:

(1) Histological study of the normal splenic tissue shows the possibility but not the certainty of the entrance of colorless cells in the circulation from the spleen. It is evident that the red cells undergo disintegration in the spleen, but there is no ground for assuming that they are formed in the spleen.

(2) Comparison of the blood of the splenic artery and vein shows no positive difference.

(3) In acute general anemia the spleen shows signs of increased activity.

(4) Removal of the spleen causes a transient decrease in the number of red, and increase in the number of white, blood-cells.

(5) The thyroid gland has no vicarious relation to the spleen.

(6) The lymph-nodules and the bone-marrow acquire an increased blood-forming activity after extirpation of the spleen.

(7) The regeneration of blood is retarded after hemorrhage in persons without spleens.

These conclusions, though contradicting certain accepted teachings, offer little that is new, but are of value in that they are based upon accurate scientific data, and corroborate much that has already been done. Unfortunately, our knowledge of the physiology of the spleen is still left in a state of confusion.

TYPHOID STATISTICS.

In the report on typhoid fever recently presented to the Medical Society of the District of Columbia by a committee consisting of Drs. G. L. Magender, W. W. Johnston and C. M. Hammett, the following statistics were given[1] of the number of deaths from typhoid fever to each ten thousand inhabitants in sewered and unsewered cities, on an average, during five years, 1880–1884.

"In cities with good sewers and general water-supply the averages were as follows: Munich, 1.7; Dantzig. 1.5; Frankfort, 1.4; Breslau, 3.3; Hamburg, 2.6; Berlin, 2.9; Brussels, 3.3; London, 2.3; twenty-eight English cities, 3.2; New York, 3; Brooklyn, 1.5; Vienna, 2.1; Washington, 4.6; Washington (1885–90), 6.7. In cities without sewers or very imperfectly sewered, the yearly averages for each 10,000 residents were as follows: Paris, 9.9; Marseilles, 12.8; Turin, 9.5; Naples (1881–84), 7.1; Palermo (1881–84), 13.1; Catania, 19; 281 cities in Italy (1881–82), 9.5; St. Petersburg (1883–84), 9.9; Riga (1881–82), 15.8; Buda-Pesth (1877-81), 9.2; twenty German cities (1878–82), 9.8; New Orleans (water-supply from cisterns above ground), 2.7; Baltimore (abundant water-supply), 4.8; Cincinnati, 7.3.

---

[1] British Medical Journal, June 9, 1894.

[2] British Medical Journal, June 16, 1894.

[1] Sanitarian, July, 1894.

[1] Annals of Surgery, August, 1894.

[2] Beitrage zur klin. Chirurgie, Bd. xi, 1894.

[1] Journal of American Medical Association, July 28, 1894.

◆

STARTING-POINTS OF TUBERCULOUS DISEASE IN CHILDREN.

At a recent meeting of the Medical Society of London, Dr. J. Walter Carr read a paper based on 120 necropsies upon children suffering from tuberculous disease, in which he drew the following conclusions:[1]

"(1) Tuberculous disease commences usually in the glands, the liability being at its maximum during infancy and early childhood, and rapidly decreasing in later childhood. But, of the 120 cases, the disease had almost certainly commenced in the glands in 70, or 58.3 per cent. (including 13 in which glands only were involved), and in 17 more, or 14.2 per cent., there was considerable probability at least that the glands were the primary focus. Including doubtful cases, the glands formed the primary focus in 64.5 per cent. of those under five, and in only 37 per cent. of those above that age.

"(2) Tuberculous lesions in the cervical glands, as in the joints, may arise by infection through the blood-stream, but caseation of the bronchial and mesenteric glands, when primary, is usually, if not always, due to direct infection from the organ with which they are connected, it having been shown that bacilli may pass through the lungs or the intestinal walls without producing any recognizable lesion, and that they then enter the lymphatic channels, and not the blood-vessels.

"(3) Tuberculous disease starts much more frequently in the thorax than in the abdomen, and certainly far more often in the thoracic than in the mesenteric glands. Of the 120 cases, in 79 the disease probably started in the thorax (in 54 certainly and in 12 possibly in the bronchial glands); in 20 in the abdomen (in 12 certainly and in 2 possibly in the mesenteric glands); and in 6 in either one or the other cavity. In only 2 cases were the cervical glands the probable primary focus. The conclusion is that, though infection undoubtedly does occur through the intestines, and especially (as experiments on animals have shown) through milk, yet infection through air is by far the more frequent and important. The disease is so commonly generalized in children that figures merely giving the frequency with which different parts are affected are of little value, the important point being to ascertain where the disease is most advanced,— that is, where it probably commenced.

"(4) Caseation of internal glands, from the frequency with which it is found after death, must often exist alone and quite unsuspected, being doubtless in many cases quite impossible of diagnosis, and it is very necessary to realize its frequency and importance when dealing with obscure febrile conditions in children.

"(5) In regard to treatment, prophylaxis is by far the most important; and as it is probably impossible to prevent bacilli from obtaining access, we must try to increase the resistive powers of the system to their entry, above all by keeping the mucous membranes healthy, by dealing promptly with, and if possible preventing, rickets,— the great cause of catarrh in early childhood,— and by taking especial care of children during convalescence from acute specific fevers, which so depress the vitality of the body generally, and the resistant power of the mucous membranes, as well as the filtering power of the glands in particular."

◆

THERAPEUTIC NOTE.

Cork Splints for Deflections of the Nasal Septum. — Dr. T. Passmore Berens[1] reports excellent results from the use of a simple device for a splint in cases of fracture or operation for deflected septum nasi. The plugs of cotton or oakum become too readily foul, while the various supports which have been used have many disadvantages, the soft-rubber tubing being too yielding, while the hard-rubber or ivory plugs cause too much pressure and pain. Dr. Berens' device to overcome these and other difficulties is as ingenious as it is simple. He makes his splints from corks in the following manner: "A selected cork (pint-bottle size), in average length one and one-quarter inches, in breadth at its broad end three-quarters of an inch, at its narrow end one-eighth to one-quarter of an inch less, in thickness from one-quarter to three-eighths of an inch, is whittled to the shape of an almond with the point cut off, and flattened on the side that is to lie against the septum; the opposite side near its lower border is slightly grooved for the reception of the inferior turbinate body. A nasal burr or trephine is now used to hollow the splint, leaving the shell one-sixteenth to one-eighth of an inch thick. A rat-tail file, small-bladed knife or red-hot metal may also be used for this purpose. Sand-paper is used to smooth both the inner and outer surfaces, and the whole splint is then coated with flexible collodion, to which has been added iodoform in the proportion of thirty grains to the fluid ounce, allowed to dry, and it is ready for use. The making of splints requires no especial mechanical skill, and they can be modified with ease to suit the peculiarities of each case." The special advantages of these splints, which are possessed by no other similar device, are the quickness and ease with which they can be made and shaped to fit the peculiarities of each case; their cheapness, lightness and elasticity, combined with sufficient firmness to support the septum: their durability and non-conduction of heat and cold, and non-interference with the free circulation of the blood; the ease with which they can be cleaned *in situ* by washing out with peroxide-of-hydrogen and boric-acid solutions followed by an oily spray as benzoinol; and the length of time they can be worn without pain, discomfort or severe ulceration.

---

[1] British Medical Journal, May 12, 1894.

---

[1] Manhattan Eye and Ear Hospital Reports, No. 1, 1894.

METEOROLOGICAL RECORD,

For the week ending July 28th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..22	30.04	64	69	58	90	77	83	N.E.	N.E.	11	4	O.	O.	.40
M..23	30.12	64	70	59	70	82	76	N.E.	E.	6	9	C.	F.	
T..24	29.96	70	79	61	97	82	90	E.	N.W.	20	5	R.	C.	1.12
W .25	30.06	78	88	68	59	86	72	W.	S.	12	8	C.	R.	.45
T..26	30.20	76	83	69	71	78	74	N.E.	E.	8	5	C.	C.	.06
F..27	30.22	74	83	66	72	86	79	S.E.	S.W.	6	12	C.	O.	
S..28	30.00	84	97	70	73	65	69	W.	S.W.	13	10	C.	F.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week

RECORD OF MORTALITY

For the Week ending Saturday, July 28, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Whooping-cough.	Diphtheria and croup.
New York	1,956,000	982	540	33.10	7.70	25.50	.70	4.40
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,139,457	504	232	26.20	9.60	20.40	.80	2.60
Brooklyn	1,043,000	536	271	30.02	10.26	22.04	.95	5.51
St. Louis	540,800	—	—	—	—	—	—	—
Boston	501,107	313	175	37.76	8.64	32.64	.64	4.16
Baltimore	500,000	—	—	—	—	—	—	—
Washington	285,000	111	56	31.50	9.90	15.30	5.40	5.40
Cincinnati	325,000	—	—	—	—	—	—	—
Cleveland	325,000	189	—	44.05	1.65	37.63	3.18	.53
Pittsburg	272,000	126	68	34.40	6.40	28.00	3.20	—
Milwaukee	265,000	—	—	—	—	—	—	—
Nashville	87,754	14	—	57.12	7.14	35.70	7.14	—
Charleston	65,165	—	—	—	—	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	100,410	36	14	20.24	10.12	16.68	—	2.78
Fall River	92,233	71	45	49.35	11.28	47.94	—	—
Lowell	90,613	52	37	61.44	3.84	55.68	1.92	—
Cambridge	79,607	40	26	25.00	10.00	17.50	2.50	—
Lynn	65,123	26	14	3.46	3.46	—	3.46	—
Springfield	50,284	18	11	55.50	11.10	44.44	—	—
Lawrence	49,900	—	—	—	—	—	—	—
New Bedford	47,741	20	15	60.00	5.00	55.00	—	—
Holyoke	43,348	—	—	—	—	—	—	—
Brockton	33,939	5	2	40.00	20.00	20.00	—	20.00
Salem	33,155	20	13	45.00	5.00	40.00	—	—
Haverhill	32,925	9	3	11.11	11.11	11.11	—	—
Malden	30,209	8	4	75.00	—	62.50	—	12.50
Chelsea	29,806	12	8	16.66	8.33	8.33	—	—
Fitchburg	29,383	7	6	42.63	14.21	—	—	—
Newton	28,837	14	7	28.56	7.14	28.56	—	—
Gloucester	27,293	—	—	—	—	—	—	—
Taunton	26,955	21	14	33.32	4.76	23.80	—	9.52
Waltham	22,058	4	0	—	25.00	—	—	—
Quincy	19,642	—	—	—	—	—	—	—
Pittsfield	18,802	4	2	50.00	—	25.00	—	—
Everett	16,585	5	3	40.00	20.00	20.00	—	—
Northampton	16,331	4	2	50.00	—	25.00	—	—
Newburyport	14,073	—	—	—	—	—	—	—
Amesbury	10,920	3	1	33.33	—	—	—	—

Deaths reported 3,254: under five years of age 1,616; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fever) 1,105, diarrheal diseases 869, consumption 269, acute lung diseases 158, diphtheria and croup 112, whooping-cough 41, typhoid fever 36, scarlet fever 16, cerebro-spinal meningitis 11, measles 10, erysipelas 5, malarial fever 4.

From typhoid fever New York 12, Philadelphia 9, Washington 4, Cleveland 3, Pittsburg 2, Charleston, Fall River, Lowell, New Bedford, Northampton and Amesbury 1 each. From scarlet fever New York 4, Philadelphia, Brooklyn, Cleveland and Cambridge 2 each, Boston, Worcester, Lowell and Chelsea 1 each. From cerebro-spinal meningitis New York 3, Washington 2, Boston, Cleveland, Somerville, Springfield, Pittsfield and Everett 1 each. From measles New York 5, Brooklyn 2, Philadelphia, Pittsburg and Springfield 1 each. From erysipelas New York, Cleveland, Pittsburg, Nashville and Lowell 1 each. From small-pox Brooklyn 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending July 21st, the death-rate was 16.6. Deaths reported : acute diseases of the respiratory organs (London) 124, diarrhea 241, measles 136, whooping-cough 82, diphtheria 57, scarlet fever 46, fever 26, small-pox (London, Oldham and Bradford 1 each) 3.

The death-rate ranged from 9.8 in Cardiff to 23.5 in Liverpool; Birmingham 16.1, Bradford 12.3, Bristol 12.0, Gateshead 11.7, Hull 11.0, Leeds 17.4, Leicester 13.5, London 16.8, Manchester 18.6, Nottingham 15.9, Plymouth 16.0, Portsmouth 13.4, Salford 22.0, Sheffield 18.6, West Ham 17.1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 28, 1894, TO AUGUST 3, 1894.

Leave of absence for one month, to take effect about August 6th, with permission to apply for an extension of one month, is granted **First-Lieut. R. S. Woodson**, assistant surgeon.

Leave of absence for one month, to take effect about October 1, 1894, with permission to apply for an extension of one month, is granted **First-Lieut. F. A. Winter**, assistant surgeon.

First-Lieut. A. N. Stark, assistant surgeon, now at Fort Sam Houston, will proceed to Camp Eagle Pass, Texas, and report for temporary duty.

Leave of absence for one month and twenty days, to take effect on or about August 15, 1894, with permission to leave the United States, is granted **Lieut.-Col. Alfred A. Woodhull**, deputy surgeon-general.

By direction of the Secretary of War, the order assigning **Captain George McCreery**, assistant surgeon, to duty at Fort Washakie, Wyoming, is revoked.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 4, 1894.

J. A. Hawke, surgeon, detached from "Independence" and to the "Charleston."

J. B. Parker, surgeon, detached from "Charleston" and to the "Idependence."

A. M. D. McCormick, passed assistant surgeon, from "Charleston" and to the "Monterey."

R. G. Broderick, assistant surgeon, from Mare Island Hospital and to the "Charleston."

J. S. Hope, assistant surgeon, from "Charleston" and to Mare Island Hospital.

W. F. Arnold, passed assistant surgeon, from the "Monterey" and to the "Charleston."

RECENT DEATH.

Judson B. Andrews, M.D., Superintendent of the State Hospital for the Insane at Buffalo, N. Y., died August 3d, aged sixty years.

BOOKS AND PAMPHLETS RECEIVED.

"The Martindale Herbarium." Reprint. 1894.

Appendicitis Obliterans. By N. Senn, M.D., Ph.D., LL.D., Chicago. Reprint. 1894.

Seventy-fourth Annual Announcement of the Philadelphia College of Pharmacy. 1894.

One Hundred Years of Business Life, 1794–1894. New York: W. H. Schieffelin & Co. 1894.

The Phonographic Record of Clinical Teaching, No 1. London: Sir Isaac Pitman & Sons. June, 1894.

Annual Announcement and Catalogue, Sessions 1894–95, Baltimore University, School of Medicine, Baltimore, Md.

Fifty-fourth Annual Announcement of the Missouri Medical College, Session 1894–95, and Catalogue of Session 1893–94.

On Guaiacol Applied Externally as an Antipyretic. By Julius Friedenwald, A.B., M.D., and H. H. Hayden, M.D. Reprint. 1894.

Report for the Year 1893–94. Presented by the Board of Managers of the Observatory of Yale University to the President and Fellows.

Association of the Alumni of the Albany Medical College, Medical Department, Union University, Proceedings of the Twenty-first Annual Meeting held April 18, 1894.

Amputation of the Entire Upper Extremity (including the Scapula and Clavicle), and of the Arm at the Shoulder-joint; with Especial Reference to Methods of Controlling Hemorrhage, with a Report of One Case of the Former Amputation and Four of the Latter. By W. W. Keen, M.D. Reprint. 1894.

Original Articles.

THE FREQUENCY OF PUERPERAL SEPSIS IN MASSACHUSETTS: ITS DIAGNOSIS AND EFFICIENT TREATMENT.[1]

BY EDWARD REYNOLDS, M.D., OF BOSTON.

At the time when I promised to prepare a paper for this meeting, I had been much interested by statistical reports of the frequency of puerperal sepsis in England and in New York state; and as such cases are always sufficiently common in my consultation practice to convince me that deaths from this cause are only too frequent here, I had thought that a report upon its frequency in Massachusetts would be of interest; but on consulting the only sources from which such statistical information can be obtained, that is, the reports of the City and State Boards of Health, I found this cause of death reported with so surprising an infrequency that I was obliged to conclude that the profession had not put it in the power of these boards to make an accurate and reliable statement on this point. I found, for example, that if I were to believe in the accuracy of the reports, I should be forced to conclude that I, personally, had seen in consultation during the year 1893 almost one-fourth of all the fatal cases of this disease in this city of half a million inhabitants. Such an hypothesis is manifestly absurd, and I am regretfully forced to abandon any attempt at estimating the frequency of septic disease among us and to confine myself in this paper to the question of its diagnosis and treatment.

I am the more ready to limit myself thus on account of the importance of these points, and because the experience which I have gained from consultation practice convinces me that a great many of the profession fail to recognize the all-important therapeutic distinction which exists between sepsis in its early or localized stage, and sepsis which has been allowed to reach the point of constitutional infection. In illustration of this point I wish to quote the results of thirteen cases of puerperal septic disease which I have seen in consultation since January 1, 1893, as compared with the fifteen cases which occurred under my charge in the Out-Patient Department of the Boston Lying-In Hospital during the year 1893.

In five of the thirteen consultation cases I was called while the disease was still localized in the uterus, and under prompt treatment all five made prompt recoveries. In two the disease was advanced, but had localized itself in the pelvis as pelvic abscess; under surgical treatment one made a fairly prompt, and the other a very slow recovery. In six cases constitutional infection was marked, without localization of the disease in the pelvis; of these, one recovered after an exhausting illness and the other five died, a mortality of 38½ per cent. of the whole number, and of 83½ per cent. of the late cases.

The contrast between this record and that of the hospital is very marked. During the year 1893 there were fifteen cases of sepsis among the 1,352 out-patients of the hospital.[2] Of these fifteen cases, one refused treatment, was under the care of some physician, to me unknown, for the succeeding five or six days, and was then sent into the City Hospital in a state of such advanced constitutional infection that she died in spite of the most energetic treatment. Of the fourteen consecutive cases who submitted to treatment recommended, not one died.

The practitioner is too apt to be unwilling to diagnose sepsis in his own cases; he is too prone to shut his eyes to the possibility of infection, to adopt every other explanation of the condition of the patient, and admit the existence of sepsis only after it has reached the incurable stage. Those who are in the habit of believing that the slight disturbances of health and temperature, which either constitute mild sepsis or herald the approach of grave sepsis, are due to milk fever, nervousness, excitement and other indefinite ailments, do not recognize the fact that under strict asepsis the convalescence from labor is always perfectly smooth and unattended by any elevation of temperature, unless some definite entity of intercurrent disease is present; that the mild disturbances which are frequently seen must therefore be considered mild sepsis, and that it is seldom possible to say in advance that they are not the initial stages of a severe attack. Every rise of temperature or disturbance of the health during the puerperium is not, of course, due to sepsis, but every such disturbance should be considered sepsis until some other cause can be established to account for it.

After labor, the first, or first and second temperature may be high as the result of fatigue, but the subsequent temperatures should be between ninety-eight and ninety-nine, and when any rise above the latter figure occurs its cause should always be investigated. It may be due to disturbances in the breasts, constipation, intercurrent non-obstetric diseases, or sepsis, and when any such slight disturbance of the health of the puerpera arises the differential diagnosis between these conditions should always be carefully made.

Slight disturbances in the breast may account for considerable elevations of the temperature, but the condition of the breast should not be permitted to account for the disturbance unless the intrinsic symptoms of sepsis are absent, nor if relief of the mammary disturbance is not followed by a prompt subsidence of the temperature.

Constipation should not be allowed to occur, but if the bowels have been inactive before the appearance of the rise of temperature, they should be promptly and thoroughly opened, when any elevation due to this cause will at once disappear, and any disturbance which remains must be accounted for in some other way.

Intercurrent non-obstetric diseases must be excluded by a careful physical examination of the patient as a whole. Among the most common are malaria, pneumonia, tonsillitis, and exacerbations of pre-existent, latent, inflammatory troubles in the pelvis. Malaria can only be established by a careful exclusion of sepsis; or by the existence of repeated chills which recur at regular intervals, are out of proportion to the constitutional disturbance and are followed by feverishness and a return to comfort after a short interval. There should, in short, be as much symptomatology to establish the diagnosis of malaria in the puerperal state as would be required at any other time. Malaria is a convenient excuse and it is too common to see a diagnosis of malaria admitted *pro forma* and without any careful consideration of the condition of the patient. Pneumonia should be diagnosed only by the presence of the well-known signs of physical examination of the chest, and not by the presence of cough and hurried breathing, which are not infrequently mere reflexes from the pelvis. I have twice been called in consultation to see cases in which the puerperium was said to be complicated by pneumonia, but in which the real condition was an acute purulent salpingitis, and in which all pneumonic symptoms disappeared after the tubes had been emptied of pus. Tonsillitis is to be excluded or established by examination of the throat; local pelvic inflammation by the ordinary bi-manual examination of the pelvis, and the other less frequent non-obstetric diseases by the absence of their characteristic symptomatology.

---

[1] Read before the Massachusetts Medical Society, June 13, 1894, and recommended for publication by the Society.

[2] Under the methods of the present day septic disease has become extremely rare in the wards of the institution. Even in the Out-Patient Department, in which the worst fed, worst lodged, and most filthy of the community are attended under the immediate care of a constant succession of inexperienced men, a careful supervision of their work has reduced the number of cases of sepsis to fifteen in a total of 1,352 cases confined during the year 1893, a percentage of sepsis of 1.1 per cent.

It should never be forgotten that even if one of these diseases is actually present it may still be complicated by sepsis; that none of them are competent to produce the symptomatology of sepsis; and, finally, that when the temperature of the puerpera is disturbed, in the absence of definite ground for a diagnosis of some other disease, the probabilities are in favor of the existence of sepsis.

The early diagnosis of sepsis rests mainly on the physical signs which can be gained by examination of the patient. The symptomatology of obstetric sepsis is commonly described as consisting of an elevation of temperature, a decrease in the lochia and milk, some decrease in the other secretions of the body, foulness of the lochia and abdominal distention and tenderness, which latter is most marked over the fundus of the uterus; but this description is of little value to-day. He who fails to diagnose sepsis, when such a symptomatology is presented him, is ignorant of the rudiments of his art; while he who must wait till this symptomatology is present, is unable to diagnose sepsis at a time when his diagnosis is of any great value to his patient; for this group of symptoms is the symptomatology of constitutional infection, and when this is present the disease has passed beyond its early and curable stage, the physician has failed in his duty, and the patient is in an extremely dangerous, if not hopeless state.

To take up these symptoms in detail. The decrease of the milk and other secretions only comes on after constitutional infection has existed for some days, and this symptom is therefore seldom or never present in the curable stage of the disease. Decrease in the quantity of the lochia is apt to come on late, and should not be waited for. Foulness of the lochia is usually present at a tolerably early stage, but is not a reliable guide, since it sometimes does not occur until during the latest stages, and on the other hand may be extremely marked as a result of external decomposition of the lochia, when there is little or no true sepsis present.

The odor of sepsis is, in fact, dependent on the presence in the lochia of the comparatively harmless bacteria of decomposition, and is not produced by pure infections of the more dangerous pathogenic forms. I have repeatedly seen cases of serious septic disease in which the uterine secretions yielded pure cultures of streptococci, staphylococci, or the Klebs-Löffler bacillus of diphtheria, in spite of an entire absence of odor in the lochia.

There is little left, then, of diagnostic value which can be obtained during the promptly curable stage, except uterine tenderness, the other characteristics of the uterus shortly to be spoken of, and the course of the temperature. These symptoms must then be carefully considered. Much may be gained by a careful study of the temperature, which should, therefore, always be plotted on paper, during every convalescence from labor. Septic infection may originate during labor, or at any period during the first eight days thereafter, but its pyrexia appears most commonly on the third, fourth or fifth day. When the temperature rises suddenly from the normal point to above 101°, with or without a chill, and is accompanied by but little uterine tenderness, the pyrexia is usually not symptomatic of sepsis; but when such a rise is due to septicemia, the case is always one of extreme virulence, and is likely to be promptly fatal. Such infections can only occur from the introduction into the system of a large quantity of pathogenic bacteria, and are to-day infrequent. Any case which presents such a rise should be visited with great frequency till the observer is either able to establish the presence of some other disease as a cause for the pyrexia, or till either a rapid increase in uterine tenderness, or the appearance of a foul odor enables him to diagnose the presence of this very dangerous form of septicemia, which has been well named by Garrigues septicemia acutissima.

When this fortunately rare form of septicemia is present there is but little hope for the patient, and that little consists in the adoption of the most radical measures of treatment at the earliest possible moment. The onset of the more ordinary forms of sepsis is, on the other hand, usually accompanied by a gradual and insidious elevation of temperature. It is, then, these gradual and not excessive rises of temperature which are most suspicious of sepsis, and when such a pyrexia is attended by a recurrence of uterine tenderness or by an undue prolongation of that which is so often seen immediately after labor (or by any foulness of the lochia), it is sufficient reason, in the absence of other symptomatology, for a physical examination of the genital tract. This is, if aseptically performed, a harmless procedure, and, if the reason for it is boldly explained to the patient, will never be objected to by her.

The vagina should be exposed and its surface searched for the so-called pseudo-diphtheritic gray patches, and this is best done by a Sims speculum, the only one which thoroughly exposes the vaginal walls. The surface of the cervix and such portion of the cervical canal as is visible should at the same time be especially carefully searched. If no such patches are found, the cervix should be seized with a pair of double hooks and a small swab of sterilized cotton should be passed into the interior of the uterus, and withdrawn covered with uterine lochia. The odor of this should be carefully noted, since the uterine lochia may be foul while the vaginal secretions are still uninfected. If no odor is discovered, the sterilized cotton may be put into a sterilized test-tube and reserved for a bacteriological examination, if the conveniences for this are at hand. The patient should be turned upon her back, and a bi-manual examination should be made. The size, consistency and tenderness of the uterus should now be noted, since subinvolution, undue softness and tenderness of the fundus and an undue patency of the os, are charactistic of the infected uterus. Finally, the region of the broad ligaments should be carefully palpated in the search for acute inflammatory conditions in their substance.

If gray patches are found in the vagina or on the cervix, but the uterus is of sufficiently firm consistency and small size to correspond to the period of the convalescence at which the examination is made, the gray patches should be thoroughly powdered with iodoform, and the physician should wait until the following day before invading the uterus. If, then, the patient is improving, the treatment should be repeated daily till the gray patches disappear. If, in the presence of an infected vagina or cervix, the uterus is soft, flabby and over-large, with a widely open os and markedly tender, it is generally safe to infer that its cavity is already infected, and the treatment must be directed primarily to it.

When infection of the uterus has been diagnosed, it may be treated by intra-uterine douches of an antiseptic solution, by placing iodoform bougies in the uterine cavity, or by these in combination with the use of the curette. The first two remedies have long been popular, but even the repeated use of intra-uterine douches is often ineffective, and they are never free from danger. Indeed, he who has once adopted the use of the curette and has learned by experience the amount of foul *débris* which can be removed from the infected uterine cavity, will, of necessity, soon give up the idea that the mere washing of its surface with corrosive sublimate can be a measure of any considerable value.

The use of the curette is attended by two dangers. First, an incomplete removal of the *débris* leaves a fresh wound in direct contact with septic material; but it has been shown by experience that this danger can be avoided by thoroughness in the use of a good technique. Second, the walls of the puerperal uterus are of soft consistency, and might undoubtedly be perforated by a sharp curette in the hands of a careless operater. The uterine muscle is, however, so much more firm than the infected decidua which covers it, that the difference is instantly appreciated by the touch; and while the operation is not one which should be recommended to those who are entirely unskilled in instrumentation, it is one which is within the capacity of any one who is possessed of even an average degree of surgical tact — as is shown, I think, by the facts that I have, for years, taught this operation to all my house-officers at the Lying-in Hospital; that, in the majority of our cases, the curettage of the uterus has been done by them, under my supervision; and that no one of them has ever had an accident.

The curette used should have a large blade, in order to make it easy to cover the whole interior surface of the large puerperal uterus, and in order to distribute its pressure over a large surface; it must have a long shank in order to reach the fundus, and the shank should be flexible, in order to make the various curves which are needed to enable it to reach every portion of the uterine surface. The technique which I recommend is as follows:

The operation should begin with a thorough intra-uterine douche of corrosive sublimate, about 1 to 3,000. This may be given by any form of intra-uterine douche pipe, but I think that the danger of retention of the fluid is best avoided by the use of the instruments I show. The cervical speculum is that devised by Dr. W. L. Burrage, only modified by increasing its size to that which is suited to the parturient uterus. When it has been placed in position in the cervix, the tube is attached to a fountain, or Davidson syringe, is carefully emptied of air, and passed through the speculum to a point near the fundus of the uterus. The advantages of this tube are — first, that its size is so small in comparison with the speculum that a free return of the fluid is provided for; and secondly, it is made of drawn brass, and can therefore be sterilized after each case by heating it red-hot in the flame, the only way in which a tube can be sterilized. When the uterus has been thoroughly douched, the curettage may be performed through a Sims speculum, or with the patient upon her back and without a speculum, as the operator prefers. The curette should be bent so that its cutting edge is directed towards the concave side of the curve, and the curve should be sufficiently sharp and long to permit the blade to reach the anterior wall of the given uterus at a point near the fundus. The instrument should then be introduced to the fundus, held lightly between two fingers and the thumb, and made to cover the whole anterior wall till every portion of its surface yields the firm, grating sensation to the touch, which is characteristic of uterine tissue. It should then be given the opposite curve, and made to cover the whole posterior wall in the same thorough manner. Next the curette should be so bent that its cutting edge will correspond to one lateral wall of the uterus; that wall should then be curetted, and while the instrument is thus curved, it should also be made to pass across the fundus. The same treatment should then be given to the other lateral wall. The intra-uterine douche should then be repeated, and the surface of the uterus should be covered with iodoform. This may be done by the use of iodoform bougies, but is, I think, much more thoroughly accomplished by packing the uterus with iodoform gauze through the cervical speculum, which is already in position. This completes the treatment.

My experience in the last five years warrants me in stating that when such treatment as this is adopted before the constitutional symptoms of sepsis are pronounced, its results should be uniformly good. In many of the cases the next temperature is normal, in the vast majority it is normal within forty-eight hours, and no subsequent symptoms appear. In a few cases the convalescence is more protracted, but out of the large number of cases which I have treated in this way I have never seen a fatal result in a case in which the treatment was instituted early. When the stage of marked constitutional infection has been reached, the outlook is far less hopeful, yet even then a thorough curettage will sometimes lead to the recovery of apparently hopeless cases, if backed by active supportive treatment; and it is an absolute rule that no woman should be allowed to die from obstetric sepsis without a resort to this procedure.

AN UNUSUAL ADVERTISEMENT. — Old superstitions die hard, as is shown by the following curious advertisement from a New York daily paper within a month: "CAUL FOR SALE, reasonable. Address ——, box ——, *World*, uptown."

SPRAINS AND DISABLED JOINTS.[1]

BY E. H. BRADFORD, M.D.

It is a truism which will admit of no dispute that a patient's condition should never be made worse by treatment, and yet it sometimes happens that an excess of care does harm. Joints become disabled after a slight injury — not from the injury, but from too great caution in treatment.

The following cases will serve as illustrations:

Case I. A young lady, twenty-three years of age, when a student at Vassar College, sprained her right ankle. She was not a person of robust health, and the sprain was in no way unusual. She was treated by a physician in the neighborhood, who applied a stiff bandage, which was worn for several weeks. This was afterwards removed, the foot again examined, and a stiff bandage re-applied. The patient was told that if inflammation set in, there would be danger of a stiffness and a disabled condition at the joint which would cripple her for life, and that as long as there was pain and swelling, inflammation was present.

The young lady gave up her studies at Vassar, returned to her home, and for the following six months used her crutches, as she found that any attempt to walk on her sprained ankle caused pain. This she regarded as an indication of inflammation, and as demanding rest. At the end of six months an apparatus was applied to the ankle which enabled her to walk without crutches for a while, but she again turned her ankle and resumed her crutches.

In the following year the patient sprained her left ankle in attempting to walk with a cane. This ankle became painful and swollen, was treated by a stiff bandage; and the patient being unable to walk, she was confined to a wheeled chair, judging that pain and swelling demanded the disuse of either ankle, and that unless great care was used she would become crippled for life.

She remained in this condition for six months, and was brought to the Carney Hospital for treatment, not having stepped for a year upon either foot. On examination it was found that the muscles of both legs were weaker than usual. The patient was of a spare build and nervous type, but otherwise sufficiently healthy, though there was said to be a tubercular family history. All motions in both ankles were normal. There was no swelling of the joint proper, though there was said to be swelling of the foot at times. There was no malposition of the feet. The patient was timid and nervous (but no more so than usually seen in chronic invalids), but was thoroughly impressed with the necessity of the disuse of joints previously sprained, lest inflammation should follow and increase, perhaps necessitating amputation, as had been told her by the physician she had consulted at the time of the spraining of the first ankle.

Both ankles were bandaged firmly, the bandage being constantly worn. If these were removed, swelling of the feet would follow, which increased the anxiety of the patient.

The condition was manifestly one where the ankles were disabled by prolonged fixation and bandaging. The necessary treatment naturally consisted of improvement in the circulation of the limbs and the development of the muscles. This, in addition to the dis cul furnishing of ankle-supports at first, and flat-foot plates (which were gradually removed) was all that was sufficient to establish a complete and permanent cure, although the treatment necessarily involved a period of several months.

Case II. A lady, forty years of age, of active temperament, but without great physique, sustained a sprain of the left knee. There was pain and effusion into the capsule of the joint, which was properly treated by fixation and compression. Later, the fixation splint was removed for a time, but was afterwards re-applied; but the bandage compression was continued, and the patient told that if there was any increase of the swelling at the knee, it would be necessary to resume the fixation apparatus.

After a time the patient changed her residence, and came under the care of various surgeons who successively recommended fixation and compression. After a while the removal of either the bandage or the apparatus increased the painfulness of the joint and the swelling, so that the patient was practically disabled.

On examination it was found that the knee was smaller than the other knee. There was atrophy of the muscles above the joint of the compression. There was some puffiness of the subcutaneous tissue in the space between the ligamentum patellæ and the condyles. There was no swelling or fluid in the sac of the capsule or the patella. This patient was extremely apprehensive of any attempt to allow greater motion at the knee, or to diminish the bandage which tightly bound, not only the joint, but parts above and below it. A great deal of persuasion was necessary before the patient was willing to consent to any attempt to gradually remove the bandage. The removal of the bandage was gradually done, however, and was followed by gradually increasing gymnastic exercises developing the muscles of the leg. After several months a perfect cure was established, which has remained permanent in the subsequent three years.

Case III. Similar to Case II, with the exception that both knees were affected. The bandage was worn firmly applied to both knee-joints. There was great atrophy; but on examination there was no evidence of any inflammatory or disorganizing process. There was complete motion at the joint; there was no swelling; there was muscular atrophy above the joint and also in the muscles of the leg. Pain and swelling were complained of if the bandages were removed, or if the patient took any active exertion.

This patient had been acting under the advice of several physicians who had examined her successively, and had informed her of the danger of using a sprained joint too soon.

The patient was unable to arrange for continued treatment, returned to her home, and at the latest report considered herself permanently disabled and had given up her occupation.

Although these cases are extreme ones, they will serve to illustrate a common opinion in the minds of the profession that sprained ankles and knees are to be treated with a good deal of care; that they are extremely tedious cases, and should be managed with great caution. This opinion is partly based upon what may be termed a tradition that anything involving the joints is hazardous. This belief, which amounts in some instances almost to a superstition, is analogous to what prevailed in the past generation as to operations on the larger cavities, namely, the abdominal, pleural and cranial cavities.

---

[1] ead before the Boston Society for Medical Improvement, March '94.

In view of this feeling as to the necessity of caution in the treatment of any injury of the joint, it is well to consider carefully what dangers surround injuries of joints, and why there is need of special care. The chief dread after injuries of this class is of a resulting stiffened joint; and it may be desirable to call to mind the causes which will give rise to anchylosis in the knee and ankle, for these are the joints most exposed to injuries which are classed as sprains.

The pathological processes which give rise to stiffness at the joints are: (1) tubercular ostitis or synovitis; (2) the rheumatic or rheumatoid affections; (3) that alteration of the condition of the peri-articular tissues which is often seen with an impaired condition in the nutrition of the synovial surfaces and with the exaggerated sensitiveness which is observed in the neurasthenic or so-called hysterical joint. It may be said of the last of these that fixation is the method to be used most sparingly of all methods of treatment in cases of this class.

Tubercular processes may, and frequently do, follow violence. The well-known experiments of Schuller demonstrate this fact beyond doubt; and yet, pathological evidence would show that in healthy adults without tubercular history, the danger of tubercular ostitis or synovitis following an injury, is so slight as to be disregarded — in the same way that the danger of typhoid fever following the ordinary exposure to cold is so slight as not to disturb the judgment of any physician in advising his patient.

The tubercular processes develop, as is now known, only where the requisite diathesis is present, and are more frequently seen in children than in adults, for the reason that well-organized and solidified bone resists the invasion of the tubercular bacillus, which attacks, in adults with a predisposition, the lungs rather than bone.

No physician, therefore, would be justified in pursuing an overcautious treatment in a sprain of the ankle, in the fear of tubercular ostitis — that is to say, caries — in a healthy adult who has sustained an injury.

This is even more true of rheumatic or rheumatoid processes, there being no positive evidence whatever that the rheumatoid, that is constitutional processes are ever caused by injury, although they may be aggravated by violence. The same is, of course, true of the semi-septic processes which are manifested in puerperal synovitis.

This suggests the query as to what lesion is found in a sprain. The inquiry may, for brevity, be limited to the knee- and ankle-joint, as being the parts chiefly exposed to sprains, and also as being the most important joints. Sprains of the hips are chiefly contusions, and are not to be classified in the same category. If a dissected ankle be examined and submitted to a violent twist, it will be seen that the forced motion causes a strain upon the ligaments and the tendons, chiefly of the medio-tarsal joint, and that contusion of the bone itself is not the rule.

In sprains, the weight ordinarily is thrown upon the forcibly inverted foot or the forcibly everted foot. In some instances the foot may be forcibly flexed or extended. In the latter instance, although the astragalus is involved in the motion, the strain falls upon the ligaments and tendons of the fore part of the foot. The astragalus in its articulation with the tibia and fibula is so thoroughly mortised, and the os calcis is so well protected by the deltoid and astragalo-calchoid ligament, almost the strongest of the body, that displacement is not to be anticipated except in the severer injuries.

It will be seen on examining a dissected foot that the medio-tarsal articulation is capable of quite free movement if it were not for the ligamentous checks, and that in a severe fall or twist, or other violent injury, the parts which would suffer would be chiefly, as has been mentioned, the ligaments and synovial sheaths, as well as the ligamentous fibres and attachments of muscles. With the exception óf such violence as would cause fracture, it is demonstrable that a complete rupture of the ligaments is not to be expected in the ordinary accidents which give rise to the condition known as sprains.

The same facts are true, but to a less degree, of the knee-joint. The motions in which a strain is to be anticipated are a lateral force pressing the knee in or out, an exaggerated flexion of the knee, or a twist. Extreme hyper-extension is rarely met, and if of sufficient violence to cause anxiety, would occasion a fracture.

The clinical symptoms which are seen in sprains are as follows: The patient meets with a violent twist or fall. The weight of the body is thrown upon the joint which happens to be fixed or placed in such a position that the weight of the body exerts improper leverage, and an unusual strain takes place. The muscles being violently exerted to preserve the equilibrium, the patient suffers extreme pain, and may be faint or be attacked by a fainting sensation; any attempt to use the limb may be either impossible or excessively painful. This is followed by swelling, sensitiveness and discoloration. This condition remains for a comparatively long time. Attempt at walking is painful, and the joint remains in a weakened condition for a long time.

If the parts were dissected at this time, it is probable that there would be found the ruptured capillaries with effusion of blood, effusion of serum, and rupture of some of the ligamentous fibres, and probably also, in some instances, of the fibres of the capsule. An increase of synovial fluid sometimes takes place in the knee, and extravasation of blood. An injury to the cartilages, or extravasation of blood under the cartilage following violence at the ankle not sufficient to fracture, would seem to be, from the anatomical position of the ankle, exceptional.

TREATMENT.

If we accept these statements as correct, it would appear that, with the exception of such support as is necessary to give time for the repair of the few stretched ligamentous fibres, treatment should be directed at first to check the effusion and extravasation.

This can be done in several ways: (1) by compression carried on for a short time; and (2) by such means as would improve the circulation in the peri-articular tissues, namely, the application of heat and cold, massage, and motion of the joint, which, however, should be restricted in character so as to prevent any excess of motion or stretching of the strained ligaments.

The length of time for which it is necessary to protect from extreme motion will vary in any individual case according to the amount of reparative power, the amount of violence and the age. But there would seem to be no justification for the popular opinion that a sprain is worse than a break, an opinion which would appear to be based upon the over-cautious treatment following such injuries, which, by interfering with the proper circulation of the part and guarded motion, increases the sensitiveness and produces a condition which, if unchecked, may develop a disabled joint, which is more tedious than an ordinary fracture.

This condition is what is occasionally seen in joints which are stiffened simply from disuse, for, as is well known, in limbs which are held stiff in the treatment of fractures, there is more pain and sensitiveness in first attempting to move the uninjured joints which have been fixed in the treatment of the fracture than in the fractured part itself.

The condition following a sprain is somewhat analogous to that seen in the soft parts near the site of fractures, namely, the circulation is interfered with, there is a certain amount of soreness on motion, and the muscles and ligaments are strained. As in the condition which follows the treatment of fractures, a great deal of stiffness of the fixed joints remain, and on any attempt to use the limbs there is pain.

In the treatment of sprains we should not be influenced by what is termed by Verneuil, "anchylophobia." A sprain is not a fracture; at most, it is a tear or a rupture of some of the fibres of certain ligaments. This unites readily. If a tendo-Achillis can be safely moved in a fortnight after tenotomy, certainly a few ruptured or stretched ligamentous fibres should not be regarded as grounds for fixation for a longer time.

The patient's pain is the natural check to an excess of motion.

Fixation by apparatus is only necessary if demanded to stop pain for a short time after a severe sprain.

In the early stages motion within the pain-limit is harmless; in the later stages of a sprain, motion and use should be allowed up to the point of pain; and in some instances in hypersensitive persons guarded and protracted motion, even beyond the point of pain, is indicated.

Compression may be advisable for a short time during what may be termed the period of effusion, after that it becomes injurious.

As means to improve the circulation, applications of heat and cold and rubbing are needed from the first, as well as during the whole treatment; and use of the limb, when permissible through absence of pain, is a natural means of improving circulation and nutrition.

The establishment of a precise diagnosis is of the most importance in sprains. If this is certain, the treatment is clear and simple.

* * *

DEFORMITIES OF THE SEPTAL CARTILAGE.

BY A. COOLIDGE, JR., M.D.,
Physician for Diseases of the Throat, Massachusetts General Hospital.

The septal cartilage may be considered as roughly triangular in shape, and is commonly known as the triangular cartilage in English text-books. It is held in a bony frame, except along a portion of two of its sides and the angle between them. This free angle carries the tip of the nose (Fig. A). The cartilage is very elastic, and has a wonderful power of straightening itself even after extensive injury, but we find it more or less irregular in a very large number of persons.

For convenience these irregularities may be divided into four varieties (Fig. B.); (1) the cartilage, as a whole or in part, may be simply bowed or bent from its perpendicular plane without being broken or thickened; (2) it may have been fractured along one or more lines, forming a sharp bend or angle; (3) it may present a spur or ridge of cartilage projecting from its surface; and (4) it may have been dislocated from one of its bony attachments and united in a new position. Very often more than one of these conditions is found at the same time. Spurs are often found on the convex side of sharp deviations, and more commonly still along the synchondroses of the cartilage with the vomer or the ethmoid, either with or without a certain amount of dislocation.

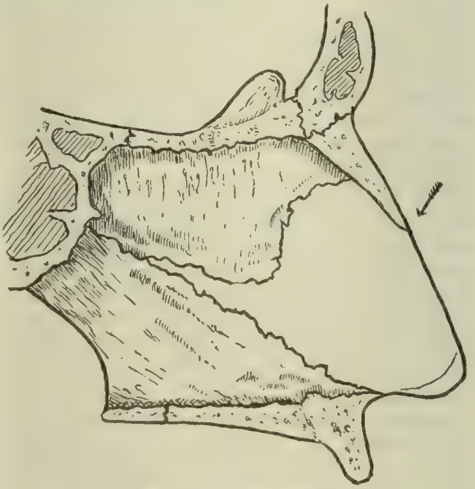


Fig. A. — The Nasal Septum.

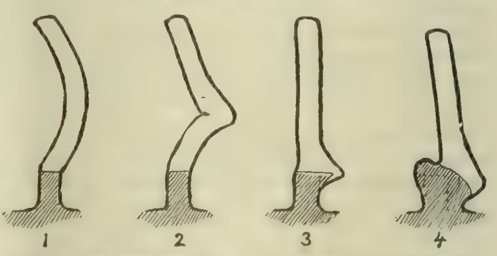


Fig. B. — Diagrammatic Section of the Septum, through a line represented by the arrow in Fig. A.

In order to form some idea of the frequency of these deviations, I have examined the septa of a number of patients in a hospital clinic at random. Of course, as many of these patients came to the hospital for some trouble of the nose, the statistics are of no value as showing the frequency of deviations in the community at large. From one hundred cases a well-marked ridge, in one or both nostrils, was found along the cartilage-vomer synchondrosis in fifty-eight; and along the cartilage-ethmoid in fifty-one. A noticeable bend of the cartilage in some part of its

---

[1] Read before the Boston Society for Medical Improvement, March 26, 1894.

extent occurred in forty. In six there had been an evident dislocation of the cartilage from the vomer; and in four an old fracture of the cartilage.

Concerning the etiology of these deviations there can be no doubt that most if not all of the cases are of traumatic origin. The injury may not have been severe enough to be remembered. It may have been a series of minor blows on a nose already bent or weakened. The septum may have changed its shape subsequently in attempts of nature at repairing the injury. Whether any other cause produces these deformities is a question which is frequently discussed; the principal reason for believing that it does is the redundancy of tissue often present. A bowing cartilage set in a solid bony frame suggests an abnormal development of the cartilage; in most cases, however, the bowing can be explained by supposing an old greenstick fracture. Where the cartilage bows into one nostril, the tip of the nose and sometimes the nasal bones also are deviated towards the opposite side of the face, the bony septum often joining in the same bowing. One nasal cavity is thus encroached upon and the other one enlarged. In the case of a simple spur, respiration may be impeded in one nostril without any corresponding enlargement in the other. Up to a certain point these changes in size of the nasal cavities are compensated for by an enlargement of the turbinate bones opposite a concavity in the septum and their retrocession opposite a convexity. Beyond this point symptoms of nasal obstruction are found, and for this obstruction we may be called upon to operate. In front of the anterior end of the lower turbinate, opposite the anterior border of the nasal process of the superior maxilla, the nasal passage is narrow; no change in the external wall is possible; and obstruction to breathing is more easily brought about.

In operating on the cartilage it must constantly be borne in mind that we are not dealing with a solid structure, but with one that is very elastic, and liable to be changed in shape by cicatricial contractions and by other causes. The elasticity of a bent cartilage is sufficient to bring it back to its original shape even after it has been held straight for a long time. It may be bent straight several times a day, or a splint put against it for weeks without accomplishing anything; to remain in a new position its resiliency must first be destroyed and redundant tissue must be removed. For this purpose several methods and several instruments have been brought forward. For simple bowing of the cartilage, Heylen, in 1847, dissected the mucous membrane from the projecting convexity, and removed a piece of the cartilage. Different modifications of his operation have been described since. Blaudin punched small disks in the cartilage with an instrument not unlike a conductor's punch. Steele introduced a modification which, used in the same way, produces stellate incisions. A septum redresser, consisting of a pair of flat, smooth blades for crushing or refracturing the septum, was brought out by Adams in 1875. Asch describes an instrument, one blade of which is flat, the other with a sharp edge, like a can-opener, for making a series of incisions through the cartilage. Roberts advocated the division of the cartilage with a bistoury, and the insertion of pins to hold the fragments together until union has taken place. Ingals, with a small nasal trephine, drills out a few cores of cartilage lengthwise without perforating the mucous membrane of the concave side. For the removal of spurs and ridges, a knife, if the obstruction is not osseous, may be used. Bosworth's nasal saw, Seiler's burrs, and the nasal trephine of Curtis, driven by an electric motor, are especially useful. To hold a septum in position after operation, we find recommended by different authors gutta-percha, hard rubber, soft rubber, ivory, glass, tin and zinc covered with cotton, and simple packing of antiseptic gauze or cotton. The problems presented to us by the septum are so varying that it seems to me that one method cannot be used to the exclusion of others. Before speaking of the treatment of the different forms of deviated cartilages, I will summarize a few general rules which I think it is always well to bear in mind.

Too much should not be undertaken at once; it is better to leave something for subsequent operations than to run the risk of leaving the septum with too little support or of perforating it. But an accidental perforation may heal by first intention, if there be no loss of substance, and the wound is kept aseptic.

The resiliency of the cartilage at the point where it is obstructing respiration must be destroyed, so that no pressure is required to hold it in place while healing.

Asepsis is of great importance in shortening the time required in healing, and in preventing soreness and foul discharge.

A smooth surface heals much more readily than a rough one, even if more mucous membrane has been removed, but otherwise it is advisable to save as much of the mucous membrane as possible.

A splint or packing is always disagreeable to the patient, and often retards healing. Wherever it is possible to choose an operation which requires no splint and no packing, or for not more than a day or two, it is much less of an undertaking for the patient.

These operations are always difficult with children, on account of the small size of the nose and their intolerance of packing.

Where the cartilage is not bent, and the obstruction is due to a ridge along the lower border, the ridge may be removed with a knife, a trephine or a saw. The latter is generally preferable, as the bleeding is less than with a knife and the surface is left smoother than with a trephine. If the septum is bent, and a spur is also found in the convex or occluded nostril, I believe that a mistake is often made in simply removing the obstructing spur or thickening. This applies especially to those spurs found on the apex of the line of an old fracture (Fig. B, 2). I am certain that I have seen the bowing of a cartilage much increased a few weeks after a septum has been thus shaved. This danger is greater the farther the spur is situated from bone, and is greater in young than in older persons. I believe that often a spur, at least for some years after its appearance, is a provision of nature for strengthening a weak point; for preventing further bending or dislocation; and that it is a question for judgment in each case whether a septum can be deprived of it safely. Where the conditions allow it, and the obstruction is due to redundant tissue, Bosworth advises that a new septum be sawed out, as one would a board from a log.

For relief of obstruction due to bowing of the cartilage, I have used entirely different methods according to the extent of the deformity. In a case, for instance, where the cartilage has been fractured and dislocated from its lower attachment, occluding one nostril almost entirely, it is impossible to gain enough by a minor operation under cocaine. In such a case I should etherize the patient, free the floor of the obstructed nostril from the dislocated base of the septum by a saw, refracture, and destroy the resiliency of the cartilage with a Steele or Adams nasal forceps, until no cartilage retaining its elasticity obstructs a free passage for respiration. A splint, as large as can be passed through the nostril, can then be laid against the septum, and held in position by gauze. If necessary for better support, another splint can be put in the other nostril. If the nasal cavity be washed out with corrosive sublimate solution and a tin splint covered with iodoform gauze be used, the wounded surface will often be kept clean for several days. By changing the splint on the fourth or fifth day, it may not be necessary to remove it again until the end of three weeks. I have also used splints made of glass with the edges rounded. Their polished surfaces do not irritate granulations, and the nostril can be irrigated without removing them.

Disadvantages of such an extensive operation are, discomfort to the patient from nasal splints and a chance that subsequent cicatricial contraction may again distort the septum. If the nostril is small, care must be taken that adhesions do not form between the septum and turbinates, or the floor. The patient should be warned that he may have to be observed for some time.

When a bent septum is obstructing respiration by simply bowing into one nasal cavity, it is often possible to correct it by an operation much easier for the patient. For this I have obtained good results from two different methods. The first is the old method of dissecting out a piece of the cartilage from the projection. I first try to dissect a flap of mucous membrane from over the projection in the obstructed side, and turn it up, keeping it out of the way with a small pledget of cotton. I do not expect to save all of the mucous membrane of this side, and do not spend much time in trying to preserve it. An incision is then made through the anterior edge of the exposed cartilage, and with a blunt instrument the mucous membrane of the concave side separated from the cartilage. A piece of cartilage, perhaps half an inch long horizontally by a quarter-inch wide, is then cut out, leaving only the intact mucous membrane of the concave side between the two nostrils. If it seems necessary incisions can be made into the edges of the cartilage left on the sides of the hole. The flap of mucous membrane is then replaced, and iodoform gauze put into the nostril sufficient to push what is left of the septum towards or beyond the median line. This packing can generally be left out in a few days. It is better not to take out a larger piece of cartilage than is necessary. Cicatricial contractions during subsequent weeks or months may change the shape of the septum; if they are not extensive, the result may be an improvement, a straightening of the septum; if they are too great, they may bow it in some new direction. An objection to this operation is the time that it takes if bleeding is persistent and the nostril narrow. Also, if much mucous membrane has been sacrificed, the healing may be slow.

The second method is the operation of Ingals, of trephining out cores from the obstructing cartilage. After cocainizing both sides of the septum, a trephine, with a diameter no greater than the thickness of the cartilage, is entered through the convex side into the cartilage at a point where it seems to offer the greatest resistance to replacement. It is kept between the two layers of mucous membrane, drilling out a round core of cartilage for as long a distance as is necessary, and brought out again into the same nostril. This is repeated as often as is necessary to remove redundant cartilage or destroy its elasticity. The cores may be taken either horizontally or obliquely, or both. When the septum can be pressed into the median line without force, it is held there by packing or a splint from a few days to two or three weeks. The passage of the trephine should be watched from the opposite or concave side through the mucous membrane in order to avoid perforating. This operation requires but little time; there is seldom any trouble from bleeding; and all of the mucous membrane is saved except where the trephine enters and leaves. Enough cartilage should be removed to replace the septum without pressure, the splint or packing being only necessary to steady it.

In closing, I can only repeat what I have said before, that the cartilage of the nose often slowly changes its shape for reasons not entirely understood, and that in some cases obstruction recurs to a greater or less extent, but the ultimate results of most of the cases which I have been able to follow have been generally satisfactory. The subject has not yet received the attention it deserves. A patient is sometimes perpetually annoyed by the blocking of one nostril; chronic inflammatory trouble is kept up, and the ear may be affected. In such cases relief can be expected only by establishing normal nasal breathing.

◆

IMPERFECTLY STERILIZED MILK.

BY E. M. BUCKINGHAM, M.D.,
Instructor in Diseases of Children, Harvard University.

During the summer, the problem of keeping babies' milk sweet is important, and the object of this communication is to call attention to certain practical points connected with it.

In some of the large cities we are now so fortunate as to have laboratories where milk can be prepared by prescription in what proportions we please, and so treated by heat as to remain sweet for a sufficient time. This is by all means the most satisfactory way, as it saves trouble and secures definite results, while it adds to our knowledge. If the prescription does not fit the case, it is the fault of the prescriber and not of the chemist. But there are people who for one or another reason will not, or do not, employ the laboratory, and for them the physician ought to be able to prescribe, not so exactly, that is impossible, but so as to avoid great errors.

In my own opinion, of the various modifications to which cow's milk can be subjected in order to fit it for infant's food, sterilization is the least important; that is, the proper proportion of fat, albuminoids, etc., to fit the milk for the digestion and nutrition of a particular baby is always important, while the destruction of bacteria is of consequence only when their presence is likely to do injury. Practically, the presence of a few bacteria in milk which is to be soon used, does not under ordinary circumstances do any appreciable harm. In the warmest weather, however, and in some other cases, destruction of bacteria before they have time to work mischief becomes of importance. It is of the domestic means of effecting this destruction that I wish to speak, pointing out that if the work is badly done, the result may be worse than if it is not undertaken.

Destruction of bacteria occurs when milk is exposed to sufficient heat for a sufficient time under proper conditions (sterilization). Exposure for a less time to less heat, while it does not destroy all bacteria, may be so regulated as to render them comparatively inert (Pasteurization). Intense cold renders them less virulent while the exposure lasts, but apparently does not otherwise injure them. On the other hand, exposure to a medium temperature increases their activity. Therefore, milk can be kept for some time upon ice; but when we heat it for sterilization it must pass through a fermenting temperature, and if the period of this medium exposure be unduly prolonged, great damage may be done to the milk. Apparently, heat does not affect the poisonous ptomaines already formed; and it follows that milk brought slowly to a sterilizing temperature may be quite unfit for food though sterile. Precisely the harm has been done that was meant to be prevented. Milk should be placed in a steamer already filled with steam, and not in a cold steamer over cold water and a slow fire. Directions to sterilize in a corked bottle are given only by those who have never tried the experiment and who forget the explosive force of steam. To first sterilize and then cork is illogical and dangerous. The proper thing is to close the bottle with tightly-packed cotton-wool. Then heated air and steam are driven out through the packing, and the cool air entering afterward is filtered so that it becomes free from bacteria.

As milk cools after sterilization, it again passes through a fermenting temperature. If no bacteria remain, that does no harm. If others are allowed access, and if the fermenting temperature is long continued, much damage is done. In this case the milk is first made sterile and then reinfected under peculiarly dangerous conditions. Milk properly sterilized and then placed in an open pitcher or pan upon a window-sill will cool quickly on a cold winter's day, and little harm may be done. The same course in August will probably lead to sickness of the baby, and if its possibility is not thought of, the result may be very serious. Even if the milk is cooled without removing the cotton stopper, it is better to do it quickly, because the packing may be imperfect. The same reasoning shows the desirability of sterilizing each meal in a separate bottle.

It might seem unnecessary to state these simple facts, but experience shows to the contrary. I have again and again met with every one of the errors pointed out, and have seen that students and physicians who would not be guilty of making them do not always recognize them when made by others. It must be remembered that most mothers and nurses are not bacteriologists, and must be given minute rules or an explanation of principles, or both.

That too prolonged sterilization is an injury to milk may not be universally allowed; but that it is so is the belief of many, and there are facts tending to support this view. If an error, it is one likely to be made by the over-anxious. Let me give an instance; A child of nine months, fed upon milk modified and sterilized at home, became pale, with occasional very slight digestive disturbances, temperature irregularly ranging from 98° to 103.5°, and evident pain on being moved. Appetite was ravenous for the first part of a meal; but he soon tired of it, and was not getting enough food. Having treated him for rheumatism without effect, and observing slight swelling and redness of the gum, it occurred to me that he might be suffering from scurvy. Questions developed the fact that his milk had recently been *boiled* for two hours in a sterilizer. It was then directed to be given raw in the morning, the afternoon supply to remain in the sterilizer but ten minutes, and the proportions to remain unchanged. Orange-juice and a teaspoonful of beef-juice daily, made the rest of the treatment. From the beginning his appetite became first-rate, and he was very soon entirely well.

◆

Clinical Department.

CASES ILLUSTRATING SOME OF THE MORE UNUSUAL CAUSES OF URINARY RETENTION.[1]

BY FRANCIS SEDGWICK WATSON, M.D., OF BOSTON,
Instructor in Genito-Urinary Surgery, Harvard Medical School, Visiting Surgeon, Boston City Hospital, etc.

CASE I. A patient, aged forty years, who had connection with a woman while drunk, missed the mark, and the penis was violently bent during erection. A brisk hemorrhage followed from the urethra, but presently ceased spontaneously. There was no infiltration of blood into the peri-urethral tissues. During the next day the patient experienced no trouble in urination beyond moderate pain during the act. On the second day he was unable to pass any urine. He was seen about eighteen hours after retention had begun. A No. 22 (French scale) webbing catheter could be passed readily into the bladder, and about one quart of urine was evacuated through it. It was then withdrawn. The next succeeding attempt to urinate was wholly unsuccessful; and when it was made, a small, hard bunch appeared on the under side of the urethra about three inches behind the meatus. Twelve hours after the second attack of retention began he was again seen; the catheter passed readily as before, and was tied into the bladder; the bunch beneath the urethra was then the size of a horse-chestnut, and was tense and fluctuating. On the following day the patient removed his catheter and tried to urinate naturally. The swelling beneath the urethra at once increased in size, and severe pain was felt at this point. No urine passed. The catheter was replaced a few hours afterward. That evening the patient had a chill and a temperature of 103° F., and the skin over the swelling was reddened. The swelling was then freely incised, and about one ounce of pus was evacuated. The abscess cavity from which it came communicated with the floor of the urethra by an irregular rent, evidently the site of the original rupture of the urethra. The cause of the retention of urine was then obvious and consisted of a valve-like flap of the mucous membrane, its free border toward the posterior urethra and its attachment towards the meatus; it had been dissected off the floor of the urethra and lifted upward to the roof of the canal by the force of the outflowing stream of urine, so as to completely close the canal, and to prevent the passage of the urine beyond this point. Urinary infiltration and peri-urethral abscess followed in due course as described. The urethral incision healed rapidly, a catheter being tied into the bladder for about three weeks. A traumatic stricture formed at the point of injury, and was divided by internal urethrotomy three years later, which was also three years ago. Up to the present there has been no recontraction.

---

[1] Read at the Surgical Section of the Suffolk District Medical Society, January 3, 1891.

Case II. This case had the same history as the preceding one; but the injury in this instance consisted in a partial rupture of the corpora cavernosa, the urethra remaining intact. There was an extravasation of blood within the sheath of the penis which extended the whole length of the organ, which was enormously swollen and discolored. Urinary retention declared itself on the first attempt at urination following the accident. A No. 22 (French scale) catheter met a solid obstruction at two and one-half inches from the meatus. A No 16 was then tried, and passed on into the bladder, but was a tight fit at the point mentioned. This patient was catheterized about once in four hours during the next three days in preference to tying in a catheter, as it was feared that sloughing of the urethra at the point of narrowing might result from the presence of the catheter. On the fourth day the swelling began to subside and the patient was able to void the urine naturally. He subsequently recovered without any ill-effects from the injury. In this case I assumed that the retention was due to the compression of the urethra near the seat of the injury by the extravasated blood.

Case III. A young man with a persistent gleet, following the advice of an apothecary, used an urethral injection of corrosive sublimate, of a strength of 1 to 1,000. Retention of the urine promptly ensued. The family physician, not having been told of the use of the injection, mistook the case for one of impassible deep organic stricture, and injured the urethra slightly in making forcible efforts at catheterization. The bladder was finally relieved by suprapubic aspiration. On the following day I first saw the patient, etherized him, and passed a No. 30 (French) sound into the bladder without the least difficulty. The bladder was then emptied, and late in the evening the patient urinated spontaneously while in a hot sitz bath, and thereafter had no further trouble.

Case IV. A young married man, who had subjected himself to the chance of gonorrheal contagion, used an urethral injection of corrosive sublimate of a strength of 1 to 500 as a preventive of the disease. Urinary retention followed, as in the last case, but was relieved by a hot sitz-bath and an opium and belladonna suppository at the end of fourteen hours, as in the other case.

Case V. A gentleman, about fifty years of age, was attacked by severe abdominal colicky pains, for the relief of which he was given full doses of morphine. Urinary retention ensued, the bladder was evacuated by the use of the catheter, which was required for three days, during the first two of which he was under the influence of the morphine. Twenty-four hours after omitting the drug he resumed the natural passage of the urine, but subsequently a prostatic abscess formed, opened into the urethra; and before it was cured by surgical operation it had reduced the patient to a somewhat serious condition.

Case VI. A man, fifty years of age, became dead drunk by drinking large quantities of beer. Upon awakening about ten hours later he was unable to urinate, and about four hours more elapsed before he sought relief. The bladder was then greatly distended, the fundus reaching about half way to the umbilicus, and he was suffering intensely. A catheter was passed without difficulty and a large quantity of urine was slowly withdrawn, and the patient at once regained the power of voluntary micturition.

Case VII. A man, forty years of age, whose experience was identical with that of the last patient, except that he was not so fortunate as to regain control of his bladder immediately after its being relieved of its contents. It was necessary to use the catheter for one week. For the first twenty-four hours it was passed at intervals. After that it was tied in. On the fifth day it was withdrawn, but the inability to urinate still persisting it was replaced. On the seventh day the control of the bladder was regained, and the patient had no further trouble.

Case VIII. A man, thirty years of age, who had previously passed two small concretions by the urethra, came one morning to the hospital with a stone impacted in the urethra just behind the fossa navicularis. It was so tightly wedged that no urine could flow past it; and the patient had been suffering from retention for fourteen hours in consequence, and was in great pain. The stone was extracted with some difficulty after cutting the meatus, and the bladder being emptied with a catheter, the patient was relieved.

Case IX. A young man came to my office suffering greatly, due to a stone which was firmly lodged in the prostatic urethra. Retention of urine had been complete for sixteen hours. The stone was pushed back into the bladder by a sound passed into the urethra, and afterwards caught and crushed once with a small lithotrite, and then removed with Bigelow's evacuator, and the bladder emptied by a catheter. This patient suffered no further inconvenience.

Case X. A man, thirty years of age, engaged in a "rough-and-tumble" fight, was knocked down by a blow of the fist, and while lying on the ground was kicked violently in the back, the blow falling upon the third and fourth lumbar vertebræ. The patient walked at once to the hospital, after getting free from his assailant. The only injury that he was then thought to have sustained was a cut lip. That night he had some trouble in passing his urine, which flowed in a feeble stream only. During the next day this difficulty increased; and twenty-four hours after the injuries were received, complete retention occurred. He only mentioned this twelve hours later, at which time the bladder was distended, its apex reaching about three inches above the symphisis pubis. A catheter was passed easily into the bladder, and the urine was slowly withdrawn. The catheter was required twice more in the course of the next eighteen hours, after which the power of voluntary urination was restored.

In the two alcoholic cases, and in the one from opium, the cause of retention was presumably anesthesia of the nerves of sensation which originate the call to urinate, and partial paralysis of the expulsive muscular apparatus of the bladder; and in the alcoholic cases the rapid filling of the bladder.

Appendicitis Literature. — Dr. Senn, referring to the literature of appendicitis, says: "It appears to me that it would be more profitable in the future for this department of abdominal surgery to write less concerning individual experience, and elaborate more thoroughly upon a pathological basis the conditions which demand surgical interference.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JOHN T. BOWEN, M.D., SECRETARY.

Regular Meeting, Monday, March 26, 1894, President, Dr. C. F. Folsom, in the chair.

ADENOID VEGETATIONS, AND CLEFT PALATE.

Dr. A. Coolidge, Jr. showed a patient with adenoid vegetations, who had also a cleft palate, so that the vegetations could be clearly seen without the reflected light.

Dr. S. W. Langmaid: Dr. Coolidge will remember a similar case, a much older patient than this, and the interesting part of it was to see the way in which the wound healed after this adenomatous growth had been removed. It has always seemed queer to me that so few accidents occurred after such operations as are done for the removal of adenoma. It is a very bloody operation, may be a very long one; a great deal of surface may be denuded; a large wound is left, covering sometimes the whole of the naso-pharyngeal space; and yet a case of septic poisoning is almost unknown, and I have always wondered why that was. I think when Dr. Coolidge removes this he will watch the healing process with a great deal of interest, and will find probably, as I found in that one case, that nature immediately spreads a protective effusion over it. It is completely covered by lymph of dense consistency which completely seals the whole wound, and that explains to me largely the fact that septic trouble so seldom follows the operation for the removal of pharyngeal adenoma.

REMOVAL OF THE LARYNX.

Dr. J. W. Farlow: This man is forty-seven years old. In 1875, Dr. Lefferts, of New York, removed a tumor from his larynx. On April 1, 1892, Dr. J. Solis Cohen, of Philadelphia, removed the entire larynx, except the epiglottis, and also the first ring of the trachea, on account of carcinoma. The tracheal opening was stitched to the external skin, in order to diminish the chance of septic pneumonia from the food or secretions from the mouth. The lungs and trachea were thus shut off from communication with the mouth.

He was in bed eighteen months, during which time he had no voice at all. Recently he has begun to have a voice of fair strength, which can be heard about forty feet and he can also sing a little, showing the ability to modulate the voice.

On the front of the neck, just above the tracheal wound, is a sac which he fills with air by a number of inspirations. In speaking, this dilated air sac gradually expels its contents, and the air, escaping into the mouth, seems to set in vibration a band which is on the left of the throat near the base of the epiglottis. This band can be seen with the laryngoscopic mirror, and is thought to be part of one of the constrictors of the pharynx.

Several long, stiff hairs can be seen growing on the posterior surface of the epiglottis. They come from the external skin which was turned in at this point. They sometimes occasion tickling and discomfort and require to be removed with forceps.

The interior of the trachea is very red and its walls can be seen to move with the pulsations of the heart and aorta.

The only trouble of which he complains is the difficulty in eating and drinking. He has to press his hand against the front wall of the sac in order to push the food toward the esophagus and away from the sac. He says he enjoys smoking, and, as you see, holds the cigar in his mouth and smokes in the same way that others do. He must, however, forego the pleasure of inhaling cigarette smoke.[1]

Dr. Langmaid: When I saw the patient in New York I had no time to examine him. I have thought of the case several times, and have wondered whether there is any communication through the esophageal wall with the lungs. I myself doubt it. It seems to me that unless such a communication exists it is a case where this sac, which is an enlargement of the pharynx above where the larynx should be, is a one-celled lung. By some process — either swallowing air, which is not an unusual process, or some other way — he is able to distend this sac. Now he has a rudimentary lung. There is air enough for the short space during which he speaks. The puzzling part is how he can articulate words with his soft palate. The larynx is absent; there are no vocal cords. Experiments have been made with regard to the ability to articulate with the soft palate. It has been said that ventriloquists do it, and you will notice some similarity in this man to them; it is a distant kind of voice. Some physiologist,[2] in trying to determine what produced the so-called head-tone, shut off all communication with the larynx; taking an India-rubber ball, which was an artificial lung, and injecting air through the nostril, he could make the person experimented upon produce tones. Whether this person articulated words or not I do not remember, and I do not think it was stated; but I cannot conceive that there is any other explanation. The larynx removed, what is there to articulate with unless it be the soft palate and the tongue? The vibration of the soft palate would produce the tone — the vowel-tone, you may say; the mouth, the tongue, the lips, etc., would produce the consonants. I hope to study this case still further. So far as I know, it is unique. It is certainly remarkable, probably the most remarkable case there is where such articular speech can be produced without the aid of any organ which could be supposed capable of phonation unless it be the vibration of the soft palate and adjacent parts.

Dr. E. H. Bradford read a paper on

SPRAINS AND DISABLED JOINTS.[3]

Dr. W. M. Conant: I am very glad to hear this admirable paper of Dr. Bradford's. I am especially glad to have so timely a paper read at this time, because every year I see a few cases where there is not the slightest doubt that the condition of the joint has been due to misapplied treatment by the doctor in charge. It seems to me that coming with the authority of Dr. Bradford, we shall in the future hear much less about putting sprains in plaster bandages. Something more scientific should be advised than putting a joint in any form of stiff apparatus and allowing it to remain practically in this position for several weeks. My experience in a large out-patient department among the foot-ball and base-ball players, gives me a considerable experience with recent cases.

---

[1] A good description of the case by Dr. Cohen is published in the Archiv fur Laryngologie, Erster Band, Heft 3. Dr. Harrison Allen, in the Medical News for March [illegible], 1894, gives an account of his interesting experiments to determine the seat and nature of the man's voice.

[2] Colombat de L'Isère.

[3] See page 156 of the Journal.

There are two other joints that, although not as often injured as the knee, should be spoken of, namely, the shoulder and the elbow, because they are frequently injured by court-tennis players and by pitchers. It is a well-known fact that there is what is known as "the pitcher's arm," which consists in some injury to the elbow or shoulder-joint; and in many cases if it is improperly treated, it means a permanent injury, and among professionals this means loss of salary. The anatomy of the joint must always make a difference in the form of treatment adopted; and whether there is a sprain of the tendon or of the muscle, a wrench in the synovial membrane or some inflammation of the bursa, all these forms of injury demand special attention, and determine to a great extent the severity of the injury and the prognosis as to future use. I have seen more trouble from inflammation of the bursa than from what seemed at the time more severe injury to some other part. One might say that it is not possible always to distinguish the injury of the joint, and say that a given sprain is a sprain of the tendon alone, or of the ligament or of the muscle, and there are cases, it is true, where it is impossible to make this diagnosis. There are, however, a certain number of cases in which you can always as accurately make a diagnosis as if you had the joint dissected. In many cases where nothing but the ligaments are sprained and the synovial membrane of the joint has not become inflamed, the treatment is practically simple, and the case under proper treatment does remarkably well.

We must divide our method of treatment into either complete rest, or a certain amount of rest with passive motion and massage; and of the two, I prefer the latter. The complete rest, unless the injury is very severe, is not needed, and is therefore not wise. A large proportion of sprains are better treated with a certain amount of rest, that is, limitation of motion; but a certain amount of motion on the part of the joint and a certain amount of passive motion best obtained by massage, is the best method of treatment. Possibly I can do no better in giving my own ideas of treatment than to describe how a man is treated when injured on the foot-ball or base-ball field. A man with an injury of a joint is immediately taken off the field; the clothing is removed, and the joint affected is put into hot water for from five to ten minutes. It is showered with cold water for a few minutes, and is then put into the hot water again. After remaining in the hot water for from five to ten minutes longer, it is taken out and carefully massaged from ten to thirty minutes, according to the severity of the injury. Then a flannel bandage cut on the bias is carefully applied over the injured joint. The endeavor is made to get a certain amount of support for the joint which shall take the place of the injured ligaments. Then if the man is able, he gets up on his legs, if it be a knee or an ankle; and if he can stand, he is allowed to walk. It is usually found that at first it causes a certain amount of pain, but that after a time this pain disappears. If a man can walk two or three rods, he can safely walk to his room. The next morning the bandage is removed, when the same process is again performed, also in the afternoon; and it is wise for him to have been seen by the attendant either in the morning or in the afternoon. If there is not found any increase in the tenderness of the joint, or in the ability to get about, and especially to come up on the toes, he is allowed a certain amount of active exercise on the leg affected. A man can do a very considerable amount of work with a sprained ankle or knee provided he is not called upon to twist said joint either to the right or left. I have yet to see any serious injury resulting from this method of treatment. It is modified, of course, according to the amount of injury; and in certain cases of injury to the joint it is unwise, when it is better to use a complete rest.

This method has been employed for the last four years at Cambridge, and there has been a good opportunity to see these injuries after the foot-ball and base-ball seasons are over, and to have an oversight of the joint long after the injury occurred; and I have yet to see the first case thus treated that I think was injured by this method.

Dr. R. W. Lovett: I am particularly interested in the late history of these sprains, especially those sprains of the ankle which I see some years after the original injury, where the patient has a disabled foot. The original injury in some cases has been recovered from and forgotten, and only when this disability comes on is it remembered. In these cases there is usually one of two conditions: flattening of the arch of the foot, or elevation of the arch. Cases of flattening of the arch are usually relieved by felt pads or by a plate. The other condition, that Dr. Schaffer has spoken of as non-deforming club-foot, is where the plantar fascia is contracted and the outer border of the foot does not touch the ground or only touches it a little, and is much more difficult to treat than is flat-foot. The condition is one of imperfect flexion of the foot; the fascia is contracted, and a band can be felt in the bottom of the foot. These cases come on within a few months of the sprain in some instances, and in other cases some years after the sprain; and in a certain number of cases they can be relieved by the application of the felt pad or a valgus plate, or can be stretched by the hand or by the shoe of Schaffer. In any of these cases where the condition persists for years, one of these conditions should be found and relieved. If not, it has to be set down to the hysterical ankle, which is presumably due to disturbance of circulation.

There is one type of chronic sprain that it seems to me is exempt from the general rule Dr. Bradford and Dr. Conant spoke of. I see them at the out-patient department of the City Hospital — chronic sprains of the shoulder. Men and women come in with a disabled shoulder-joint, sometimes perfectly stiff, sometimes partly disabled. Wasting of the muscles is present, especially of the deltoid; and over the anterior surface of the capsule of the joint there is a tender spot. Motion on lifting the arm from the side is particularly painful. After having had a certain amount of experience in massaging those people gently and giving them passive motion, and contrasting that method with fixing the arm completely, I have been convinced that complete fixation of the arm at first is the shortest and best method of treatment. The joint is in most cases in a condition of irritability, and the dragging of the arm on the ligaments of the joint is painful, so that fixation of the arm by a sling, and keeping it fixed for two or three or four weeks, in nearly all instances has increased the motion rather than diminished it. The patients have been gradually allowed to resume the use of the arm, and to have massage. In this way it is analogous to the sprains of the finger that come on, especially in women, between forty and fifty, where a sprain becomes steadily more painful; and there is apt to be thickening about the joint, which resists massage and behaves better when put in a splint and treated with counter-irritation and by massage later. Sprains in children, of course, are different, because in a certain number of instances in tuberculous children the swelling of the sprain merges directly into the tubercular swelling. This, in the Children's Hospital, we see in the knee and elbow, particularly where a comparatively slight injury leads to a sprain which does not clear up; the joint continues thickened, and it goes on into typical tuberculous synovitis of the joint.

Dr. P. C. Knapp: I should like to add a little to what Dr. Lovett has said, especially about sprains of the shoulder-joint. We get in the nervous out-patient department at the City Hospital a very large number of cases of chronic joint trouble, especially a large number of cases of sprain of the shoulder-joint. In addition to the difficulty in lifting the arm from the side, the rotation of the arm outwards becomes extremely painful, the pain being referred chiefly to the point Dr. Lovett has mentioned. On going over a good many of those cases it is possible occasionally to pick out certain cases of a somewhat different type. A case came in this morning where there was distinctly nothing but the strain in the deltoid itself, no limitation of motion in the joint, but merely the pain in the insertion of the deltoid caused by extreme movements. There is another class which is also rare; a case where, following injury, there is simply a lesion of the axillary nerve and paralysis of the deltoid with degenerative atrophy, where the passive movement is not impaired. But the majority of these cases that come in from the surgical department are very protracted. They are usually referred for electricity, and I think in many of the cases galvanism through the joint helps somewhat, but certainly they are very slow. I shall be very glad if Dr. Lovett has found a method which gives better success than is generally obtained in the majority of cases that are referred to me from day to day.

Dr. Douglas Graham: I suppose that everybody knows what a sprain is, but very few could define it. I have searched the text-books in vain for a satisfactory definition of the word sprain, and finally constructed one for myself. My definition is that a sprain is a sudden, partial displacement of two joint surfaces, followed by immediate replacement. The attachments of the joint on one side are stretched beyond their natural limit, on the other side unduly compressed. If the patient has fallen from a height there will probably be contusion of the articular surfaces and soft tissues as well. Two years after this definition was published, the American Text-Book of Surgery thus described a sprain: "A temporary displacement, followed immediately by return to place, constitutes a sprain." Priority?

The method of treating sprains which Dr. Conant has described I have used for over twenty years, probably twice as long as he has; but I do not lay any claim to originality in this, though we may all use more or less tact and skill. The majority of sprained cases get away from me in seven or eight days. Some of these patients ask their physicians for massage, and are flatly told that it would be absurd to attempt to *masser* a joint that is so tender and painful; and in one sense the physician is right. But we do not begin massage on a joint in that condition. We first use gentle friction on the healthy tissues above the joint in the direction of the returning circulation, and gradually proceed towards the injured part. We do the same on the distal part of the limb, beyond the joint, for the circulation is hindered in both directions by reason of the swelling. After this we employ deep kneading in the same manner, first about on the sound tissues and gradually approach the joint. This has a more agreeably benumbing or analgesic effect than friction, and also some influence in pushing along the currents in the veins and lymphatics and thus making room for the effusion to get off. Proceeding in this manner for fifteen or twenty minutes, we can then make firm pressure over the effusion which by this time will probably be agreeable, and this spreads the effusion over more space and hastens its absorption. After this a tight bandage. Two *séances* of this kind daily, and the patient soon has the use of the sprained joint. Heat, pain and swelling rapidly disappear, and there are no bad after-effects, such as Dr. Bradford has described after other methods.

About ten years ago I published statistics of over 700 cases of sprains of all degrees of severity treated in this way by eight observers, and the average time of recovery was one-third of that under other methods. Some of these were my own cases. In general, the sooner after a sprain massage is begun, the sooner it gets well. For all that, however, we occasionally see an unusually severe sprain and contusion of a joint where a week or ten days of absolute rest seems better before massage is commenced. But even here massage may be used in such a way as to do no harm, if it does no good; and if one has brains in the ends of his fingers, an acquaintance with the behavior of joints, and a judgment of temperaments, he will probably arrive at a correct conclusion.

Dr. A. N. Blodgett: I should like to call attention to a point which has not been alluded to this evening. I think it is an accepted fact that the vicinity of the lower leg and ankle is not an easy place for the ordinary practitioner to apply a smoothly fitting bandage, and that is a very common place for sprains of greater or less severity. In some cases of that character which I have seen,[3] and among them a severe sprain which I myself received some years ago, I found very great relief, and since then marked success from the proper application of contractile collodion, *immediately*, or during the first few hours of the existence of the sprain. By bathing the part in hot water, a great deal of relief is sometimes obtained, but the ecchymosis and effusion is not relieved, the parts remaining somewhat inflamed, hot, and painful, and are filled with effused blood, and there is often a great degree of disability. Under these circumstances, after the bath, which may be quite prolonged, the application of contractile collodion is a means of applying a perfect bandage. It can be applied to almost any surface, and to almost any extent without the danger of overpressure in any part, or of cutting, or in any way injuring the external tissues. The extreme volatility of the ethereal portion of the collodion affords a sense of grateful coolness, and its contraction mechanically squeezes out a large part of the effusion. It is quite transparent, so that the condition of the parts beneath may be observed through the collodion without disturbing the bandage, and it is sufficiently stiff to afford the necessary support to the foot in the position in which it is placed, and to restrain overaction. In my own case I was able to walk on the second day, much in the manner Dr. Conant has described. The application of collodion is free from objection, as far as I know, and will accomplish in the early days of a sprain of severe character what I have not seen follow any other method of treatment.

---

[3] See Journal, March 31, 1881

DR. E. H. BRADFORD: The shoulder-joint affection to which Dr. Lovett has referred was described some years ago in a French thesis quite thoroughly, and was described anatomically and clinically as being really an inflammation of the bursæ. It seems there are a large number of bursæ around the shoulder-joint, particularly under the deltoid; and the cases which he alludes to were classified by this writer as being really inflammations of the bursæ rather than of the joint. Of course, that would necessitate rest during the inflammatory period, and then limited motion and massage with an inflamed bursa would not be justified; after the inflammation has passed, the use of the limb would improve the circulation, and I think under those circumstances the results are not altogether unsatisfactory where the cases can be treated. Of course, in the out-patient department of a large hospital the treatment cannot be very thoroughly carried out. The condition of the foot Dr. Lovett referred to I think is a different affection, or at least it may result from a sprain, but it seems it is due to an injury of the plantar fascia which has never been thoroughly treated. As to the danger of a tubercular affection setting in in the sprains in children, in the cases where you analyze the history, the connection between the sprain and the injury is not sufficiently clear always to oblige us to treat sprains even in children by fixation. I intended to allude to the treatment by collodion. I have used it frequently. In regard to the statistics given by Dr. Graham as to twenty-seven days being the average time in treating sprains without massage, I may say I think that is an overstatement of the book-writers.

DR. A. COOLIDGE, JR., read a paper on

DEVIATIONS OF THE CARTILAGINOUS SEPTUM.[4]

DR. J. W. FARLOW: Many of these deviations are of a complicated nature; and the fact that so many different methods of treatment are advocated is proof enough that they are all more or less unsatisfactory. An occluded nostril is so narrow and dark that we are not always able to tell exactly what is best to be done. The free flow of blood during the operation obscures still further the field of vision. For simple ridges or deviations, with thickening, I should say that the saw was more frequently useful than any other method. If the septum is much bent but thin, I have been in the habit of making an incision down to the cartilage, stripping back the soft tissues and cutting out enough of the cartilage to diminish its size and elasticity and then pushing the septum over toward the other side. It is important to be careful and not perforate the membrane on the concave side. The trephine works well in cases of thickenings and ridges, but is apt to leave a ragged surface which is slow in healing. The sigmoid-shaped deviation is often hard to remedy, because both nostrils are narrow and it is difficult to make the straightened septum stay in place. In the cases of old fractures or displacements, where the septum is bent way over to one side, it is often wisest to refracture it, push it to the median line, and use nasal plugs for several weeks.

One mode of treatment was not spoken of by Dr. Coolidge, and that was to push the bent septum over to the other side and fasten it there by a long stout pin passed through the septum in front of the deviation and made to emerge in the nostril behind the deflection. I have never tried this myself, and should not think it possessed many advantages.

The septum sometimes deviates so far forward, and is so long, that its free end is entirely in one nostril, and causes so much pressure on the overlying membrane as to cause cracks, fissures and even eczema. A number of dilated capillaries is also often seen. Even when the nostril is not much occluded, it is a disfigurement, and for esthetic reasons should be remedied. The skin affection and dilated vessels will not disappear until the septum has been shortened. It is very easy to remove the redundant cartilage by cutting the membrane over the projecting cartilage, pushing back the soft tissues, and with rongeur forceps, scissors, or knife trimming off enough of the cartilage so that the pressure and deformity are removed. Sometimes a stitch is useful, but generally the wound heals well if a little gauze is put in the nostril.

The attempt to correct deviations of the septum by directing the patient to push the cartilage over with the finger once or twice a day can be of no special benefit, for the cartilage is so elastic that it returns to its original position as soon as the pressure is removed.

Whatever method is used, the after-treatment is very essential and often very tedious.

Dr. Farlow showed a Chappel ring-knife for removing projections from the septum, also a Curtis rongeur forceps for cutting the septum.

DR. T. A. DEBLOIS: In Dr. Coolidge's paper he mentions the pushing back of the mucous membrane in cases where he excises a portion of the cartilage. I have found that the best instrument for that is a little metal instrument made for cleaning the nails. With that you can push the membrane back very nicely. The trephine I am no friend of. I find it very difficult to use. I use a good deal a Goodwillie revolving knife. It cuts on the side, and is driven by the electric motor. You save a certain amount of mucous membrane. In the operation spoken of by Dr. Coolidge I always commence with the saw. Once or twice after excising the cartilage I have been able, by using short needles to suture the membrane back; but it is very tedious, and unless the hemorrhage is remarkably small in amount, it is almost impossible to do it. In cases of a double bowing, as in No. 1, a piece of cartilage can be dissected out very nicely.

DR. G. A. LELAND: I am very glad this subject has been brought up to-night and covered so thoroughly. I am glad it has been brought up, because by implication the making of a free passage in the nose by destruction of the soft parts has been condemned. The hard parts have almost no function; they are simply in the lower part of the nose, covered by ciliated epithelia, but they have not, like the middle and lower turbinates, the office of moistening and warming the air. It has occasionally been my opportunity to see cases in which the lower turbinate has been wholly or very largely removed in order to make room enough in the nostril. The condition of that patient afterwards, I apprehend, will be a great deal worse than before, when in after life dry catarrh shall take place, as is certainly possible or even probable; and it would, in my opinion, have been a great deal better to have had the septum wholly removed than the turbinate itself. It has also been implied here that we should not remove too much of the surface of the septum. It is certainly a fact that a large amount of it can be removed, and the mucous membrane with its ciliated epithelia will be proliferated over the wound; but I have seen cases where a very large amount — in Case I, apparently the whole side — had been removed where the mucous membrane was not proliferated over the whole extent of the wound, and, therefore, crustiness and malodor of the breath resulted.

---

[4] See page 158 of the Journal.

Almost if not quite as bad a condition is brought about by making a perforation through the cartilage in sawing off a spur or the elbow of a deflection. This is a result to be avoided, for it must be extremely unsurgical to make a hole through the cartilage where one was not intended by nature; and yet we see many cases where it has been done. Where the perforation is posterior to the junction of the vomer or cartilage with the ethmoid plate, it is not to be so much deprecated, because that is far enough back to be in the moist part of the nose. Whereas, if the perforation is made farther forward in the dryer part, then a most uncomfortable condition of affairs results, and crustiness with malodor of the breath must ensue. Therefore, in all these cases perforations through the septum ought to be avoided, as well as removal of too large a surface of the septum itself. It seems to me the spur, as in Case III, is nature's effort to repair a greenstick fracture. Nature is a mighty poor surgeon, although she may be a good physician. When she undertakes to put out the callus in the nose, when it is moist and warm, she oversteps herself. It seems to me in this case, she threw out too much spur, and the removal of that spur, provided the granulations were kept down, would restore the lumen. I forgot to mention one case where I perforated myself. It was the fault of the patient, who moved out of position, and I lost my direction. She was a sufferer from asthma for years; but she has had none since, upwards of two years.

The operation which I have adopted and mostly used, because of its quick performance and avoidance of bleeding, and of the very delicate manipulation which would be necessary in Case V, is one advocated by Adams and Steele, in which the resiliency of the cartilage is destroyed, the septum replaced, and then kept in place by hollow splints. It can be done under cocaine in simple cases, as well as general anesthesia. If the splints are properly adjusted, the patient does not have a great deal of trouble nor pain; but the precision and accuracy of the operation consists mostly in the perfect adaptation of the splints. If there is any pressure to amount to anything, they are uncomfortable to the patient. It is not always easy to get a splint to fit so as not to cause pressure, but in late years in most of my cases the patient has said that there was not any pain after he recovered from the ether.

This is a subject of a great deal of interest because we find so many spurs and deflections. I am rather surprised to find a septum straight after seven years of age.

Dr. J. P. Clark: I have been very much interested in Dr. Coolidge's paper. There are one or two points I should like to emphasize. It seems to me important to save as much as possible of the mucous membrane in operating on the nose. Of course, where one removes a spur with a saw, it is generally impossible to save any mucous membrane, but where there is a large bowing of the septum anteriorly with some thickening, dissecting off the mucous membrane and removing a piece of cartilage and putting the mucous membrane in place, gives a better result than removing any part of the prominence together with the mucous membrane. It is important to get the nose as clean as possible before the operation and keep it clean while the wound is healing. I always have the patient use some antiseptic solution twice a day as long as the wound is healing. I have a case in mind where there was a large ridge in one nostril with some nasal polypi and suppurating ethmoiditis. In order to remove the polypi it was necessary to remove the ridge and I removed it very thoroughly, and then I removed the polypi. A few weeks afterwards the prominence began to grow again, the cartilage to proliferate, and the condition of the nostril as far as the ridge was concerned was almost as bad as before; and it seemed to me this was due to a septic condition of the nostril from the discharge of pus from the ethmoid cells. Where the free edge of the triangular cartilage is deviated into one nostril, I think a very good method of operating, which I have used in several cases, is to bend the tip of the nose to one side, make an incision on the free edge of the cartilage, dissect back the mucous membrane, remove the cartilage as far back as it seems to be overprominent in that nostril, and to replace the mucous membrane. It is unnecessary to use any stitch. A little gauze in the nose for twenty-four hours is sufficient to keep the flap in place.

Dr. F. C. Cobb: I have seen these operations of Dr. Coolidge's, and they have, as a rule, resulted very well. In doing them, the main difficulty, I have found, is that the mucous membrane on the wide side is apt to be adherent to the bend, and that is the point at which the perforation is liable to take place in dissecting it off with the probe. At this point it is sometimes difficult to free it, but after that is done the operation proceeds without trouble. In all operations with the trephine there is apt to be, in my experience, a longer period of healing and a larger callus than in those done with the saw. For a deviation of the kind which Dr. Coolidge describes, this operation has been more successful than any other I have seen done.

Dr. Coolidge: Dr. Farlow spoke of the difficulty of trephining. This is true of some cases, but in many it is not difficult. Every septum is different, the trephine is inferior to the saw in many of them; but with a septum which is simply bent, and where there is no spur a saw is of little use. I feel confident that I have seen cases in which the removal of a ridge from the convex angle of a deviation has resulted in a subsequent increase of the deviation. I have also noticed, as Dr. Cobb has said, that the mucous membrane is often very adherent along the acute angle of a sharp deviation.

Dr. F. L. Jack: Very often in deviations of the cartilaginous portions, as in Fig. 1, you will find little spots of ulceration on the concave surface, sometimes on the convex. I should like to ask what effect straightening of the cartilage has on these ulcerations in the experience of the reader, whether they heal more readily.

Dr. Coolidge: I have not noticed that ulceration is more common in a bowing than in a straight cartilage. This ulceration is generally situated anteriorly, in front of the point where obstruction occurs.

◆

MAINE MEDICAL ASSOCIATION.

Forty-second Annual Meeting, Portland, June 13, 14 and 15, 1894.

The Association met, as for many years, in the spacious chambers of the City Council, with an unusually large number present.

In the absence of the President, **Dr. J. A. Donovan**, of Lewiston, **Dr. A. E. Besse**, of Waterville, called the Association to order at 10.15 a. m. on Wednesday, the first day of the session, and proved himself a most admirable presiding officer.

Following the usual preliminary business, the Treasurer's report was presented and read, showing a most prosperous condition of the treasury notwithstanding unusual drains upon it in trying to provide the people of Maine with a Medical Registration Law. A cash balance of $1362.61 remains to the credit of the Association.

Dr. George Googins, of Millbridge, reported

A CASE OF PROFUSE VOMITING OF BLOOD DURING LABOR

by a patient previously healthy, followed by the birth of an exsanguinated child. Subsequent labors have been normal.

Dr. Jason Walker, of Minot, reported

A CASE OF PERSISTENT SCIATIC NEURALGIA

which was cured by deep hypodermatic injections of morphia.

TYPHOID FEVER, WITH SOME NEW NOTIONS REGARDING ITS TREATMENT,

was the title of an interesting and practical paper by **Dr. Edwin M. Fuller**, of Bath.

The line of treatment adopted was called by the author "the alkaline plan," and was based upon the recognized necessity of combating bacterial infection and securing effective depletion. Alkalies were administered every two hours or oftener, and kept up at less frequent periods until convalescence was well established.

The treatment begins with a Seidlitz powder every two or four hours until good operations ensue, unless the bowels have been previously well moved; then a wineglassful of Dunbar's liquid magnesia every two hours until more than two operations are obtained during twenty-four hours; after this, either one-half a wineglassful is given, or the same dose once in four hours.

For irritable stomach, plain syphon soda is substituted, but is given regularly and persistently. The only water allowed is Apollinaris, and that in copious draughts. A hot bath by sponging is given every morning. If the temperature runs above 102°, this is repeated three to five times before eight p. m. Antipyrin, in five-grain doses, is given at 7 and 9 p. m., and if the temperature be above 102°, another at 11 p. m. Whiskey is given when indicated, substituting brandy, however, if the daily stools become more than three. Diet is absolutely liquid; milk when diluted is made so by Apollinaris, always cold.

Dr. A. K. P. Meserve quoted the practice of forty years ago in York County to show that the alkaline treatment was not new. Until some true antiseptic which could be safely used was found, the best treatment would be largely expectant; good water, good nursing, good air and food, and the checking of hyperpyrexia.

Several gentlemen alluded to their use of alkaline remedies, and agreed that the complication by hemorrhage had been decidedly less since the introduction of intestinal antisepsis.

AFTERNOON SESSION.

Drs. J. E. Garland, of Gloucester, Mass., and **T. S. Hills**, of Willimantic, Conn., were presented as delegates from their respective societies, and were invited to participate in the discussions of the meeting.

PRESIDENT'S ADDRESS.

In the absence of the President, **Dr. J. A. Donovan**, of Lewiston, who was in California, the address was read by his associate, **Dr. John F. Hilton**, of Lewiston. The title was, "Medical Hints, especially Addressed to the Younger Members of our Association." It was a happy presentation of the conclusions of a busy, practical man as to the elements which tend to bring success or disappointment to the young practitioner. It contained much sound advice and wise counsel.

Dr. B. B. Foster, of Portland, read a paper upon

THE TREATMENT OF HEMORRHOIDS BY CLAMP AND CAUTERY.

The advantages urged were that time was saved to both patient and surgeon; little need of preparatory treatment; no need of antiseptics; little or no danger from hemorrhage; entire absence of pain; and no such unfortunate results as sometimes follow the cutting, ligating and injection methods.

Dr. S. C. Gordon said he had made repeatedly all the operations suggested for the cure of hemorrhoids and prolapse of the rectum, and had injected the last hemorrhoid he ever should, and the clamp and cautery offered the most satisfactory method of dealing with these affections yet devised.

Dr. S. H. Weeks, of Portland, preferred the ligature, and thought the unpleasant after-effects of pain and spasm might be avoided by care in the performance of the operation. When he used the cautery, he preferred burning off the whole mass, to cutting and then searing the stump.

Dr. Henry B. Palmer, of Phillips, read a paper on

PUERPERAL ECLAMPSIA,

emphasizing the points that

(1) Eclampsia is always the result of toxemia.

(2) That the toxic agent may be urea or creatine; in some cases some undetermined principle.

(3) That an explosion may be favored and intensified by emotional causes or by any peripheral irritation.

(4) That the most usual cause of an outbreak is pressure upon the nerve filaments of the os uteri.

In treatment, veratrum viride, administered hypodermatically in doses of 0.33 to 0.65 c. c. of the fluid extract, half-hourly until the pulse-rate is reduced to 60, was urged in place of venesection. Prompt and rapid evacuation of the uterus during chloroform anesthesia was demanded.

In the ensuing discussion the general opinion inclined to prompt evacuation of the uterus, and hypodermatic injections of morphia, as the most efficient treatment.

EVENING SESSION.

Dr. W. B. Small, of Lewiston, read a paper upon

THE ARTIFICIAL FEEDING OF INFANTS.

The writer preferred the formula of Dr. Rotch to any of the commercial foods, as approaching nearest to the human breast-milk.

Dr. W. L. Dana, of Portland, presented a paper upon

THE PRINCIPLES OF ANTISEPTIC SURGERY,

which was preliminary to a clinic on the following morning at the Maine General Hospital, illustrative of surgical dressings.

Dr. S. H. Weeks, of Portland, reported in detail a

UNIQUE CASE OF URINARY CALCULI.

The patient had a history of long confinement in the recumbent position after gunshot injury to the thigh during the War of the Rebellion, followed by long-continued suppuration. In 1891 he had an attack of pyelitis, from which he slowly recovered, until in the spring of 1892 two large, painless swellings suddenly appeared, one in the right groin, the other in the right thigh a few inches below the groin. Deep-seated fluctuation followed free poulticing, the abscess was opened, and discharged freely for several weeks. One morning, in dressing the wound, a small uric-acid calculus was found in the opening. Free incision was made into the swelling in the thigh, and the opening into the groin was enlarged; from each opening was removed a renal calculus the size of a cranberry bean. A year afterward another small stone came away. Since this occurrence the sinus has so far healed that the use of injections has been discontinued. No indications of urine in the discharge have ever been present, nor has there been any pain.

The unusual features of the case were the ulcerations through the renal tissue into the perinephritic tissue, the passage of the calculi down along the course of the psoas magnus muscle, and the closure of the opening in the pelvis of the kidney, which prevented a permanent urinary fistula.

Dr. D. A. Robinson, of Bangor, read a paper on

THE CODE QUESTION FROM THE STANDPOINT OF THE GENERAL PRACTITIONER,

which at once set in progress an aminated discussion. The Association wisely declined to waste time upon serious consideration of a subject upon which it was evident few were prepared to commit themselves definitely, and referred the question of modifying the present code of ethics and By-Laws, to a special committee for report at the next annual meeting. The present code was criticised as containing much that is irrelevant, much that is utterly useless, and much that does not affect equally the individual physician, and his associates when organized as hospital staffs, with the same obligation. What the action of the Association may be upon the main question, it is not now possible to predict. The conservative element will doubtless prove to be in a majority.

Dr. Geo. W. Way, of Portland, reported a series of

FOUR PREGNANCIES IN A WOMAN WITH DOUBLE UTERUS AND VAGINA,

with especial reference to the theory that the ovaries ovulate alternately, and that the egg from one produces males, from the other, females.

The argument was based upon correspondence in certain clinical facts during the second and third pregnancies, notably a gravitation of the uterine mass toward the right side, vomiting during the first three or four months, hard instrumental deliveries, and large male children. The third pregnancy was left-sided; no vomiting; short, easy labor; female child. An abortion at six weeks had preceded these pregnancies, having been accompanied by much nausea and vomiting, and the sac having been expelled after five days of severe pain. The fetus was said to be male. The vaginal septum was ruptured at the second confinement.

Dr. John F. Thompson, of Portland, said that because the uterus was double, the fetal body would not necessarily go on to complete development on one side of the abdomen, because the empty side would play no part at all. He was glad no attempt had been made to substantiate the theory enunciated.

SECOND DAY. — THURSDAY.

Dr. W. P. Giddings, of Gardiner, read a paper on

THE SURGICAL DEMANDS OF A COUNTRY PRACTICE.[1]

The report of the visitors to the Maine Insane Hospital, was presented and read, and again, as it has for so many years, urged upon members of the Association the necessity of using their influence with members of the legislature to secure the passage of an appropriation which will ensure the erection of the new hospital at Bangor, and relieve the overcrowded condition of that at Augusta. The staff of the present institution has for several years been laboring under great disadvantages, being obliged to care for from two hundred to three hundred more patients than there are adequate provision for. During the past year the whole number of patients and attendants has been nearly one thousand; and patients have slept in corridors, and wards have been crowded, all because politics have dominated the situation. Added to this condition of things, two years ago diphtheria gained an entrance; and in spite of the best sanitary management, with the most improved appliances, has persisted, now and then attacking patients and nurses. It would seem that humanity would demand the suppression of sectional squables, and allow some agreement in carrying out the provision made several years ago for the erection of another hospital, for which land was purchased and plans drawn and accepted. Thus far the repeated remonstrances of the medical profession have been unheeded; and there exists a condition of affairs which disgraces the State.

At 11 o'clock the Association adjourned, by invitation, to the amphitheatre of the Maine General Hospital, where, under the direction of the surgeons on duty, a large variety of antiseptic surgical dressings was exhibited, and various modern methods of sterilization of dressings, instruments and wounds were illustrated.

AFTERNOON SESSION.

The annual election of officers resulted as follows: President, Dr. W. P. Giddings, Gardiner. First

---

[1] See page 131 of the Journal.

Vice-President, Dr. A. G. Young, Augusta. Second Vice-President, Dr. C. D. Hill, Bethel. Corresponding Secretary, Dr. J. E. Walker, Thomaston. Board of Censors: Drs. C. A. Ring, Portland; F. J. Robinson, Fairfield; Jas. S. Sturtevant, Dixfield; F. B. Ferguson, Deer Isle; J. O. McCorrison, North Berwick. Committee on Publication: Drs. C. D. Smith, Portland; W. L. Dana, Portland; W. B. Small, Lewiston; A. F. Murch, Westbrook; Alfred Hitchcock, Farmington. Business Committee: Drs. W. B. Moulton, Portland; Addison S. Thayer, Portland.

The Treasurer, Dr. Aug. S. Thayer, and the Recording Secretary, Dr. C. D. Smith, both of Portland, are permanent officers.

Dr. F. H. Gerrish, of Portland, introduced a resolution, which was unaminously adopted, urging upon our senators and representatives in Congress the necessity of trying to secure an increase in the sum appropriated by Congress for the support of the Library of the Surgeon-General's Office at Washington, to the original amount of $10,000.

Dr. Jas. B. O'Neil, of Portland, reported in detail

A SUCCESSFUL CASE OF SYMPHYSEOTOMY,

the first in this State.

The patient had passed through three severe instrumental deliveries, with dead children, as the result of a justo-minor pelvis, the measurements by pelvimetry being as follows:

		Normal.
Between spines	8½ inches.	10¼ inches.
Between crests	9¾ "	11½ "
External conjugate	6¼ "	8 "
True conjugate	2¾	

Recovery has been perfect, with an immoveable joint and a living, healthy child.

Prof. F. C. Robinson, Professor of Chemistry in Bowdoin, read a paper on

THE CHEMISTRY OF DECOMPOSITION.

The paper was a description of the formation of ptomaines, and their relation to micro-organisms. The writer emphasized the close resemblance between some of the members of this group, and certain vegetable alkaloids, so intimate in their physiological action as to greatly obscure diagnosis in certain cases of poisoning.

Dr. S. C. Gordon, of Portland, reported two interesting

CASES OF ABDOMINAL SECTION.

One was Cæsarean section upon a woman at full term, rapidly wearing out from the drain of a uterine epithelioma. The time of delivery was just seven minutes from the first incision into the abdominal wall until the child was in the hands of his assistant.

Placental delivery was easily accomplished, and uterine contractions were good; the wound was closed by buried sutures through the muscular part of the wall, and the peritoneal portions were brought together edge to edge. The external wound was closed by catgut and silkworm-gut. Death occurred in fifty-six hours, from septic peritonitis. He did not regard this case as a fair test because the uterus was in a septic condition before operation.

The other case was one of extra-uterine pregnancy of the abdominal type. The symptoms had been those of general peritonitis following the pain and hemorrhage characteristic of tubal pregnancy terminated by a ruptured sac. Partial recovery had followed, and as soon as the patient could be moved, she was taken to a hospital. There was a conspicuous tumor above the pubes apparently from exudate. The last menstruation had been in December, about five months before.

Abdominal incision brought to light a mass of exudate as large as one's two fists, which contained a fetus of five months, which was living when delivered. The pregnancy had been originally tubal; at the end of seven weeks, as the history of the case now shows, the tube had ruptured, and development had gone on in the abdominal cavity. At this operation not only the sac but ovaries and tubes were removed, and the patient made an excellent recovery.

Dr. W. K. Oakes, of Auburn, reported

A SERIES OF TWENTY CASES OF ABDOMINAL SECTION,

with special reference to their bearing upon the statistics of these operations.

EVENING SESSION.

This was devoted to the Annual Oration, by Dr. Henry H. Smith, of Machias, upon the subject of

THE RELATION OF THE INDIVIDUAL PRACTITIONER TO SANITATION AND PREVENTIVE MEDICINE.

The address outlined the wide sphere of usefulness which lay open to the physician in improving the opportunities offered in his private relations with his patients for promoting the public welfare through preventive medicine.

CLOSING SESSION. — FRIDAY.

The closing session was held on Friday morning, and besides the usual business, little was done except to receive and adopt the report of the Board of Censors, which is as follows:

The next annual meeting will be held in Portland on the first Wednesday, Thursday and Friday in June, 1895.

The following appointments were made: Orator, Dr. A. K. P. Meserve, Portland. Visitors to Maine Insane Hospital: Drs. C. A. Ring, Portland; C. D. Hill, Bethel; E. M. Fuller, Bath. Visitors to Portland School for Medical Instruction: Drs. C. W. Pillsbury, Saco; C. W. Price, Richmond. Visitor to Medical School of Maine (two years): Dr. A. E. Besse, Waterville. Necrologist, Dr. Chas. D. Smith, Portland.

Delegates to other medical societies — American Medical Association: Drs. T. A. Foster, Portland; Geo. B. Swasey, Portland, C. W. Foster, Woodford. Vermont: Drs. J. B. O'Neil, Portland; J. F. Hilton, Lewiston. Massachusetts: Drs. Chas. Hutchinson, Chas. D. Smith, Portland. Rhode Island: Drs. E. A. McCollister, Gray; I. D. Harper, North Gorham. Connecticut: Drs. F. B. Adams, Rockland; Geo. A. Coombs, Waldoboro. New York: Drs. S. P. Warren, Portland; E. A. Porter, Liberty; G. M. Woodcock, Bangor. New Brunswick: Drs. H. H. Smith, Machias; C. J. Milliken, Cherryfield.

The Necrologist reported the deaths of Drs. E. Edgecomb, Great Falls, N. H.; Hampton E. Hill, Saco; Isaac E. Hobart, Milford, Mass.; D. L. Lamson, Fryeburg; D. E. Marston, Monmouth; and Charles T. Moulton, Cumberland Centre.

As a whole, the session was unusually successful. Twenty-two new members were added, and the attendance exceeded that of any meeting for several years.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, AUGUST 16, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

THE SANITARY DISPOSAL OF THE GARBAGE AND REFUSE OF CITIES.

Within the past ten years or more public attention has been aroused to the necessity of better methods of disposing of the offal, garbage and refuse of cities than those which had hitherto existed. In inland cities especially, the collection and final disposal of the putrescible material resulting from the waste of hotels, restaurants, boarding-houses and private families has proved a serious question to local boards of health until radical measures were adopted to remedy the evil. The ancient swill-cart, with its leaky contents travelling slowly through inhabited streets proved to be a nuisance, which the authorities were often importuned to abate. No less objectionable was the feeding of such material to domestic animals. In Massachusetts a statute was enacted in 1889, prohibiting the feeding of such garbage to milch-cows, but no bar was imposed upon its use as food for swine, notwithstanding the fact that investigations of the State Board of Health upon several thousand hogs fed upon the offal produced by the City of Boston showed that 13 per cent. of these animals, when slaughtered for use as food, proved to be infected with *trichinæ*. Epidemics of this disease occurred in the State in 1892, resulting in the loss of several human lives.

In seaboard cities a partial remedy had been effected by towing the material out to sea and leaving it to be disposed of at a distant point from the shore. Objections have been made to this method, in consequence of the nuisance caused by floating material driven ashore by easterly gales, and by the difficulty of such disposal in rough weather.

To remedy these evils, the plan of burning, or otherwise treating the garbage at a central collecting station has been adopted in several cities in this country — at Milwaukee, Buffalo, Providence, Detroit, St. Paul, Chicago, Lowell and other places. The processes employed may practically be divided into two classes, destruction or cremation by fire, and rendering or treating the material in such manner as to utilize a portion of it. In one of these processes, for example, the fat is extracted for use in making soap and candles, while a portion of the remainder is converted into fertilizers.

England has the reputation of being the country where the practice of cremating garbage originated, or, at least, where it has been most thoroughly accomplished; and at the present time about fifty English cities and towns are now supplied with destructors of some sort or other. The first was built at Manchester in 1878.

A summary of the operations of these establishments has just been published by Mr. Charles Jones, of Ealing, near London, which gives many facts which are worthy of note.[1] Mr. Jones obtained his facts mainly by means of circulars addressed to the authorities of many English cities and towns, and from the replies to these circulars valuable information may be obtained.

Omitting some of the technical details, we find that 46 English cities were supplied with 51 establishments for treating offal, garbage, refuse, etc. The area of the districts from which collections were made, varied from 406 acres in the densely settled district of Whitechapel, London, to 21,572 acres at Leeds. The largest population supplied by a single plant was that of Liverpool.

In the case of 33 towns all of the house refuse is burned; in the remaining towns a part is burned and a portion otherwise disposed of; in Liverpool, a part is towed out to sea.

The quantity of material collected varied from 10 loads per day in a town of 10,000 inhabitants to 699 loads per day at Birmingham.

The cost of collection, exclusive of interest in the plant, varied from 11 pence per load at Southampton to four shillings sixpence per load at Battersea (one of the London establishments).

The materials treated in these destructors differ according to the circumstances and conditions prevailing in the cities where they are located. The following summary presents the average composition of the refuse collected at Paddington (a district of London) as stated by Professor Forbes:

IN EVERY 10,000 TONS.

	Tons
Ashes	[illegible],260
Breeze or cinders	2,880
Animal and vegetable refuse	1,120
Pottery, etc.	290
Coal	[illegible]
Bones	[illegible]
Rags	42
Iron	[illegible]
Brass and pewter	[illegible]
White glass	[illegible]
Black glass	[illegible]
	10,000

The annual amount per inhabitant was 3.6 cwt. The foregoing represents a fair average composition of the ash- and dust-bin refuse of a city in which water-closets are employed. It is not strictly comparable with the material treated in most American cities using destructors, in consequence of the absence of ashes in the latter, this form of refuse in America usually being separated and used for filling of waste and low lands. The dust-bins of the London streets, almost unknown in most American cities, receive the street sweepings and horse-droppings.

---

[1] Refuse Destructors, with Results up to the Present Time. By Charles Jones, M. Inst. C. E. Biggs & Co., 139 Salisbury Court, London. 1894.

In some localities great pains are taken to separate all portions of the refuse which can be made available from an economical point of view. The New Refuse Disposal Company at Chelsea on the Thames, provides for the sorting of refuse by machinery. Each load is dumped into a revolving screen, and the cinders and fine coal are separated for fuel, the paper and rags are made into wrapping paper on the premises, bones, glass and iron are separated and sold. The organic material is ground up with the fine dust and converted into fertilizers, and the whole process is conducted without offense to the neighborhood.

In addition to these materials, at Birmingham and at Leeds, the pail system is in use for a considerable portion of the population instead of water-closets, and the contents of these pails are collected at intervals and treated at the same establishment with the garbage and ashes; and again, at Ealing, where the town is supplied with a good system of sewers, the sewage is treated by chemical precipitation, and the resulting sludge is burned in the destructor with the garbage.

Another economic point is the utilization of the resulting cinders or ash produced by the process of burning. This ash can be converted into a cement of good quality, as is done at Birmingham, where stables, and houses for the workmen, were shown to the writer, the walls of which were constructed of this cement. It also makes a very good material for roads and sidewalks.

One of the most important sanitary questions in Mr. Jones's circular, and one which is at present exciting much interest in this country, is that of possible nuisance or annoyance to the surrounding neighborhood in consequence of foul odors from the smoke and gases of combustion. The question was put in the following form: "Have complaints ever been made as to smell from chimney or otherwise?"

To this question 27 authorities answered with an unqualified "No;" and in several of the remaining instances it was stated there had been no complaints after "Fume Cremators" had been intoduced to destroy foul odors before the smoke and gases were admitted to the chimney stack. In most instances the chimney is quite high, averaging about 175 feet above the ground.

It appears to be quite practicable, judging from the results of these inquiries, to conduct such processes, even in crowded localities, without giving annoyance to the surrounding neighborhood. The establishments in London, in Birmingham and in Leicester are in the most densely settled districts. One of the numerous plates and diagrams with which Mr. Jones's book is illustrated, shows the establishment at Leicester in close proximity to dwelling-houses and a large public schoolhouse.

◆

DIGITALIS IN PNEUMONIA.

Petresco[1] speaks most enthusiastically of the value of large doses of digitalis in the treatment of pneumonia. Four to eight grammes are administered daily in the form of an infusion, with 200 grammes of water and 40 of syrup, a tablespoonful being given every half-hour. He has thus treated 755 cases, with a mortality-rate of 1.22 per cent. The temperature usually falls after such doses from 40–41° to 36–35°, and the pulse from 120–130 to 37–30 or even lower, in one case sinking to 24. The crepitant râle and bronchial respiration disappeared, leaving the lung perfectly clear, while the general condition kept pace with the improvement in the physical signs — prostration, coma and asphyxiation giving place to mental clearness and a sensation of well-being. All the patients felt in a condition of perfect health twenty-four hours after the complete jugulation of the disease, which usually was brought about at the end of three days. A correspondence could be noticed between the gravity of the disease and the amount of the drug borne; the more serious the condition of the patient, the larger the dose which could be tolerated. The same treatment was employed in infectious pneumonia of a typhoidal character, but some antiseptic was given in addition. None of the cases exhibited the classical symptoms of digitalis-poisoning.

He draws the following conclusions:

Pneumonia can be jugulated by digitalis in large doses given from the beginning of the disease. This abortive treatment is the most rational, as it is based on the pathogenic indications of pneumonia, while its efficacy is proved by statistics, the lowest mortality being found among patients treated in this way.

Four to eight grammes a day of the leaves in infusion is the true therapeutic dose in adults, and from this dose only can we expect immediate salutary effects.

Toleration and non-toxicity of this dose are incontestably proved by the number of 755 observations.

Fickl[2] is hardly less enthusiastic from his experience with 108 recruits, of whom 74 had croupous and 34 lobular pneumenia. One only, a case of frank lobar pneumonia, died. He quotes Hoepfel of Bärnau as having treated 15 cases, with one death. He used a somewhat smaller dose than Petresco, and also gave alcoholic stimulants pretty freely. The course of the disease in his cases was not markedly shortened, nor was the fever rapidly reduced, but fell one-half to one degree after a day or two, and then gradually sank from day to day, finally dropping suddenly to normal or subnormal, its termination taking place more frequently by lysis than by crisis. Convalescence was not protracted beyond the usual time.

---

[1] Bull. de Thérap., vol. cxxii, p. 120.
[2] Wien. med. Woch., xliii, H. 8 and 9.

Strizover[3] reports nine consecutive cases treated by this method. On the day following the beginning of treatment the temperature dropped from 40° C. to 38°, and the subjective state markedly improved. In cases in the incipient stage the lungs became free from abnormal signs in a day or two, while in those more advanced complete resolution occurred about the seventh day.

These remarkable results have not, however, passed unchallenged. Löwenthal[4] reports 12 cases in the Vienna Hospital, all of whom recovered; but the depression and exhaustion rather increased under treatment than diminished, while stupor and other cerebral symptoms were not influenced. The turgidity of the face disappeared and was replaced by pallor with cold extremities, while the cough and sputum remained as before. No alteration in the course of the disease could be detected by physical examination, previously intact lobes in two cases being affected after the patients were thoroughly under the influence of the drug. The course of the fever was but slightly influenced, but after the temperature fell it remained subnormal for several days. Before the crisis, the frequency of the pulse was only slightly affected; but after it, it fell decidedly, and often became very irregular, and remained so for two or three weeks. The blood-pressure also remained below normal. In three cases the slow pulse was followed by a rapid one, which was thready, irregular and intermittent. Resolution was not prolonged, but owing to the weakness of the patient, expectoration was less easy. Convalescence seemed lengthened, the picture being that of a marked and rather prolonged collapse.

Renier's[5] experience in 24 cases is very similar to that of Löwenthal. Although but one death occurred, a woman sixty-nine years of age, who was admitted in a state of collapse, he was unable to see that the drug had any influence upon the disease, except, perhaps, in the way of prolonging resolution, while symptoms of intoxication occurred ten times.

We have here a record of 923 cases, of whom but 12 died. The value of the statistics is, however, somewhat lessened when the sources from which they are derived is considered, the larger series being drawn from a selected class of patients, young and presumably healthy men serving out their term of military duty, in whom a low mortality is to be expected, while the others are made up of so few cases that the small death-rate might be an accidental coincidence, and result from any form of treatment. Although Petresco and Strizover claim to have met with no cases of poisoning, it has been comparatively frequent in the experience of the other reporters; and occasionally the symptoms have been very serious, Renier reporting a case in which after digitalis had been given in doses of four grammes for three days, alarming symptoms of collapse lasting for six days came on, consisting of cyanosis, sunken face, vomiting, small and intermittent pulse, cold sweat, uninterrupted hiccough and stupor. Even if recovery followed in all such cases, the occurrence of collapse as the result of treatment, whose special object is its prevention, should act as a warning against the use of these large amounts of digitalis in pneumonia as a matter of routine; but, as Löwenthal says, "in cases in which it is indicated, but where no result is produced by ordinary doses, the administration of a single large dose, three or four grammes in infusion, produces at times extraordinarily good results."

MEDICAL NOTES.

The Cholera. — The cholera shows a little tendency to diminish in St. Petersburg. During the week ending August 4th there were 313 new cases and 240 deaths, while in the week ending August 11th there were only 156 new cases and 101 deaths. In Warsaw, for the same two weeks, there were nearly 700 new cases and 400 deaths. These figures are of reported and officially recognized cases, and are said to be much under the real number. In Amsterdam there have been one or two new cases each day, while at Maestricht there have been four or five. Some six or seven cities in Holland have now reported single cases.

Small-Pox at Newark, N. J. — Five cases of small-pox were discovered in a tenement-house in Newark, N. J., last week; and it is thought that others will occur, as these patients had been ill for some time before reported.

The American Pharmaceutical Association. — The annual meeting of the American Pharmaceutical Association will be held at Asheville, N. C., on September 3, 1894.

Bequests to Hospitals. — The will of Elizabeth H. Pleasanton of Philadelphia makes the following bequests to medical charities: The Philadelphia Home for Incurables ten thousand dollars, the Presbyterian Hospital twenty-five thousand dollars. The will also contains provisions for the payment of a contingent bequest of a further income to the same two hospitals.

American Visitors at the Meeting of the British Medical Association. — Among the foreign visitors at the annual meeting of the British Medical Association in Bristol were Professor Osler, of Baltimore; Dr. de Schweinitz, Dr. Riseley and Dr. George M. Gould, of Philadelphia. Dr. Unna and Dr. Voigt, of Hamburg, Dr. Landolt, of Paris, and Dr. Snellen, of Utrecht were also guests of the Association.

A New Medical Journal. — Not only do certain organs of the body have their special medical journals, but now comes the first of a series devoted to a single disease. A new quarterly journal devoted to the study of tuberculosis has just been issued at Madrid. Its title is *La Revista de Tisiologia*, and it is edited by Dr. Valenzuela.

---

[3] Epitome, British Medical Journal, December 24, 1891.

[4] Centrblt. f. d. gesam. Therap., November, 1891.

[5] Wien. med. Woch., 1893, H. 39.

A Chair of Embryogeny. — Dr. Bornand, the eminent Swiss consultant lately deceased at Berne, bequeathed his property to the Académie de Lausanne for the endowment of a chair of Embryogeny.

Notification of Disease in Lisbon. — The Portuguese government has ordered that there shall hereafter be reported to the board of health on the first Monday of each week, every case of the following diseases which has occurred in the previous seven days in any school, hospital or asylum of the city: plague, cholera and choleraic disease, yellow fever, miliary fever, cerebro-spinal meningitis, small-pox, whooping-cough, measles, scarlet fever, diphtheria, influenza, puerperal fever, dysentery, green diarrhea of infants and purulent ophthalmia. In addition to these diseases, in private practice physicians must report each case of tuberculosis. The relative importance of reporting chronic tuberculosis at all, and typhus, cholera or diphtheria within a week only, is worthy of an efficient board of health!

The Pennsylvania Hospital for the Insane. — The report of the Department for the Insane of the Pennsylvania Hospital for the year just ended shows a total of 622 patients treated during the year, a daily average of 438. Since the hospital was opened in 1841 there have been 10 073 patients under treatment. The report says: "Thus far there has been no unusual demand upon our accommodation. Of those admitted, but a small number of cases can be traced to business reverses. The diffusion of knowledge, and a high standard of public and social morality, prove a wholesome safeguard against the effects of business calamities, and can be depended on to fortify a community to endure with patience and courage all the mutations of human affairs. It is, however, probable that there will be an unusual demand upon the accommodations of the public hospitals for the insane. Prolonged strain and worry from loss of employment, and lack of means to procure the actual necessaries of life, must inevitably result in a depression of the vital forces and nervous system. Epidemic conditions that affect the public health, such as the prevalent influenza of recent years, have been noticed to be followed by an increase of insanity. While the prevalent business depression has not produced any perceptible increase of insanity, there can be little doubt that the secondary effects are yet to be felt and will be observed in the hospital statistics of the country in the future."

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, August 15, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 39, scarlet fever 29, measles 8, typhoid fever 21.

One Hundred Years Old. — Mrs. Sally Batchelder, of Peabody, Mass., was one hundred years old on August 8th. She is in excellent health, but for impaired eyesight.

The First Annual Report of the Beverly, Mass., Hospital. — The annual report of the directors of the Beverly Hospital shows that during the first official year of its existence ending May 1, 1894, there have been ninety patients under treatment, of whom forty-six were discharged cured, twenty-five relieved, four not relieved and ten dead. The total receipts of the hospital were $8980.94 and the total expenditure $6266.70.

A Decision on Sanitary Defects. — The Supreme Court of Massachusetts in a decision of the full bench, has ruled that a landlord is not legally bound to inform his tenants at will of sanitary defects in the drain of the house. Neither is he liable to the tenant at will in a suit for damages for negligence in not acquainting such tenant of defects in the drain which arose during the course of the tenancy, even where the condition of the drain caused one of the occupants to take typhoid fever and die.

NEW YORK.

Dr. Judson B. Andrews. — The history of the career of the late Dr. Judson B. Andrews, whose death was announced in the Journal of August 9th, is that of a life of great usefulness and high honor begun under very discouraging circumstances. Dr. Andrews's father was of the humblest origin, and for many years was employed as a college "sweep" at Yale. He was, however, a man of frugal habits and strict integrity, and his ambition in life was that his son should attain to higher things. In this he was joined by his worthy wife, who contributed to the maintenance of the family by taking boarders. Accordingly, young Andrews was educated at the best schools, and in due time was graduated from Yale College with honors. After he had completed his medical course, he became interested in the study of mental disease, and for many years he served as assistant physician under the late distinguished Dr. John P. Gray, at the State Hospital for the Insane at Utica. A few years ago he was appointed superintendent of the State Hospital at Buffalo, a position he held at the time of his death, and in 1892 he was honored (as Dr. Gray had previously been) with the presidency of the New York State Medical Association.

Diphtheria Bacilli in Cheese. — The discovery of diphtheria bacilli in a lot of cheese (the first instance of the kind yet recorded, as far as known), lately sent to the city from a dairy at Afton, N. Y., has attracted unusual attention in the medical profession. It seems that in the early part of July there was a number of cases of diphtheria in the town of Afton, and among those attacked by the disease was the child of the proprietor of the dairy mentioned, and one of the employés of the cheese factory belonging to it. In the latter instance the affection was of a very malignant character, and the patient died. Under these circumstances the factory was closed by the local Board of Health, and instructions asked from the State Board of Health. Dr. F. C. Curtis of the State Board then came to Afton, and, after investigating the condition of affairs, gave permission to ship the June cheese from the dairy, but ordered the July cheese held for further examination. He then requested that samples of the latter should be sent to Prof. J. H. Stoller, of Union College, Schenectady, for bacteriological tests, and instructed the Afton Board of Health to allow the cheese to be shipped on July 30th, if not advised to the contrary. On July 30th, accordingly, no word having been received from Dr. Curtis, the cheese was shipped to a firm of commission merchants in New York City. The next day, July 31st, a letter came from Dr. Curtis, stating that diphtheria bacilli had been found in the samples examined by Professor Stoller, and the Board of Health then telegraphed the New York Board to seize the cheese sent on the previous day. This was accordingly done, and the tests which have since been made by Mr. A. L. Beebe, Acting Chief of the Bacteriological Bureau of the City Health Department, have amply confirmed those of Professor Stoller, and demonstrated beyond question the presence of the Klebs-Löffler bacillus in the cheese. Guinea-pigs have also been inoculated with cultures derived from the cheese, but the results of the latter investigations have not yet been announced.

◆

Miscellany.

THE INFLUENCE OF POLITICS ON PULMONARY THERAPEUTICS.

The most suitable treatment for pulmonary anthracosis has always been considered to be removal from the conditions of vitiated air to better hygienic and aerial surroundings, but there seems to be now an opposition to such treatment, on the part of M. Dr. Vigné d'Octon, a member of the French House of Deputies.

The government having offered to employ the miners of Graissessar, who are out of work, in the coal-yards of the railroad at l'Aveyron, Dr. Vigné d'Octon says the miners should refuse such an offer for the following reasons: "Since adult age, and in some cases from childhood, the miners whom you would send to the railroad yards at Rodez have worked in the mines, that is, in a peculiar atmosphere which has gradually brought about profound changes in their organs. Their lungs, for example, are affected with anthracosis, due to the accumulation in the parenchyma of a considerable amount of carbon dust. The result of this condition is that they cannot carry on their functions without danger in a too fresh atmosphere or one too different from that of the mines. And these miners you propose to transport brutally to the mountains of Rouergue to an altitude of seven hundred metres, to a climate so vigorous that the winters test the most robust. I appeal to all physicians, members of Parliament, and ask them if as physicians they would sanction the decision they have approved as politicians."

Inasmuch as the miners are out of employment and in need of the means to procure food, it seems a refinement of therapeutic interest to starve the men to death for the sake of providing them with a sufficiently carbonized air to breathe; and there is small doubt that, whatever be the value of Dr. d'Octon's opinion, most men would prefer even a short life of work, well fed, on a mountain seven hundred metres high to a prolonged idleness of hunger in the most carefully adjusted atmosphere that a coal mine could provide.

◆

Correspondence.

LETTER FROM KOREA.

Chemulpo, Korea, May 25, 1894.

Mr. Editor: — This city is well situated for good hygienic conditions; but the habits of Chinese and natives of Chosen are quite able to counteract the advantages given by nature. The slow, but steady infiltration of Anglo-Saxon ideas of cleanliness may work a change. The great rise and fall of tides (thirty feet being the extreme) aid the hilly shore to afford drainage, while the clear sea-air blows much bad gas away.

Under the auspices of the Episcopal Mission, Dr. Landis (Emir of Peina) has erected a hospital of ten rooms, Korean fashion — small, square compartments, warmed from fireplaces beneath the floor. Devoting himself to the study of the language and to his professional work, he is enabled to win their confidence, and thus have opportunity to let them see the light of truth that is to free them from the present ignorance and its many evils both physical and mental. He reports many instances of myetalspia.

The Korean, Japanese, and Chinese communities are distinct from each other, but coterminous. The few foreigners are here and there, according to convenience of business or the desirability of location.

The carved and colored images on ends of posts or stakes remind one of the "totem" Poles of Alaska, as well as of the "masks" of Japan and of the American and Mexican tribes of Indians.

The sound of Korean words is similar to those given by children of Alents at Unalaska — perhaps another instance going to show the provenance of the Alaskans and North American Indians. The system of mensural notation in Korean is much like that used by the Iroquois. The reverence accorded the sun recalls the worship of the same object by the Zuñi, and other peoples of the western hemisphere.

Mr. James Scott, M.A., British Consul, is preparing a revised edition of his "Korean Language Manual," probably the best English work for those who wish to obtain a practical knowledge of this tongue. It is also used by the people of Chosen (the name liked by the natives) to learn English. This second edition will be issued in about six months. It contains elements of pronunication, grammar, and phrases for illustration and practice in speaking, reading and writing. The introduction gives the latest results of research on the linguistic cognation of the written and the spoken forms — different from Chinese and from Japanese. The Chinese language and literature bear very much the same relation to Korean and Japanese that Greek and Latin do to English.

F. B. Stephenson, M.D., *Surgeon U. S. N.*

◆

SHORTHAND IN MEDICINE.

Oxford, England, July 31, 1894.

Mr. Editor: — In order to promote the use of shorthand in medicine, it is desirable that a list should be compiled of all those who use it. We would, therefore, ask each practitioner and student, who is acquainted with phonetic shorthand to send his name and address to Dr. Neil, Warneford Asylum, Oxford, England.

The preparation of a list of medical phonographers is intended as a preliminary step to such farther measures for mutual encouragement and help as may appear advisable.

Yours faithfully,
W. R. Gowers, M.D., F.R.C.P.
Edward B. Gray, M.D.
James Neil, M.D.

METEOROLOGICAL RECORD.

For the week ending August 4th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		
Date.	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Rainfall in inches.
S..29	29.89	84	94	75	72	66	69	S.W.	S.E.	10	5	F.	F.	
M..30	29.94	78	88	68	69	52	60	W.	W.	9	7	F.	C.	0.04
T..31	30.00	77	85	69	54	68	61	W.	W.	6	11	F.	O.	
W. 1	30.04	68	72	63	58	64	61	N.E.	S.E.	10	9	F.	F.	
T.. 2	30.01	70	77	62	90	81	86	E.	S.	11	11	O.	O.	
F.. 3	29.84	73	80	66	95	82	88	S.E.	S.W.	4	10	R.	O.	0.11
S.. 4	29.98	69	74	64	73	58	66	N.W.	W.	5	11	R.	O.	0.04
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week

RECORD OF MORTALITY

For the Week ending Saturday, August 4, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,956,000	988	517	32.90	8.30	24.40	.70	4.30
Chicago . . .	1,438,000	—	—	—	—	—	—	—
Philadelphia .	1,139.457	577	263	28.90	7.65	22.27	1.87	2.38
Brooklyn . .	1,043,000	561	317	36.00	7.02	26.10	.72	5.40
St. Louis . . .	540,800	—	—	—	—	—	—	—
Boston . . .	501,107	276	145	35.28	9.72	27.00	1.44	5.04
Baltimore . .	500,000	—	—	—	—	—	—	—
Washington .	285,000	127	44	26.86	6.32	12.64	10.27	1.58
Cincinnati . .	325,000	—	—	—	—	—	—	—
Cleveland . .	325,000	—	—	—	—	—	—	—
Pittsburg . .	272,000	103	58	43.65	12.61	35.89	1.94	1.94
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	30	9	16.66	23.33	10.00	6.66	—
Charleston . .	65,165	37	21	21.60	10.80	16.20	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	100,410	41	28	48.80	—	41.48	2.44	2.44
Fall River . .	92,233	64	43	42.12	4.68	42.12	—	—
Lowell . . .	90,613	39	28	58.88	2.56	58.88	—	—
Cambridge . .	79,607	37	15	43.20	5.40	32.40	—	2.70
Lynn	65,123	19	11	31.56	—	31.56	—	—
Springfield . .	50,284	21	10	47.62	—	42.84	—	—
Lawrence . .	49,900	—	—	—	—	—	—	—
New Bedford .	47,741	31	20	45.22	9.69	45.22	—	—
Holyoke . . .	43,348	—	—	—	—	—	—	—
Brockton . .	33,939	—	—	—	—	—	—	—
Salem	33,155	19	11	36.82	5.26	26.30	5.26	—
Haverhill . .	32,925	15	10	39.99	—	39.99	—	—
Malden . . .	30,209	15	9	39.99	6.66	26.66	—	6.66
Chelsea . . .	29,806	25	13	12.00	16.00	—	4.00	8.00
Fitchburg . .	29,383	9	6	33.33	—	33.33	—	—
Newton . . .	28,837	—	—	—	—	—	—	—
Gloucester . .	27,293	—	—	—	—	—	—	—
Taunton . . .	26,955	9	4	33.33	22.22	33.33	—	—
Waltham . .	22,058	4	2	25.00	50.00	25.00	—	—
Quincy . . .	19,642	—	—	—	—	—	—	—
Pittsfield . .	18,802	8	4	50.00	12.50	50.00	—	—
Everett . . .	16,585	5	5	80.00	—	80.00	—	—
Northampton .	16,331	12	3	41.65	25.00	16.66	—	16.66
Newburyport .	14,073	6	4	66.66	—	50.00	—	—
Amesbury . .	10,920	2	0	—	—	—	—	—

Deaths reported 3,119: under five years of age 1,634; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 1,174, diarrheal diseases 817, consumption 255, acute lung diseases 119, diphtheria and croup 113, typhoid fever 47, whooping-cough 40, measles 14, cerebro-spinal meningitis 13, scarlet fever 12, malarial fever 12, erysipelas 5, small-pox 2.

From whooping-cough Philadelphia 12, New York 10, Brooklyn 8, Boston 3, Washington, Pittsburg, Cambridge, Springfield, Salem, Malden and Newburyport 1 each. From measles Brooklyn 6, New York 5, Pittsburg 3. From cerebro-spinal meningitis New York 7, Washington 2, Philadelphia, Worcester, Everett and Northampton 1 each. From scarlet fever New York 5, Boston and Somerville 2 each, Brooklyn, Cambridge and North Adams 1 each. From malarial fever Brooklyn 5, New York 4, Charleston 2, Philadelphia 1. From small-pox New York and Brooklyn 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending July 28th, the death-rate was 17.0. Deaths reported 3,409: acute diseases of the respiratory organs (London) 160, diarrhea 267, measles 115, whooping-cough 80, diphtheria 73, scarlet fever 53, fever 27, small-pox (Birmingham 4, London, Plymouth and Manchester 1 each) 7.

The death-rate ranged from 9.5 in Gateshead to 24.4 in Liverpool; Birmingham 14.5, Bradford 16.8, Croydon 13.5, Huddersfield 15.9, Leeds 15.6, Leicester 13.2, London 17.2, Manchester 18.8, Newcastle-on-Tyne 16.3, Nottingham 17.0, Plymouth 11.3, Portsmouth 11.9, Salford 20.3, Sheffield 18.8, West Ham 14.4.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 4, 1894, TO AUGUST 10, 1894.

A board of medical officers to consist of **Major Valery Havard, Major John Van R. Hoff** and **Major George H. Torney**, surgeons, is, by direction of the Secretary of War, appointed to meet at West Point, N. Y., August 15, 1894, or as soon thereafter as practicable for the physical examination of the cadets of the first and third classes; the cadets of the second class on their return from furlough and such other cadets of the Military Academy and candidates for admission thereto as may be ordered before it.

Leave of absence for one month, to take effect about August 5, 1894, is granted **Captain W. Fitzhugh Carter**, assistant surgeon.

Captain Wm. J. Wakeman, assistant surgeon, U. S. A., granted one month's leave of absence, on completion of his duties at Fort Thomas, Rifle Range, Ky.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 11, 1894.

F. L. DuBois, medical inspector, detached from U. S. S. "Chicago," ordered home and granted two months' leave.

RECENT DEATH.

Reuben D. Clark, M.D., State Chemist of the State of New York and a prominent physician in Albany, died August 11th, aged forty-seven years. He graduated from the Long Island College Hospital in 1875.

BOOKS AND PAMPHLETS RECEIVED.

Circular of the Graduate School of Harvard University, 1894–95.

Alumni Oration. By Hon. Charles Emory Smith, Philadelphia. Reprint. 1894.

Sur l'Anatomie et la Physiologie des Articulations Sacro-Iliaques Avant et Après la Symphyséotomie. Reprint. Paris. 1894.

Harvard University Announcement of Courses of Instruction Provided by the Faculty of Arts and Sciences for the Academic Year, 1894–95.

Prevention and Treatment of Cholera. The Treatment of Typhoid Fever. By Elmer Lee, A.M., M.D., Ph.B., Chicago, Ill. Reprints. 1893–94.

De l'Agrandissement Momentané du Bassin, Rapport lu au Congrès International des Sciences Médicales Tenu à Rome du 29 Mars au 5 Avril, 1894. Par Adolphe Pinard. Paris. 1894.

De l'Agrandissement Momentané du Bassin Oblique Ovulaire par Ischio-Pubiotomie, Avec Considérations sur la Puissance Nocive du Forceps, etc. Par L. H. Farabeuf. Reprint. Paris. 1892.

Dystocie du Détroit Supérieur: Mécanisme, Diagnostic, Traitement, Symphyséotomie. Compte-rendu d'une Demonstration Obstétricale Faite à Rouen, Caen, Rennes, Nantes et Angers du 12 au 18 Avril, 1894. Par L. H. Farabeuf. Reprint. Paris. 1894.

Increasing the Length of Bones; The Means of Increasing the Length of Bones and of Arresting their Growth; The Application of Some Experimental Facts to Surgery. By L. Ollier, Lyons, France. Translated by B. Merrill Ricketts, Ph.B., M.D., Cincinnati, O.

The Reactions of Nucleo-Albumin (Erroneously Styled Mucin) with the Commonly Employed Urinary Albumin-Tests: the Difficulty of Distinguishing these Reactions from those of Serum Albumin, Globulin, etc. Remarks on the Occurrence of a Normal, Constant Trace of Albumin in the Urine. By D. D. Stewart, M.D., of Philadelphia. Reprint. 1894.

Original Articles.

MALIGNANT DISEASE OF THE UTERUS.[1]

BY E. H. TROWBRIDGE, A.B., M.D., OF WORCESTER, MASS.,
Surgeon to the Out-Patient Department of the Worcester City Hospital.

Of all the diseases which afflict women, none is more abhorrent or more dreaded than cancer; and especially is it so, when the growth is connected with the uterus, for here the disease is unseen and its rapid progress undetected, and the woman is in almost total ignorance of her true condition.

It is estimated that of the number of women who die from cancer, one-third die from cancer of the uterus; and the very fact that this disease has made rapid advance in a great many patients before they seek surgical advice renders it important that every physician should make an early diagnosis, and prepare the patient for the necessary subsequent treatment.

Hence I desire to consider such minor and such salient features of malignant disease as will enable us to render an early diagnosis, and, secondly, to consider such radical operative procedures as will give the patient the greatest relief and, if possible, establish a cure.

The cervix, the same as other oral regions, is naturally the favorite seat of the disease, which, at first, is no doubt purely local, and may be in its nature a carcinoma, a scirrhus, a medullary, an epithelioma or a sarcoma.

The idea of a cancer rarely suggests itself to a woman under the age of thirty-five; but after this age is passed and the fortieth cycle is approaching, then this thought arises whenever anything occurs, out of the natural course of events, which calls attention to the pelvic organs. If the menopause subsides without any special disturbance, then the woman is easy in her mind until the age of fifty is reached; from that time until sixty, the dreaded disease may assert itself with all its accompanying symptoms.

Cancer of the cervix generally appears as a papillary or cauliflower growth, or may assume a nodular form, or become a superficial ulceration of the mucous membrane. The first grows from the intravaginal portion of the cervix, where it may be limited for a long time; but later on it spreads to and involves the adjacent tissue. The nodular variety starts as one or several nodules in the cervical mucous membrane; but this mucous membrane is soon destroyed, and then the cancerous nodules fuse together and the disease extends. The last, or superficial, form begins as an infiltration of the mucous membrane, which in time is completely invaded with the disease.

The symptoms of cancer vary somewhat in degree, depending on whether the cervix or the body of the uterus is involved. In the cervix, probably more than in the body, the disease may exist for some time without anything transpiring which will attract the attention of the patient.

The appearance of blood at such unnatural times as between menstruation, or as a profuse menstruation; or, after the menses have subsided, hemorrhage starts up again or appears after coition, causes the woman manifold anxiety.

In scirrhus, hemorrhage may be absent, though generally it is present. This hemorrhage is frequently attended with a sanious or serous discharge, which, when ulceration takes place, changes to a greenish-yellow, green-brown or blackish color, with more or less offensive odor, according to the advance of the disease.

This serous or watery discharge, I believe is an important early sign, and appears even before the hemorrhage; the amount of this discharge is wrongly estimated, because at times the hemorrhage accompanies it. The intensely congested blood-vessels in close proximity to the growth are drained of their watery elements, and there is a more or less constant serous flow, which often precedes the appearance of the blood; this watery discharge also constitutes the greater part of the leucorrheal flow which is often complained of by the patient.

There are cases when the hemorrhage may be slight or wanting; but I have never seen one which did not have more or less leucorrhea. I desire to emphasize this statement because we see and are informed of cases where they have been told, after relating the above-mentioned symptoms, that this is only a slight leucorrhea probably attending the menopause, when in reality the physician has made no examination and does not suspect the presence of any cancerous growth. I look with just as much suspicion on those cases having a thin watery discharge, attended with leucorrhea, as I do on those cases where the first indication of disease is hemorrhage.

Then, too, pain may be somewhat deceptive; by some authorities it is considered as the third important symptom, and so it is, though not present during the early advance of the disease. This symptom, above all others, is the one in regard to which the laity entertains a mistaken idea; it is the universal opinion that cancer cannot exist without that degree of pain which varies from the mild to the excruciating. How often we hear patients and friends remark that there has not been any pain, and that they have only a slight flow or some leucorrhea! This is almost the universal answer given to me when I question the patient in regard to her early symptoms; and because they have not had any pain, it is difficult to convince them or their friends that cancer exists.

Then, too, the woman often looks so vigorous and healthy that these signs might appear to be exaggerated, and it seem an impossibility for cancer to be present; too often, I fear, physicians have been misled, and have desisted from giving their patients that thorough examination which should be accorded to every one who consults us, and have waited for time to reveal the true state of the disease.

As the disease advances, the patient discovers that the hemorrhages become more frequent; that the thin watery and bloody discharge becomes more offensive; that the pains in the lumbar region become more severe; that the digestive tract begins to be disturbed; and still later on appears the characteristic cachexia, with the skin harsh and dry. By this time the adjacent tissues and organs have become more or less invaded.

In the body of the uterus we find that cancer is less frequent; but when it does exist, it is a disease of advanced age, and originates in the glandular elements of the endometrium, and appears as a polypoid degeneration or a diffuse infiltration, and may extend to the tubes and ovaries. Here the symptoms I have mentioned are intensified to the fullest degree. The hemorrhage is generally profuse; the watery discharge copious; the pain violent and extending down one or both extremities, or it may simulate labor pains, as when the uterus endeavors to expel its contents through a narrowed cervix. When the peritoneum, broad ligaments and cellular-tissue become invaded, then the pain is liable to be excruciating.

---

[1] Read at the meeting of the Worcester Medical Association, May 23, 1894.

I desire to here relate the history of three cases which illustrate these points.

CASE I. Mrs. S.; seen with Dr. Whittaker. American, age fifty-eight. Has had five children. Menstruation ceased at the age of fifty-three. Three years afterwards she fell down a flight of stairs, and has been ill since then. Shortly after the fall, she had a severe cold, and from excessive coughing she first noticed a discharge of blood from the vagina; this was unattended by pain except on coughing. Two years after, she commenced to experience severe pain in the uterus and its appendages, which has continued up to the present date (March 27, 1894).

In 1892 she was examined by the late Dr. Lincoln, of Millbury, who pronounced it "cancer of the womb."

Mrs. S. was first seen by Dr. Whittaker on December 1, 1893. At that time the os was hard and immovable, and the walls of the vagina were involved.

At the present date (March 27th) she says she has hemorrhage at times, *but all the time* has a *bloody, watery discharge*, very offensive. Is weak, and gradually becoming more so, and is obliged to resort to the use of opiates to relieve pain, and to antiseptics to overcome the offensive odor and relieve the watery flow.

This woman had delayed having anything done; and when I saw her the disease had so extended, that curettage and cauterizing was the only procedure to advise. This, however, she did not have done.

CASE II. Mrs. H., seen March 5, 1894, and sent to me by Dr. H. Warren. Her age is forty-two, married. Family history good. Has had five children; no miscarriages. Does not remember when she was first unwell; but since menses were established, has been very regular up to two years ago, and then flow became more frequent. About six months later, she began to have pain in the left side. Nine months ago she began to have profuse menstruation attended with clots, and for past six or seven months the vaginal discharge has been continuous, tinged with blood and very offensive. Has had pain over uterus, also pain in stomach followed by vomiting; bladder becoming a little more irritable and urination more frequent; appetite diminishing and flesh decreasing.

At the above date (March 5th), when I saw her, the external os was greatly enlarged and the growth protruding; the cervix, posterior to the growth, was tough; the uterus enlarged, with appearance as though the whole cavity was involved; at the anterior portion of the vaginal vault and to the left, the nodules could be felt. I advised a thorough curettage and removal, if it could be done.

A thorough curettage was done, followed by use of the thermo-cautery. The greatest discomfort which now annoys the patient is a copious watery discharge. There have been three periods of bleeding, one quite profuse. The odor has disappeared due to the use of antiseptics. Pain has at no time been an important factor.

At present the patient is fairly comfortable, and able to go out riding on pleasant days; she is holding her own in appearance, and any one would hardly suspect that cancer has so extensively invaded the uterus and vagina.[2]

CASE III. Mrs. E., age forty-two, housekeeper. She was first seen in the spring of 1893, and from the appearance of the growth on cervix, I suspected cancer and at that time I advised that she be kept under observation, as there might be a malignant condition existing.

After being thus informed and advised, she soon afterwards consulted three other physicians, believing that it was impossible for such a condition as cancer to exist, when she felt and looked so healthy.

I did not see the case again until October, 1893, when she consulted me, and gave the following history: For the past few months she had bled quite profusely at and between menses, also during coition; no pain at any time; discharge not offensive. Examined patient, and found os greatly enlarged; it bled at the slightest touch. The cervix was completely invaded with a cancerous growth. I advised curettage and a microscopical examination of the scrapings.

On November 1st, assisted by Dr. Clark, the cervix was thoroughly curetted. There was no doubt as to the diagnosis; yet I desired an examination of the shreds, and the following is Dr. F. H. Baker's report of November 22, 1893:

"The report of the tissue taken from the cervix which you sent in is: — A section half an inch long by one-quarter of an inch wide; grayish opaque; partly firm and dense; partly soft and friable; consisting of fibrous tissue, with irregular, infiltrating nests of epithelial cells, many undergoing fatty change; also considerable cystic glandular degeneration. Diagnosis, carcinoma." I desire to emphasize the great importance of an early microscopical examination; this should be done, not only in those cases where diagnosis is unmistakable, but in those cases where we have the least suspicion. Only by so doing can we scientifically investigate and determine the true nature of the disease.

After receiving Dr. Baker's report, I informed the patient of the nature of the disease, and advised a vaginal hysterectomy in the near future. To this she readily gave her consent; and on December 3, 1893, the operation was performed. I was assisted by Drs. J. B. Rich, Clark, Baker, Wilder and McKenzie. Dr. Davis, the consultant, was also present.

TECHNIQUE OF THE HYSTERECTOMY.

After rendering the parts aseptic by means of a bichloride douche (1 to 2,000) and exposing the cervix by the use of the Sims speculum and side-retractors, I stitched together the anterior and posterior lips of the cervix, and also passed a silk suture through the centre of each lip — the same as in trachelorraphy — by means of which I could make traction and thus avoid the use of the volsellum. The cervix was then ringed with the scalpel, the incision being close to the cervix; for we must remember that the ureter on each side is only one-half an inch away. After separating the cervix, the forefinger of the right hand was forced between the uterus and bladder, and the fold of peritoneum anteriorly was opened and slit laterally to the broad ligament. The peritoneum in Douglas's pouch was separated in the same way, leaving the uterus hanging or suspended by the broad and round ligaments.

---

[2] Patient died July 4, 1894.

By making traction with the sutures already passed through the centre of each lip, the cervix was brought well down in the vagina, and the first series of catgut ligatures, including the uterine artery, was passed on each side. After cutting the tissue between ligature and uterus, the second series of catgut ligatures, including the tissue between the uterine and ovarian arteries, was passed and intervening structures severed. Finally, the third series of ligatures, including the ovarian artery and the Fallopian tube, was passed, and the remaining structures cut and the uterus freed.

In this case I was able also to remove the right ovary. The anterior fold of peritoneum was stitched with catgut to the anterior wall of the vagina; the fold of peritoneum posteriorly was likewise sutured to the posterior wall of the vagina; then these two lines of sutured surfaces were stitched together by catgut, and the wound rendered as firm as possible. Iodoform was dusted along the line of sutures, and slight gauze packing inserted into the vagina.

Convalescence was uninterrupted; and three weeks from the day of operation the patient was able to go to the dining-room for dinner.

Since the operation she has gained in flesh, and at present is feeling in excellent health. Of course, it is impossible to tell whether or not there will be a recurrence, as the time limit is three years.

A short time ago this patient remarked that it was worth all she had gone through — operation and expense — to be relieved of the bloody, disagreeable discharge, which made life miserable to the extreme.

In those cases where removal of the uterus is not warranted by reason of the too extensive involvement of the surrounding tissues, the next best method is to thoroughly curette, and then cauterize with the thermocautery or with the chloride of zinc solution.

The use of clamps, to control hemorrhage from either the uterine or ovarian arteries, I do not believe in; and the method of employing them (clamps), which in the early days of hysterectomy was more extensively used than at present, will in time be supplanted by the ligature.

As to the ligature, I believe that catgut is the only material to use. If silk is used, it should be so cut as to have one portion of the ligature very long and protruding through the wound, so that when it separates from the tissue it can be removed; and thus no material, to act as a foreign substance, will be left in the pelvic cavity.

EXPERIMENTAL VAGINAL HYSTERECTOMY ON THE CADAVER.

In doing experimental work on the cadaver, I found that the uterus could or could not be brought down easily in the vagina, according to the plan adopted.

In one series of experiments I made a long median abdominal incision to enable my assistant to watch, from the abdominal stand-point, and inform me how the tissues acted as each step of the operation was taken.

I first did the hysterectomy (vaginal) by ringing the cervix and passing the ligatures on each side, and cut the tissues between ligatures and uterus; the uterus was then pulled down as far as the cut tissues, laterally, would allow, and the second series of ligatures passed and the intervening tissue cut as before. At this stage I punctured the peritoneum anteriorly and posteriorly, slit it laterally, and passed the third series of ligatures.

By this plan I found that the fold of peritoneum which passes from the anterior wall of the uterus, opposite to the internal os, to the posterior surface of the bladder held the uterus as an anterior check ligament, and prevented the uterus from being readily pulled down into the vagina; and also, when making traction on the uterus, the bladder was pulled backward by the attached peritoneum.

In another series of experiments, after making the abdominal incision for the purpose of watching the manipulation, and ringing the cervix, I separated, at the first step, the peritoneum from the uterus anteriorly and posteriorly, and after puncturing it, slit it laterally to the broad ligaments, as was done in the operation on Case III. The uterus was then left suspended; and in making traction, there was nothing anteriorly or posteriorly to check the uterus, as was the case when the peritoneum was left intact, until the last step of passing the third series of ligatures, as in first method of experiments.

In this latter method, after the uterus was completely freed anteriorly and posteriorly, the ligatures were very easily passed, the uterus readily brought down in the vagina, and the operation rendered more expeditious.

Especially when the uterus is enlarged, will the method of first separating the peritoneum anteriorly and posteriorly, enable the surgeon to more dexterously perform the hysterectomy.

◆

REMARKS ON CERTAIN ACCIDENTS OCCURRING IN PULMONARY TUBERCULOSIS IN CHILDHOOD.

BY CHARLES GREENE CUMSTON, B.M.S., M.D.,
Acting Assistant Pathologist to the Boston City Hospital.

IN this short paper I do not intend to describe the different forms of tuberculosis in children, but desire to call attention to two important complications of this disease, namely, hemoptysis and pneumothorax.

I have in mind some twenty-five cases of pulmonary tuberculosis, of which eight were important because the disease was not characteristic. These patients were thin and presented symptoms of bronchitis; they were born of tuberculous parents, and the parents were themselves children of scrofulous descent. After a stay in the hospital, these patients were sometimes better, or their condition remained the same; and the diagnosis has remained doubtful, tuberculosis being suspected but never proven by any real symptoms. One child was afflicted with Pott's disease, and was taken quite suddenly with the miliary form of tuberculosis; but the parents took him away before the end of his illness. Seven patients had tuberculosis affecting the form of broncho-pneumonia, and all died; their ages varied from a year and a half to five years. Rickets, scrofula, athrepsia,* repeated bronchitis, typhoid fever and measles are, according to my observations, the diseases having usually preceded the *début* of tuberculosis or have been favorable to its development. Once only, could no physical signs or localization of the disease be discovered, but the autopsy showed that many lobules of both lungs were invaded. In all the other cases, the lesions formed foci, confluent or in one or several points, giving during life the usual signs of congestion and hepatization. In four cases the progress of the disease was acute, death occurring in from two weeks to twenty-six days; three times the patients lived a little over two months, and at the autopsy an extensive pseudo-lobar hepatization or caseous pneumonia with caverns was observed. But these cases are what are commonly found in children, consequently I will not insist further, but will give some rather uncommon complications taken from my notes on cases.

---

* There is a singular misunderstanding among the English-speaking profession as to what athrepsia, as the French understand it, really is; and I here would like to define it in as few words as possible. I would say: Athrepsia is a dystrophia of newly born children, characterized by the non-assimilation of alimentary substances. From this, considerable emaciation results, accompanied by a group of symptoms and anatomical lesions of which Parrot has given such a remarkable description. In the great majority of cases, athrepsia has for starting point a bad alimentary regimen, milk is given in insufficient quantity, it is of bad quality, want of regularity in giving it, and especially premature alimentation are the principal causes of its production.

All writers agree as to the extreme rarity of hemoptysis in young children, I mean, be it understood, those in whom tuberculosis takes the form common to young age, and not those cases in which the lesions are similar to those found in adults. If hemoptysis is rare, especially at the beginning of the disease, it appears to be less so at the last.

Rilliet and Barthez relate some examples in which it was nearly always mortal. According to them, hemoptysis only shows itself in children having an advanced tuberculosis of the glands, and they know of no case in which the final hemorrhage came from a cavern, unless there were at the same time some enlarged bronchial glands. All the patients who presented this complication were (with one exception, who was three and a half years) over seven years of age.

Henoch has seen slight hemoptysis a dozen times; once, only, severe hemorrhage. He has never observed perforation of a large pulmonary vessel produced by peri-bronchial adenopathy.

West mentions seven cases of tuberculosis, ending abruptly with loss of blood from the lungs. Autopsies were made in three of these cases, and in only one did he find a cavern communicating with a ruptured vessel; the age of this patient is unfortunately not given.

Dr. Berger [1] saw a similar case in private practice in a child aged four.

Baginsky [2] has met with this complication apparently quite often; for he says, "Hemoptysis is seen in young children, and I have observed it many times."

Steiner and Wyss have also reported cases in children varying in age from two to six years.

D'Espine and Picot [3] mention a case of a boy, age thirteen, who had repeated hemoptysis during his phthisis, and this was one of the causes of death: they say, however, that as an initial symptom, it is much less frequent in children than in adults.

Smith [4] says: "Hemoptysis is rare under the age of six years, and less frequent subsequently than in the adult. It is most apt to occur in those cases in which there is already passive congestion of the lungs, produced by the pressure of enlarged bronchial glands."

Jacobi [5] writes: "Profuse hemorrhages are rare in children. I do not remember more than half-a-dozen cases of pulmonary hemorrhage in children, except those which took place in violent attacks of whooping-cough. Only one of my cases — phthisis — was three years old; one, a girl of eleven, had repeated attacks extending over a year, and exhibited infiltrations of the upper lobe afterwards; the others occurred in children affected with phthisis, early or late stage, of from seven to eleven years."

Lastly, Professor Osler [6] expresses himself in these terms: "Hemoptysis may be said to be infrequent in children under ten. Certainly, it is very rare at the onset. It is usually small in quantity. The terminal hemoptysis, common in the adult, but rare in children, results from the rupture of an aneurism in a small cavity or erosion of a branch of the pulmonary artery."

From what has been said, it is evident that this complication is very rare in children under six years of age, and even then is infrequent; consequently the following case may be of interest on account of the age of the patient, the considerable quantity of blood lost, the pathological investigation with its findings, and the rarity of hemoptysis in young subjects:

A little boy, sixteen months old, thin and sickly, had never been well, and had continual diarrhea and vomiting. The child was seen on July 10th at the hospital, his mother asking, on account of her great misery, permission to leave him for a few days in spite of his age. After a few days with a good milk diet, the child was better; but this amelioration was only temporary. On July 19th he commenced to lose flesh, and râles could be heard. On the 23d very marked dulness was noted in the right axillary line, extending to the front up to the sternum. For two days the child had rendered about two cuspidors full of blood, by the nose and mouth. The little patient suddenly died on the morning of July 24th, during a very abundant hemoptysis of red blood which was thrown out in jets. An autopsy, twenty-four hours after death, revealed the following: All the organs were anemic. Both lungs adhered to the costal walls. In the anterior mediastinum, near the union of the first and second pieces of the sternum, was found a bunch of caseous glands softened in their centre. A similar tumor was found a little lower down, in the posterior mediastinum. Both lungs were riddled with tubercles; they cried under the knife, and were hard to cut. In the right lung there was a cavity the size of a walnut, and filled with a clot of red blood, situated in the antero-inferior part of the upper lobe. Above the cartilage, and in immediate contact with it, was a large branch of the pulmonary artery. A communication was found, with a probe, between the artery and the cavity, having a calibre large enough to admit a goose quill; the tunics of the artery formed a kind of incomplete valve. By moving the probe gently in the cavity, a bronchial tube was found opening directly into the cavern near the artery. The liver, spleen and peritoneum were filled with tubercular granulations. This case demonstrates how tuberculous lesions, even advanced, may remain a long time undiscovered, or, at least, only give very few physical signs. In fact, it was only two days before death that râles could be heard, and dulness was only discovered the evening before death, and for all that there was an enormous cavern in the subclavicular region, which is generally accessible to the ear. It also proves the truth of the statement made by Rilliet and Barthez and Smith that hemoptysis hardly ever is present excepting in children having advanced tuberculosis of the glands.

Pneumothorax, on the other hand, is more frequent under the age of five than above, in the proportion of ten to five, according to Rilliet and Barthez; and they believe that this frequency is due to the fact that broncho-pneumonia is more common in the very young.

The perforation is generally found in the middle or inferior dorsal aspect of the lung, and the pneumothorax is more often general than partial. The *début*, which is sudden and characterized by violent pain and intense dyspnea, can also be the same in children; however, it is usually less pronounced in the latter. Once formed, a pneumothorax has the same physical signs as in adults; and death occurs either in a few hours or after a more or less long period of cachexia and hectic. Cure may be brought about, as in a case of Rilliet and Barthez, and one of Sanné. It is true that these were not tuberculous patients, so to speak; but the writers who report them say that pneumothorax occurring in phthisis should not necessarily be considered fatal to the patient. They saw this lesion disappear when tuberculosis was only slight, and the latter disease was left to continue its course. Cadet de Gassicourt[7] relates the case of a purulent pleurisy, treated by empyema, in which a pneumothorax appeared. The child was cured and has been in good health ever since, a period of seven or eight years. As in adults, a pneumothorax is often complicated by a fluid collection in the pleural cavity; this only if it is not final, that is to say, if the life of the patient continues long enough for the liquid to form.

The diagnosis presents some serious difficulties, on account of the age of the patient and the insidious commencement of the lesion. Dieulafoy[8] says that pneumothorax is more frequent in adults than in children, but it is met with in the latter even under two years of age. Tubercles produce perforation at all ages; rupture of the vacuoles of broncho-pneumonia produces it exclusively in the young, aged from two to four years.

West considers pneumothorax more infrequent than hemoptysis. This, however, I am not disposed to admit, although I cannot give sufficient proof of its being erroneous. But the frequency of caseous pneumonia in children, the superficial situation of the cavities resulting from the breaking down of tuberculous lobules, the thinness of the tissues separating them from the pleural cavity, would lead one to suppose that such a lesion ought not to be a great exception.

Here are two cases that seem worthy of noting:

Case I. A child, two and a half years old, entered the hospital on March 3, 1888. No history could be obtained. He presented manifest signs of a left pneumothorax, consisting of an amphoric souffle, and the copper bruit produced on percussion by means of two pieces of money. There appeared to be no fluid in the cavity. The general condition was bad: dyspnea, fever, wasting of the tissues. Three days later, a dulness was found at the base of the left lung, as well as a soft souffle; but there was no evidence of hippocratic succussion. The signs of perforation remained stationary. The face was earthy in color, and one could see that the child was growing weaker. The physical signs remained the following days, and there was no doubt as to the existence of a pneumothorax.

The child was taken away by his parents after being in the hospital twenty-one days, so that, unfortunately, no autopsy could be had.

Case II. A boy, age two, rachitic, born of tuberculous parents. They had had in all six children, four of whom were dead. One died of whooping-cough, and one of pulmonary tuberculosis. Consequently, the antecedents of our little patient were clear, as regards the tuberculosis. His pathological history was most complicated. He entered the hospital on January 20th, with nervous accidents of so great intensity that at first a cerebral tumor was thought of, and the autopsy gave us no light on the cause. By February 9th the nervous symptoms had ceased, and the child was taken with measles. Two days later we found dulness, souffles, and râles over the left base in the back and extending towards the front of the thorax. The child was cross, and the temperature was quite high; and, considering the antecedents of the patient, we had serious reason to suppose that tuberculosis was not a stranger to the etiology of the pulmonary lesion.

On February 18th, eight days after finding the above symptoms, they were no longer present; but the child was still cross, and the temperature remained between 38° and 39°. Our diagnosis, in spite of the absence of physical signs, was correct; for on the days following, emaciation made rapid progress, the fever persisted, the patient became weaker and cried continually.

On February 26th, in the midst of these ill-defined symptoms, two weeks after the *début* of the pulmonary symptoms, we found all the signs of a pneumothorax in the inferior third of the chest on the left, both behind and in front. Perforation took place in an insidious fashion, for nothing during the preceding day or night had called our attention to it. We found all the physical signs of a collection of gas in the pleura, but succussion could not be produced.

The child died on March 1st.

At the autopsy, the left pleural cavity was found to be filled with air. The lung was pushed upwards and to the front, and was held in this position by adhesions to the costal wall. The rest of the cavity was lined with a *doughy pus*, if I may be allowed this expression, forming a kind of false membrane. There was very little purulent fluid at the base. A perforation about the size of a five-cent piece was found at the infero-external part of the upper lobe, and put the pleural space in communication with a cavity the size of a walnut, into which several bronchi opened. The left and right lungs were infiltrated with numerous foci of tubercular broncho-pneumonia.

To sum up, here was the case of a child predisposed by birth to tuberculosis, and who contracted measles in the ward. The measles became complicated with a tubercular broncho-pneumonia, with final pneumothorax, the child dying in twenty days. I would again call attention to the fact that the cavity had escaped notice during the entire illness, although the chest was carefully examined every day.

My thanks are due to Dr. E. Revilliod for his kindness in allowing me to publish the above cases.

REFERENCES.

[1] Revilliod, E.: Notes Cliniques sur quelques Maladies des Enfants. Paris, 1886.

[2] Baginsky, Adolph: Traité des Maladies des Enfants, Paris, 1892.

[3] D'Espine et Picot: Manuel des Maladies des Enfants, fifth edition, Paris, 1894.

[4] Smith, J. Lewis: Diseases of Children, 1886.

[5] Jacobi, F.: Cyclopedia of the Diseases of Children, edited by Keating, vol. ii.

[6] Osler, W.: Text book of the Diseases of Children, [illegible]

[7] Revilliod, E.: op. cit.

[8] Dieulafoy: Manuel de Pathologie Interne, vol. i, sixth edition, Paris, 1890.

Rilliet et Barthez: Traité des Maladies des Enfants.

West: Diseases of Children.

The present-day euphemism for "the world, the flesh and the devil," says the Rev. Joseph Parker, of London, is "'society' environment and tendency."

SYMPHYSEOTOMY FOR THE RELATIVE INDICATION, WITH COMPLICATIONS.

BY EDWARD P. DAVIS, A.M., M.D.,
Professor of Obstetrics in the Philadelphia Polyclinic; Clinical Professor of Obstetrics in the Jefferson Medical College.

Antiseptic symphyseotomy for the accomplishment of difficult labor is too familiar to require defense, explanation or comment. Two unusual complications made the case in point interesting to me, and added observations of practical value to my experience with this operation.

The patient, a Polish woman, ignorant of English, was admitted to the Jefferson Maternity during the past spring in a pregnant condition. Through an interpreter, it was learned that her age was about forty. Her previous health had been good. Her sister had died after childbirth with a great swelling of the thigh and abdomen. On examination, the patient was fairly nourished. Her fetus, at the ninth month of pregnancy, was in the first position. She presented no apparent abnormality in the skeleton; her pelvic measurements were

Anterior Superior Iliac Spines	27 cm.
Crests of Ilia	27½ cm.
Trochanters	31 cm.
External Conjugate	19 cm.

Fetal heart sounds were strong and regular. The placenta was not discernible. Physical examination of the thorax and abdominal region revealed no abnormality. The patient's urine was that of a normal pregnant woman. By suprapubic manipulation the head was brought to the brim of the pelvis, presented in the right oblique pelvic diameter, and dipped slightly into the pelvis. During the time which elapsed between admission and confinement the patient's health was good, and she did housework without inconvenience.

Her labor was tedious, labor pains were good, the head presented in the right oblique pelvic diameter and partially engaged, Naegele's obliquity being more than normal. As exhaustion threatened, after dilatation was complete and all other means had been used to facilitate labor, the patient was etherized and the membranes ruptured. While an assistant endeavored to promote the descent of the head by suprapubic pressure, Simpson's forceps was applied to the sides of the child's head, and axis-traction made with the Poullet tape attachment. A half-hour's intermittent traction failed to cause descent of the head, but increased the obliquity, the parietal bone of the right side presenting. No further efforts with forceps were made. As symphyseotomy was not expected, a pause of an hour ensued for suitable preparation and to secure instruments required. During this time the patient slept quietly.

She was again etherized, and symphyseotomy performed. The first complication of interest encountered was an abnormal height and ossification of the pubic joint. The Galbiati knife, the chord of whose arc readily fits the height of the pubes in the average female skeleton, failed to grasp the joint. When a probe-pointed bistoury was used, the cartilage was found partly ossified. The joint was accordingly opened with a finger saw. The surfaces immediately separated two fingers' width, the child was readily delivered by forceps in the usual mechanism, and although asphyxiated, was resuscitated. The perineum was sutured, and a gauze drain carried behind the joint, pressing the urethra back from the severed bones. This was removed after twenty-four hours, and the wound entirely closed.

The patient's temperature ranged from 100° to 102° F. for the first week after delivery. Perineal and abdominal wounds healed promptly and well. Lactation was established, nutrition and excretion were well performed. The temperature then became normal, and so continued until the 21st day. It is my custom to allow symphyseotomy patients to first turn upon the side three weeks after the operation, and then with the assistance of a nurse. As the patient could not understand perfectly what was said, she eluded the nurses, and while a labor in an adjoining ward was in progress, turned suddenly over. This was followed by thrombosis of the femoral veins upon the left side, accompanied by swelling, pain especially in the popliteal space, and temperature of 102° F. So far as the genital organs were concerned there was no evidence of infection or inflammation revealed by examination. The patient's nervous system was unduly disturbed by this condition, as she stated to an interpreter that her sister had died under a similar condition. Ten days after the occurrence of the thrombosis, her temperature was normal; she was able to gradually get up and to walk carefully. Three months after delivery a thorough examination of the patient revealed no diseased condition; she was doing light housework. Examination of her pelvis revealed an increase in the internal conjugate of one and one-half centimetres following the symphyseotomy. Good union existed at the pubes. The uterus and pelvic floor were in normal condition.

The measurements of the child's head were as follows:

Maximum diameter	13½ cm.
Occipito-frontal	12 cm.
Fronto-mental	10 cm.
Suboccipito-bregmatic	10 cm.
Bi-parietal	9½ cm.
Bi-temporal	9 cm.
Bis-acromial	13 cm.
Length	51 cm.
Weight	7 lbs., 11 oz.

Sex, female.

The child's head, which was distorted by efforts to deliver, acquired its normal contour. It nursed well for a week, when it developed obscure symptoms of inanition, persistence of meconium stools, and failure of strength. Death occurred on the eighth day. Postmortem examination revealed congenital absence of the common bile duct; no other cause for death could be found.

In undertaking symphyseotomy in women older than thirty, the operator must not trust wholly to a knife; this is the second case in my experience in which a condition of partial ossification has resisted the Galbiati knife and probe-pointed bistoury. The occurrence of thrombosis during convalescence may be explained by the dislodgement of septic thrombi in the uterine sinuses, although it is not perfectly clear how such infected thrombi could cause no disturbance before the patient turned. A more rational explanation to me lies in mechanical injury in the sudden turn done to vessels predisposed to thrombosis by long recumbent posture, a retention dressing about the hips, and recovery from a surgical procedure of moderate severity. There was no evidence of abscess in any part of the thighs, which might readily have followed septic thrombosis. This case illustrates well the importance of good nursing after symphyseotomy, without which this patient's complicated labor would have been far more dangerous and trying.[1]

The patient's pelvic measurements were such that delivery, possibly with forceps, was all that was anticipated; symphyseotomy was performed for the relative indication. The case impressed upon the operator and upon the class in clinic the futility of attempting to deliver a living child by forceps without symphyseotomy, when a relative disproportion in size between head and pelvis sufficient to prevent engagement exists.

◆

A STUDY OF ANEMIA CASES WITH THE AID OF THE HEMOMETER AND BLOOD-COUNTER.[1]

SERVICE OF A. K. STONE, M.D.
REPORTED BY ANNA G. RICHARDSON, M.D., ELLIOT P. JOSLIN, PH.B., AND FRANCIS P. DENNY, A.B.

Last summer, through the kindness of Dr. Stone, Mr. Joslin and Mr. Denny, of the Harvard Medical School, and I, were allowed to study with him all the cases of anemia that came to the Woman's Clinic Out-Patient Department of the Massachusetts General Hospital.

The method of examination was as follows: Every patient who showed any signs of anemia, first had her blood examined for hemoglobin. We used the instrument of von Fleischl. Then if the percentage of hemoglobin was low, the corpuscles were counted by Mr. Joslin or Mr. Denny. The instrument used was the Thoma-Zeiss. As long as the patients could be kept under observation, this was repeated from time to time. The counting and hemoglobin test was always made by the same person for each case, so as to eliminate error as much as possible, the personal error being presumably always the same.

In some of the cases in which the diagnosis was obscure, slides were prepared and stained, and the white corpuscles studied by Mr. Dolliver of the Medical School.

The hemoglobin of 168 patients was examined, all of whom presented symptoms of anemia. Of these 8 were above 100 per cent., the highest being 105 per cent.; 19 were between 90 and 100 per cent.; and considering 75 per cent. as the dividing line between the anemic and the not anemic, 89 were not anemic, that is to say, by the ordinary method, the diagnosis was incorrect in 53 per cent. of the cases. These mistakes in diagnosis were evenly distributed throughout the service. The hemoglobin of a number of persons in health was examined, and it ranged from 70 per cent. to more than the hemometer would register. We found that in the anemic, and in the non-anemic, the amount of color in the skin and mucous membranes was of no value in estimating the amount of hemoglobin.

Owing to the difficulty in an out-patient department of keeping track of the patients, and to the fact that many come to the Massachusetts General Hospital simply for diagnosis, there were about 33 of these anemic cases seen a sufficient number of times, and over a long enough period, to make the cases of value. Of these, 20 were Americans; 5 were from the British Provinces; 5 were Irish; and 1 each Russian, German and Swiss. The large number of Americans may be due to the fact that the patients who go to the Massachusetts General Hospital are generally of a better class, although many of the Americans were of foreign parentage. With regard to age, 22 were between fifteen and twenty years, 5 between twenty and twenty-five years; and of the six over twenty-five years, 4 were secondary anemias, and one a leukemia. Although 22 were under twenty years of age, there were only 3 school-girls, and a number of them had been at work for more than three or four years. Twelve did housework; 5 worked in shops; 3 were seamstresses, and a number were unable to work at all. The number of cases doing housework is large. This is probably due to the lack of fresh air, and the attendant evils of a poor appettite and a bad diet.

The symptoms were such as are usually given: pains; usually in the head, often in some part of the chest; palpitation; dyspnea; and anorexia. Hemic heart-murmurs and a venous hum in the cervical vessels were present in a large number of cases. There was one case of amenorrhea. Menstruation was scanty in about half of the cases and normal in the rest. Constipation was a symptom in 16 of the cases, but very probably this was true with more of them. There was diarrhea in two cases; in one of these the diarrhea was probably the cause of the anemia. The diarrhea was stopped; and the corpuscles increased from 2,160,000 to 4,584,000 in a few days, and the hemoglobin dropped from 35 to 28 per cent. Then this was steadily increased to the normal by giving the patient Blaud's pills.

One case, which we suspected was of syphilitic origin, did not improve until put on potassium iodide with the iron.

Another case, age 34, in which the hemoglobin was 35 per cent., the number of corpuscles between three and one-half and four million, and the symptoms very severe, did not improve at all in three months of faithful following of directions as to fresh air, food, etc., and iron and Fowler's solution for medicine. Finally, in December (she was first seen in July) the hemoglobin had increased to 43 per cent., and the number of corpuscles to five and one-half million. This patient was seen on March 5th, when the hemoglobin was found to be 54 per cent. It was thought at first that it might be a case of progressive pernicious anemia; but the examination of the stained specimen did not bear out the diagnosis, and the later improvement also excluded this diagnosis. There was at times a slight trace of albumin in the urine. She had also a cough, but no expectoration, and the examination of the lungs was negative.

In another case, a woman twenty-eight years old gave the history of having had her first child before she was sixteen years old, and ten pregnancies since, in six of which she aborted. The youngest, a child of four months, she was nursing. This woman had the lowest record of all for hemoglobin, it being but fifteen per cent., and the number of red blood corpuscles was two and one-half million. She weaned her baby, and was put on liq. potass. arsenitis, which was later changed to tincture of the chloride of iron. In four months of constant treatment she only increased to 23 per cent. of hemoglobin and four and one-half million of corpuscles. When seen two months later, she had just menstruated for the first time since the birth of her last child, eleven months previous. She had stopped taking iron for about a month, and the hemoglobin had dropped to 22 per cent.

---

[1] Read before the Medical Section of the Suffolk District Medical Society, March 21, 1894.

[1] Those interested in this subject are referred to an article by my chief nurse, Miss Russell (The Trained Nurse, July, 1894, "Nursing of Symphyseotomy Cases").

One very satisfactory case was a girl of fourteen, whose hemoglobin at first was 23 per cent., and the red blood-corpuscles were four and one-half million. In three months the hemoglobin was over 100 per cent., and the corpuscles were five million. She stopped taking her medicine, and the hemoglobin fell back to 75 per cent., but the number of corpuscles remained unchanged. Taking the medicine again, the hemoglobin increased to 86 per cent. within a month. During this relapse she had no return of her previous symptoms.

In fact, we found that in cases where hemoglobin had been low, by the time it reached 60 per cent. the symptoms were so much relieved that the patients considered themselves well. Frequently they called themselves better when there was no improvement.

An interesting case of secondary anemia gave the following history — she had not been well since an attack of the grip five months previous to her coming to the hospital. At the time she came, she had pains in the back, constipation, palpitation and dyspnea. The catamenia were regular but scanty. Examination of the urine gave a specific gravity of 1,018, acid reaction, no sugar, one-eighth per cent. albumin, and an excessive amount of sediment, which consisted of pus and epithelial cells. The hemoglobin was 40 per cent. and the number of red blood-corpuscles 4,368,000. She was put on extra diet and iron. On returning a week later, the examination of the urine gave the same results, and she said she passed five quarts in twenty-four hours. The hemoglobin had increased to 61 per cent. The next day she returned and said she had passed four quarts of urine in the last twenty-four hours. The tubercle bacillus was looked for in this urine, but was not found. A physical examination showed a dull area in the right lumbar region, and resistance and tenderness on deep pressure. She was advised to go into the hospital, and was admitted a week later. While there, there were no new developments in her case, and she only stayed a week. She was not seen again for three months, during which time she had taken no medicine. There was no change in the character of her urine, and she said she still passed as large a quantity. Her hemoglobin had dropped to 55 per cent., the red corpuscles had decreased to 4,176,000, and the white corpuscles were 20,000. This was the last time we were able to see her.

We had one case of splenic myelogenous leukemia. The patient was emaciated, with a dull yellowish skin. She gave a history of having had a tape-worm for some time, fifteen feet of which she had passed one month previous. She had no appetite, and was losing strength. Physical examination showed a much enlarged spleen. Examination of the blood resulted in 68 per cent. of hemoglobin, 4,648,000 red corpuscles, and 988,000 white corpuscles — a proportion of one to five. A specimen of this blood was stained, and a differential count made by Mr. Dolliver and Mr. White, resulting as follows:

Polynuclear leucocytes	44 %
Large mononuclear leucocytes	27
Myelocytes	23
Eosinophiles	3
Nucleated red corpuscles	4

She soon after entered the City Hospital, and her case will probably be reported with others of the same kind.

Some of the cases with the symptoms of anemia, in which the hemometer and blood-counter showed the blood to be normal, improved on taking iron.

In regard to treatment, there were three cases kept entirely on Blaud's pills, cascara or Carlsbad to regulate the bowels, extra feeding and fresh air, who made an uninterrupted recovery. They discontinued the medicine too soon and had a slight relapse; but on resuming the medicine they regained what they had lost. Two cases did not do well on Blaud's pills. A pill consisting of reduced iron (gr. i), arsenic (gr. $\frac{1}{50}$), strychnine (gr. $\frac{1}{60}$), tablets of the saccharated oxide of iron, Fowler's solution, and malt and iron were the most successful drugs used.

There were two cases in which the pill of iron, arsenic and strychnine caused a diarrhea. There were eight of the patients who took no medicine from two to three months; and in all but two of them the hemoglobin decreased, and they made a very slight gain. These patients dropped the medicine on their own responsibility, but said they carried out instructions with regard to diet, air and the care of the bowels.

The rapidity of improvement possible in hemoglobin is very difficult to determine in an out-patient department, because of all kinds of irregularities of the patients. Those that came regularly improved accordingly. In the first part of the treatment, the greatest amount of improvement was 8 per cent. in two days, the least, 5 per cent. in one month. About 5 per cent. a week is a fair average. In a few cases it was noticed that the amount gained would alternate, being fairly large one week and small the next. Increase is more rapid in cases where the hemoglobin is 40 to 60 per cent. than in the very low.

The color-index in cases of chlorosis has been found at the beginning to be generally one-half or one-third. In the secondary anemias the color-index did not exceed one-half.

The cases are chiefly interesting because they show what can be done under unfavorable circumstances, and the errors in diagnosis the physician is liable to. For our experience convinced us that it was difficult to diagnose anemia, except well-marked cases of chlorosis, by the appearance; and that it was as impossible to know the degree of the anemia as to estimate the temperature by the touch. We found the hemometer to be of great practical service in diagnosing anemia, because it so easily and quickly determines the amount of hemoglobin. It does not diagnose the kind of anemia, but it is not misleading, for the hemoglobin was never above 75 per cent. when the corpuscles were below normal, with the exception of one case. This exception was due, probably, to faulty manipulation, because a subsequent estimate of the hemoglobin was in proportion to the number of corpuscles. The amount of hemoglobin may not be proportionately as low as the number of corpuscles, but it will show a diminution. As the hemoglobin becomes normal later than the corpuscles, we have in the hemometer a valuable guide as to the improvement of the patient, and when to stop treatment. Counting the corpuscles is tedious, and need not be done as often if the hemometer is used at frequent intervals.

Elliot P. Joslin, Ph.B., and Francis P. Denny, A.B., add the following description of

MAKING THE BLOOD-COUNTS.

In counting the blood-corpuscles the blood was taken from the ring-finger of the left hand which was held firmly for a few seconds to produce a slight congestion and pricked with a fine needle sufficiently to get a good drop of blood. It was diluted two hundred times with the following solution:

Sodii sulphatis	gr. civ.
Acidi acetici	ʒi
Aquæ dist.	℥iv. M.

This was found much better than the five-tenths-per-cent. salt solution which is recommended. It has the great advantage of making the white corpuscles appear very refractive, so that the presence of one corpuscle in a field of red can be detected at a glance. This is of the greatest value in searching large areas while estimating the number of white corpuscles.

We counted the red corpuscles in one hundred of the small squares, selecting twenty-five squares in four different parts of the slide where the globules were most evenly distributed. In order to avoid counting any of the globules twice, those on the upper and left-hand lines of the squares were counted, while those on the lower and right-hand lines were not.

All of the four hundred squares on the slide were searched for white corpuscles. In addition to this, following a suggestion of Dr. Richard Cabot, we estimated the number of squares which were included in the field of the microscope, and then, by moving the slide out in various directions from the centre, we could determine the number of white corpuscles over a considerable area outside of that which is marked off. In this way the equivalent of four thousand squares can be counted. Inasmuch as in a normal case there will only be three or four white corpuscles in the whole four hundred squares, the source of error is very great, and it is important to count a larger area.

The mixer was cleaned by washing, three times each with water, absolute alcohol and ether. To blow out the tube we used the compressed air which is employed by the throat specialists. The convenience of this method will be appreciated by those who have ever gone through the tedious process of blowing out the tube with the mouth. The bulb of the thermo-cautery can also be used, or even a Davidson's syringe; but neither of these are as good as the compressed air.

In some of the more severe cases of anemia we noticed marked changes in the appearance of the red corpuscles, and especially in their refraction. These changes have, in all probability, some significance which a careful observer, making a large number of counts and especially noting these changes, might determine.

◆

Clinical Department.

A CASE OF CYSTIC DISEASE OF THE KIDNEY.[1]

BY H. B. McINTIRE, M.D., OF CAMBRIDGE, MASS.

Wm. J, born in Scotland, age about fifty years. By trade he was a stone and brick mason, until in 1878 he began candle-making, continuing the work until 1888, when he left it to carry on a small coal business and assist his wife in a small-goods store. He was a large and muscular man, but was always a dyspeptic until six months before his death. During these six months, until the last three weeks, he could eat anything without distress, and was unusually well. His dyspepsia was at times associated with severe colicky pains in the epigastrium; and during one of these attacks, he was seen by Dr. J. A. Dow. Dr. Dow discovered a tumor in the left side of the abdomen. This was probably about two years before death. Not long after, he was first seen by me during one of these attacks of pain. The tumor was readily made out. This attack was similar to previous ones, and after two or three days in bed he was able to return to work. Again, in about a year, I was called, and found an effusion of blood in the leg, extending from the knee to the foot, probably due to some injury, as the previous day he had been engaged in some work on his knees.

I next saw him on April 23, 1890. He had been in his usual health since my last visit. On the day before, he had walked a great deal, and now had a swollen and painful ankle, and was covered with a pustular eruption (porrigo?). The rheumatism disappeared in a few days, and he was able to be about.

He again sent for me on May 3d, and stated that he was not getting his strength as he thought he should, nor was he able to sleep as formerly. Upon questioning him, I found that for months he had been very sleepy, never sitting down for five minutes without falling asleep. There was slight swelling of the ankles, which first appeared with the rheumatism; there was also some puffiness under the eyes. The tumor in the left side had increased very much in size since first found, some two years or more before, and now crowded the intestines well over to the right. About two quarts of urine were passed in the twenty-four hours, of a specific gravity of 1,014. This contained a large trace of albumin, but no casts could be found. There were a few pus-corpuscles and epithelial cells from the bladder. From this time until the 11th, there was no decided change. The quantity of urine remained about sixty ounces in the day, the patient being about the house and out of doors.

On the 11th, I was called in the evening, and found him looking very ill. He was restless and excited. He complained only of his throat; this was very painful, and he swallowed with much difficulty. There were slight signs of inflammation, a little redness and some swelling of the uvula. He had slept poorly for several nights.

On the morning of the 12th he was about the same. The urine had a specific gravity of 1,010, and contained a large trace of albumin; no casts could be found. That night he had a severe headache, was delirious and sleepless. At nine the following morning I found him comatose; at ten he had a convulsion, which was followed by a second at eleven, in which he died.

An autopsy was made by Dr. Holt. Upon opening the abdomen a tumor was brought to view occupying nearly all of the left half of the abdominal cavity, and was at once recognized as a cystic kidney. The weight was over eight pounds; and it was found to consist entirely of cysts of various sizes, filled with an amber-colored fluid. Not a trace of normal kidney tissue could be seen. Upon pressing the intestines to the left, the right kidney was brought to view, which was similar in every way to the left, weighing but one pound less. The two filled an ordinary water-pail. The other organs, so far as examined, were normal.

---

[1] Read before the Cambridge Medical Improvement Society.

DISCUSSION.

Dr. McIntire remarked that there was very little written upon this subject, and that the most he found was in Roberts's text-book. Four varieties of the disease are found: one of congenital origin; another where cysts are scattered throughout an otherwise healthy kidney; third, the cystic degeneration of amyloid kidney; and the fourth where there is a general change of the whole kidney into cystic formation, such as he has presented this evening.

Dr. Vaughan had one case during his service at the hospital — a theological student, twenty-four years old, tall, slight, and of poor health. He had practised medicine for a short time. There was a history of trouble with the urine and of an attack of hemiplegia. He rallied from the latter, and was up and about for three or four weeks, when he had a second attack and died. He had hematuria as a principal symptom, which disappeared during the attack of hemiplegia. Examination of the kidneys after death showed a condition like that described by Dr. McIntire, the whole mass having a honey-comb-like appearance, one kidney weighing six pounds, the other eight.

Dr. Currie had seen one case, the principal symptom being hematuria, and the course of the disease similar to those already described. The nature of the trouble was not recognized until after death.

Dr. A. P. Clarke had a case in the early part of his practice — a young man about twenty years old, a clerk in Boston. He began to complain of trouble in his back, which grew steadily worse for two years, when he died. The kidneys were covered with large cysts, appearing like great blisters, and on section very little normal secreting surface could be found.

Dr. McIntire said that the disease is always bilateral, although it may be impossible to make out both tumors during life, and there is no chance of surgical interference.

◆

Medical Progress.

RECENT PROGRESS IN THORACIC DISEASES.

BY GEORGE G. SEARS, M.D.

FEEBLE PHYSIOLOGICAL RESPIRATION ON THE RIGHT SIDE.[1]

Moncorge has noted twenty cases, free from all pulmonary disease, in whom respiration was feebler in the right lung than in the left. All of the cases were in the habit of sleeping exclusively upon the right side, and he therefore argues that its cause is found in the pressure exerted upon that lung during the eight hours of sleep preventing its proper expansion. The predominance of women, fourteen of the twenty cases being females, he attributes to the fact that her breathing is chiefly thoracic and, therefore, more seriously interfered with during sleep, while owing to her tight garments this pressure is constant, instead of being partly corrected as in man by the freer movements during the day. Her sedentary life also makes it more difficult for her to compensate by day for the restricted movement of the lung by night. With proper exercises he found it easy to correct this condition.

PULMONARY HEMORRHAGE.[2]

Gluzinski discusses at length the effects of hemorrhage upon the lung tissue. Clinically it is known that it gives rise to symptoms which can be recognized by physical examination (dulness, râles), which may either altogether disappear after a time, or become chronic, or be followed by an acute process, phthisis florida. In order to determine the pathological changes he made a series of experiments on dogs and came to the conclusion that effused blood in the lungs is by no means harmless. Twenty-four hours later reaction sets in which shows itself in a desquamation of the epithelium of the alveoli and the finest bronchioles and an out-pouring of leucocytes, a peri-bronchitis. About the sixth day the lung becomes atalectatic, the peribronchial inflammation is more manifest and sometimes the desquamative pneumonia of Buhl results. In case the lung had been for a long time affected, for example, by adhesions or infiltration, the result would probably be more serious. He describes the conditions which are found in consumptives as a result of hemoptysis and criticizes the usual methods of treatment by rest and narcotics in severe hemorrhages, as having no influence in effecting the removal of a not indifferent foreign body.

THE PNEUMONIC FORM OF ACUTE PULMONARY TUBERCULOSIS.

Fraenkel and Troje report thirteen very carefully studied cases of this form of tuberculosis, all of which occurred in men. In cases which run a very acute course it may not be possible to distinguish it from acute lobar pneumonia, but usually attention to the following points will establish the diagnosis:

(1) That there has been no critical fall of temperature, although the presence of diffuse crepitant râles on superficial observation gives the impression of a pneumonia in the stage of beginning resolution. If a remission of the fever takes place and resembles a crisis, it immediately rises again and progresses with marked variations of no distinct type. At times for several days the inverse type of fever is seen which is frequently noticed in tubercular affections.

(2) The frequent absence of any dyspnea or cyanosis, but a comparatively rapid increase in pallor of face and mucous membranes.

(3) The greenish color of the sputum and the recognition of tubercle bacilli in it. The latter, however, is not always easy, and in case of doubt they should be sought for with redoubled care.

(4) The presence of the diazo-reaction from the very beginning of the disease.

(5) The comparatively rapid loss of strength and deterioration in general condition, which do not correspond with the severity of the other symptoms, notably the absence of dyspnea and cyanosis.

PNEUMOCOCCI IN THE BLOOD.[4]

The presence of pneumococci in the blood has been denied by some observers, while others regard it as a very rare event. Even the latest contributors to the subject, for example, B. G. and F. Klemperer, assert that they are never found there, while Netter, who corroborates this statement, draws from it the conclusion that pneumonia in man is generally a local disease. On the other hand Casati, by better methods of examination, has proved that the diplococcus lanceolatus capsulatus was constantly present, not only in the blood of those who had died with the disease, but also that they could be regularly found in the blood of living patients even as early as the second day. In light cases, also, they are present without exceptions. Pneumonia is, therefore, to be considered not a local, but a general disease.

---

[1] Lyon Méd., No. 16, 1894.

[2] Przegl: lekarski, 25, 1893; Schmidt's Jahrb., 1894, No. 7.

[3] Zeitschft. f. Klin. Med.. 1894, xxiv, Hs. 1–6.

[4] Schmidt's Jahrb., 1894, No. 3.

EARLY DIAGNOSIS OF PERICARDIAL EFFUSIONS.[5]

Ebstein says that the first change in the area of dulness in cases of pericardial effusion takes place not at the base of the heart but in the lowest portion. At first, there is an extension of the pericardial sac toward the left, which is, however, but seldom noticed, owing either to a coincident pleural effusion, or to the loud tympanitic note transmitted from the semilunar space. Soon after the pericardium is distended toward the right, and this is nearly always clinically demonstrated by the appearance of absolute, or nearly absolute, dulness in the fifth right intercostal space in the so-called cardio-hepatic angle. This sign is all the more valuable when it develops under the observation of the physician, since it cannot be then mistaken for other conditions which lead to its production. In the differential diagnosis between cardiac enlargement and pericardial effusion the absolute dulness in the cardio-hepatic angle is of value, because, so far as is yet shown, even by enormous enlargement of the right heart, dulness does not extend beyond the right sternal border between the fifth and sixth ribs.

DIASTOLIC MURMURS IN DILATATION OF THE HEART WITHOUT ARTERIAL INCOMPETENCE OR AURICULO-VENTRICULAR CONSTRICTION.[6]

Steell reports two cases which illustrate this condition, and says that he has learned from them "the lesson that even in the absence of aortic incompetence implicit confidence cannot be placed in a diastolic apex-murmur accompanied by thrill as a sign of mitral stenosis." He offers no explanation as to the origin of these murmurs.

The first case was a woman nineteen years old, who had suffered from acute rheumatism eight years before, and who died with symptoms of increasing cardiac incompetence. In the mitral area both a systolic and diastolic murmur were heard, the former being transmitted to the back, while the latter was accompanied by a thrill. A systolic murmur was also heard in the tricuspid, pulmonic and aortic areas. The second pulmonic sound was markedly accentuated. At the autopsy the pericardium was generally adherent, the heart enormously enlarged, with greatly dilated cavities. The tricuspid and mitral orifices admitted four fingers each. The mitral curtains were thickened, the chordæ tendineæ were hard and short, and there were vegetations on the auricular surface.

The other case was a man, aged twenty-three, without rheumatic history. A systolic murmur was heard at the apex and was transmitted into the back, a murmur similar in time being also heard in the tricuspid, aortic and pulmonary areas, while a distinct diastolic murmur accompanied by a thrill was heard at the apex. The autopsy showed a very much enlarged heart, the tricuspid and mitral orifices being greatly dilated. The mitral valves were thickened and indurated, but there were no vegetations. The aortic valves were competent.

HEART DISEASE AND PREGNANCY.

During the years 1891 and 1892, Vinay[7] made a careful physical examination of the hearts of the 1,700 women who were admitted to the Maternity Hospital in Lyons, and found in 29 or 1.7 per cent., some cardiac lesion. Eleven of them were cases of pure mitral stenosis, while in seven it was complicated by mitral regurgitation, and in one by aortic insufficiency. Eighteen cases passed through pregnancy and labor without noteworthy symptoms, four had edema of the extremities, which was, however, probably due to varicose veins from which they also suffered. In only four did pregnancy exert any marked influence upon the cardiac condition, one of whom had hemoptysis, and one dyspnea with some serous effusion, while two, both twin pregnancies, had dyspnea and edema.

Labor came on at term in 24 cases, one being a case of twins, while of the five premature cases two were twins. Albuminuria, which he considers a symptom of very grave omen, was present but twice.

Allyn's[8] figures give a much less hopeful prognosis in these cases, yet its gravity is probably considerably exaggerated by them owing to the source from which they are taken. He has collected, chiefly from literature, 72 cases of mitral stenosis, of whom 27 died before the puerperium was over, or so soon after that death could reasonably be attributed to the influence of pregnancy, the majority succumbing soon after delivery. Among the children there were 54 fatalities in 199 pregnancies recorded. Both authors would permit marriage and maternity under certain restrictions if the lesion is well compensated and there has been no history of previous symptoms of cardiac failure, but of the two Allyn is the more conservative, as he says that "the heart is certain to be worse for the pregnancy." Allyn lays special stress on the great amount of good which a timely bleeding may do before labor, and says that after delivery hemorrhage should be encouraged rather than checked. Abortion should be done when dangerous symptoms persist in spite of treatment.

Reports of Societies.

CLINICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

HENRY JACKSON, M.D., SECRETARY.

Regular Meeting, Wednesday, March 21, 1894, Dr. Frederick C. Shattuck in the chair.

A STUDY OF ANEMIA CASES, WITH THE AID OF THE HEMOMETER AND BLOOD-COUNTER.[1]

These cases were reported by Dr. Anna G. Richardson and Messrs. E. P. Joslin and F. P. Denny, and occurred in the service of Dr. A. K. Stone in the Out-patient Department of the Massachusetts General Hospital.

---

[5] Virch. Arch., cxxx, Hft. 3.

[6] Practitioner, April, 1894.

[7] Sem. Med. xiii, 1893, p. cclxxiv.

[8] Univ. Med. Mag., April, 1894.

[1] See page 183 of the Journal.

Dr. Stone: I want to speak of one or two of the clinical points connected with the paper. Before I do that I want to say that the paper to-night represents a great amount of enthusiasm and tact on the part of the readers — enthusiasm that meant the examination of four to eight cases a day with the hemometer, and staying two or three hours after a long clinic to do the blood-counts, and then later tact in following up the patients and getting them to come round so that the cases could be observed for six or eight months, making them of much more value than they would have been from the four months of the hospital service.

In regard to the diagnosis, we found that in all the men connected with the clinic, with two exceptions, the hemoglobin was fully 90 per cent., and in one case over 110 per cent. Of the two cases that were not normal, one was in a medical student who had had scarlet fever during the winter accompanied by an attack of nephritis, and the other in a man who indulged very extensively in the use of cigarettes. But the others, who were strictly temperate, and had been well, had the normal amount of hemoglobin. I speak of this because recently I have seen asserted that the normal amount (or 100 per cent.) at which the hemoglobinometre is gauged is too large, and that the real normal point is about 50 per cent.

A good deal of doubt is thrown on the value of blood-counts, since a small error in the count makes a large error in the result. From our experience, however, the same instrument in the hands of careful observers will give almost exactly the same results, and for that reason the instrument must be considered a valuable one.

In regard to the diagnosis, which is one of the clinical points I wanted to speak of, I found that it was very difficult to make a diagnosis. Of course, in the case of the plump, yellowish-green girls, there was no doubt that these were chlorotic, and we got so we could guess within 10 per cent. of the amount of hemoglobin. But there were a large number who presented approximately the same symptoms — general malaise, headaches, palpitation, constipation, whose mucous membranes were pale, tongue flabby, and no good bright color under the nails — and who were apparently as thin-skinned as the rest, but on examination showed that they had a large amount of hemoglobin, that is, from 80 per cent. to 100 per cent., and it was astonishing to find the number that would at the first glance by almost any one have been passed off as simple anemia when they were not really anemic cases. What they are I have not been able to make out. Possibly they represent simply poisoning in some cases from the absorption from the rectum from the constipation, in some cases from excessive use of tea; possibly it is a pretubercular state, for we know that a large number of tuberculous patients look anemic and have a jaded appearance, but on examination have a large amount of hemoglobin, and it is only in the later stage that you get the hemoglobin wanting and the secondary anemia. It would seem that we should carefully go over such patients, and when we find that it is not a case of simple anemia that we have to deal with, to see if something organic cannot be determined as cause.

Another thing that was of especial interest in considering the cases was the fact that they did not get well. Dr. Osler says in his *Practice*, "the treatment of chlorosis affords one of the most brilliant instances — of which we have but three or four — of the specific action of a remedy," and in the article he wrote on "Anemia and Chlorosis," in the "American System of Medicine," he says, "Chlorosis is one of the diseases of which the physician is a therapeutic master. A few weeks' administration of iron, together with improved hygienic conditions, suffices to restore the red glow to the most pallid cheek." I think this expresses the prevalent opinion.

I was talking with Dr. Thayer, of Johns Hopkins, with regard to this matter; and he said, from his observation at the Massachusetts General Hospital and his observation of patients as seen in Baltimore, that anemia and chlorosis were very much more severe in Boston than in Baltimore. He said further what Dr. Osler had written was an absolute fact, that patients taking iron, and being directed in regard to their manner of life, would entirely recover in two or three months. That has not been our experience. Whether it is that the patients in Baltimore are a much more docile set of people, I don't know. He advanced the opinion that a large number of them were of German extraction, educated in obedience, and so quite willing to do exactly as was laid down for them; on the other hand, our Northern people are decidedly imbued with the spirit of liberty to such an extent that they feel they know as much as anybody who is directing them, and do about as they please, and possibly it may be we cannot control our patients in the same way they are able to do in the South. Another thing that Dr. Thayer suggested was, that the possibility of getting milk and eggs of an extremely good quality at a cheap rate might be another factor. In Baltimore you can get the best of milk for three or four cents a quart instead of six or eight cents here, and of a much better quality, and eggs are correspondingly cheap; so that a patient can for much less money be put on a rational basis, and that, together with the fact that they are willing to follow out directions, may be of importance in bringing about the difference in the results.

Another thing that has struck me is that a large number of our patients worry. They worry about losing their business. A large number of them are employed in stores. They have a pretty high standard of living, and they feel that the stopping of their salary is going to plunge them down. Then, too, the American and Irish-American girls who have made moral slips worry tremendously; and it seems to me that the New England conscience has much to do with their general condition.

One German writer, in speaking of the therapeutics, said that very often the iron was not assimilated, and that stopping the iron and giving sulphur for some time, and then changing to iron again, would frequently make a change in the condition of the patients, so that they would be able to get well much faster than on iron alone. I tried this in a number of cases; but as far as I could find, got no beneficial results. However, there were no unpleasant results from digestive disturbance.

Dr. Thomas: In general, I think the results that they obtained at the Massachusetts Hospital last summer correspond very closely with those of my own work though I have not been able to follow up my cases very closely. Most of the cases I have seen, I have seen only once, and have not had the chance of making repeated clinical examinations. In those cases

I have been able to follow, I think I have had about the same results as Dr. Stone, that is to say, the chlorosis did not get well quickly.

I think possibly the red glow of which Dr. Osler speaks may be one similar to that seen in chlorosis, the so-called chlorosis rubra, where the patient has the appearance of health, good color in the cheeks, and yet the corpuscles may be under the normal, and the hemoglobin still further reduced. The corpuscles seem to have been the first to return to normal and the hemoglobin last, and the return of the hemoglobin to normal is often delayed very long. A thing I have noticed in cases of this sort is that where the patient drops the treatment after two or three months, while the hemoglobin is at, say, 60 per cent., they are apt to come back in the course of the next half-year with a return of the symptoms; while most of the cases that keep on until the hemoglobin is 80 per cent. or in that neighborhood, have remained well permanently.

In regard to treatment, my own experience has been that Blaud's pills and tincture of the chloride of iron and other forms of iron answer as well as anything we have found. Sulphur, I have not tried myself. My own impression is that its chief use is from its effect on the bowels.

In regard to the counting, I think the suggestion Dr. Cabot made of estimating the number of squares in the field of the microscope, and counting out a certain distance on each side of the ruled space to enable one to cover enough ground to take in a fair number of white corpuscles, will be found to be useful in practice; of course, it cannot be accurate. It is more or less an estimate of the relative proportion of the white to the red. One can make fairly accurate estimates from this method. I want to emphasize the fact that I think for any accurate results we must have a separate count of the white from the red. We must use a solution which dissolves the red corpuscles and make a count of the white cells separate from the red ones. For clinical purposes the other method will be very useful.

Dr. Chadbourne: I am sorry not to have been able to hear the papers that have just been read, and I hope that you will excuse me if I unintentionally repeat what has been already spoken of. I should like to say something about the methods of examining the blood for clinical purposes; not in any way as a criticism of what has been reported, but only as bearing on the general subject. First, as to the quantitative test for hemoglobin with the Fleischl apparatus. In using this *color test* it is well to bear in mind that the following causes may, any or all, influence the result, though not to the same extent:

(1) The individual equation of the person who makes the test is, as is well known, most important.

(2) The kind and intensity of the light used, and also the level at which it is placed in relation to the reflecting "mirror" should not vary. To obtain the best results the light should be on the same plane as the mirror, as otherwise the same intensity of light does not reach the two chambers, though often the difference cannot be recognized without special tests.

(3) All direct light should be cut off from above the stage, and this is easily done by using a cylinder of blackened paper to look through.

(4) The test should be made looking in the line of the partition between the cells, not across them, and only one eye should be used.

(5) As soon as the blood has been secured, it should be at once examined, as in certain cases the mixture becomes opaque in a short time.

(6) For the most exact results the examinations that are to be compared should be made at the same hour of the day, and with due regard to the fact that digestion, exercise, the catamenia, sufficient food, change in body weight, etc., all influence the amount of hemoglobin. Thus, in fasting animals, the hemoglobin is increased, while with a return to full diet and gain in weight, it grows less.

(7) If the blood is collected with a Leif's pipette for counting red corpuscles, the quickness, ease of accurately filling and emptying, as well as the certainty of removing any blood that may be on the outside of the tube must be much greater. A further argument for the pipette is that a certain proportion of the capillaries do not hold exactly the standard amount of blood.[2]

The Fleischl method is a convenient and, for most purposes, a sufficiently accurate test of the amount of *coloring matter* in the blood, and, as a rule, probably of the hemoglobin also; but we must not overlook the fact that, as has been maintained by Beinecki[3] and others, there are certain albuminoid substances that also affect the color of the blood, and that any hemoglobin outside of the corpuscles would be included in the Fleischl estimate. Most authors agree, however, that this possible error may be disregarded for practical use. On the other hand, it is said,[4] that in a considerable proportion of cases the amount of hemoglobin does not correspond to the color tests.

As to "blood counts" much is learned from counting, not only the number of white cells, but also the relative number of the different varieties. This can be done either by a count of the total white cells with the Leif's apparatus, and a subsequent count of the different varieties from a stained specimen to give the relative percentage of each kind; or it may be made with considerable accuracy by using a mixing fluid that will stain the nuclei of the white corpuscles. One objection to the latter method is that the stain is necessarily weak, and some hours must elapse before the nuclei are distinctly colored.[5]

Neusser[6] bases his classification of cases of chlorosis and also of anemia on the kind and relative number of the different varieties of white corpuscles. He recognizes a "myelogenous" form of these diseases, characterized by large numbers of the kinds of white cells that originate in the bone marrow; and such patients are found to react well to iron, the recovery being rapid and the prognosis good. The "lymphatic" variety shows a marked increase in the lymphocytes, but the myelogenous cells are not seen in numbers, and the prognosis is not good. This form is generally found to be but little helped by treatment and the patients are often tubercular.

---

[2] This I have tested with eighteen capillary tubes bought at the same time as the instrument. The same blood was used for each test, every tube was tried six times, and each was handed to me by an assistant, so that it was impossible for me to tell one capillary from another. Three Leif's pipettes were used as controls, each being tried thirty-three times, with the same precautions as in the case of the capillaries. The results with the same capillary never varied more than five per cent., while the maximum variation in the eighteen capillaries was nearly twenty one per cent. The variation in the estimates with the same pipette were but little over two and one-half per cent., certainly less than five per cent., and between the three pipettes the difference was not five per cent. in any of the one hundred and eight estimates. (These tests have been made since the meeting of March [illegible], but are mentioned here in proof of the statement referred to.)

[3] Wiener Klin. Woch., v, 1892, p. 62.

[4] Beinecki, loc. cit.

[5] Soison's solution gives good results. It consists of: Neutr. glycerine 30, sodium sulphate pur. 8, sodium chloride 1, distilled water 100, methylene violet 0.125.

[6] Wiener Klin. Woch., v, 1892, p. 65.

For the white corpuscles and eosinophyll cells the suggestion made by Dr. Cabot is a great help and very simple.[7]

For cleaning the pipettes a mixture of bichromate of potash, 40 grammes; sulphuric acid (concentrated) 30 c. cm., and water, 150 c. cm; will remove all organic matter. It will also remove the rubber tubing should it come in contact with it.

Dr. Shattuck: The paper of the evening represents an immense deal of work and there are some results that are surprising and interesting to me. This lack of correspondence between facies and the results of the blood examination is somewhat upsetting, because we have been accustomed to believe we could make a diagnosis of anemia with the naked eye pretty well. With regard to the curability of cases of chlorosis I have been struck with the same difficulty which the readers have, that some of them are very obstinate even when put under good circumstances. I have had several cases in the hospital this winter where they were removed from worry, given the best food they could have, the largest amount they could digest; and the improvement has been slow, and in some cases trifling. I have whenever I could this winter followed the plan of Dr. Forchheimer of treating chlorosis by salol or betanaphthol rather than by iron. The results of his experiments would seem to indicate that the hemoglobin is deficient in cases of chlorosis on account of its destruction in the intestinal canal, and that by using intestinal antiseptics the proper amount of hemoglobin gets into the blood more rapidly than under iron. My results have not coincided with his as far as they have gone; but my number of cases is so small that I speak with some diffidence on the matter. I have had cases improve in the wards this year under iron and arsenic which did not gain under the intestinal antiseptic treatment.

What Dr. Stone said about Dr. Thayer's remarks on the difference between chlorosis in Boston and Baltimore is interesting, and reminds me of another thing which Dr. Thayer said to me, namely, that gastric ulcer is a very rare disease in Baltimore, while here it is so common in our hospital wards. He says they can hardly get a case to demonstrate. We recognize the association which there is between anemia and gastric ulcer, and there is another factor which perhaps enters into the curability of the Baltimore chlorosis, namely, the fact that they have no tenement houses in Baltimore. Land is cheap and each family has its own house.

Dr. Vickery: I should like to ask the size of the doses of iron given.

Dr. Stone: We began usually with one Blaud pill (the smaller form), increasing at the end of about each week until we gave three three times a day. In giving the saturated oxide of iron, we gave five to ten grains three times a day.

Dr. Vickery: I feel confident from my own experience that a five-grain Blaud's pill three times a day does not amount to much. From ten grains up, I think, is right. I have heard a chlorotic murmur in a patient with tubercle bacilli. It was a young girl who would have passed for a case of chlorosis if there had not been reasons for careful examination. It has been said that if you get a murmur in the neck of a young woman whom you fear may be going into consumption, you can feel comfortable about her, but it was not so in this particular patient. Some of the most anemic looking women I have seen at the out-patient department were uterine cases, and the treatment of their pelvic troubles improved their blood fully as much as any medicine. I have been struck by the continued improvement with the continued use of iron. I remember one young woman who was very nervous, hysterical and also frail, whom I started on Blaud's pills, and told her, as I regularly do, that she would have continual benefit from the remedy if continued a long while. I did not see her for about six months, and she looked like a picture of health.

A CASE OF DEATH DUE TO THE INHALATION OF VOMITUS IN A STRONG AND HEALTHY CHILD, AGED THREE AND A HALF YEARS.

Dr. Prescott: I wish to report a case which occurred in the practice of Dr. W. M. Conant, and which is reported from its rarity, having in casually looking through the records found no case similar to it in a child of the same age. A strong, healthy girl, between three and four years of age, was perfectly well up to dinner-time. She ate very heartily, the last thing being an orange, swallowing not only the juice but the substance. About two hours after dinner she complained of feeling "heavy in her stomach and sick all over," and was told by her aunt to go and lie down. She went into the next room, and that was the last time she was seen alive. In about twenty minutes some noise in the room attracted the aunt's attention; and going in, she found the child struggling and black in the face. She immediately put her into hot water, slapped her back, and sent for Dr. Conant. He hurried to the house with his tracheotomy instruments; but when he arrived he found that the heart had ceased to beat, so he only cleared out the mouth and the pharynx. I made the autopsy four hours after death. The child was very well developed. The skin everywhere was pale, except the lips, which were blue; everything seemed rather dry. There was nothing abnormal found except in the lungs, trachea and bronchi. The mouth, as I said, had been cleared out. The pharynx and larynx were nearly free of all foreign material, there being only a few particles of orange in the pharynx and about the larynx. On opening the chest, the lungs were found voluminous, and did not retract at all. They were pale. There were no subpleural ecchymoses, and no ecchymoses or anything abnormal about the heart. The trachea was filled with what looked like the yellowish-white material of the solid part of the orange, and this same material also filled both main bronchi, and even down to the fourth and fifth divisions of the bronchi. The extraordinary part of the case was the extent to which the material had been sucked into the bronchi, and the fact that there was no general cyanosis. On microscopical examination of the lung, which was injected with alcohol, as far as it could be under light pressure, some of the alveolar walls appeared to be torn, but whether that was done in hardening and cutting or not, I could not make out, but it seemed as if some of the tears were made by the efforts at expulsion. The foreign material could easily be demonstrated in the small divisions of the bronchi.

---

[7] See the Journal, March 22, 1894.

A CASE OF DEATH FROM ACUTE, PURULENT PERITONITIS, DUE TO SEPSIS CAUSED BY TAPPING THE SAC OF A SCROTAL HERNIA.

Another case I wish to speak of was that of a man about fifty-three years of age, who had been sick a number of years and had been under the care of many physicians. He was told in the beginning, by Dr. Whittier, that he had a fatty or weak heart. He was then seen by Dr. Wesselhoeft, who told him he had trouble with his kidneys. He was seen by a number of men in the next year, and one thought his heart was diseased, and one thought his kidneys were the seat of the trouble. He was troubled a good deal with ascites and dyspnea on exertion. Finally, Dr. Whittier saw him again, and told him he could do nothing more for him. Then he consulted Dr. Blank. He was then bloated very much, and Dr. Blank said he could cure him. He gave him a pill, and the ascites seemed to run right away from him. Within a week he was able to be up and about; but the fluid soon began to reaccumulate, and he had, in addition, swelling of his ankles, scrotum and penis. He had had a hernia for years. After about two months or more of treatment at Dr. Blank's private hospital, he came home apparently to die; but Dr. Blank came and tapped his scrotum. Evidently the trocar was put into the cavity of the hernia, the gut having been returned to the abdominal cavity. The reason for thinking this was the way the water came out. There were nearly three quarts of water withdrawn from the scrotum. That was Thursday night. Friday he was worse, and had a severe chill with abdominal tenderness, grew rapidly worse, and died Monday, four days after the tapping. I did the autopsy that afternoon, and found that the man had a fatty heart, contracted kidney, chronic nephritis with the interstitial element predominating, and cirrhosis of the liver; but that the immediate cause of death (and the thing that led me to report the case) was an acute fibrinous peritonitis due to sepsis following the puncture with the trocar in the scrotum.

I am indebted to Dr. W. M. Conant and Dr. E. N. Whittier for the clinical histories of these cases.

Dr. Shattuck: The second case reminds me of one I had in the hospital some years ago. The scrotum was distended with ascitic fluid, and twice the scrotum was tapped to drain the peritoneal cavity. There were no evil effects, but the procedure in this case did not seem to have any advantage over abdominal paracentesis.

◆

THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Eighth Annual Meeting, Washington, D. C., May 29, 30, 31 and June 1, 1894.

FIRST DAY. — TUESDAY.

Dr. George Chismore, President, in the chair.

MODIFICATIONS OF BIGELOW'S OPERATION FOR STONE IN THE BLADDER, DESIGNED TO MEET CASES IN WHICH THE PROSTATE IS ENLARGED.

Dr. George Chismore, of San Francisco, read a paper on this subject. He stated that the difficulty of clearing the bladder of a stone by Bigelow's method increases in direct proportion to the amount and character of the encroachment upon that viscus by senile enlargement of the prostate gland. The modifications of the classical operation suggested by the author were as follows:

(1) Substituting local for general anesthesia in cases where an anesthetic is required.

(2) Short sittings. Continue crushing only so long as fragments can easily be found. Wash out the pieces, and stop the moment symptoms of exhaustion, spasm of the bladder or unusual distress occur.

(3) Remove remaining pieces, after symptoms due to previous operation have subsided, as soon they can be felt by the searcher — usually within a week — and repeat the process until the bladder is cleared.

When a patient presents himself for treatment with senile enlargement of the prostate and a stone, he is usually dependent on the catheter — has catheter stricture — and requires a course of dilatation of the urethra preliminary to attacking the calculus. As soon as a sixteen or eighteen Van Buren sound will pass, Dr. Chismore seizes the first favorable opportunity and operates on the patient in his office. The bladder is emptied, and from one to two fluid ounces of a four-per-cent. solution of cocaine muriate injected; the lithotrite is then gently inserted, and the stone seized and crushed. If, during this procedure, he becomes aware that quite a large fragment has apparently vanished, he makes no prolonged attempts to find it. It is perhaps in some pouch, or lying in a fold between two projecting knobs of the prostate, or firmly imprisoned in a deep sulcus formed by the bladder wall doubled upon itself by the intruding gland; in any case, it is entirely beyond the reach of instruments, and there it will remain until it becomes slippery with mucous membrane, or in some other way dislodged. When no more pieces can be found, the lithotrite is removed, a catheter as large as will pass is inserted, and the bladder washed with a warm borated solution, until the fragments cease to come. The patient is then sent home, with orders to keep quiet. In the great majority of cases operated on in this way, there are no after-symptoms; the patient is better at once. In 52 cases reported by the author, the youngest was fifty-one years old; the eldest, seventy-four; average, 66.36 years. There were 22 phosphates, 24 oxalates, 5 urates, and 1 mixed oxalate and urate. The smallest stone weighed, dry, 7 grains; the largest, 1,000 grains; average weight, 149 grains. There were no deaths, and no serious complications attributable to these operations.

In connection with this paper, Dr. Chismore presented a number of instruments and specimens.

Dr. L. Bolton Bangs, of New York, said he was much interested in Dr. Chismore's paper, particularly in that part which referred to performing the operation under local anesthesia. The class of patients in whom this operation is called for are especially susceptible to the secondary bad effects of general anesthesia, which is apt to produce congestion of the kidneys, or even actual inflammatory changes in them.

Dr. Francis S. Watson, of Boston, said that, were it not for the fact that Dr. Chismore presented such a strong array of figures, he would feel inclined to regard the method of operation recommended by him as a distinctly retrograde one. The Bigelow operation has its chief value in the fact that none of the fragments are left behind, and the high mortality following lithotrity in former times was due, in all probability, to the presence of such fragments. He did not see why this should not be so in Dr. Chismore's cases, where a large fragment was often left in the bladder. In cases where the hypertrophied prostate offers serious difficulty to the passage of the evacuating tube through the deep urethra, Dr. Watson said he was in favor of making a perineal incision, dilating the deep urethra, and then rapidly crushing and evacuating through the opening thus afforded. By this procedure we obviate the danger of injuring the deep urethra; death in old men is usually due to injury in this region.

DR. W. K. OTIS, of New York, said that in cases where the prostatic enlargement is considerable, he felt inclined to favor the suprapubic operation, for the reason that it enables one to entirely empty the bladder of stone; furthermore, the prostate itself can be operated on at the same time, if it is deemed advisable, and the bladder drained.

DR. JOHN P. BRYSON, of St. Louis, said he was fully in accord with the statement made by Dr. Watson regarding the bad effects that are apt to follow instrumental manipulation of the prostatic urethra in these cases. In cases where the stone formation is secondary to bladder inflammation, associated with a certain amount of inflammation of the prostate, he considered it advisable to drain the bladder.

DR. JAMES BELL, of Montreal, said he was surprised to learn that Dr. Chismore was in the habit of injecting such large amounts of cocaine into the bladder without producing dangerous results.

DR. EDWARD MARTIN, of Philadelphia, said that, in view of the fact that chloroform has lately been shown to be even more irritating on the kidneys than ether, the employment of local anesthesia in these cases is of great practical importance.

DR. SAMUEL ALEXANDER, of New York, said that in patients with enlarged prostate, and thickening and hypertrophy of the bladder, with excessive irritability of that organ, it appeared to him that the partial removal of a stone and the leaving behind of a fragment would be exceedingly disagreeable, if not dangerous.

DR. WILLIAM JUDKINS, of Cincinnati, said he had employed cocaine in much smaller quantities than those mentioned by Dr. Chismore, and in some instances quite alarming results had followed.

DR. L. BOLTON BANGS, of New York, said that by the suprapubic method the bladder can be best drained, and that operation is certainly indicated in some instances; in others, some modified form of operation is better. After making the perineal incision, he has in some cases stretched the prostatic urethra, so as to gain ready access to the bladder.

DR. CHISMORE, in closing the discussion, stated that since June, 1889, he had invariably used local cocaine anesthesia in operating for stone. In a small proportion of these cases mild toxic symptoms, such as nervousness, etc., were observed; but these were never sufficiently pronounced to induce him to suspend the operation or discard the use of the drug. In patients with prostatic enlargement, the bladder is far more tolerant than in young persons, and a fragment of stone left behind does not give rise to much inconvenience. A person is no safer from recurrence of r suprapubic cystotomy than he is after and the latter is certainly by far the asier of the two operations.

had not been

See the Journal

A SUMMARY OF THE HISTORY AND PRESENT POSITION OF THE OPERATION OF CASTRATION FOR HYPERTROPHY OF THE PROSTATE,

by DR. J. WILLIAM WHITE, of Philadelphia.

The author stated that a series of experiments on dogs have been made under his direction, with the view of determining whether or not castration would be followed by notable atrophy of the prostate. The idea that this was possible was suggested to him by the comparison long ago made by Valpeau, and afterwards by Sir Henry Thompson, between the prostate and uterine fibromata. In these experiments the first castration was done January 27, 1893; the others followed at intervals of a few days, and the results — showing rapid atrophy, first of the gland, and then of the muscular elements — were very decisive. The line of argument, theoretically, is as follows: The prostate, while not embryologically the true homologue of the uterus, is developed from structures quite distinct from those which form the urinary passages. The structure of the prostate and of the uterus is strikingly similar. Its growth is in direct relation to the sexual life of the individual; its overgrowth occurs at a period when the sexual life is fading out, but is usually not extinct.

The reproductive powers of life end sooner in the female than in the male; accordingly we find fibromyomata appearing earlier in the former than in the latter. The histology of the growths are markedly alike in the two sexes. The uterine tumors do not appear after the menopause, or, if present already, undergo atrophy. After a certain period of life there is no increase in the tendency to enlargement of the prostate, but rather the reverse. In the female oöphorectomy causes the disappearance of these growths and atrophy of the uterus itself. Castration almost certainly has the same effect upon the normal prostate.

The fact that we have no examples of spontaneous shrinkage of the hypertrophied prostate in old age, may be explained by the great frequency with which the trouble causes death in such cases. Messer's and Desnos's observations go to show that, after a certain period of life, the frequency of notable hypertrophy diminishes; and they suggest the possibility that in many cases physiological atrophy had already begun. Uncertainty as to the exact duration of the sexual life in the male also weakens the force of the statement that the condition does not manifest itself until after the period of life when it should occur if it were truly homologous with the uterine growth. In addition, it may be said that there is accumulated evidence that prostatic hypertrophy begins, much more frequently than was formerly supposed, during middle-life.

Dr. White then referred to a number of cases reported by Dr. Francis L. Haynes, of Los Angeles, Cal., who had three times performed double castration in old men afflicted with prostatic hypertrophy. In all these cases the operation was followed by very satisfactory results. He also referred to a case reported by Dr. F. Freemont Smith, of St. Augustine, Fla. This case was almost a hopeless one of prostatic hypertrophy, with marked sepsis, cystitis, beginning uremia, etc. Double castration was performed; and within fifteen weeks after the operation the patient gained forty-five pounds in weight, and had no further symptoms of cystitis or other urinary trouble.

On January 1, 1894, Dr. White operated on a man aged sixty-nine, who had a very large prostate, one-half the size of an orange. He had passed no urine excepting by the catheter for years. His urine was loaded with mucus and extremely offensive, and at intervals it contained blood. Double castration was performed, and at the present time, about four months after the operation, while the patient does not urinate spontaneously, rectal examination shows a reduction of the prostate to about its normal dimensions. The catheter, which it was formerly necessary to introduce nine and one-half inches before reaching the bladder, now goes in only about eight inches when the urine begins to flow. Its introduction is easy and painless. No blood has appeared in the urine for two months. The urine itself is entirely normal in every respect.

In conclusion, the author said that the above and other cases that have been reported certainly establish the claim of the operation to further and more extended trial, and show that, even on the basis of experiment and theory alone, he was justified in suggesting it to the profession.

Dr. Bangs said that any means whatsoever which promises some relief to this class of cases is certainly worthy of attention. In many of these cases long-continued drainage will achieve very good results. If the enlargement of the prostate is dependent on the activity of the testes, why not ligate the vessels of the organs instead of performing castration?

Dr. Bryson said that in one case of hypertrophy coming under his observation, double castration was performed, owing to the fact that both the glands were involved by tubercular disease. Their removal was followed by a distinct improvement in the man's symptoms, and there was a marked diminution in the frequency of his urination, especially at night.

Dr. Belfield, of Chicago, said it has long been known that castration will produce atrophy of the normal prostate. We must bear in mind, however, that in the enlarged prostate we have certain elements or conditions which are not found in the normal organ, namely, the growth of fibrous and adenomatous tissue, or a mixture of both; and it is a question whether these elements are affected by the cessation of sexual activity.

Dr. Watson said that in two cases coming under his observation, atrophy of the prostate on one side was produced by destruction of the corresponding testis, due to suppuration. In both of these cases the prostate had been enlarged for years.

Dr. Martin said that in the case reported by Dr. White, there had been a truly remarkable change produced in the size of the prostate.

Dr. Alexander W. Stein, of New York, said that the bladder in these cases is not always relieved by simply removing the mechanical obstruction at the neck. Owing to the cystitis the bladder becomes insensitive, and is entirely unable to empty itself.

Dr. Alexander said he recently saw three cases of double, undescended testes, in which the organs were removed and were found to be atrophied. In two of the cases the testes were fibrous, and no healthy spermatozoa were found in them. In all of these cases a rectal examination failed to reveal that the prostate was diminished in size.

Dr. Belfield said he had seen two cases of unilateral, undescended testis, with pronounced atrophy, and atrophy of the prostate on that side.

Dr. Bangs said that in one case of cryptorchidism that has been reported, the man had full sexual powers, and was convicted of bastardy.

Dr. Bryson said the testes may be concealed, and yet have that nervous connection which will maintain their virility.

Dr. White, in closing the discussion, said that in Dr. Smith's case he did not think that drainage of the bladder could have been employed with any prospect of success, nor could he recall any case in which drainage alone has given results comparable with those obtained by the removal of the testes. Tying the vessels of the testis is apt to be followed by necrosis of the organ.

A SUGGESTION AS TO THE REMOVAL OF ADENOMYOMATOUS GROWTHS FROM THE PROSTATE.

Dr. Samuel Alexander read a paper on this subject, in which he called attention to the various methods which have been employed for removing prostatic hypertrophy, and stated that he favored the double incision, as recommended by Belfield. The modification suggested by Dr. Alexander consists in removing the obstructing portions of the enlarged prostate by enucleation, after stripping up the mucous membrane from the submucous tissues by means of the finger passed into the perineal opening. In one case reported by the author, the patient was fifty-three years old, and gave a history of prostatic obstruction of two years' duration. The bladder was opened above the pubes, and a perineal incision was made, extending as far as the apex of the prostate. The mucous membrane of the prostatic urethra was stripped up, and the adenoid growths removed with the prostatic forceps through the lateral opening.

The advantages claimed by Dr. Alexander for this method were that the mucous membrane remained intact; that the chances of hemorrhage were greatly diminished; that the prostatic sphincter was preserved; and that the entire obstructing portions of the prostate could be removed with greater ease.

Dr. Watson said that the operation of enucleation in reducing the size of an enlarged prostate is an important advance over the older method of biting or chewing away the projecting masses. It would be interesting to know in what proportion of cases enucleation is possible. Dr. Watson said he still employs the Peterson bag in these operations, for the purpose of pushing the bladder firmly against the abdominal wall.

Dr. Belfield said that Dr. Alexander has carried the enucleation process to a much greater and more successful issue than any who have preceded him. He has also been more systematic in removing the mucous membrane, so as to make enucleation possible.

Dr. J. William White said that in all these discussions about operations on the prostate, no mention is made of how little we may take away from the gland with resulting benefit to the patient. There seems to be a direct ratio between the amount of gland tissue removed and the death-rate.

Drs. Watson and **Belfield** stated that they had in some instances removed very small portions of the gland with good results.

Dr. Bryson said he had noticed on several occasions that the source of the severe bleeding in these cases was the mucous membrane and the sub-mucosa. He did not see how the amount of tissue removed could materially affect the mortality. He still employs the

Peterson bag, and has never performed a prostatectomy without it.

Dr. James Bell, of Montreal, said that in his experience the fatal results after prostatectomy seemed to be due to some form of toxemia, rather than to hemorrhage.

Dr. Alexander, in closing the discussion, expressed the opinion that the mortality-rate bears little or no relation to the amount of prostatic tissue removed. Of more importance in this respect is the condition of the kidneys and the upper urinary tract.

REPORT OF SOME CASES OF RUPTURE OF THE URETHRA,

by **Dr. Francis S. Watson**, of Boston.

The first case reported was a sailor. Fifteen days before coming under observation his penis was struck by the handle of a wedge, rupturing the urethra midway between the meatus and the peno-scrotal angle. The integument externally was not ruptured. On first attempting to urinate, a small amount of water passed through the meatus. Subsequent to this he was unable to pass any urine, which collected underneath the skin, forming an artificial bladder. A few days after the accident inflammation set in, with perforation of the distended sac, and the urine made its exit through two openings to the right of the symphysis, above Poupart's ligament. In this condition he came to the hospital. Dr. Watson said the operation he performed consisted in draining the artificial bladder and performing perineal section, in order to avoid contact of the urine with the injured urethra. The urethra was then cut down upon and repaired. The man made a good recovery; and at the present time a No. 29 sound can be passed into the bladder.

Four other cases of rupture of the urethra were reported by the author; in all of these the injury was received during coitus. In one of them the accident was followed in a few days by extensive infiltration of urine and gangrene of the entire skin of the penis. Skin-grafting by Theirsch's method was employed, and very good results obtained.

REMARKS ON THE TREATMENT OF CYSTITIS.

Dr. Gardner W. Allen, of Boston, read a paper on this subject, based on the records of a number of cases which have come under his observation during the past eight years. Many of these cases were of gonorrheal origin, and in nearly all the inflammation was confined to the neck of the bladder. Extension backward of gonorrhea into the neck of the bladder, accompanied by a sharp onset of urinary symptoms, is, of course, common enough. In non-gonorrheal cases the cause of the cystitis is not always clear; but in a certain number it is apparently traceable to a posterior urethral catarrh resulting from congestion of the prostatic portion, with or without inflammation of the seminal vesicles, and brought about by prolonged and repeated sexual excitement. It begins insidiously, has little or no tendency to recovery, and is apt to prove intractable to treatment.

As regards the treatment of cystitis, Dr. Allen said that of the various internal remedies he preferred the saline diuretics, especially benzoate of soda. Few surgeons nowadays, however, would long defer local treatment of the disease. For the simple purpose of washing out the bladder, perhaps a saturated solution of boric acid gave on the whole the best results. For the purpose of producing a decided impression upon the mucous membrane of the vesical neck, the author said he had had very gratifying experience with nitrate of silver and permanganate of potassium. Of the nitrate of silver, he rarely goes beyond a one-per-cent. solution, injecting from ten to fifteen minims. The injections appear to be more effectual if preceded immediately by the passage of a large sound, excepting in the more acute cases. Permanganate of potassium he has found to be very efficacious in cystitis and chronic prostatitis. Where it fails, nitrate of silver often succeeds, and *vice versa*. The bladder should be thoroughly irrigated with the permanganate solution (1–4,000 to 1–5,000), and this is conveniently done by means of a large Ultzmann syringe, connected with an elastic or soft-rubber catheter. One syringeful at a time is injected, and allowed to flow out again; and this is continued until the solution comes away with its color unchanged. Then two or three ounces are injected, and left in the bladder as long as they can be comfortably borne.

Dr. Allen then detailed the histories of a number of cases of cystitis coming under his observation.

Dr. Bransford Lewis, of St. Louis, said that in his experience, none of these various remedies mentioned by Dr. Allen can be depended on in every case. In some instances the benefit derived from their use is not observed until after they have been discontinued.

Dr. Martin stated that the new antiseptic remedy, tri-cresol, promises to be very useful in this class of cases. It is a powerful antiseptic, and causes very slight irritation.

(To be continued.)

◆

Recent Literature.

An Illustrated Dictionary of Medicine, Biology and Allied Sciences. Including the Pronunciation, Accentuation, Derivation, and Definition of the Terms used in Medicine and the various Sciences closely allied to Medicine. By **George M. Gould**, A.M., M.D., editor of "The Medical News," President (1893–1894) of the American Academy of Medicine, etc. Philadelphia: P. Blakiston, Son & Co. 1894.

The past year has seen the publication of many medical dictionaries of various sizes, some enlarged revisions of well-known books, others entirely new. Books of this latter class naturally need justification for their appearance. An author, in presenting a new dictionary to the medical public to-day should have definite purposes, other than publication, and should be consistently thorough in his accomplishment. Both of these requirements have been amply filled by Dr. Gould. The rapid growth of new sciences has filled medical literature with so many new words and terms, that the actual need of a dictionary based upon a new comprehension of medical science has been long apparent.

Accordingly, Dr. Gould proposed the following specific desiderata for his work: (1) The inclusion of the many thousands of new words and terms that have been introduced into medicine during the last few years. (2) To give the most complete epitomization of the works of older and authoritative lexicographers. (3) To include all the more commonly used terms in biology — a most desirable and but poorly filled need in other dictionaries. (4) Keeping the size and purpose of the book well in mind, to give it an encyclopedic character, not only by supplying the usual pronunciation, derivation, and definition of the words, but also by showing their logical relations, their bearings, and their practical importance for the worker in literary or clinical medicine. (5) When advisable, to give a pictorial illustration. (6) To cást the influence of the work, in doubtful or disputed cases, in favor of a more consistent and phonetic spelling. (7) To indicate the best pronunciation of words by the simplest and most easily understood method.

All of these purposes have been admirably carried out. So far as the test of daily use has been made no word has been found wanting, while the arrangement of biological and bacteriological terms gives the greatest satisfaction. The wide extent of the fourth proposition has been most surprisingly well carried out. The volume is of a size to be easily used, and contains but 1,630 pages; yet within that space is epitomized, and that without any sacrifice of clearness, a larger amount of information than in any other similar book we know. Much of this is accomplished by the judicious and skilled use of tables which at once economises space and makes comparison easy. Besides the ordinary tables of muscles, nerves and arteries, there are several deserving of especial mention, such as the tables of stains and tests, giving the names and agents employed, as well as the methods of application and reactions. The table of named operations is of particular excellence, while the long tables of parasites and bacteria, which fill forty-three and thirty-two pages respectively, are probably the most complete lists ever published. A special index for ready reference to the tables shows a list of considerably over one hundred of these collections of tabulated facts.

The illustrations are exceptionally clear, and are used with discretion so as to be of considerable help. The spelling is in accord with Dr. Gould's advanced position towards phonetic spelling reform. It adopts the methods approved by Skeat and Whitney, and sanctioned by the Association for the Advancement of Science. Both spellings, however, are given of words in dispute.

The mechanical execution of the book leaves nothing whatever to be desired. Both Dr. Gould and the entire medical profession are to be congratulated on the completion of so useful and excellent a dictionary.

Antiseptic Therapeutics. By Dr. E. L. Trouessart. Translated by E. P. Hurd, M.D. Two volumes. Detroit: George S. Davis. 1893.

The rapid advance during the past few years in our knowledge of bacterial and physio-chemical causes of disease, and the consequent change in therapeutic methods, make these volumes of Dr. Trouessart exceedingly interesting to the general practitioner. In a few pages he has brought together the tested facts of antiseptic preparations in such form as to be readily accessible to the busy physician. In the multiplicity of new antiseptic remedies such a work as the first volume is of great help. The second volume, dealing with the methods of treatment and formulæ which belong to the antiseptic therapeutics of particular diseases, is equally readable and suggestive; though in a few instances the author's enthusiasm has led him to claim results as due to antiseptic action which are quite as readily explained by less organic means.

Pyogenic Infective Diseases of the Brain and Spina Cord. By William Macewen, M.D., Glasgow. 8vo. pp. xxiv, 354. With sixty-one illustrations and sixteen temperature charts. New York: Macmillan & Co. 1893.

Atlas of Head Sections. Fifty-three engraved copperplates of frozen sections of the head, and fifty-three key plates with descriptive texts. By William Macewen, M.D. Quarto. New York: Macmillan & Co. 1893.

"The prognosis is always doubtful and usually unfavorable." "An uncomplicated cerebral abscess, whose position is clearly localized, if surgical measures are adopted for its relief at a sufficiently early period, is one of the most hopeful of all cerebral affections." But twelve years have passed since Wernicke published the first of these sentences, and the advance which has made it possible to write the second has been due in very large part to the work of Macewen himself. It is long since any work of greater value and of greater practical importance has come to us from England. It is not a compilation of other men's opinions; it contains no abstract theorizing, no details of elaborate but as yet fruitless experimentation, but it is a plain, straightforward account of the various pyogenic infective diseases, and the results of his own work. These results are sufficient: thirty-five cases of meningitis, with twenty-eight operations and twenty-four recoveries; twenty-seven cases of sinus thrombosis, with twenty operations and sixteen recoveries; thirty cases of abscess, with twenty-four operations and twenty-three recoveries; fifty-four mastoid operations, with forty-three cured and eleven relieved, make a record which may well justify publication.

The first chapter is devoted to the surgical anatomy of the brain as far as it is important in regard to the pyogenic infective diseases. The majority of the pyogenic affections arise from neglected otitis media. Hence a knowledge of the relations of the temporal bone and the venous supply of the head becomes essential, and the anatomy of these parts is described in the fullest detail, with the utmost clearness, and with constant reference to the practical application. The second chapter is devoted to the pathology. Micro-organisms are the chief if not the only cause of the pathogenic processes, those most constantly found being the streptococcus pyogenes and the staphylococcus pyogenes aureus. These enter either through wounds of the scalp or from purulent disease of the ear or nose, and infect the membranes, the sinuses and the brain itself. The next two chapters are devoted to a consideration of abscess, meningitis, and sinus thrombosis. In the limited space of a review we can note but a few points in regard to the symptomatology and diagnosis of these affections. The elicitation of a differential percussion note on percussing the skull is considered to be of distinct diagnostic value, especially in children. When the fluid contents of the skull are increased, a clearer note may be elicited. In abscess the temperature is not elevated, the pulse and respiration are slow; in meningitis the temperature is persistently high, the pulse rapid, and there is general irritability and over-acuteness of all the senses; in thrombosis the temperature shows marked remissions, the pulse is weak and rapid, there are recurrent rigors, sweats, infarctions, diarrhea, and pain in the posterior triangle, sub-mastoid region and along the jugular vein. In regard to treatment the advice is radical. "A person might as well have a charge of dynamite in the mastoid antrum and cells" as chronic suppuration. If this cannot be cured by the ordinary means at the disposal of the aurist there must be thorough operative interference, arresting the encroachments of the disease toward the brain cavity, clearing out the mastoid cells, affording a free outlet to discharges, and filling the parts with fresh fibrous tissue as a barrier to pyogenic invasion. If the disease be more deeply seated, further interference becomes necessary. After the tympanic cavity and the mastoid cells have been cleared out the sigmoid sinus may be entered through the cavity and fistulous openings should be explored. If there be an abscess more extensive openings become necessary, through a trephine hole in the skull. In infective meningitis it is sometimes difficult to remove the pus by irrigation, but an attempt at washing out the purulent secretion should be made. Macewen suggests, although he has not tried it, that in pyogenic cerebrospinal meningitis an attempt at irrigation should be made after one or more laminectomies, injecting the fluid from the intradural cerebellar space down the spinal canal.

For the details as to the symptoms, diagnosis, and methods of operation we must refer the reader to the original. Full reports of sixty-five cases are given, and the work is profusely illustrated. All but three of the illustrations are original, and the mechanical execution of them is extremely fine. We can say no more in praise of this great book except that it is indispensable to the surgeon, aural surgeon and neurologist.

Elaborate and magnificent as the illustrations of the work are, they are supplemented by the plates of the atlas, and as these plates are constantly referred to in the text, the atlas becomes a necessary companion to the book. It is, however, something more. There is but one English work with which it can be compared — the magnificent "Brain Sections," of Dalton, which is now practically unattainable. Macewen's plates are unfortunately reduced to about two-thirds of life-size, and in the perfection of execution and in clearness they are a little — but only a little — inferior to Dalton's. The various sections are not all made at such regular intervals, and the series are not always quite so complete. There are three series of coronal sections in males of sixty, forty, and two and a half years; one series of sagittal sections in a male of thirty; and three series of horizontal sections in males of thirty-five, fifty and five. They give us, however, information which cannot be obtained from Dalton. Dalton's sections were simply of the brain; Macewen's are sections of the whole head. Hence, in comparing the two, one very striking difference is the way in which the brain, in Dalton's sections, seems spread out and flattened. In Macewen's sections it is held firm and upright in its bony case. In this atlas we can study, as we can nowhere else, the relations of the tympanic cavity and mastoid cells to the brain and the sinuses; the extremely thin walls that separate them; the numerous vascular connections by which infective processes can travel from the ear to the brain. Certain other facts, hitherto practically unrecognized, are made plain: the way the temporo-sphenoidal lobe is enclosed in a bony and membranous case, so that the only possible way of expansion is upwards, towards the lower frontal convolution; the way the frontal lobes dip down in the median line, and their very intimate relation to the ethmoid cells; and the fact that the cerebellum ascends between the cerebral lobes in the median line to a level with the orbital roof, and is wrapped around the medulla and part of the cord, descending down through the foramen magnum. These plates, therefore, showing us the brain as it is *in situ*, with all the surrounding parts, become of greater value, for practical purposes, than the plates of Dalton, and, showing the deeper parts on section, they give far more valuable detail than the work of Fraser. As regards the anatomy of the brain itself they may not add greatly to our knowledge, but as showing the practical relations between the brain and the surrounding parts, they form an important addition to our knowledge, and they must serve as an indispensable guide to the surgeon in undertaking any operation on the brain.

A System of Legal Medicine. By ALLAN MCLANE HAMILTON, M.D., Consulting Physician of the Insane Asylums of New York City, etc., and LAWRENCE GODKIN, ESQ., of the New York Bar, with a corps of Collaborators. Illustrated. Vol. I. New York: E. B. Treat. 1894.

This treatise, of which the first volume only is under present notice, represents fully the composite method of literary construction. The editor has enlisted the co-operation of a corps of twenty-eight writers, more or less identified with the science and practice of legal medicine, more or less able to speak with authority upon medico-legal themes. The claim is set forth in the publisher's prospectus that "the list of contributors to this great work includes the names of some of the most distinguished writers and authorities upon Medical Jurisprudence in America"; how far this claim has been justified, the discriminating reader will be able to judge for himself.

This volume contains chapters on the technique of autopsies, the medico-legal aspects of death, the identification of blood, personal identity, homicidal wounds, poisoning, life and accident insurance, the legal relations of physicians and surgeons, and indecent assaults upon children. It does not appear that any well-considered method has been followed in the arrangement of the several topics, nor does the editorial supervision seem to have been either exacting or critical in preparing the various manuscripts for the printer.

A conscientious endeavor is apparent in most of the contributions to give a tone and flavor of freshness to the work, to avoid the use of the familiar citations found in other treatises, and to present the most recent advances in forensic medicine; the cases which have attracted public attention in the past two years, the Borden, Halliday and Trefethen affairs for example, are described in their appropriate relations and are a proof of the progressive character of the work. There is also a manifest American spirit throughout the book; the allusions to the law and the references to illustrative cases are generally national rather than international and the book is evidently designed and adapted for American readers.

While there are many excellent features in this new candidate for approval, many qualities that deserve recognition and commendation, it is fair to state that the newest in medico legal literature, as in other literature, is not necessarily the best; and it is hardly probable that this latest venture will render obsolete and useless the works to which physicians have been accustomed to turn for help in their medico-legal emergencies.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, AUGUST 23, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

A NEW DEPARTURE IN CONNECTION WITH DIABETES: DR. PAVY'S CROONIAN LECTURES.

Dr. F. W. Pavy has been for forty years pursuing his investigations to ascertain the rôle of sugar in the animal economy. The Croonian lectures of this summer delivered by him, have for their subject, "A New Departure in Connection with Diabetes."

It is now sixteen years since his first Croonian lectures on diabetes were delivered, and the present course marks many advances since then, the result of painstaking experiments.

Dr. Pavy points to the wide distribution of carbohydrates in nature, and affirms that "carbohydrates are the source of organic matter." Starch is the primordial organic product: fat, proteids, cellulose, lignose, etc., originating from it by ferment or protoplasmic action. Living protoplasm in the plant has a constructive influence on carbohydrates formed in the leaves (in chlorophyll cells) and mineral matter and nitrogeneous compounds absorbed by the roots; the product is cellulose (plant-fabric) and protein. The demonstration of the ability of living protoplasm to utilize carbohydrate in the formation of proteid matter constitutes the most striking feature of these lectures.

Yeast cells are placed in Pasteur's saccharine and ammonium-tartrate solution; they grow and produce fresh yeast cells, hence proteid matter. This is cited as an example of what takes place throughout the whole animal and vegetable kingdom. There is a finely-balanced play of ferment action and protoplasmic action. The former hydrates and splits up, the latter dehydrates and synthetizes. Dr. Pavy, by an interesting experiment, demonstrated the extraction of carbohydrate from albumin. His theory now is that protein is, in its fundamental constitution, a glucoside. Pavy made his discovery in the course of an investigation with regard to glycogen. He isolated glycogen from liver, muscle, etc., by boiling with potash; the carbohydrate was converted into sugar by sulphuric acid; the proteid molecule, in fact, in presence of sulphuric acid undergoes cleavage, and the carbohydrate is liberated in the form of sugar. Moreover, by ferment action, carbohydrate may be liberated from the proteid molecule, and this occurs during the process of digestion. Pavy took some pure albumin from white of egg, and submitted it to artificial digestion, and as a result carbohydrate was obtained, which gave osazone crystals with phenylhydrazine. Again, and conversely, the simple principles obtained from protein — peptone and carbohydrate — when subjected to the influence of the protoplasm of the cells lining the villi become synthetized by the protoplasmic action into proteid.

It may here be remarked that if this doctrine should be accepted that proteid matter has a glucoside constitution, it will prove to be of great physiological importance besides presenting certain obscure pathological problems in a new and clearer light. Carbohydrate matter is seen to stand in a quite different position from that which it has been looked on hitherto as holding. Nitrogenous matter was considered to be the flesh forming portion of our food; the new doctrine affirms that carbohydrates, also, contribute to flesh formation. Moreover, carbohydrate is susceptible of conversion into fat, as is shown by a simple experiment with the yeast plant fed with Pasteur's solution; yeast cells growing in this solution are found to contain fat. Again, in the higher vegetable organisms — in the fatty seeds — the fat formation is preceded by starch formation.

Pavy contends that his experimental studies have completely discredited the glycogenic doctrine of Claude Bernard. This doctrine represents that carbohydrate matter taken into the alimentary canal becomes absorbed and passes through the portal vein to the liver to be stored away as glycogen, ultimately to escape as sugar into the systemic capillaries. This theory does not explain how carbohydrate matter is disposed of in the capillaries, and if sugar as such were conveyed into the general circulation there would be constant glycosuria, for the sugar cannot reach the systemic capillaries without being made manifest through the urine. This he had proved by test experimentation. We have not space to follow him here, nor in his general refutation of the glycogenic doctrine. He denies that the liver is saccharine to an extent that other parts of the body are not; that the blood escaping from the liver contains more sugar than the blood going to it; likewise, that the blood on the venous side of the systemic capillaries contains less sugar than that on the arterial side. The liver, in fact, is required to perform the reverse office, and to prevent the passage of sugar into the general circulation. In proportion as sugar does pass in a free state, so will it appear in the urine. Carbohydrate does certainly exist in all parts of the body, and there must be some means of transport from the seat of ingestion to the distant parts; it does not pass in a free state else it would appear in the urine, but as a proteid. A person partakes of food containing carbohydrate matter. If ingested as starch, the carbohydrate matter is subjected first to ferment action, whereby it is hydrated to the simpler state of saccharose. So, by ferment action, the proteid elements of food are converted into albumose and peptone, also into sugar. This latter process constantly takes place during digestion, and is not dependent on the liver as Bernard taught. In the liver, on the contrary, amyloid matter escaping conversion in the intestine into proteid, is stored up as glycogen, to be subsequently converted into fat by the synthetizing action of the protoplasm of the liver cells. Pavy thinks that there is first a construction of proteid, and subsequently, by ferment action, a conversion into fat.

After the breaking-up and hydrating influence of ferment action has been exerted on the complex carbohydrate and proteid molecules of our food, the opportunity is provided for protoplasmic action to come into play. The products of digestion as they lie in the intestinal canal become brought within the sphere of influence of living protoplasm belonging to the villi. Carbohydrate matter in the form of sugar lies with peptone within the sphere of influence of the protoplasm belonging to the cells of the villi; here, proteid in the shape of albuminoid matter is formed and the peptone and glucose, *as such*, disappear. In other words, there is a synthesis of glucose and peptone to form proteid matter. The proteid formed is a glucoside; has carbohydrate locked up in it, and as such is fit for utilization by the economy. The lacteal system probably constitutes the chief channel for the passage of the formed albumin from the products of digestion into the system; some of the newly-formed proteid also passes through the portal vein. In combination under the form of proteid, carbohydrate can be conveyed through the general circulation to the tissues without elimination by the urine, while if permitted to circulate in a free state it could not fail to be drawn upon by the kidney and thereby render the urine saccharine. After appropriation to the nutrition and growth of the tissues, it may be subsequently broken down, for everywhere building-up and breaking-down processes are simultaneously going on, and give rise to the liberation of either glycogen or sugar.

It will be seen from the above statement that Pavy believes that the liver supplies a sort of supplementary agency for checking the passage of free carbohydrate matter into the general circulation. By protoplasmic action here exerted, reduction in hydration with transformation into glycogen occurs. In the form of glycogen it is non-diffusible and can be retained. As before said, he thinks that its ultimate destination is to be converted into fat, but the liver cells may also transform their glycogen into proteid.

Under the view here stated, there is, Pavy affirms, nothing inscrutable or mysterious about the nature of diabetes. Carbohydrate matter ought to be disposed of in such a manner as to be prevented from reaching the general circulation as sugar. If not so disposed of, it simply passes through the system in an unutilized state, and is eliminated as waste material with the urine. The natural disposal of carbohydrate is effected by protoplasmic assimilative action. In diabetes, then, protoplasm from some cause (want of nutrition, capillary stasis, decline of vigor through age, etc.) fails to exercise the power belonging to it of synthetizing the carbohydrate into proteid, and hence it appears as sugar in the urine.

It cannot be said that the problem is yet entirely worked out, or that Pavy's theory of a super-oxygenated condition of the blood as a proximate cause of the failure of living protoplasm to assimilate and synthetize carbohydrate matter is very clear. It is certain, however, that a better understanding of the vexed questions of sugar assimilation and sugar disposal will be facilitated by these studies.

◆

THE BLOOMINGDALE ASYLUM.

On August 7th the first detachment of patients was removed from the old Bloomingdale Asylum in New York to the new institution at White Plains. In view of the approaching abandonment of the old Bloomingdale site by the New York Hospital authorities, a short sketch of this venerable asylum may be of interest. For a number of years after its foundation there was no provision made for the treatment of the insane by the governors of the New York Hospital, which was organized in the year 1770, and incorporated by King George III in 1771, under the designation of "the Society of the Hospital in the city of New York in America." In the new hospital building at Broadway and Pearl Street, which was erected after the Revolutionary War, and formally opened January 1, 1791, a ward in the basement was set apart for those suffering from mental disease, and this was the starting-point of the department for the insane. As the years went on, this basement ward proved entirely inadequate for the accommodation of the patients of this class, and consequently a special pavilion for the insane was put up on the hospital grounds.

Finally, the governors became convinced of the desirability of acquiring a suitable suburban site for the erection of a separate asylum; and in 1818 they selected a beautiful and historic spot, Bloomingdale Heights, which at that period was described as "the hill and battle-ground of Bloomingdale, about six miles north of the city." This is the property — extending from 115th Street to 120th Street, and from the Boulevard to Amsterdam Avenue, and famous for its picturesque situation and the exquisite beauty of the grounds — which the institution has occupied up to the present time, and which was recently sold to Columbia College for its new university buildings. Around the site were scattered a score of old colonial residences, many of which belonged to the governors of the hospital; and prominent among these was the De Peyster mansion, which did service as General Washington's headquarters in the battle which is known as that of Harlem Plains. At its centennial anniversary in September, 1776, the New York Historical Society held the exercises in commemoration of that event in this De Peyster house, which was to be seen on the bluff above Morningside Park until about a year ago, when it had to be taken down to make room for the new St. Luke's Hospital.

Up to the day of the purchase of Bloomingdale Heights by the Society of the New York Hospital, the sides of the hill carried redoubts and breastworks, sentry-lookouts, and even cannon, for the position had been utilized as a sort of fort and encampment all through the war of 1812. Within the grounds of the institution many of these marks of war were allowed to remain, and they will probably be preserved also by Columbia College.

On May 7, 1818, the corner-stone of the first building of the Bloomingdale Asylum was laid; and in June, 1821, the first patients were admitted to the new institution. In 1829 the large male extension was added, and at various times since then a number of other buildings have been erected. It is worthy of note that the new home of the asylum, like the old, is situated at a point of Revolutionary interest, the site selected being under the shadow of Chatterton Hill, on which the battle of White Plains was fought.

The records of such an institution are full of interest. Among them may be found the history of the first case, it is said, in which acute mania was produced by mesmerism. The patient was a young man of twenty, suffering from a mild form of epilepsy, whose father, having consulted a number of reputable physicians with unsatisfactory results, finally took him to a mesmerist quack. The treatment of the latter produced a very unexpected effect, and his condition soon became serious. For days together he would lie in a cataleptic state, and then all at once break out into a fit of uncontrollable mania. It is stated that when he was brought to the asylum he was tightly bound to a wide board; but in a short time the quiet of the place and the careful nursing he received restored him to his natural condition. For a number of years after the asylum was opened cases of delirium tremens constituted a large proportion of all the patients treated as there was at that time no other institution in the city where alcoholics were admitted.

◆

MEDICAL NOTES.

Cholera. — The cholera in St. Petersburg is less severe, but in the provinces has shown no signs of abating. In three days of the past week it is reported that there were 237 new cases of cholera, and 129 deaths from the disease in Galicia. In Bukowina, 38 new cases and 21 deaths were reported in the same time. The disease has appeared in Prussia, and already about 60 cases with 20 deaths have occurred in the Dantzig and Johannisburg districts. The troops of the Cracow garrison of the Austrian army were affected while marching through Silesia, and several men were taken ill at Bielitz and at Oswiecin. In Holland, scattered cases still occur.

An Honor for Dr. Wolcott Gibbs. — The American Chemists' Association has made Dr. Wolcott Gibbs, emeritus professor of chemistry at Harvard, an honorary member of the society. Dr. Gibbs is the first American to receive this honor.

Three Aged Sisters. — Three sisters in Lancaster, Pa., claim to have the highest aggregate age of any family trio in the State. They are Mrs. Margaret Ewing, aged 92 years; Mrs. Elizabeth Zell, 94 years; and Mrs. Martha Morrison, 97 years; a total of 283 years.

Lake Windemere, Poets and Pollution. — The charm of Lake Windemere and its influence upon English literature are soon to give way to a more potent and less poetic action upon mankind. It is reported that some of the local boards have taken to emptying without purification large volumes of sewage into its hitherto limpid waters, so that it may soon become a dangerous pollution for the vicinity.

Female Medical Students in Scotland. — The *London Hospital* says: "Each Scotch medical school in its turn seems destined to become the battlefield upon which female medical students have at the outset to meet repulse. The Dundee Royal Infirmary is the last centre of medical education asked to open its doors to lady students. The application has met with definite refusal. The two strongest reasons urged against it were, first, that there was no precedent, and, secondly, that such an innovation would tend to make the infirmary less capable of curing diseases. Of all reasons to bring forward these were of the poorest, and Edinburgh could indignantly repudiate the last were not the fame and popularity of its royal infirmary too widespread to need any vindication."

The Annual Epidemic of Suicides in Paris. — The number of suicides in Paris, which reaches a maximum each summer, is this year greater than ever, and might almost be called an epidemic. During the week ending July 8th there were seventeen self-inflicted deaths, and the week before thirty-one. The mean maximum of temperature during the two weeks, according to *La Semaine Médicale*, was 25.4 and 27.4; so that the statistical opinion of a direct relation between high temperatures and suicides is upheld. It also calls attention to the fact previously established by statistics that the largest number of suicides occurs during the last quarter of the moon. The week credited with thirty-one suicides was the last in June, from the 24th to the 30th; and the last quarter of the moon fell on the 26th. In every way this epidemic was typical, as the maximum of the suicides occurred between six A. M. and noon, quite according to rule.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, August 22, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 32, scarlet fever 34, measles 3, typhoid fever 22.

An Epidemic of Malaria at Newton, Mass. — During the last few weeks there has been an unusually large number of cases of malaria in Newton due to the exposure of the mud banks along the Charles, owing to the low condition of the river. During some parts of the day the stench from the flats has been blown a long way back into the city, while near the river it has been most offensive. Most of the cases of malaria so far have been in the river wards and along Newtonville and West Newton, though cases have occurred in Nonantum.

New England Convention of Deaf Mutes. — The New England Convention of Deaf Mutes held its annual session in Worcester on August 14th.

Bequests of John G. Whittier. — The will of the late John G. Whittier contains, among others, the following bequests for hospital purposes: Amesbury and Salisbury Home for Aged Women, $9,914.42; Anna Jaques Hospital, Newburyport, $9,914.42; Haverhill City Hospital, $1,000.

A New Sewerage System for Attleboro, Mass. — The town officers and a committee of citizens of Attleboro appointed to investigate the methods of sewerage disposal best suited to the town needs have decided upon the filtration system which will be adopted in place of the present discharge of sewerage into Ten Mile River.

NEW YORK.

The Suspected Cheese Investigation. — On August 16th, Dr. A. L. Beebe made his report to the Board of Health upon the result of his bacteriological investigation of samples of the cheese recently shipped from the dairy at Afton, Chenango County. With the diphtheria bacilli cultures obtained from the cheese he inoculated a number of guinea-pigs, but none of them developed any sign of ill-health. The animals were then killed, and a careful search made for diphtheria bacilli, but none were detected.

Mortality. — There has been a very gratifying reduction in the city's mortality, owing, no doubt, in great part to the cooler weather that has prevailed of late. During the week ending August 11th there were reported 769 deaths, which is a decrease of 219 from the week previous, and represents an annual death-rate of only 20.42 per thousand of the estimated population. The births reported during the week amounted to 1,164, an excess of 395 over the deaths. The deaths from diarrheal disease among young children diminished from 244 the preceding week, to 140. Most of the contagious diseases also showed a considerable reduction. Thus, of diphtheria, there were reported 111 cases, with 34 deaths, against 146 cases, with 37 deaths; of scarlet fever, 23 cases, with 6 deaths, against 40 cases, with 5 deaths; and of measles, 16 cases, with no deaths, against 26 cases, with 5 deaths. Typhoid fever, however, as usual at this season of the year, shows a slight increase, the number of cases reported being 37, against 21 in the previous week.

Miscellany.

THE AMERICAN PHYSICIAN AS SEEN BY A FRENCHMAN.

A Frenchman, who has travelled in this country and read the writings of other returned voyagers, describes, in a recent article,[1] the customs of the American physician, which, he says, are so different from those of the French doctor as to merit a moment's attention. It is interesting to note some of the particular characteristics remarked by M. Baudouin.

First of all is the widespread security in which specialties flourish, so that even in cities of a second rank "ophthalmologists, *who usually are also otologists*, just as the rhinologist is a laryngologist, neuropathologists, pediatricians and electro-therapeuticians are as abundant as gynecologists and proctologists. . . . In every large city there are always one or more dispensaries for diseases of the eye and ear as well as women's hospitals; so that many physicians devote themselves wholly to one or the other class of cases."

Another interesting custom is "the office." "In practising medicine in cities," he says, "specialists often make use of a single consultation-room, away from their dwelling, in the business part of the town, so that it serves each one of them at a different hour. The patient afflicted with several diseases, resorting to several physicians, sees them one after the other without trouble or loss of time. In other cases, always with the same purpose of facilitating multiplied and successive visits of their clients, the same specialists hire several different apartments in the same building with other persons — as architects, lawyers and bankers. . . . In New York, a city relatively like the old continent, and where there are still some of the old prejudices, physicians almost all receive at their homes in a quiet part of the city. . . . In Washington it is still different; here the physicians are grouped together in the aristocratic part of the city. Many physicians are not contented with the simple sign which is everywhere in use. Doctors who are *très sérieux* write their names at the bottom of each window facing the street; others still less opposed to publicity do not hesitate to hang from the front of their houses signs which swing in the wind, like those of the White Horse Inns of our provinces. It is sufficient to go to Chicago to enjoy this spectacle unknown in Europe" (!)

The light two wheeled "buggie" was also an object of keen interest; but after giving some interesting statistics of the ratio of physicians to population (the largest *city* having a population of 375), our author gives the most delicious example of the social life of the American physician, which he quotes "from a writer who appears to me to have judged these physicians with sufficient good sense, although only a layman." *Voici l'histoire!*

"The physicians of the West have often only this in common with their *confrères* of Europe, that they charge for their visits. They do not suffer from intellectual engorgement during their studies, and obtain their degrees very easily. An American disciple of Esculapius living in the small chief town of a county in Iowa had the misfortune to lose his wife. After several months of regrets and tears our man cast his eyes upon a blonde Swedish woman who cooked his "beefsteacks." However, even in America it is not good form to marry one's cook; and the old lover was burning up with slow heat, when it occurred to him to try strategem. He remembered that Chicago possessed, among others, one Faculty which could in six months make a doctor of medicine of any man or woman who came along. It was just the thing. The next day the young Scandinavian took the train for Chicago, and six months later the marriage of Doctor J. to Doctoress A. was announced."

---

[1] Progrès Médicale, July 21, 1894.

◆

HAFFKINE'S ANTI-CHOLERA INOCULATIONS.

WE have already given an account of the methods employed by Dr. Haffkine in the inoculation against cholera, and of his first inoculation of over 900 persons in Agra in the spring of last year. The last twelve months have offered an opportunity to test the effectiveness of the protection, as a sufficient number of persons have received the injection to give a good exposure to true cholera in many parts of India.

After leaving Agra, Dr. Haffkine went to Aligarh and Jhansi, and thence to Lucknow, where he inoculated 1,200 persons, including nearly 500 British soldiers. At Patalia 3,400 persons were inoculated, including the family of the Maharajah. In all, there have been about 25,000 persons inoculated since March 1893. The first real test of the efficacy of the treatment occurred last March near Calcutta and an interesting account of the conditions is given by Dr. W. J. Simpson, in a report to the commissioners of the Municipality of Calcutta in May of this year.[1]

"This year, as soon as the cholera season began, Dr. Haffkine came down to Calcutta, and in the course of six weeks inoculated over 1,200 persons in different parts of the town where cholera was prevalent. The numbers and the short time since the inoculations are obviously insufficient to allow of definite comparisons being drawn, but one or two remarkable facts which have been observed where the proportion of inoculations in the locality has been larger than in others, and where a small local epidemic of cholera prevailed, arrest the attention. About the end of March two fatal cases of cholera and two cases of choleraic diarrhea occurred in Kattal Bagan Bustee, in a population grouped around two tanks. This outbreak led to the inoculation of 116 persons in the bustee out of about 200. Since the 116 cases were inoculated, nine more cases of cholera, of which seven were fatal, and one case of choleraic diarrhea, have appeared in the bustee. *All these ten cases of cholera have occurred exclusively among the not-inoculated portion of the inhabitants, which, as stated, forms the minority in the bustee, and none of the inoculated have been affected.*

"The following facts were observed: In Ramdhun Dutt's house six members out of eight in the family were inoculated between March 31st and April 7th. On April 9th cholera affected one of the members of the family, who subsequently died. This death occurred in one of the two not inoculated, the six inoculated remaining unaffected.

"In Shaik Subratee's house there resided fourteen persons. Two cases of choleraic diarrhea occurred among them. After this, seven out of the fourteen were inoculated. Since then one case of choleraic diarrhea has occurred in an adult not inoculated.

"In Karam Ali's house, the family consisting of eight members, three were inoculated on March 31st, and on May 7th one of the five who were not inoculated was affected with cholera and died.

"In Mungloo Jemadar's house a fatal case of cholera occurred on March 29th. On the 31st eleven members of the family, out of a total of eighteen, were inoculated. It so happened that cholera, again breaking out in the house, attacking four persons, three of whom died, *selected four of the seven not inoculated*, while the eleven inoculated remained perfectly free.

"The numbers are still too small for any definite conclusions, but they are sufficient to indicate the manner in which this all-important question will be solved. To carry on these observations in Calcutta on a large scale in its most affected parts during the next one or two years would, in my opinion, solve the question, for it is obvious that under these conditions a sufficient number of facts would be collected in Calcutta to determine the amount of protection that can be given by Dr. Haffkine's anti-choleraic vaccine to individuals or communities in an affected locality; and accordingly I recommend the Commissioners to give the system an extended trial."

◆

THE SPECIALIST AND THE GENERAL PRACTITIONER.

IN his valedictory address to the graduating class in medicine of the University of Pennsylvania,[1] Dr. Louis A. Duhring gave the following excellent advice regarding the choice of a "specialty," and the relations it should have to general medicine:

"The field of medicine," he said, "has expanded so vastly that the minds of even the strongest men are unable to assimilate all that is being evolved from the abundant mass of accumulated material. Division of labor in the world of disease, as in the other spheres of life, has become a necessity. Broadly and correctly interpreted, a specialty is a branch of general medicine; without general medicine there can be no legitimate specialties. To be genuine a specialty must be supported by a full understanding of the principles and practice of medicine and general pathology, without which no medical man is fitted to be a special observer.

"The pursuit of a specialty incites to study and research; it opens new paths and fields of knowledge, and advances the science of medicine to the benefit of the profession at large. The specialist who is well equipped for his position, and who pursues his investigations from an elevated and scientific plane, should be encouraged. He is a distinctly valuable member of the community."

As to the choice of work in medicine he said: "Pursue the kind of work you are best fitted for, whether in some particular line or as general practitioner. Permit me here to remark that there is no field more estimable, honorable, and advantageous than that which the all-round medical man occupies. The world needs him to-day as much as it needed him five hundred years ago, and it will always require him. The sphere will ever remain open to all worthy men. The field of the specialist is found only in populous centres of highly civilized life, where large hospitals exist, and where diseases of the same kind are congregated; the field of the general physician and surgeon is everywhere on the face of the globe. His services are always in demand, in the upper walks of life as well as among the poor. In rank he is the peer, nay, the superior, of the specialist. He literally controls the situation, for without him the latter cannot exist.

---

[1] Practitioner, July, 1894.

[1] University Medical Magazine, August, 1894.

"The tendency of the day is towards specialism, but take care, my friends, that you follow not heedlessly with the throng. Believe me when I say that in so doing you are in danger. The mediocre or unsuccessful specialist occupies an unenviable position. Between his lot and that of the struggling general practitioner we should decide in favor of the latter. You are not all fitted by nature to be specialists. Probably most of you would meet with more prosperity and fill out more rounded and satisfactory lives as general practitioners. From a wordly stand-point, the average of your combined professional incomes would probably be larger in the latter than in the former sphere. It is a deplorable error to think that specialism is the only avenue leading to position and profit. The man with ability and tact succeeds whether his line of work be general or particular. The specialist, unless supported by character, preëminent attainments and skill, will probably fall short of distinction.

"To enter upon the study and practice of any particular department of medicine without natural endowment for the work entailed is a mistake. The practitioner, for example, who pursues the study of children without possessing by nature a kindly feeling for the little ones, can never gain their confidence, without which a successful career in the treatment of children's diseases is impossible. The eye, the throat, the ear, and the teeth, all require distinctive surgical aptitude and skill; the skin calls for faculty of close observation and attention to detail; the nervous system demands influence, control, and power. The surgeon should have a sound physical condition, with strong nerves and a steady head. He should possess decision, with good reasoning powers, knowing when to withhold the knife as well as when to apply it. He should be a masterly anatomist, a dexterous operator, and a broad-minded pathologist. The practice of internal medicine calls for a patient, accurate observer, one who is able to interpret correctly the slight as well as the grave symptoms, and who realizes the importance of aiding rather than of coercing nature. She may sometimes be forced, but oftener she must be wooed. Without these requisites nothing beyond mediocrity can be hoped for."

◆

MASSAGE IN THE SOCIETY ISLANDS.

In a recent discussion on massage at the Medico-Chirurgical Society of Edinburgh[1] Dr. A. J. Keiler quoted the following interesting extract from Capt. Cook's diary, dated from Society Islands, September 22, 1777:

"I now returned on board my ship, attended by Otoo's mother, his three sisters, and eight more women. At first I thought this numerous train of females came into my boat with no other intention than to get a passage to Mataria; but when we arrived at the ship, they told me that they intended to pass the night on board for the express purpose of undertaking the cure of a disorder I had been complaining of, which was a pain of a rheumatic kind. I accepted the friendly offer, had a bed spread for them on the cabin floor, and submitted myself to their treatment. They began to squeeze me with both hands from head to foot, but particularly in the parts where the pain was lodged, till they made my bones crack and my flesh become a perfect mummy. In short, after undergoing this discipline for about a quarter of an hour, I was glad to get away from them. However, the operation gave me immediate relief, which encouraged me to try another rubbing down before I went to bed, and it was so effectual that I found myself pretty easy all the night after. My female physicians repeated their prescription next morning before they went on shore, and again in the evening when they returned on board, after which I found the pains entirely removed; and the cure being perfect, they took their leave of me the following morning.

"This operation is universally practised amongst these islanders, sometimes performed by the men, but more generally by the women."

◆

THE MEDICAL PROFESSION AND SOCIALISM.

In an address upon "Medicine; Its Relation to the Spirit and Tendencies of the Age," delivered before the annual meeting of the North of England Branch of the British Medical Association, Dr. Thomas Oliver[1] spoke of the indirect influence which the medical profession had had upon the present social conditions, and the more direct interest of physicians in the question of the wages and poverty of the working classes. He said:

"The amount of surplus production to be given to capital and the amount to be handed over to labor are questions in the settlement of which we, as a profession, can take no part. The wages of any class are regulated by the law of supply and demand. Although not directly concerned, this settlement of the wages question is a very important matter to a very large number of members of the medical profession, for as it is from the working classes that the major part of their income is drawn, they are necessarily influenced by the monetary recognition of labor, particularly if it only just reaches the limit of a 'living wage.' Disease has to be paid for as if it were a luxury. It is, therefore, quite impossible for unskilled laborers who are living in a town, and whose wages are small, to pay their medical attendant handsomely. To all of us, therefore, this wages question is a matter of considerable importance. Trades unionism has raised the position of the working classes and enriched their pockets. By combination they have secured a higher price for their toil than singly they could have succeeded in obtaining. Whi'st the aim of trades unionism at the first was to make provision for their families in sickness and death, the objects at present are improvement in the conditions of labor, as seen in the demand for increased wages, reduction in the hours of labor, limitation of production, and improved sanitation of the industries. The medical profession has advocated the improving of the sanitary conditions under which our industries should be conducted.

"Our ideas of public health have permeated society, and are thus indirectly acting in behalf of the working classes, to shorten the hours of labor, to prevent child-labor and the employment of women who are mothers, and girls in occupations that are unhealthy."

---

[1] Edinburgh Medical Journal, August, 1894.

[1] Lancet, July 21, 1894.

Though so situated as to see the vast contrasts in social opportunities, the physician is rarely a supporter of radical, so-called, socialism; and Dr. Oliver explains this by referring to the character of the work in which the physician is engaged.

"There is no class of men by whom the sad effects of the differences in social life are more frequently observed, or to whom the serious consequences of ill-requited labor more pathetically appeal than to us. It is ours to move with noiseless tread in the subdued glare of luxury, where wealth obtains all, to rob illness of much of its sting; and it is ours to stand where poverty throws its shadow and human life, as it slowly ebbs away, pays the penalty of existence in suffering unrelieved by even ordinary necessaries. It is scenes such as these, it is the pangs of hunger experienced and with no capability of relieving, that create the cry, 'Give us the wherewithal to live; give us labor or its opportunities; give us a sufficient return for our toil, so that we may meet eventualities.' This cry, be it remembered, comes from the working classes who, numerically, form the bulk of our population. Fully cognizant of the numerous imperfections of our social life, and while recognizing the necessity for change, I do not see how socialism, as at present advocated, will give earth the heaven its supporters dream of. It may be that is because we are members of a profession, success in which is so largely personal, that we cannot allow the claims of individualism to be so rudely set aside by collectivism. Our professional existence depends upon life being imperfect and upon inequalities of the human constitution. Social progress is the sum of the efforts of individuals whose mental and physical inequalities had so far placed them beyond mediocrity that they transformed whatever they touched."

◆

A MODEL SURGICAL CLINIC.

Scene, a spacious room. At a large table in the centre is seated the surgeon; his secretary is opposite, an enormous folio register open before him. A group of students is clustered about the table. Benches filled with waiting patients occupy the sides of the room. The secretary calls No. 120,736. A man aided by crutch and cane limps forward. The surgeon's examination into the biography and genealogy of the patient (four folio pages carefully written out by the secretary) being ended, the attendant removes the multiple wrappings of the right foot, exposing an inflamed great toe with ulceration upon one side of the nail. The surgeon gives it a hasty glance, and, turning, addresses the students as follows:

"Gentlemen, a few years ago a case of this kind, — evidently an ingrowing nail, — would have been at once submitted to local treatment, and, I admit, with fair prospects of obtaining a good result. But now that we have learned the general interdependence of the different organs of the body, we feel that a thoroughly scientific treatment demands the examination by specialists of these different organs, in order to detect any conditions likely to be etiological factors in the case. The attendant will therefore take him and a copy of his history to the different rooms in succession, and return here with their respective official reports."

[*Some Hours Later.*]

Surgeon (*loquitur*). — "Gentlemen, the patient has now returned to us, and I ask your attention while I read the reports of the various specialists."

Ophthalmological Department. — Case No. 120,736. This patient is myopic. As I recall a case where a similar visual defect was the cause of injury to the great toe in a person who "stubbed" it against the curbstone, I have ordered appropriate lenses to correct the difficulty, as a prophylactic against the recurrence of the disease. It is essential, however, that this treatment should be supplemented by wearing a loosely fitting shoe.

Otological Department. — Case No. 120,736. I find no defect of audition. As the patient's trouble may have arisen from want of suitable support to the foot, I have thought it best to shorten the stapes leather two holes.

Rhinological Department. — Case No. 120,736. A case of nasal tone ail. Wishing to bring about a radical change in the parts, I have removed with the curette all adenoid growths, together with the adherent mucous membrane, from the cavities and packed them all with aseptic gauze — which should be removed if the patient wishes to sneeze.

Department Abdominal Surgery. — Case No. 120,736. Drs. A B and C, in consultation. The history showing that the patient's mother during life lost a set of false teeth, Dr. A, reasoning that "tooth and nail" are generally associated in action, is inclined to think the set may have been swallowed unconsciously and remained in the patient's stomach. Of course, he advises an operation.

Dr. B, in view of the accepted belief that "Gallia est omnis divisa in partes tres," thinks it possible that one of them may have wandered down to the great toe, and advises an exploratory incision of the gall-bladder to ascertain if either part be missing. The "Gallic boot of love," cited by Dr. O. W. Holmes, seems to indicate a tendency of the gall to the foot.

Dr. C concurs entirely with both of these opinions, but on general grounds advises the removal of the appendix. The patient, however, avers that this has been already done, and that he has it in a bottle at home, which he will fetch if required. It is therefore deemed advisable to await further development.

Gynecological Department. — Case No. 120,736. Palpation reveals no abnormal condition of uterus or appendages. A medical student calling our attention to the fact that the patient wears pants and has well-developed male generative organs, we doubt if this is a proper case for this department.

Department Genito-Urinary Diseases.—Case No. 120,736. Organs apparently healthy. It, however, is not impossible that the patient may have had a stone (vesical) which was passed naturally and impinged upon and injured the great toe.

Department of Neuroses, etc. — Case No. 120,736. The result of a careful examination of this case indicates a deficient innervation of his lower extremities. Two well-marked areas of impaired sensibility or partial anæsthesia are located in the gluteal regions beneath the tuberosities of the ischia. His history not mentioning this, we questioned him as to how long the condition had existed. His replies were unsatisfactory — merely to this effect, that he had "sat so long upon those d——d hard benches that his —— got numb." A rubber cushion with two holes is recommended, and the case should be kept under observation.

"There, gentlemen," continued the surgeon as he finished reading to them the reports, "you have the result of a careful scientific inquiry into this case.

"I shall now send the patient to the chiropodist around the corner, with instructions to have the toe cleansed and a piece of sheet lead inserted under the roughened edge of the nail. I counsel you all not to lose the opportunity of witnessing the operation. Good morning, gentlemen!"

C. F. C.

METEOROLOGICAL RECORD.

For the week ending August 11th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S.. 5	30.12	69	78	60	64	53	58	W.	W.	12	5	O.	C.	
M.. 6	30.13	72	84	60	60	57	58	W.	S.W.	5	13	C.	C.	
T.. 7	30.03	74	84	63	58	59	58	W.	S.W.	5	16	O.	C.	
W. 8	29.92	78	90	67	65	69	67	S.W.	S.W.	8	10	C.	O.	
T.. 9	29.91	72	83	62	87	87	87	W.	N.E.	7	10	R.	R.	
F..10	30.09	66	77	56	63	50	56	N.W.	N.	6	9	C.	C.	.51
S..11	30.19	61	67	55	54	58	56	N.W.	S.E.	5	10	C.	C.	.02
☞														.53

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 11, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,956,000	769	378	27.56	10.40	18.20	1.30	4.84
Chicago . . .	1,438,000	—	—	—	—	—	—	—
Philadelphia .	1,139.457	424	194	23.04	8.64	13.44	1.68	4.56
Brooklyn . .	1,043,000	424	206	28.80	11.76	18.96	1.68	6.00
St. Louis . . .	540,800	—	—	—	—	—	—	—
Boston . . .	501,107	252	132	38.72	7.48	29.92	2.64	3.52
Baltimore . .	500,000	—	—	—	—	—	—	—
Washington .	285,000	93	25	23.76	7.56	9.72	—	3.24
Cincinnati . .	325,000	129	52	15.40	7.70	10.00	1.54	.77
Cleveland . .	325,000	159	104	37.80	5.67	26.46	3.78	—
Pittsburg . .	272,000	—	—	—	—	—	—	—
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	33	16	21.21	6.06	6.06	6.06	—
Charleston . .	65,165	31	17	19.38	16.15	12.92	6.26	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	100,410	22	16	54.60	—	40.95	13.65	—
Fall River . .	92,233	—	—	—	—	—	—	—
Lowell . . .	90,613	33	23	63.63	9.09	60.60	—	—
Cambridge . .	79,607	37	21	48.60	13.50	35.10	8.10	2.70
Lynn	65,123	31	15	32.25	6.46	22.61	-	3..3
Springfield . .	50,284	18	9	33.33	16.66	27.77	—	5.55
Lawrence . .	49,900	—	—	—	—	—	—	—
New Bedford .	47,741	21	12	42.84	4.76	42.84	—	—
Holyoke . . .	43,348	—	—	—	—	—	—	—
Brockton . .	33,939	8	2	12.50	—	12.50	—	—
Salem	33,155	22	8	22.70	4.54	18.16	4.54	—
Haverhill . .	32,925	6	1	16.66	16.66	—	—	—
Malden . . .	30,209	12	3	33.33	16.66	16.66	—	—
Chelsea . . .	29,806	20	5	5.00	5.00	5.00	—	—
Fitchburg . .	29,383	10	8	40.00	—	40.00	—	—
Newton . . .	28,837	—	—	—	—	—	—	—
Gloucester . .	27,293	—	—	—	—	—	—	—
Taunton . . .	26,955	27	11	—	14.80		—	—
Waltham . .	22,058	3	1	33.33	—	33.33	—	—
Quincy . . .	19,642	—	—	—	—	—	—	—
Pittsfield . .	18,802	5	5	20.00	—	20.00	—	—
Everett . . .	16,585	7	2	28.56	28.56	14.28	—	—
Northampton .	16,331	5	2	40.00	60.00	40.00	—	—
Newburyport .	14,073	6	2	16.66	16.66	16.66	—	—
Amesbury . .	10,920	1	0	—	—	—	—	—

Deaths reported 2,760: under five years of age 1,235; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 784, diarrheal diseases 529, consumption 262, acute lung diseases 153, diphtheria and croup 97, whooping-cough 59, typhoid fever 49, scarlet fever 22, cerebro-spinal meningitis 11, malarial fever 6, measles 5, small-pox 2.

From typhoid fever Philadelphia 11, Washington 9, New York 6, Brooklyn 5, Boston and Pittsburg 3 each, Cincinnati and Cleveland 2 each, Nashville, Lynn, Somerville, Haverhill, Malden, Chelsea, Everett and Brookline 1 each. From scarlet fever Cleveland 7, New York 6, Boston 2, Philadelphia, Brooklyn, Lowell, Cambridge, Somerville, Malden and Medford 1 each. From cerebro-spinal meningitis New York 6, Cincinnati 2, Boston, Washington and Lynn 1 each. From malarial fever New York and Nashville 2 each, Brooklyn and Cleveland 1 each. From measles Brooklyn and Cleveland 2 each, Pittsburg 1. From small-pox New York and Philadelphia 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending August 4th, the death-rate was 17.2. Deaths reported 3,455: acute diseases of the respiratory organs (London) 144, diarrhea 328, measles 99, diphtheria 80, whooping-cough 66, scarlet fever 35, fever 23, small-pox (London 5, Birmingham 2, Manchester 1) 8.

The death-rate ranged from 8.4 in Derby to 29.0 in Preston; Birmingham 14.5, Bradford 13.3, Croydon 13.5, Hull 13.0, Leeds 16.2, Leicester 17.4, Liverpool 27.8, London 17.6, Manchester 21.8, Newcastle-on-Tyne 15.5, Nottingham 17.0, Plymouth 20.2, Portsmouth 9.8, Swansea 10.4, West Ham 14.0.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 11, 1894, TO AUGUST 17, 1894.

Leave of absence for one month, to take effect upon the completion of his present duty at the Fort Thomas Rifle Range, is hereby granted to **CAPTAIN WILLIAM J. WAKEMAN**, assistant surgeon.

MAJOR CURTIS E. PRICE, surgeon, upon the expiration of his present leave of absence, is ordered to Fort Supply, Oklahoma Territory, for duty at that station, relieving **CAPTAIN WM. H. CORBUSIER**, assistant surgeon.

CAPTAIN CORBUSIER, on being relieved by **MAJOR PRICE**, is ordered to New York City, N. Y., for duty as attending surgeon and examiner of recruits, relleving **CAPTAIN WM. C. SHANNON**, assistant surgeon.

CAPTAIN SHANNON, on being thus relieved, will report in person to **COLONEL C. H. ALDEN**, assistant surgeon-general, president examining board, for examination for promotion.

CAPTAIN EDGAR A. MEARNS, assistant surgeon, will be relieved from duty with the commission appointed for the location and marking of the boundary between Mexico and the United States and ordered to Fort Myer, Va., for duty, relieving **CAPTAIN JOHN L. PHILLIPS**, assistant surgeon.

CAPTAIN PHILLIPS, on being thus relieved, is ordered to Fort McKinney, Wyoming, for duty at that post, relieving **CAPTAIN GEO. E. BUSHNELL**, assistant surgeon.

CAPTAIN BUSHNELL, on being thus relieved, ordered to David's Island, N. Y., for duty, relieving **CAPTAIN SAMUEL Q. ROBINSON**, assistant surgeon

CAPTAIN ROBINSON, on being thus relieved, ordered to Philadelphia, Pa., for duty as attending surgeon and examiner of recruits.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 18, 1894.

EDWARD KERSHNER, medical inspector, ordered as fleet surgeon, North Atlantic Station.

L. G. HENEBERGER, surgeon, ordered to Marine Rendezvous, New York.

N. H. DRAKE, surgeon, from Marine Rendezvous and to Receiving-ship "Franklin."

B. S. MACKIE, surgeon, from the "Franklin" and as fleet surgeon, European Station.

C. P. KINDLEBERGER, assistant surgeon, ordered to Naval Laboratory and Department of Instruction.

T. N. PENROSE, medical inspector, from Norfolk Hospital and to special duty repairing and renovating New York Hospital.

C. J. CLEBORNE, medical director, from Naval Hospital, Chelsea, and to Naval Hospital, Norfolk.

A. A. HOEHLING, medical director, from special duty, Washington, D. C., and to Naval Hospital, Chelsea, Mass.

B. H. KIDDER, medical director, ordered to report to chairman Senate Committee investigating Ford Theatre disaster.

RECENT DEATH.

WILLIAM C. DABNEY, M.D., Professor of Obstetrics and Medicine at the University of Virginia, died at Charlotteville, August 20th, aged forty-five years. He was a member of the Association of American Physicians.

BOOKS AND PAMPHLETS RECEIVED.

Announcement, Session of 1894–95, the Council Bluffs Medical College, Council Bluffs, Iowa.

A Brief Consideration of the Cases of Appendicitis Occurring in the Practice of Professor William H. Carmalt. Reprint. 1894.

Original Articles.

ABDOMINAL DRAINAGE.[1]

BY ERNEST W. CUSHING, M.D.

THERE is no practical question connected with abdominal surgery on which opinions differ more widely than on that of abdominal drainage. It would seem that by this time there should be a reasonable unanimity in the opinions of the leaders of the profession on this subject; and yet their practice differs widely, while their statements, and especially the statements of their followers, diverge even more widely than their practice. Three years ago, in Berlin, I had the honor, in conjunction with Dr. Sänger, of bringing this subject of abdominal drainage before the Tenth International Medical Congress, and I naturally examined pretty carefully the practice of the best German operators on this point. I was lead to the conclusion that the use or omission of drainage is merely a part of a system, and not an arbitary decision at the end of an operation. Abdominal drainage is very little used in Germany, except by Sänger; and with the mighty influence which German thought and example is exercising among the profession everywhere, the German influence is becoming marked in all countries, and not the least in New York City, which, it must be remembered, has the largest German population of any city in the world but Berlin and Vienna, with a particularly brilliant representation in our profession by German Medical Societies and journals, and especially by a number of gentlemen who are very distinguished in abdominal surgery and whose names will readily suggest themselves to my hearers.

On the other hand stands the English school of abdominal surgery with its brilliant leaders, its admirable results and its splendid contributions to the progress of abdominal surgery. Naturally, recent professional opinion in this country has been largely moulded by English thought and writing, and by the fact that so many of our leading gynecologists have studied the methods and watched the operations of the great English surgeons. We have, therefore, besides the German school, the Anglo-American school of practice; and it may be interesting to notice wherein lie the differences between them. In the first place, the Germans, starting out with a positive faith in the theory of bacteriological infection of wounds and of the abdominal cavity as the cause of septic troubles, set about to prevent any such infection with true German thoroughness. Abdominal surgery is confined to a few men; it is performed in buildings made as perfect as science can devise or money can furnish; the clinical operator has a staff of highly trained assistants, who remain for a period of from three to five years connected with the clinic. Discipline prevails which is military in its exactness. The abdominal work is, on the whole, of a rather simple nature to that which we have in our large cities, for the reason that, as the hospitals are supported by the States, there is a large proportion of hardy peasant women with tumors, who are sent immediately to the great clinics, while the rarity of abortions and the control and careful treatment of venereal diseases render pelvic suppuration far less common than is the case here. Speaking broadly then, the German surgeon has on the average simpler cases, stronger patients, better assistants, a better operating-room, a far greater certainty of aseptic surroundings, than is the case in this country. His methods are naturally based on all these facts: he makes a long incision; he and his assistants ligate with catgut all adhesions; everything is done by sight; and when the tumor is finally removed, there is little chance that there will be any bleeding, for everything is tied. Then the abdomen is closed, and the results are excellent. Even in cases where collections of old blood are evacuated or where pus-tubes during removal burst and discharge their contents, similar methods are followed. The use of the Trendelenberg position, with a large incision, makes pelvic surgery more certain, and the removal of all foreign matter can be more surely accomplished, than when the small incision is used, unless the latter is followed by irrigation; even in unclean cases, therefore, most of the German operators dispense with irrigation, and their results appear to them satisfactory, although I gravely doubt whether they would be able to pursue any such methods, if they really had such a proportion of difficult cases of pelvic suppuration to treat as we have here, and in the same class of emaciated women of little vitality.

To sum up, the omission of drainage is based upon the use of a large incision, complete tying of all adhesions with catgut, and entire removal of all foreign matter from the abdomen without irrigation, the assistants being skilled, the preparations perfect, the operating-room ideal, the operator being a clinical professor of long experience and particular skill, and the patient being, on the average, robust and in good condition.

The Anglo-American school of abdominal surgery has grown up under the auspices of men who are practical rather than theoretical. While not denying the facts demonstrated in the bacteriological laboratory as to infection by pathogenic micro-organisms, they have insisted that we must consider the field of infection more than the infecting agent, and, speaking broadly, their efforts have been to remove the pabulum of germs, besides taking reasonable precautions to prevent any infection of the abdominal cavity. They have been extremely sceptical as to the possibility of keeping all microbes out of the abdomen, but have pinned their faith on the ability of the living tissues to resist the subtler forms of atmospheric infections provided all dead and foreign matter were removed, the pelvis kept dry, and the vitality of the patient maintained. Recognizing the fact that most cases of acute sepsis after abdominal operations are found to have a collection of decomposing bloody fluid in the pelvis, the inference is obvious, that, if this fluid had been removed, the patient might have recovered; moreover, as it is evident that this bloody fluid ought to have been absorbed by the peritoneum before decomposition occurred; the practical rule followed is to avoid everything that would chill or chafe the peritoneum, or in any way weaken its absorptive powers or injure its serous surface. From this came the advocacy of the short incision and the use of irrigation instead of sponges for the removal of blood, pus, the contents of cysts, or other foreign matters in the abdominal cavity; also in the endeavor to shorten the time of operation, it was found practicable to separate adhesions very largely by the fingers without the use of ligatures, even although there might be some bloody oozing afterwards, so long as the latter would be removed by the drainage-tube. It should be remembered that the great development of abdominal surgery in England, and especially in America, during the last ten years has been in surgical treatment of diseases of the uterine appendages and in hysterectomy, as well as in surgery of the kidney, appendix and intestine. The treatment of tumors has not changed, and is much the same everywhere, but the new surgery of the uterine appendages has so completely overshadowed that of ovarian tumors, that active operators do not find that one-fifth of their cases of laparotomy are performed for the removal of ovarian tumors. At least, that is my experience; and I presume it coincides with that of other gynecologists.

---

[1] Read before the Surgical Section of the Suffolk District Medical Society, April 4, 1894.

Our subject may be divided into indications and technique. The chief indication for the use of drainage is the prevention of any accumulation of the fluid in the pelvis. It is certain that in the cases of laparotomy which die of acute sepsis on the second, third or fourth days, there is always or usually found a bloody accumulation, or puddle, which seems to be the cause and focus of septic intoxication. This accumulation can be prevented by the use of a drainage-tube. It is true that in most cases the peritoneum is able to absorb all fluids; and usually, with reasonable care and attention to cleanliness, such an event may be anticipated with considerable confidence. On the other hand, the peritoneum sometimes fails to do its duty in this respect, and then bloody serum accumulates, decomposes and poisons the patient.

It is impossible to attribute all such deaths to infection at the time of operation. Long series of cases in the hands of careful operators have shown that with every precaution such accumulation of fluid with consequent sepsis, will occasionally occur, while the frequent use of the drainage-tube even in light cases, has taught us that even after the simplest operations, such as removal of unadherent uterine appendages, there is sometimes a very profuse sanguineous effusion for a day or two, probably from the stitch-holes of the abdominal incision, or from a vein in the pedicle where it is transfixed.

The reasons for this use of drainage may therefore be cast somewhat into the form of a syllogism, as follows:

After every laparotomy involving an operation on the pelvic organs there may be a profuse sanguineous discharge, or even a serious hemorrhage.

After every laparotomy the peritoneum may fail to absorb such a discharge. There may be no evidence that dangerous hemorrhage is occurring.

The failure to absorb such a discharge, if it occurs, is fatal. Concealed hemorrhage if undiscovered and unchecked is fatal.

The drainage-tube properly placed and cared for will remove this dangerous effusion as fast as it occurs. It will give timely evidence of concealed hemorrhage.

Therefore, drainage should be used in all cases of laparotomy involving an operation on the pelvic organs. As usual, however, the general rule and principle is subject to limitations and exceptions, some of which are as follows:

The use of a drainage-tube is a decided inconvenience. If carelessly handled, it may be a source of secondary infection, with formation of exudates. If incorrectly placed or left too long in position, it may fail of its purpose. It may even, if wrongly used, be the origin of a fecal fistula, by pressure, or of a suppurating abdominal wound, or a sinus may remain in the track of the tube. Its use greatly increases the necessity of skill and attention in the treatment, and adds to the discomfort of the patient for a day or two after the operation. By pressure on the intestine, unless removed in time, it may cause an obstruction, even with fatal result. The liability to subsequent hernia is said to be somewhat increased.

This is a formidable list of objections; and yet all these accidents may be avoided by skill and conscientous care in the use of the tube, and a fatal result from such use in proper hands is an extremely infrequent occurrence. No such accident has ever occurred to me.

On the other hand, acute sepsis after laparotomy is an accident so dreadful and so irremediable that it is far more to be feared than the lesser and more remote evils resulting from the use of the tube. In these days it is more and more difficult for the conscientious operator to reconcile himself to the death of a patient by sepsis after operation. It ought almost never to occur. Experience has shown that those who die ought to have been drained, and that in long series of cases those who are drained die less frequently than those who are not.

The result of the compromise between the reasons for and against drainage has been the establishment of the following indications for drainage:

(1) The presence of freshly separated adhesions, or of voluminous pedicles, or of rents or incisions in the pelvic peritoneum which have required many stitches; in fact, of any condition which may probably lead to hemorrhage or to oozing of bloody fluid.

(2) The fact that pus or urine or fecal matter, or the contents of cysts, or much blood has escaped into the abdominal cavity. Such a circumstance should always be followed by free irrigation with pure hot water, and the use of drainage.

(3) The perforation or incision of the intestine or bladder during operation, or a sloughy condition which makes it probable that perforation will occur. Even when an opening into these viscera found or made during operation is carefully sutured, experience shows that patients often recover with a fecal or, as the case may be, a urinary fistula, who would presumably have died without drainage. Such fistulæ heal eventually under proper treatment.

(4) The presence of masses of exudates, or of stiff walls of cavities from which diseased organs have been enucleated, which do not permit the intestines to snugly fill the pelvis and which would offer a cavity where fluid could accumulate.

(5) Almost any condition, such as shock or weakness, which has required very rapid termination of a difficult operation, in which case the abdomen will usually be full of hot water.

There are no special contraindications to drainage. The general considerations mentioned above prevent its use where it is not needed; but practically those operators who use the drainage-tube learn to trust in it, and when there is any doubt, they drain.

The advantages are real, immediate and indispensable. The disadvantages are mostly theoretical, remote and preventable.

It will thus be seen that drainage used after irrigation is particularly associated with modern pelvic surgery. It is seldom necessary after ordinary tumors, but indispensable in many cases of laparotomy for salpingitis, ectopic gestation, evacuation of abscesses, intra-ligamentary cysts, etc.

It is especially advantageous for the man who operates with few and ill-trained assistants, without the aid of the elaborate preparations of a thoroughly organized hospital.

It is useful in the weak, and in those where we have to fear that the stomach and bowels will not behave well, and that thus the peritoneum will fail to absorb any fluid which may be effused.

Why what is so salutary in America and in England is not thought necessary or useful on the Continent, I hope to learn as a result of the discussion of this paper.

In regard to the technique of drainage, of course there are differences in the practice of various operators, but there is substantial unanimity concerning the chief points to be observed.

In the first place a straight tube should be used, because it is easier to clean, and sometimes it is important to turn it on its axis without removing it. It is also far easier to introduce and to remove a strand of absorbent cotton or gauze through a straight tube than through a curved one, and often it is very desirable to turn the cotton-holding probe on its axis in order to wipe out the tube or to remove small clots of blood from the space of Douglas. Tubes which have the same curvature everywhere, like those used by Dr. Sänger, may sometimes be valuable, but those which have a curve only at the lower end are objectionable in every respect. The tube, being straight, should be well annealed, open at the lower extremity, and provided with a flange at or near the top. The lower two inches should be perforated with fine apertures, so small that the omentum or intestine cannot become entangled therein, and yet large enough to permit of the free passage of blood or secretions. The tube should be perfectly smooth inside and out. It seems hardly necessary to specify these attributes of a good drainage-tube, but yet it is very difficult to find one in the shops which fulfils all these conditions. A collection of unsuitable tubes is here shown, as well as those which I am accustomed to use, made after the model of those employed by Bantock. The latter are two-fifths of an inch in diameter, and have a calibre just large enough to admit a probe wrapped with cotton, or a small rubber tube. They are in four lengths — five, six, seven and eight inches respectively.

Operations which require drainage usually demand irrigation of the abdominal cavity; and for this pure hot water is to be used, preferably distilled water or that which has been boiled and strained. No antiseptic should be added to the water (although some think it is well to add common salt, 0.6 per cent., or 16 gr. to the quart), which is to be poured rapidly into the abdominal cavity by means of a funnel and rubber tube, with an end-piece of glass or metal having openings sufficiently large to permit of a free flow of water.

Irrigation is to be continued until the fluid returned is clear or nearly so, making sure that opportunity is given for all clots to escape; then, without attempting to remove the water from the abdomen, the tube is to be carried to the bottom of the space of Douglas, and sometimes a second tube or a packing of gauze is required to drain some particular pocket or cavity with stiff walls. The abdominal wound is closed around the tube, allowing the latter to project through that part of the wound where it lies most easily. Excess of fluid may then be removed through a small rubber tube inserted in the glass drain. A piece of thin rubber sheeting, or "dam," is then stretched over the upper end of the tube, which projects through a small hole in the middle of the sheeting. This prevents any soiling of the wound by fluids which escape through the tube.

The subsequent care of the drain may vary according to the system and the ingenuity of each operator; but any method, to be efficient, must ensure that the space of Douglas be kept dry, and that the drain be kept clean, and that no infection be carried into the peritoneal cavity. My own method is as follows: When the patient is in bed, a piece of rubber tubing about eighteen inches long, with a lateral opening close to the lower end, is introduced into the glass drain until it reaches the bottom of the latter. All fluid which can be extracted by the aid of a syringe is then removed, the rubber tube remaining in place. Everything about the dressings being now made dry and clean, the upper end of the drain is covered with clean, crumpled gauze, in which is enfolded the piece of rubber tube which runs down through the glass drain. The nurse has instructions to suck the outer end of this rubber tube, without disturbing its position, by means of a small syringe, every ten minutes at first, and afterwards every quarter or half an hour, according to the amount of fluid which is obtained. In this way a large amount of bloody liquid is often obtained, while the patient is not disturbed in the least, and serious hemorrhage is at once detected. After a lapse of a period varying from one to eight or ten hours, the rubber tube is removed and the glass drain is carefully dried by means of a wire wrapped with absorbent cotton or iodoform gauze, until no more fluid is absorbed; then a rope of loosely twisted absorbent cotton, or a strip of iodoform gauze an inch wide is pushed down to the bottom of the drain by means of the wire. This usually remains in place for two hours, when the same process is repeated; and the intervals are gradually increased to three or more hours, as the secretion diminishes. In most cases if all goes well, on the second or third day the secretion will be scanty and straw-colored; and when this favorable change is noticed, and not sooner, it is time to withdraw the glass tube. It is not best to withdraw the drain earlier than thirty-six hours after the operation, since the secretion sometimes diminishes after about twelve hours, and then becomes quite free again during the period of reaction. I find it convenient to introduce a piece of clean, boiled rubber tube through the glass drain, and to withdraw the latter, slipping it up over the former, so that when the glass is out the rubber tube is left in its track. A strip of iodoform gauze may be used in the same way. Whichever is used, is then pulled up an inch or two, cut off flush with the dressings, and fastened with a safety-pin. It is shortened half an inch morning, noon and evening, until it is thus all removed. If everything has been kept clean, there is no trouble about the healing of the wound, and no tendency to formation of fistulæ.

Septic infection of the wound may be avoided by clean fingers, clean cotton or gauze and clean wire. As a matter of fact, wounds do very well, and tubes do not become infected if ordinary absorbent cotton is taken from a roll as it comes from the manufacture, and if fingers and instruments are well scrubbed with soap and water. The scrupulous surgeon will prefer, however, to sterilize his cotton and gauze by steaming or baking them, and will dip his hands in sublimate solution after washing them. The main thing, however, is to prevent the accumulation of fluid in the peritoneal cavity; if the drain is so placed and so cared for that this is accomplished, the patient will recover, even after desperate and gruesome operations. On the other hand, if drainage is not used, and the fluid accumulates, and for any reason the peritoneum fails to absorb it, the patient will surely die in spite of all the refinements of antisepsis.

It remains to consider certain cases in which drainage with the glass tube is not sufficient; these are those cases in which there is free oozing from some points deep in the pelvis, such as the bed of a pyosalpinx, an extra-uterine pregnancy, or a tumor of the broad ligament, and in which the condition of the patient is such that a further loss of blood would be disastrous and a prolongation of the operation would be unwarrantable. There are also certain cases where it is desirable to prevent the intestines from falling into a cavity which is wholly or in part lined with a suppurating membrane, or where a perforation of the bladder or intestine has been found or made so that a fistula may reasonably be expected; in these cases packing with iodoform gauze is of the greatest service, and the best way of employing this is certainly by the method of Miculicz. This is applied in the following manner: The centre of a large square of iodoform gauze, from two to three feet on the side, is seized with the clamp or sponge-holder and pushed to the very bottom of the cavity to be drained; the fingers of the left hand are now carried inside of the sack thus formed, and there expanded so that the gauze is spread over every bleeding point and pushed into any suspicious cavity. Strips of iodoform gauze, three inches wide and a yard long, are now pushed down over the fingers, using a clamp or other smooth instrument until the cavity is filled; this usually requires from three to five such strips. I usually employ a glass drainage-tube reaching to the bottom of the pelvis behind the gauze packing, in order that the irrigation fluid and bloody oozing may be rapidly withdrawn during the first twelve hours after the operation, after which the glass tube can be taken out. Nevertheless, this use of a glass drain is not customary, as the gauze packing will remove a large amount of fluid in the pelvis by capillary attraction; it is therefore usually covered with a mass of crumpled sterilized gauze to absorb this fluid. I think it is better, however, to wrap a piece of rubber dam around that part of the gauze packing which is external to the wound, lengthening it if necessary by pinning to it a piece of moist gauze, so that the whole can be carried between the legs of the patient, or at one side, into a mug which will receive the drainage fluid. This modification makes it much easier to keep the bandages and dressings dry and clean, and facilitates drainage by adding the principle of the syphon to that of capillary attraction.

The strips of gauze should be removed from the sac after from twenty-four to forty-eight hours, the sac itself on the fourth or fifth day; it is not well to try to remove it by means of a string attached to the centre, as recommended by Miculicz, at any rate it cannot be done readily when the neck of the sac is so small as I make it. On the fourth or fifth day, however, by gently unfolding or pulling on the edges of the sac, first at one point and then at another, the place will soon be found where it can be drawn out, and starting from this point the whole can be gently removed, the cavity syringed with peroxide of hydrogen, and then a fresh strip of gauze put into it. It is astonishing how rapidly the cavity closes and the abdominal wound unites. I have used this method of packing in a large number of difficult and serious cases, and I have been so thoroughly satisfied with it that I have no hesitation in employing it.

I shall say little in regard to draining the abdominal cavity through the vagina. There is no doubt but that it a useful procedure in vaginal hysterectomy and sometimes in total extirpation of the uterus; but, as a rule, where the abdomen has been opened from above, I prefer to use drainage through the abdominal wound, because the vaginal drainage is neither so efficient nor so convenient, nor yet are we so certain of draining the pouch of Douglas while we have to depend on capillary attraction to raise the fluid to the level of the perineum. It is, moreover, difficult to keep the capillary drain clean and away from the infection when it protrudes from the vagina.

I could say much more about drainage; but it is not necessary, for it is impossible in a written communication to explain all the little points on which a successful use of it depends. It is a practical refinement of the art of surgery of the highest order of skill and of the greatest possible importance, and it will serve well those are content to study its details with care and thoroughness. Its advantages are evident to those who know best how to use it; of its disadvantages the contrary may be said.

◆

NOTE ON FRACTURES OF THE HUMERUS AT THE ELBOW-JOINT.[1]

BY CHARLES W. DULLES, M.D., PHILADELPHIA.

THE treatment of fractures at the lower end of the humerus is one of the well-recognized difficulties in surgery. The reason for this is chiefly the complicated character of the elbow-joint, the number of bones entering into it, the anatomical features of the joint, and the disturbance of function which results from slight displacements. The danger of permanent stiffness of the joint used to be regarded as one of the most serious features of these cases; but in recent years this danger seems to be more usually avoided, and mere stiffness is not feared as it once was. The point in regard to the treatment of these fractures which now attracts most attention is the very important one of preserving the normal inclination of the plane of the joint surface of the humerus to that of the principal axis of its shaft. This forms on the radial side a moderately acute, and on the ulnar side a moderately obtuse angle, resulting in a slight angle between the axes of the forearm and of the upper arm in the position of extension, which contributes very materially to the usefulness of the arm for a variety of purposes, and especially for carrying weights in the hand. The importance of this has been frequently and strongly emphasized of late years, and has to a certain extent dominated the treatment of injuries near the elbow-joint. Another source of trouble in fractures at the lower end of the humerus, to which as much attention should be paid, is rotary displacement of the fragment or fragments of the humerus. The result of this displacement is sometimes exceedingly unfortunate, the external condyle, for example, being displaced in a direction forward and toward the middle line (ventral) producing a deformity which is not uncommon, and which destroys what is called the "carrying-angle" as effectually as the more commonly recognized upward displacement of the internal condyle, because it destroys the normal relation of the radius to the humerus and to the ulna, and materially restricts the motion of supination.

---

[1] Read before the College of Physicians of Philadelphia, June 6, 1894.

To understand the condition involved in fractures at the lower end of the humerus, it is necessary to study the normal mechanical conditions of this joint. Its complicated character makes verbal description almost impossible; but certain points, easily demonstrable from the bones, ought to be understood and remembered.

The first of these is the well-known obliquity of the plane of the joint, by which the really articulating bone — the ulna — in a position of extension of the forearm, with the arm hanging at the side, is directed somewhat away from the axis of the body, so that the elbow can get a purchase against the hip, and objects carried in the hand do not touch the leg; while, on flexion, the hand is carried across the line of the axis of the humerus in the direction of the chest in a manner which has a number of practical advantages. Another point which I have not yet found referred to in any work on surgery, general or special, but which is familiar to observant anatomists is, that the head of the radius, when the forearm is extended, is not in contact with the capitellum — the articular surface of the external condyle of the humerus. Freedom of the motions of pronation and supination is favored by this fact, and at the same time the joint is to a certain extent protected from accident. With the arm extended and the forearm strongly pronated, the head of the radius is at its greatest remove from the capitellum. With the forearm semi-flexed and semi-pronated, the head of the radius rests against the capitellum; while if flexion of the forearm be carried further, there occurs a condition which I have taken this occasion to describe particularly. I do not know that it has been as yet described, although I know that the conclusion to which a study of it has led me coincides with what has been done before; and I have been interested to ascertain, by a correspondence accidentally started, that Dr. H. L. Smith, of Boston, has been brought to similar conclusions by studies undertaken before he knew that I was working on this subject and by actual practice.

The point which I wish to make is, that when the forearm is semi-prone and fully flexed — that is, until flexion is stopped by the impact of the coronoid process against the humerus in the coronoid fossa — the bones of the forearm act as a lock to hold the lower end of the humerus, in case of an intra-condyloid fracture, in a correct anatomical position, and that in no other position of the forearm is this the case. If we take the bones in this position we find that the olecranon and coronoid processes, with the ridge dividing the greater sigmoid cavity, control the inner part of the elbow-joint, preventing motion laterally, antero-posteriorly, or rotary, while the head of the radius rests against the capitellum, and its ligaments prevent displacement of the external condyle in any direction by the condition of tension in which they are found when the forearm is fully flexed and semi-pronated. To say that the bones of the forearm lock the inner and outer portions of the lower end of the humerus in a correct anatomical position, covers the essential points in the treatment of a fracture; and to understand the full significance of the expression requires only a knowledge of the anatomy of the elbow-joint.

As I wish to be brief, I will limit myself to this statement, adding only a particular reference to the obliquity of the plane of the joint and the danger of rotation of one of the fragments, as alluded to above.

To meet the indications suggested by these anatomical considerations, I apply from the fingers to the shoulder, smoothly and with moderate tension, a soft flannel bandage, avoiding undue pressure upon the anterior angle at the elbow by having the forearm flexed and semi-pronated while the bandage is applied. After this the bend at the elbow is filled with some cotton, a splint is laid against the arm with very moderate cotton padding — not bound on with a bandage, but just laid loosely on — and the whole is enclosed with a good roller bandage. This treatment I have found to be entirely comfortable to the patient, and to give admirable results.

The essential feature of the method which I propose is, that the forearm shall be semi-pronated and fully flexed, with the intention that the ulna and radius shall then hold their corresponding parts of the joint-end of the humerus in a correct anatomical relation to each other. The mode of securing the arm is a detail which need not be discussed here, as any one who treats many elbow-joint injuries knows that it is impossible to fix inflexible rules for their management.

Any splint may be used which will maintain the forearm in full flexion upon the upper arm. For this purpose a splint with a very acute angle, to fit either side of the arm, or an anterior angular splint will answer.

The chief difficulty in following out a theoretically correct method at the elbow-joint is due to the swelling which, in this situation, comes so quickly and often becomes so considerable. My own experience leads me to believe that it is desirable to effect reduction of this swelling by a carefully applied flannel bandage, assisted with wool or cotton, so as to produce equable pressure. This may be for twenty-four hours before applying the splint which is to maintain the arm in the position above referred to; and while it is done the arm may be kept in almost any position that is comfortable to the patient. I find that it requires some ingenuity to neatly bandage an arm to a lateral angular splint, but no more than every surgeon may be supposed to have.

This is not the time to dwell upon details which all surgeons understand. The object of this note is to call attention to the fact, as I believe, that, if the forearm be semi-pronated and fully flexed upon the humerus, the head of the radius and the coronoid and olecranon processes of the ulna will hold the inner and outer portions of the lower end of the humerus in a correct anatomical relation to each other and to the bones of the forearm. With all this, it is possible that a T-fracture may turn out badly; but, if it should, this would be in consequence of a displacement at the line of transverse fracture; and I believe the chances of such an accident would be diminished by securing accurate anatomical relations of the bones forming the elbow-joint.

Clinical Department.

FIVE CASES OF COMPOUND FRACTURE OF THE ANKLE-JOINT.[1]

BY FRANKLIN G. BALCH, M.D., BOSTON.

The following cases of compound fracture of the ankle-joint occurred during Dr. Cabot's service at the Massachusetts General Hospital in 1892. I have decided to report them, not that there is anything especially new in the method of treatment, but as showing very good results in cases which seemed to offer very little hope of a useful foot, when first seen in the accident-room. In one case there was a compound fracture of both ankles and a simple fracture of the thigh; in another, a compound fracture of the ankle and a compound fracture of the other thigh; in another, a compound fracture of one ankle; and in the last, a simple fracture becoming compound later from sloughing of the skin over a prominent portion of a dislocated astragalus.

Case I. Joseph C., twenty-two years of age, a teamster by occupation, was brought to the hospital July 12, 1892. His ice-cart had been struck by a train, and he had been thrown out with great force. There was a great deal of shock. On examination, it was found that he had a compound fracture of both bones of the right lower leg, the fracture extending into the ankle-joint. The opening was on the inner side of the ankle. There was a compound fracture of both bones of the left leg and a backward dislocation of the ankle, also compound. There was a simple fracture of the left thigh, at about the middle.

The opening on the right ankle was enlarged, and the wound thoroughly irrigated with a weak solution of corrosive sublimate. Iodoform gauze was used for drainage, and the leg put up on a posterior wire-splint. The left foot was also thoroughly cleaned, the dislocation reduced, and a counter-opening made on the other side, through which a rubber drainage-tube was passed. The dressing was iodoform gauze, and the leg was put up on a posterior wire-splint. The thigh fracture was treated by extension, long side, ham and coaptation splints. Six days later the tube was removed from the right foot. The leg was dressed two days later. The wounds of both ankles healed entirely in a short time, with both feet in good position. The thigh was slow in uniting, largely owing to the restlessness of the patient. It had finally become fairly fixed, when the patient ate some kind of a poisonous root which a friend brought in, had an acute attack of gastro-enteritis, with acute mania, and during the attack got out of bed and tried to walk. He got as far as the door and back, but broke up the union pretty thoroughly. He finally got a firm union and left the hospital. Unfortunately, some photographs which were taken of the ankle turned out badly. For nearly a year I lost track of this patient, when he turned up at the hospital one day, walking without crutch or cane, but with a very little lameness, owing to the slight limitation of motion in the right ankle- Since that time I have not been able to find

The second case entered September 3, y B., a man thirty-eight years old, was is horse two days before entrance. He was examined under ether at the time of the accident, and the doctor reported a fracture of the external malleolus, with a dislocation and probable fracture of the astragalus. There was great swelling of the ankle, and but little could be made out at entrance. The ankle was very much broadened, with the skin very tense. There was an especially prominent spot anterior to and somewhat above the external malleolus. The leg was put up in a pillow-splint with ice-bags. September 12th the leg was put on a posterior wire-splint. The skin over the prominent spot on the front of the ankle was then necrotic over an area as large as a half-dollar. When the dressing was done on the 25th, the slough had separated, exposing what proved to be the forward articulating surface of the astragalus. Dr. Cabot removed the presenting piece of bone October 14th. It proved to be the astragalus which had been completely broken across in two places. It was removed quite easily, leaving a deep hole with a few pieces of torn ligaments hanging into it. The ligaments were carefully cut away, and the cavity packed with iodoform gauze. There was no rise of temperature. The wound closed slowly, and in November the patient went home on crutches. I heard from him again in March, 1893. He was then walking on the foot a little and improving. I again heard from him in the latter part of October, 1893. He had been working since May, and gaining gradually. He complained of some soreness and "prickling" when he started to work after having been quiet for a while, but said it lasted only two or three minutes. I have not been able to see him since he left the hospital.

Case III. The third case was that of Edward J. D., twenty-nine years old, a brakeman. He entered the hospital August 2, 1892, having fallen from the top of a freight car. He said his left foot was crushed by a wheel, but his right leg caught over a brake rod and kept him from being drawn under the truck. A brakeman hastily put on the brake, and in so doing, broke the right thigh.

When seen in the accident-room, he was in a state of severe shock. He was etherized; and on examination it was found that he had a compound fracture of his right thigh, with a compound outward dislocation of his left ankle, fracture of the tip of both malleoli and a compound fracture of the fifth metatarsal. The skin was dissected off from the whole of the outer side of the foot, about half of the dorsum, and for two inches above the external malleolus. The capsule of the joint on the outside and the external ligaments were completely torn away. The condition of the patient allowed of no delay, so the disinfection and dressing had to be done very hastily. A rubber drainage-tube was put through between the heads of the fourth and fifth metatarsals from the dorsum to the sole of the foot, and another on the outside of the foot, draining the pocket made by the skin flap. Dry dressings were used on both the ankle and the thigh. The left leg was put upon a posterior wire-splint, and the thigh with ordinary Buck's extension. On the 10th the tube was removed from the side of the foot, but the other was kept in until the 21st. On September 7th I grafted a large surface on the foot, where the skin had sloughed, by Thiersch's method; and on the 24th the only open spot was a small granulating space where the tube had been.

The patient was extremely unfortunate about his

---

e Surgical Section of the Suffolk District Medical 894.

right thigh, as he broke up the union several times by falls when he was nearly well. He was discharged wearing a plaster spica December 16th. At that time the left ankle showed a marked tendency to get into the equino-varus position, but could readily be brought into good position, and promised to become all right as soon as he could bear weight upon it. In March the patient wrote me that he had been trying to favor the thigh and had put more weight on the ankle than it could bear, and that it bothered him by turning in under him. I sent him to the hospital to have a varus shoe made. He started to go, slipped, and again broke his right thigh. While he was in the hospital with the thigh, the tendo-Achillis was cut, and the foot brought into good position under ether and put up in a splint. The skin over the grafted area was firm and strong. December 6, 1893, he came over from East Boston to see me. He was wearing a varus shoe, and walked with crutches out-doors. He got on very well without crutches in the house. The tendo-Achillis was still very tense, and he had to wear a high heel. There was very fair motion in the ankle-joint, and he thought he was improving steadily. There was some chafing where the iron of the shoe pressed on the grafted area, but it was due to faulty construction of the apparatus.

Case IV. James C., a laborer, forty years old, entered the hospital July 16, 1892, with the history of having had his right leg caught in the rope of a derrick. He was thrown down and dragged twenty feet to a ring-bolt, where the foot became fast and the rope ran out with a turn about the ankle until the derrick mast fell to the ground.

Examination showed a much lacerated and contused wound about the ankle and lower part of the leg. The wound was four and one-half inches long by two and one-half inches wide. There was a compound fracture of both the tibia and the fibula into the joint. The leg was disinfected as far as possible, and put upon a posterior wire-splint, with side-splints. No stitches were taken. The dressing was dry, sterilized gauze. The wound suppurated; and four days after entrance the temperature was 101°, and there was considerable swelling and tenderness. Three days later Dr. Cabot operated, removing about half an inch from the lower end of the tibia. A rubber drainage-tube was passed through from one side to the other, and several counter-incisions made to relieve tension. The dressing was iodoform gauze at first, which was later changed to a wet corrosive dressing. The leg was put upon a posterior wire-splint. The sinuses were slow in healing, and the patient was not finally discharged until September 8th, when a small sequestrum was removed from the outer malleolus and a plaster bandage applied.

From the hospital he went to the out-patient department. I saw the patient at my office about a year ago. He then walked with a cane, but carried it more from fear of slipping than actual need. He said the wound had closed soon after leaving the hospital, and that he was walking better each day. At first he could not bring his heel to the ground, but the foot then came down squarely, and there was some motion at the ankle. Forcible flexion and extension gave him no pain, and he complained only of stiffness. He had two extra lifts on the heel of this boot.

Last October the patient again came to my office, walking over from Shawmut Avenue and back during the noon hour. His work required him to stand all day, and the scar had in consequence broken down in a spot about the size of a quarter, on the inner side of the tibia. The ankle swelled somewhat towards night, but he said this was improving. He had worn no bandage or support of any kind. He was then slightly lame, and probably always will be so, as there is very slight motion in the ankle.

From this series of cases, it seems to me that we may draw the following conclusions:

(1) That, at any rate in the case of poor patients, it is worth while to try to save the leg, even when the ankle is so severely injured that the chances of a movable joint appear very small. To a poor man the appearance of the ankle, and the slight lameness caused by some loss of motion in the joint, are of little importance in comparison with the expense and trouble of an artificial leg.

(2) That a very good way of treating these fractures is on a posterior wire-splint. This splint allows us to easily adjust the fragments from time to time, as the swelling goes down, while the foot is held firmly in the right position.

(3) That the best dressing is the dry dressing of sterilized gauze, with iodoform gauze for drainage, when necessary. In certain cases a wet antiseptic dressing will hasten the separation of sloughs; but, as a rule, the dry dressing is to be preferred.

◆

CANCER OF THE SIGMOID FLEXURE, PERFORATION OF THE CANCEROUS ULCER; DEATH; AUTOPSY.[1]

BY F. B. LUND, M.D., OF BOSTON.

The patient was a laborer, fifty-two years of age. When first seen by the writer in August, 1893, he complained of pain in the abdomen and back, constipation, flatulence, and occasional diarrhea. At times he had noticed a little blood in his stools. These symptoms had begun about two years ago, but the blood had not been noticed until lately. About three years ago he had had pain in the region of the bladder and painful micturition. He was examined at the Bellevue Hospital in New York, and told, he says, that his trouble was due to an enlarged prostate. During the last two years his symptoms had gradually increased in severity; and he had been to various hospitals and dispensaries in the city, and had been given cathartics and alkaline diuretics, and also been told that an hypertrophied prostate was the cause of his trouble. There was thought to be a large element of hypochondria in his case. He had obtained no relief, and the constipation had grown worse.

In August, Dr. George H. Monks, who saw him, suspected malignant disease high up in the rectum, and sent him to Dr. W. J. Otis, for a high rectal examination. I saw him with Dr. Otis at this time.

He was of sanguine complexion, and showed no marked cachexia, although he said he had lost much flesh. His stools were not abnormal in shape, and there was a little bright blood passed with them.

On rectal examination, Dr. Otis found nothing except a slight reddening of the mucous membrane and a little mucus and blood. He made the diagnosis of chronic proctitis. Nothing resembling malignant disease could be seen or felt.

---

[1] Read before the Surgical Section of the Suffolk District Medical Society, April 4, 1894.

On abdominal examination, however, marked tenderness was found in the left iliac region, and a tumor, which was very hard, irregular in shape, of insignificant size, and apparently fixed to the pelvic brim. He was given Epsom salts, which provoked free catharsis, attended by severe pain, and caused the tumor in part to disappear. A tender mass, however, was left, which was just distinct enough to be felt. After about a pint of water was injected into the rectum no more was retained.

As there was no evidence of syphilis or tuberculosis in the case, a probable diagnosis was made of malignant disease of the sigmoid flexure, or lower part of the colon, and early in September the man was advised to have an exploratory laparotomy done, with a view to the possible resection of the growth or an intestinal anastomosis. He was, however, unwilling to submit to operation; and during October and November the pain, flatulence, etc., increased in severity, in spite of the administration of laxatives. The pain was in some way relieved by the administration of salicylate of soda, and became much worse whenever this was omitted.

On December 26th, having just carried a hod of coal up two flights of stairs, he complained of severe pain in the abdomen, lay down on a bed, vomited copiously and continuously for fifteen or twenty minutes, and died within half an hour, according to his wife's statement.

The following day the autopsy was performed by the writer. The abdomen contained a large amount of liquid feces, which had evidently escaped from an opening in the sigmoid flexure, which admitted both thumbs. This opening was surrounded by a ring of hard nodular tissue, continuous with a small nodular mass in the mesentery, which was short at this point (the beginning of the sigmoid flexure, and adherent to the pelvic brim). The liver was normal in appearance, as were the other abdominal organs. The prostate was slightly hypertrophied. There was no dilatation or hypertrophy of the intestine above the cancerous mass, and the intestine just below the ulcer was but slightly constricted, the lumen easily admitting the thumb.

This condition would account for the fact that there was at no time obstruction of the bowel, which is usually the most important, often the first, sign of malignant disease of the colon or sigmoid flexure.

The nutrition of this growth would seem to have been so poor that it broke down, with perforation of the bowel as a result, before it had attained size sufficient to cause obstruction of the bowel.

The pain in this case was very severe, as its close relation to the great nerve roots of the lumbar and sacral plexuses would render probable. In these sections of the growth, which Dr. W. H. Prescott kindly made, can be seen nerve filaments grasped and probably constricted by the fibrous stroma of the growth. The sections are from a nodule in the mesentery and show beautifully the structure of the growth.

The case is interesting from the point of view of diagnosis, as the man's pain had been considered to be due to prostatic hypertrophy, and to be increased by a hypochondriacal temperament. The slight bloody discharge from the rectum was thought to be due to a proctitis or slight hemorrhoidal condition.

It seems improbable that the growth could have been successfully resected at the time at which it was thought of, as it was firmly adherent to the wall of the pelvis, and had probably infiltrated the psoas muscle and the nerve roots at that point.

◆

Medical Progress.

REPORT UPON FOOD, DRUGS AND ARTICLES OF DOMESTIC USE.

BY B. F. DAVENPORT, M.D.

THE following draft for an Act regulating the sale of food and drugs in Great Britain has been prepared by the Council of the Society of Public Analysts, for submission to the Committee of the House of Commerce now sitting to receive evidence on the working of the Food Acts. As containing some valuable suggestions for some future possible improvements in our own Act, the following abstract is presented. The proposed Act could, however, be greatly improved by large adoptions from our own Act.

1. Provides for the repeal of all former conflicting Acts.

2. The term "food" shall include every article used for food or drink by man, other than drugs or water, or any article intended to enter into, or be used in the preparation of human food, and all flavoring matters and condiments.

The term "drug" shall include medicines for external or internal use.

Court and territorial jurisdiction are here provided for.

DESCRIPTION OF OFFENCES.

3. No person shall mix, color, stain, or powder, or order or permit any other person to mix, stain, or powder, any article of food with any ingredient or material so as to render the article injurious to health, with intent that the same may be sold in that state; and no person shall sell any such article so mixed, colored, stained, or powdered, under a penalty in each case not exceeding fifty pounds for the first offence. Every offence, after a conviction for a first offence, shall be a misdemeanor, for which the person, on conviction, shall be imprisoned for a period not exceeding six months with hard labor.

4. No person shall, except for the purpose of compounding as hereinafter described, mix, color, stain, or powder, or order or permit any other person to mix, color, stain, or powder, any drug with any ingredient or material so as to effect injuriously the quality or potency of such drug, with intent that the same may be sold in that state, and no person shall sell any such drug so mixed, colored, stained, or powdered, under the same penalty in each case respectively as in the preceding section for a first and subsequent offence.

5. Provided that no person shall be liable to be convicted under either of the two last foregoing sections of this Act in respect of the sale of any article of food, or of any drug, if he shows to the satisfaction of the justice or court before whom he is charged that he did not know of the article of food or drug sold by him being so mixed, colored, stained, or powdered as in either of those sections mentioned, and that he could not with reasonable diligence have obtained that knowledge.

6. No person shall sell, to the prejudice of the purchaser, any article of food or any drug which is not of the nature, substance and quality of the article demanded by such purchaser, under a penalty not exceeding twenty pounds.

In any prosecution under this Act for selling to the prejudice of the purchaser any article of food or any drug which is not of the nature, substance and quality of the article demanded by such purchaser, it shall be no defence to any prosecution to allege that the purchaser, having bought only for analysis, was not prejudiced by such sale. Neither shall it be a good defence to prove that the article of food or drug in question, though defective in nature or in substance or in quality, was not defective in all three respects.

Any drug sold under any name included in the "British Pharmacopœia" shall be required to comply with the description, character and tests for such drug as specified in the latest edition, with amendments, of the "British Pharmacopœia," provided that the drug be not included in the list of exceptions in Schedule II of this Act.

7. No person shall sell any compound article of food or compounded drug which is not composed of ingredients in accordance with the demand of the purchaser, under a penalty not exceeding twenty pounds.

8. Provides that no person shall be guilty of any such offence as aforesaid in respect of the sale of an article of food or a drug not recognized by the "British Pharmacopœia," mixed with any matter or ingredient not injurious to health, and not intended fraudulently to increase its bulk, weight, or measure, or to conceal its inferior quality, or any article of food or a drug deficient in any material constituent, if at the time of delivering such article of food or drug he shall supply to the person receiving the same a notice, by a label distinctly and legibly written or printed, affixed to the vessel or parcel, and on the outside wrappers of the article or drug, in characters more prominent than any others, upon any label or other thing upon or with such article of food or drug, describing such article of food or drug as a mixture, and naming the ingredients thereof, and their relative proportions, or declaring its deficiency or deficiencies.

It shall be no defence, under this section, to plead the accidental deterioration of the article, or accidental abstraction or spontaneous separation or evaporation of the ingredients.

APPOINTMENT AND DUTIES OF ANALYSTS, AND PROCEEDINGS TO OBTAIN ANALYSIS.

10, 11. These provide for appointment and duties of analysts.

12. Any purchaser of an article of food or of a drug in any place . . . where there is any analyst appointed under this or any Act hereby repealed shall be entitled, on payment to such analyst of ten shillings and six pence, or if there be no such analyst then acting for such place, to the analyst of another place of such sum as may be agreed upon between such person and the analyst, to have such article analyzed by such analyst, and to receive from him a certificate of the result of his analysis.

13 (*a*). This provides that any medical officer of health, inspector of nuisances, of weights and measures, of a market, or any police constable or other duly authorized person under the direction and at the cost of the local authority appointing, may procure samples, and shall submit the same to the analyst of the district who shall report thereon.

13 (*b*). This provides for the taking of samples from railway stations, or elsewhere during transit, and for penalties for any hindering thereof.

14. This provides that when samples are obtained for the purpose of analysis, the seller shall be so informed immediately after the sale, and shall be offered a third portion of the sample to be then and there securely marked and sealed up, or otherwise secured for identification. A like portion is to be delivered to the analyst, and the other third retained for future reference.

15. This provides that when the seller does not accept the offered one-third portion, the analyst shall in like manner seal up one-half of the sample he receives, and deliver it to the purchaser to be retained for future reference, in case legal proceedings should be instituted. Other provisions are also made for cases where for other special reasons Section 14 was not followed.

16. This provides for samples being delivered to the public analyst either personally, by agent, or by registered post, and provides for the expenses thereof.

17. Provides for the purchase or seizure of samples sufficient for analysis of any article exposed or intended for sale on tender of the usual price thereof, and for penalties for the refusal of sale, or hindering in the taking of samples.

18. Provides for a certain form of report upon the part of the public analyst, and that the local authorities shall cause not less than one sample per annum for every one thousand inhabitants within their district to be submitted for analysis. If this last is not done it is to be caused to be done by the Local Government Board, at the expense of the local authorities.

19. Provides for quarterly reports from the public analysts of work done and receipts therefrom, to the local authorities appointing them, who are annually to forward copies of such reports to the Local Government Board.

20. Provides for court proceedings when from the report of the analyst the Act appears to have been violated, that the summons to appear in court shall be served within a reasonable time after the sample was obtained, that is, within twenty-eight days in the case of a perishable article; that the particulars of the complaint, and the name of the prosecutor shall be stated on the summons, which shall not be made returnable within less than seven days after serving. It also provides how penalties imposed shall be recovered.

21. Provides that the certificate of a public analyst shall be *prima facie* evidence, but that if called by the defence to personally appear his reasonable remuneration and expenses shall be allowed. At the hearing the sealed reserved portion of the sample shall be produced, and the defendant, as well as his wife, may testify if they choose.

22. Provides that the court may have the reserved sealed portion of the sample examined and reported upon by the Office of the Commissioners of Inland Revenue, and imposes all expenses insured thereby upon the party desiring to have it done.

23, 24. Provide for the taking of an appeal to higher courts in cases of conviction under the Act, and for exceptions under provisions of the Act.

25. Provides that under certain conditions in case it is shown to the satisfaction of the court that the defendant sold the article, as for the article called for, relying upon a written warranty to that effect, the giver of the warranty shall be held answerable to the complaint, and liable to a penalty not exceeding fifty pounds, while the original defendant shall be discharged.

26. Provides how penalties imposed shall be paid, and to what purposes it shall be applied in sustaining the expenses insured under the Act.

27. Provides penalties for frauds in relation to certificates or warranties concerning any article of food or drug.

28. Provides that this Act shall not diminish rights and remedies of procedure under other Acts against offenders under this Act; and that in suits for breach of contract on sale of food or drug, penalties, together with costs of court and of defence, which had been incurred, may be recoverable in addition to any other damages, if certain conditions are complied with.

EXPENSES OF EXECUTING THE ACT.

29. Provides for the necessary rates or funds for executing the Act.

BOARD OF REFERENCE.

30. Provides for the formation of a board of reference consisting of the chief chemical offices of the Inland Revenue Laboratory and of five others to be appointed for terms of three years, and eligible for reappointment, who shall be nominated one by the General Medical Council, three, being public analysts, by the Local Government Board, and one by the Board of Agriculture. Their pay and times of meeting are provided for. Their duty shall be from time to time to examine and report upon the composition of various food and drugs, to describe, investigate, and devise new or improved methods for their examination, to set forth definitions and exceptions, and to fix limits, and standards of quality and purity, which, on ratification by Order in Council and publication in the *London Gazette*, shall be binding in law, and continue in force until such Order in Council be rescinded.

SPECIAL PROVISION AS TO TEA.

31, 32. Special provisions are made for the examination of all teas commercially imported by the Commissioners of Customs at the port of entry.

33-37. Make provisions for certain court jurisdiction, expenses, and legal terms used in the Act.

SCHEDULES I, II AND III.

These are the forms of certificate to be used by the public analyst in making his report; the list of articles bearing a name identical with the "British Pharmacopœia" remedies, yet not required to be of the "British Pharmacopœia" quality; the list of official definitions, limits, and standards of strength and purity adopted by the Board of Reference, such as spirits, as at present defined by the amended Act; milk; water in butter; lard; cheese; vinegar; impurities in tea, pepper, and other spices; drugs.

◆

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

C. L. SCUDDER, M.D., SECRETARY.

Regular Meeting, Wednesday, April 4, 1894, Dr. Abner Post in the chair.

Dr. Franklin G. Balch presented a paper on

CASES OF COMPOUND FRACTURE OF THE ANKLE.[1]

Dr. Richardson: I should like to say a word about this conservatism in the treatment of joint-fractures, not only the ankle-joint, but others. The results of conservatism in trying to save tuberculous ankles in adults, so far as my experience goes, are very unsatisfactory. The cases of compound fractures which are going to do well I think very soon show what the prognosis is going to be. Septic infection of the joints of the tarsus if they are open, of the joints between the astragalus and the tibia seems to me very unpromising. If once the synovial membranes get thoroughly septic, I think the prognosis is very unfavorable. I believe the conclusions which Dr. Balch has given us are justified by cases, and that we should attempt to save an ankle when it is possible to do so; but I believe we may carry conservatism too far in subjecting patients to the dangers of septicemia if the case goes badly in the early days of the injury. Conservatism has done so much since the application of aseptic principles that we very seldom ought to sacrifice a limb unless the outlook is hopelessly bad from the first. On the other hand, we may go too far if the prospect is gloomy at the outset and if the course of the disease is not favorable very soon. One case in particular always impressed me very much in favor of conservatism in these joint-fractures. That was a case of Dr. Cabot's, in a man past middle life, a compound fracture of the joint which seemed to indicate amputation if ever a case demanded it. I think at the consultation there were several in favor of amputation, and for some reason the patient objected. An attempt was made to save this foot, and it was saved. The ankle is very useful at the present time. That was the most conspicuous example of successful surgery in compound joint-fracture I have seen, and it induced me to attempt to save limbs which I should from previous experience sacrifice. There is a good deal to be said in regard to the point of election in doubtful cases, especially in persons whose manner of living or constitution predisposes them to bad results, or, I should say, prevents their having good results. I think I have seen a good many cases in which attempts at saving limbs have proved disastrous, not only to the limb but to the life of the patients. I do not think I should try to save the badly comminuted fractures of the ankle-joint in a man whose habits were very bad, or if in the course of a few days there was not a decided tendency toward rapid healing. I think we perhaps do not yet realize what can be done by careful attention to the details of aseptic surgery in the wounds of joints. Certainly in joints with large synovial surfaces like the knee-joint the results are not infrequently disastrous; on the other hand, I have seen very good motion result.

Dr. Balch: One of the cases I spoke of has come to-night. We came near amputating in that case; I got him ready one day to go down. In that case there was a piece taken off the tibia. (Patient shown.)

I have here a piece of the astragalus removed from one of those cases, and a photograph of the leg on the posterior wire-splint.

Dr. Scudder: It seems to me that these cases of compound fracture of the ankle are extremely interesting in children as well as in adults, and that there should be little dread of obtaining a stiff ankle, especially in children. I have in mind the case of a boy about ten years of age whose ankle was caught in a railroad turn-table while playing, and he received a compound dislocation of the ankle. The dislocation was reduced. At the present time, about six years after the accident, there is no motion at the ankle-joint at all and yet he walks with scarcely a limp. There seems to be in children, where the foot is very supple, a compensatory movement at the medio-tarsal joint which helps to make up for motion lost at the ankle-joint. The case of this boy was interesting in that he could walk after such injury without much of a limp.

Dr. Post: These cases seem to me extremely interesting. They illustrate to my mind as well as any cases can the revolution in surgery. Twenty-five years ago every one of these cases would have been amputated. Now they are all saved. It may be, as Dr. Richardson remarked, that some of them would be better amputated; but therein lies one of the beauties of surgery at the present day, that it is possible to experiment on saving them. Most of them can be preserved for a time and amputated secondarily without any very great risk; and certainly a very large percentage of these compound fractures of the ankle do extremely well. There must be a very large number of such cases scattered throughout the city, and they are but part of a great series of cases that have been preserved from amputation of late. It is surprising to see how great a change has taken place at the hospital, particularly in regard to the number of amputations. I had occasion recently to look up the matter, and I find that within the first five years of the existence of the City Hospital, from 1864 to 1869, there were 132 capital amputations. During the last five years there have been but 79 capital amputations; and at the same time the number of patients in the hospital has increased fivefold. The number of patients in the hospital the last year is greater than the whole number of patients in the hospital during the first five years; and at the same time the mortality from amputation has very decidedly decreased. The mortality in the 132 amputations during the first five years was something over 33 per cent. That included a large number of amputations at the shoulder-joint and two or three amputations at the hip-joint. The last five years the mortality all told was 18 per cent., including some three cases where double amputation was performed where death was not to be avoided, and where the total number of deaths was but 13. Two or three additional cases make a great difference in the percentage.

---

[1] See page 210 of the Journal.

Dr. Homans: I think the idiosyncrasy of surgeons varies in regard to amputations. I remember when I was in the hospital Dr. Townsend tried to save limbs, and the other surgeons amputated. I saw a man the other day; you could put the finger through the head of the left humerus, and yet he had a perfectly good joint. That was saved, as many of these limbs are, by the obstinacy of the patient. Most compound fractures of the shoulder from a large bullet, comminution of the scapula as well, would be amputated; and I think the element of the character of the surgeon has something to do with it. I have no doubt we save a great many more of these compound fractures than we used to.

Dr. E. W. Cushing read a paper on

ABDOMINAL DRAINAGE.[2]

Dr. Homans: Dr. Cushing has covered the ground and the methods of using drainage so thoroughly that I have very little to say about it. He has not alluded to the method of putting gauze around outside of the tube, so far as I know. I sometimes do that, particularly in appendicitis; draw out the rubber or glass tube, leaving the gauze to come out later. I think by running some gauze around the tube you can perhaps pull out the tube pretty soon and take out the gauze later. With the Miculicz packing you can do that too.

I regard all drainage as an evil to be avoided if possible. It depends on the wisdom of the surgeon as to when to apply drainage and when not. It is surprising, as Dr. Cushing says, when you put a mass of gauze in the pelvis after operation to see the amount of fluid that comes out; so that I suppose after almost all our operations there is a good deal of fluid that is poured out and absorbed. The other day I had a very large collection of blood following an extra-uterine pregnancy at the end of three weeks; and there was over a pound of blood-clot by weight. The cavity was, I should say, nine or ten inches deep, going down to the side of the rectum and filling the pelvis pretty much. I was obliged to close that without drainage, and I packed it with gauze. The case did remarkably well. I have since thought I could have got along without gauze. Where you put a good deal of gauze in, you have rather a large neck for the sac. The gauze is not always so easily got out. If I find difficulty in getting it out I generally give the patient a little chloroform. You are surprised when the gauze comes out to see the amount of fluid on it and in it. You have probably done right in any case in which you have drained. At the same time I do not think I drain as much as I used to; and I find on taking up my service at the hospital three or four cases of chronic fistula of the abdomen, and I think chronic fistula after abdominal operations is not very uncommon, and it is a difficult thing to heal. A fistula that has been going on three or four weeks is very apt to continue almost indefinitely. Perhaps with more ideal management these fistulæ will not be as common. But we are uncertain when it is better to take out the tube. Take an ordinary case of what we fear will be an infected abdominal cavity from a pus-tube, as you put in your drain, and in the course of three or four days the fluid is sweet and colorless. You take out the tube, and it does very well.

I do not know that there is anything more that I can say — because Dr. Cushing has said so much about it — except that I always dislike to drain if I can avoid it. If you can drain and the cavity becomes sweet after a day or two, supposing it is infected; if you have in your stitches when you close, you feel a doubt whether you had better unite the wound or still keep in a little piece of gauze. I only know that practically, in the hands of different surgeons, there are a good many cases going about of fistulous tracks in the abdomen which are very slow in healing, and some of them I imagine never heal; so that I prefer, if possible, not to drain. If in an appendicitis operation or other operation the cavity is contaminated, you have got to drain. The management of the drainage-tubes ought to be very antiseptic. It is one of the most difficult things in surgery to manage a drainage-tube so that it won't get infected. In ordinary operations, even with very extensive adhesions, cases where I formerly drained I do not. I had one the other day where the whole sigmoid flexure was adherent to a tumor, a good deal of bleeding; and I hesitated about it. I should have had to cover so large a surface with gauze that I did not drain, and the woman has done perfectly well.

The question of employing drainage or not employing drainage is one which a person must decide, and try to decide wisely; and if he can avoid drainage, he had better do so.

Dr. Richardson: I think the question of drainage depends entirely on the theory of bacterial infection. It is impossible to demonstrate the presence of micro-organisms except in a general way unless you have at hand, as we ought to have in all hospitals, men who can make the demonstration on the spot. I agree with Dr. Homans fully, that drainage should be avoided if it is possible to do so. I find that I use drainage much less frequently than previously. I have not used a glass drainage-tube in any case that I recall for a long time, not even in appendicitis.

The question of drainage must depend also somewhat upon the kind of poison that we are to expect. There are certain forms of peritonitis which are necessarily fatal, I think, without drainage; and there are certain forms of peritonitis which are not necessarily fatal. That depends on the kind of germ that is present, so far as I have been able to observe. Every case of general peritonitis in which some of the more virulent organisms were present has been fatal, in spite of anything I have been able to do; therefore, in a given case if there is good reason to think the peritoneum is infected by rapidly growing micro-organisms of virulent tendency, I think you must drain in every case. I mean that you must drain in every case of appendicitis in which there is extravasation from the appendix. If you watch how rapidly these things grow outside the body, you can infer that they will grow as rapidly inside. With the colon bacillus you will get in about the time the luxuriant growth appears on agar the growth in the abdominal cavity, which is about twenty-four hours.

---

[2] See page 205 of the Journal.

The main question, it seems to me, is when we shall drain, rather than the methods of drainage. My own belief is that there is very little to be said in favor of one kind of drainage in contrast with another, except in a very general way. I am in favor of sterile gauze drainage. It is a personal matter with me. I do not like and won't use iodoform. I dare say I may be wrong. I dare say I am wrong in attributing death in breast tumors to the use of iodoform and strong chemicals. I do not have them now. I have no doubt that in one case of cancer of the intestine death was hastened by the use of iodoform gauze. Sterile gauze is not poisonous, drains better than iodoform gauze by capillary attraction, and answers every purpose except the escape of the clots.

Considering the question when to drain in operations on the abdominal organs, in the gall-bladder, kidney, tubes, appendix, surgery of the uterus and the ovaries, I think drainage should be used in every case in which there is any doubt whatever whether the fluids escaping are septic or not. Bile is not aseptic always, nor urine always aseptic. They say it is aseptic, and I have no doubt it is frequently. The other day I found in a gall-bladder case that the bile was infected with the colon bacillus; and if we had not drained in that case, I have no doubt the patient would have died with general peritonitis. In gall-bladder surgery in which the gall-bladder can be attached to the abdominal wound, I should not drain. I never use a tube in gall-bladder surgery unless I put it into the common duct or cystic duct, and then I put gauze around it. That gives free drainage through the tube, and the gauze surrounding the tube provides for the escape of the bile around the tube, accidentally or otherwise. I think we might bring statistics to show the advantages of one kind of drainage or non-drainage, except that statistics are not always to be relied on. A gentleman has been looking up for me the subject of statistics of operations on the breast. He worked for a week or two looking up all the statistics for the last ten years, and he found that all the authors could always prove whatever they wanted to by their statistics. I think it is in connection with surgery of the tubes that drainage is most important. I never feel safe in sewing up the abdomen when I remove pus-tubes. I believe I agree with Dr. Cushing in the use of drainage in those cases. I believe it is not safe not to drain those cases, because some of them are aseptic and some are not. Some are sterile; the germs have been enclosed so long that they have killed each other, and the fluid is sterile. I have found that true in the appendix which has been shut off some months by obliteration of the canal. In large abscesses of the appendix I have always drained, with one or two exceptions; and in those cases I felt I subjected the patient to an unnecessary risk. I have said that the appendix cases should always be drained unless the appendix is taken out intact.

In intestinal surgery, unless the opening is small and the suture is perfectly secure, I think a little gauze drainage is essential. In intestinal resection I think that gauze packing about the suture line is one of the best things that can be done, and it makes the mortality much less than the suture with complete closure of the abdomen. I believe that the circular, end-to-end suture of the intestines, with provision for the escape of feces, is the most important thing in connection with that operation. In tubercular peritonitis, of course, that is an operation for drainage. Drainage in hemorrhage, I think, is an important matter. I think drainage is unnecessary and should be avoided in every case in which the condition requiring operation is essentially aseptic; and that is true of all hemorrhages, almost all internal hemorrhages. It is true of all hemorrhages, excluding the hemorrhages from malignant disease and hemorrhage from wounds and accidents in which the hollow viscera are also injured. I should not drain in any case of peritoneal hemorrhage unless there was persistent hemorrhage; and yet I regret I did not drain in a case of extra-uterine pregnancy I operated on eight or ten weeks ago, in which the abdominal cavity was much distended with blood, and the patient died with general peritonitis. I think she was infected at the time of the operation. She was in *articulo mortis* at the time, and the preparations had to be made with great haste. I have no doubt that the infection was by some not very virulent germ. She lived four or five days, and died of general peritonitis of no very fulminating kind. I think I ought to have drained. I did not, because in a case just like it (except that the patient was not so badly off) the patient recovered without any trouble.

It does not seem to me that it is necessary to use the Miculicz method. It does not seem to me that much need be said about the way you use gauze. The principle is a wick, capillary attraction, dryness, pressure. If you want to use pressure, I think the Miculicz method would be very advantageous. You remove the gauze more easily perhaps in this method. Unless you desire pressure, I think we use too much gauze, and I am coming to the conclusion from a very extensive experience with it. I have had recently a case of acute intestinal obstruction from the using of too much gauze in a case of appendicitis. The small intestines were pushed in such a way by the gauze that obstruction resulted. A wick will drain better if it is a small one than if it is a large mass. I think one error is using too much gauze except for pressure.

I have had very few fistulæ. I recall but one case of fistula following abdominal hysterectomy, in which I did pack with gauze on account of hemorrhage. The fistula lasted until the ligatures came away, and then closed. I know of nothing more annoying and difficult to treat than an abdominal fistula discharging a few drops of pus every day. I think this may be infected with the cocci of the skin probably, and these do not do much harm, but grow rapidly and are not destroyed in this poor tissue; these lifeless granulations keep it going.

In regard to irrigation, that is another thing about which I should say the same that Dr. Homans has said in regard to drainage. I do not like to irrigate, and never do if I can help it in any case that is not septic, and rarely irrigate in those. I should irrigate in a general peritonitis, and in almost nothing else unless I could be sure of irrigating in such a manner that the fluid would not be spread among the intestines. If you put a drainage-tube into a small opening and the fluid does not run out, it will spread all through the abdominal cavity, and carry with it colonies and deposit them everywhere in the abdominal cavity; and you substitute a general for a local peritonitis.

Dr. Irish: I do not know that I have very much to add to what has been said on the matter of drainage. I do not use it so much now as I used to before I operated in the Trendelenberg posture. With the patient in that position it becomes easy to clean out the pelvis thoroughly in many cases in which in the old horizontal position it could not be so well done. I still follow, however, the rule that whenever any degenerated liquid from an ovarian tumor, or pus from a pus-tube, or any suspicious and septic liquid has got into the abdominal cavity, I always feel safer with a drainage-tube than to close it without it. At the same time, I believe that the drainage-tube is a source of danger, not so much from infection as from the position of the tube. I do not know but I have been especially unfortunate, but I have had two cases of fecal fistula following the use of drainage — one a glass tube and the other with gauze. It is possible in the case of the gauze that it may have remained in too long. I had a good deal of difficulty in getting it out, and it remained some five days, I think; and in the particular case with the glass tube I used a Bantock tube, and the upper end of the tube was flush with the wound, and I did in this case as I always do — carried my fingers down into the pelvis to the bottom of the tube to be sure there was no loop of intestine beneath. But it is very easy with the glass tube, during the subsequent dressing of the patient before the bandage is applied, for a loop of intestine to get under the end of that tube in the handling of the patient. In cases of hysterectomy where the pedicle is brought outside, I always avoid the use of the drainage-tube if possible, because I think in those cases it adds very much to the danger of subsequent hernia; and if I have to use a drainage-tube after a hysterectomy, I am always very careful, always try to bring it well up in the wound and at a distance from the pedicle, so that the abdominal wall for a certain distance shall be closed between the tube and the pedicle at the bottom. Unfortunately, the drainage-tube does not always save us from sepsis, as I have experienced.

Dr. Cushing: I have very little to add except in regard to this principle of having some one in the room to examine suspicious fluid and pass on whether the tube shall be used or not. That is all very pretty, but it does not seem to me good surgery. If the fluid is suspicious enough that you have to have it examined, I should rather take the chances of injury from using the tube than take the chances that in a particular field the young man might examine during the operation, although he found no bacteria in what he examined, there might be bacteria he had not happened to find. It seems to me to be getting things down pretty fine and a little too ideal. I know very well that in pus from pus-tubes it very often is sterile, as the doctor says; and I had rather use a tube every time than take the chances of getting my assistant to look at it and tell me whether the germs were there, and, if there, were capable of proliferating.

In regard to the matter of fecal fistula laid to the drainage-tube, it seems to me the drainage-tube is wronged therein very often, that fecal fistula is not caused by the pressure of the tube, but by separating an adhesion, possibly by rather rough handling of the bowel, so that there is a thin place and the patient is going to have a fistula; and, instead of laying it to the tube, we ought to be thankful she did not die from perforation. Of course, to prevent that, the tube should be pulled up and turned round after twelve hours, so as to avoid pressure.

In regard to abdominal fistula, not fecal, after the use of the tube, I fully appreciate what Dr. Homans says about the distressing effect of having one — having to take care of it. I nursed one for a year one time, going to see it every day, in a French-Canadian patient. It may be interesting to know how it was finally cured. She finally made a poultice of some mustard, and bound over it a little image of a sacred nature and the ligature came out the next morning, and I had to bow to evidence. Since then I have always used catgut in the abdominal cavity. As to boiled water carrying colonies of micrococci through the abdominal cavity, I don't see where the boiled water, if filtered and clear, is going to get them unless it is spreading round those already in there. Now, I don't think that is a valid objection, because, if there are colonies in there, they are going to proliferate; if they are septic and not removed, they are going to set the woman on fire, and she is going to get her peritonitis just the same. That is how I should look at it. I think that flushing can be washed out so that the whole is as clean as any one part can be; still, there are some disadvantages in irrigation, and the use of the Trendelenberg posture enables us to do things in such a clean way that we do not have to do it as much as we did.

There is so much to drainage — in the minutiæ of it; so much said against it does not rest on perfect comprehension of the small points connected with it — that I thought it was fair to bring up some of these points for discussion.

Dr. Lund read a paper on

CANCER OF THE SIGMOID FLEXURE, WITH PERFORATION.[3]

Dr. Homans: I remember one case that died in the same way, where I made the autopsy.

Dr. Richardson: I have seen perforation in the transverse colon, without symptoms, come on suddenly.

Dr. Post: Dr. Councilman has recently shown a case where there was perforation above a fibrous stricture where the stricture was no tighter than this.

Dr. C. L. Scudder described

A CASE OF MOVABLE KIDNEY.

The specimen which I have here is from a female patient twenty-five years old, who has had the following history: For four years a movable kidney has been noticed, and this kidney has increased in size rather slowly, until now, four years after the first observation, it was found to be about the size of the fetal head, situated in the left loin, fitting well up in the hypochondrium. The tumor was causing no serious symptoms at the time of the operation. She was two months pregnant. The operation was done at this time for fear that the abdominal distention, which was increasing rather rapidly, might be too great, and, also, it was thought that the tumor might be malignant. The operation was done thraugh an incision a little to left of the left linea semilunaris. The abdominal cavity was opened, and the colon was found to be in front of the tumor, with the meso-colon; the outer portion of the meso-colon was incised, and the edge of the peritoneum of the meso-colon was stitched to the peritoneum of the wound toward the median line, thus closing the abdominal cavity and keeping the bowel from the field of operation. The tumor was enucleated and found to be connected with the kidney, coming from its lower end. The tumor presented as a cyst, was incised, and the fluid evacuated amounted to eight ounces. This fluid was bloody, and some like it was examined by Dr. Wood, as the tumor had been aspirated some days before the operation. The fluid was found to contain biliary pigment and a small quantity of urea and a few fatty degenerated cells. The fluid was evacuated, and the cyst removed with the kidney. There was no drainage used in this case and no vessels were tied except the renal. The abdominal contents, with the dressing applied well into the loin, seemed to make a pretty good pad, and closed the cavity from which the tumor was removed. The nature of the tumor is still a matter of doubt; it has not been examined microscopically. The temperature has been normal. To-day, the fourth since the operation, the total quantity of urine has increased up to sixteen ounces; the first twenty-four hours, fourteen ounces; the second, eleven; the third, sixteen. The patient is comfortable and has no symptoms whatever.

---

[3] See page 211 of the Journal.

This case is being carefully watched, and periodical examinations of the urine are being made. A further report of the case will be made in due time.

◆

THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

EIGHTH ANNUAL MEETING, WASHINGTON, D. C., MAY 29, 30, 31 AND JUNE 1, 1894.

(Continued from No. 8, p. 194.)

SECOND DAY. — WEDNESDAY.

AERO-URETHROSCOPY, WITH A NEW INSTRUMENT.

DR. WILLIAM K. OTIS, of New York, read a short paper on this subject, and exhibited an improved instrument. He stated that, while aero-urethroscopy will no doubt often render a diagnosis possible in obscure cases, our methods are still very imperfect. The view obtained of the urethra is hazy and unsatisfactory, and for the purpose of making topical applications the urethral speculum is equally as good.

Dr. Otis also exhibited an instrument which he devised for the purpose of facilitating catheterization of the male ureters.

DR. BELFIELD showed an instrument which he devised for the purpose of securing a view of the deep urethra. Also a longer one, by which a good view of the bladder may be obtained in the region of the trigone.

DR. F. TILDEN BROWN, of New York, exhibited a perineal tube-holder, intended for cases in which long-continued drainage of the bladder through the perineum is indicated.

Dr. Brown also showed a modification of a Clover crutch for perineal operations. Also an improved needle-holder.

STONE IN THE BLADDER: CHOICE OF OPERATION.

DR. WILLIAM H. HINGSTON, of Montreal, read a paper with this title, in which he gave the following conclusions:

(1) Lithotrize in all cases of adults where the stone is neither too large nor too hard for the lithotrite. By lithotrity, he said that he meant the more perfect method, which was foreshowed by Mercier in France, and brought to its highest perfection in America.

(2) Lithotrize where the urethra is or can be made sufficiently capacious for the crushing instrument.

(3) Lithotrize in children, however young, where the urethra will permit the passage of a crushing instrument.

(4) In very young children the cutting operation is preferable. The age at which lithotrity is possible must vary with the calibre of the canal, which in young children greatly varies in its capaciousness and in its capacity. When the urethra in the child is not and cannot be made fit to receive the lithotrite, the cutting operation to be chosen is the lateral method.

(5) In cases of stone in the aged, where an enlarged prostate prevents the stone being seized, we should act as if the stone were of large size and incapable of reduction, and proceed to operate by the suprapubic method.

Surgical interference in cases of calculus in the female remains the same as heretofore. The method employed years ago by Erichson, Thompson and others has since been followed, and stones of large size are removable generally *per vias naturales*, after dilatation. In exceptionally large calculi the lithotrite commonly suffices, and rarely indeed is the surgeon obliged to resort to the knife.

DR. CHISMORE said that in cases where we find the bladder stretched cap-like over the enlarged prostate, a small stone may evade every possible instrument which we can introduce through the perineal incision. The speaker said he had never encountered a stone weighing more than one thousand grains. Calculi nowadays did not seem to attain the large size they did in former years. This was probably due to the fact that patients sought relief earlier now than they did formerly.

DR. POST, of Boston, said that during the past year he had a patient under his care who was also affected with hip-disease from childhood. On account of the position of the limbs, it was impossible to get him into the litholapaxy position; nor could he be operated on through the perineum. The bladder was accordingly opened above the pubes.

DR. BANGS said that in some of these cases it might be necessary to choose one of the cutting operations, so that the bladder and pelvis of the kidneys might be properly drained.

DR. JUDKINS referred to a case in which one of the stitches in a suprapubic wound was torn out during a fit of coughing, and some time afterwards the stitch was passed *per urethram*, thickly covered with phosphatic deposits.

DR. BRYSON said he had operated in a number of cases in which the stone rested behind the prostate, which obstructed the outflow of urine and set up a cystitis: in two of those cases he was afterwards compelled to do a cutting operation, the distinct object in view being to remove the obstruction which produced the cystitis and which resulted in the formation of secondary calculi.

DR. HINGSTON said, in closing, that he was not wedded to any particular method of operating. He expressed the opinion that there was no condition of the kidney or bladder in which lithotrity was not as good or better than lithotomy. He did not care what the condition of the urine was; whether it was loaded with pus or not. The source of the trouble was the stone, and it should be removed.

URINE-LEAKAGE AND STRICTURE FORMATION,

by **DR. J. P. BRYSON**, of St. Louis.

In this paper the author made a comparative study of the histology of stricture of the urethra and that of old urinary fistula, and illustrated the same with a number of drawings of microscopical sections. His conclusions were as follows:

(1) The close resemblance in the tissue elements, their arrangement and effects upon the related normal structures, point to an identity of the etiological factor, and give support to the doctrine of urine-leakage.

(2) Observing the prolongation of the urethral epithelium on the fistula wall in an effort to create an adequate artificial channel for urine, and seeing that the epithelium lining the stricture also participates in the battle against urine-leakage, we may take fresh hope of radically curing strictures, even of the pendulous urethra, by such means as tend to restore or rehabilitate the urethral lining.

(3) Merely diverting the stream of urine for a time, without such restoration of the lining mucous membrane, would fall into the category of palliative treatment, along with urethrotomy and the various methods of dilatation.

Dr. R. W. Taylor, of New York, said that the title "inflammatory stricture" could only be applied in cases where you had a round-celled infiltration in a still lingering state of congestion and inflammation. The inflammatory stage of the stricture was that during which exudation was present. The pathological appearance of the conditions found in these cases hardly warranted the theory of urine-leakage suggested in the paper, which thus far must be regarded as pure assumption.

Dr. Bryson said he did not contend that the doctrine of urine-leakage was definitely settled. He simply presented his paper as a comparative study on the subject.

THE POSSIBILITY OF OVERCOMING PERMANENT STRICTURE OF THE DEEP URETHRA WITHOUT RESORT TO EXTERNAL URETHROTOMY,

by **Dr. J. Blake White**, of New York.

The author stated that to determine by the usual methods of examination whether or not a deep stricture requires surgical interference for its relief, cannot by any means be regarded as an easy matter. A distinct and positive diagnosis is rarely possible until every prefatory obstruction in the anterior urethra has been detected and wholly removed. A number of instances have come under his observation in which, having reason to doubt the genuineness of the deep obstruction, he deferred perineal section; and when a sufficient time had elapsed after meatotomy, either alone or associated with internal urethrotomy, he was gratified to find that what had seemed to be an impassable stricture in the deeper portion of the urethra yielded readily to the passage of an instrument of full size. Experience has repeatedly demonstrated that large-sized sounds have been immediately admitted along the entire urethral tract after simple division of the meatus, when previously an attempt to introduce the smallest filiform bougie met with unyielding resistance. This fact proves the possible existence of spasm in that part of the urethra especially prone to such phenomena. If the possible existence of an uncomplicated local spasm along the urethral canal is admitted, we must also recognize the possibility of a continuance of urethral erethism, especially in certain cases, for a considerable period after the immediate causes of reflected irritation have been removed. The character of the lesion, always associated with some degree of spasm, is such that it may be overcome by patient dilatation after the remote causes of spasmodic contraction have been removed by appropriate treatment.

Dr. White then gave the history of a case in which there was constant spasm of the urethra combined with a deep, non-traumatic stricture, which was relieved by careful dilatation with graduated sounds after the obstructions in the anterior urethra had been removed.

Dr. Taylor said that spasm of the compressor urethræ muscle was a great bugbear. It was assumed that this muscle was in a continual state of great tonicity. As a matter of fact, this was not so, and in the great majority of cases a soft catheter could be passed into the posterior urethra with little or no trouble. As a result of inflammation in the anterior urethra, the compressor muscle undoubtedly did contract, and this constituted spasmodic stricture. It was possible that some of the spasm in Dr. White's case was due to instrumentation.

Dr. Watson said that while he did not favor the divulsion of strictures in the deep urethra, he did not know where the idea originated that the operation was attended by a high mortality-rate. He thought one per cent. was the highest mortality-rate reported.

Dr. W. K. Otis said that both Sir Henry Thompson and Bulkley abandoned the operation because of the high mortality.

Dr. Taylor said that Van Buren and F. N. Otis gave it up for the same reason.

Dr. Bryson said he regarded dilatation as a most rational and scientific method in the treatment of stricture, and very few strictures failed to yield to careful and intermittent dilatation. Certainly by mere division of the stricture we accomplished nothing.

Dr. Hingston said that in the treatment of stricture he favored the method adopted by Dr. F. N. Otis, that is, gentle dilatation, with occasional division.

Dr. F. Tilden Brown said that Dr. White, in his paper, reported an example of a very clear-cut type of cases. He did not see why such conditions of spasm — or partly spasm and partly cellular infiltration — should be regarded as the outcome of instrumentation.

Dr. W. K. Otis said there was no doubt that most strictures could be dilated to a certain point. In some cases, however, cutting would give more permanent benefit. As regarded spasmodic stricture, he had seen many such cases, which he did not think were due to instrumentation.

Dr. White, in closing the discussion, said he was positive that in the case reported by him the spasmodic stricture could not be attributed to instrumentation.

Dr. Alexander W. Stein, of New York, read a paper on

EXFOLIATION OF THE MUCOUS AND SUB-MUCOUS COATS OF THE BLADDER, PRECEDED BY RENAL AND VESICAL CALCULUS.

He first referred to the fact that exfoliations of the mucous membrane might occur from the uterus, vagina, larynx and other mucous tracts. That complete exfoliation of the mucous membrane of the bladder might occur had been repeatedly denied, and that quite recently, although there were at least fifty cases of this kind on record. Some of the text books, it was true, mentioned a diphtheritic and croupous cystitis, but with these conditions the cases collated had nothing in common. Not only the entire mucous membrane had exfoliated *en masse*, but portions of the muscular coat came away as well. In one case the entire mucous coat was shed in form of a sac, and after an interval of some days a portion of the muscular tunic was cast off separately. The real question at issue, therefore, was not whether exfoliation of the bladder occurred, but how it occurred. Reasoning from analogy, we inferred that when a mucous membrane was subjected to prolonged or intense irritation, as after the employment of powerful urethral injections, or the presence of ammoniacal urine in the bladder, the vitality of the epithelium became modified, and its exfoliation was favored. The chief etiological factor in almost all the cases appeared to be retention of urine. Of the fifty cases that had been reported, forty-five were females and five males. In all of the former, the retention was due to a retroverted gravid uterus, or else the pressure of the child's head in prolonged labor. The cast-off shreds usually had a gritty feel, and were covered with a phosphatic deposit. The prognosis in women was good. The exfoliated membrane was often expelled *per urethram*, *en masse*, and so ended her trouble. Of the forty-five cases in women, nine died, and in these the fatal termination was not altogether attributable to the vesical lesion. In men, the reverse was the case. Two of the five patients died. The prognosis in men was not so good because the conditions which gave rise to the exfoliation were in themselves grave, independent of the bladder trouble. Complete recovery occurred in some of the most unpromising cases, but if so, there was apt to remain for a time disturbance of co-ordination between the retentive and the expulsive forces of the bladder.

Dr. Stein then gave the history of a case of this kind coming under his observation, and exhibited some of the shreds passed by the patient.

THIRD DAY. — THURSDAY.

A PLEA FOR THE EXCISION OF THE INITIAL LESION,

by **Dr. Edward E. King**, of Toronto, Canada, (read by the secretary).

The author stated that while the specific microbe of syphilis had not yet been isolated, it was almost beyond doubt that the disease was caused by a specific germ. In all germ diseases there was a period of incubation of variable length. In a good many the effect of the germ was self-limited, whilst in others it was continuous. That mild cases of these diseases occurred proved either that a smaller dose of the germ was administered, or that the soil was not properly suitable for its growth, or that both of these conditions existed together. In all cases we had a period of incubation, of exacerbation and a period of recrudescence. The intensity of secondary syphilis had been held to be in direct proportion to the extent of the initial lesion; this the author said he had corroborated, and he had further demonstrated clearly to himself that it was also in direct proportion to the time that the initial lesion had existed.

Dr. King said he did not think it was possible by any known means to abort syphilis, once the germ, in sufficient quantity, had entered the general system, but that the course of the disease could be greatly modified by limiting the amount of the poison which entered the economy. Excision had been useful in other diseases where fatal results followed the introduction of a poison, when neglected; for instance, the effects of rabies and the bite of a cobra had been prevented by free and early excision. So, with syphilis, if it was possible to see the lesion during the first few hours of its existence and to at once excise it, the disease might be aborted. Even with the ameliorating results, the patient should not be allowed to be careless about internal treatment.

Among the cases reported by Dr. King, in which he performed early excision of the initial lesion, is the following: The patient was a male, who noticed a slight crack on the free border of the prepuce. Fifteen days previously he had had intercourse with a woman of the town, who "had a skin disease on her body." This woman, on examination, was found to be suffering from a secondary skin eruption and mucous patches on the vulva. The lesion on the man's penis was immediately excised under antiseptic precautions, and the edges of the wound brought together with fine silk. Since that time (June, 1893) he has presented no further symptoms of syphilis. In six other cases reported by the author the history and results were much the same.

Dr. Edward Martin, of Philadelphia, read a paper on

EPITHELIOMA OF THE PENIS.

After detailing the histories of a number of cases of this affection coming under his observation, the author stated that one of the most interesting points in connection with the subject was the etiology of the disease. Phimosis was almost universally acknowledged to be a strong predisposing factor, and in six of the seven cases which he saw, this condition was present. Traumatism was usually recognized as a predisposing factor. Direct contagion was generally denied, although thirteen such cases were on record, eight of them being instances of contagion from the wife to the husband. Syphilis has been repeatedly quoted as a predisposing factor in the development of cancer. This ground was scarcely tenable, and was certainly not generally accepted, though Demarquay had collected ten cases who had suffered from syphilis. Two such cases had come under the author's observation.

The prognosis of epithelioma of the penis was guardedly favorable. Accurate knowledge of the percentage of recurrences after thorough extirpation could scarcely be obtained, since there was a natural tendency to report only those cases which were successful, or which presented certain peculiarities.

In performing the operation we could arrive at a very clear idea as to the chance of radical cure in individual cases by careful microscopical examination of the parts removed. When the penis was amputated, cross-sections should be taken at the seat of the amputation, and these should be carefully examined for cancerous infiltration. Similar examinations should be made upon the entire periphery of the growth. Even though these sections showed healthy tissue, this, of course, did not guard against glandular recurrence. In all cases where amputation of the penis was required, the groin should be opened freely and the entire chain of lymphatic glands removed, whether they were enlarged or not.

Dr. Taylor said that epithelioma of the penis occurring in syphilitic subjects was probably a coincidence, as we usually saw it after the syphilitic processes had ceased.

Dr. Lewis said that in cases where amputation of the penis was performed, removal of the testes had also been advocated, on the theory that if they were left, the rubbing of the clothing against the stump of the penis produced a certain amount of erethism and increased the supply of blood to the parts, thus favoring recurrence.

The discussion was continued by Drs. Bangs, J. Blake, White and Chismore, and was then closed by Dr. Martin.

◆

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Meeting, June 6, 1894.

Dr. Charles W. Dulles read a paper entitled

NOTE ON FRACTURES OF THE HUMERUS AT THE ELBOW-JOINT.[1]

Dr. Addinell Hewson: I think that the points advanced by Dr. Dulles are well taken both from an anatomical and surgical standpoint. The fixation of the joint depends upon two factors — first, the contour of the bones and, second, although not of so great importance, the deltoid shape of the lateral ligaments. In the fixation of this joint Dr. Dulles brings the head of the radius in accurate approximation with the capitellum. The remaining portion of the head, together with the orbicular ligament, occupies the space immediately above the capitellum, and prevents the angle being made less than forty degrees. This angle is made greater by the position in which he places the hand, midway between supination and pronation. I think that the points that Dr. Dulles has made have been brought out in the adaptation of the Stromeyer splint to the treatment of fractures at this joint. If we recall the method of formation of the lower end of the humerus it will be remembered that the epiphysis is divided into four parts — the external condyles and internal epicondyle, the point of ossification for the trochlear surface and for the capitellum. These points of ossification vary in the time of their attachment from the third to the eighteenth year. This will make a great difference in the treatment of fractures.

I have had several cases of fracture at the elbow-joint in which I have obtained good results, although not using the treatment employed by Dr. Dulles. One case was that of a young man, aged eighteen years, with a T-fracture at the elbow-joint. In that instance there was obtained complete use of the joint and preservation of the carrying function. In this case an anterior angular splint was used, and I attribute the result to the care that was employed. The anterior splint in this case was furnished with a Stromeyer screw. In this way one splint is sufficient. The only modification that might be made would be, if the splint is to be worn in the extended position, to bring out the natural angle. The lines of the humerus and ulna are at an angle in the straight position, but in the flexed position the line of the humerus and the inner line of the ulna are in the same vertical plane.

Dr. Richard H. Harte: I have been much interested in Dr. Dulles's remarks. Looking at the anatomical relations of the joint, there is one point that is often overlooked. If we examine the lower end of the humerus we shall find that the larger portion of the articular surface is anterior to the long axis of the bone, and that the natural functions of the hand and forearm are performed largely with the forearm at or near a right angle with the arm. Of course there are reasons why in certain conditions of fractures at the elbow, the fragments may be in better position in the extended position, but, as a rule, the flexed position is the most satisfactory. In the flexed position the ligaments are relaxed almost equally, and the flexor and extensor muscles are also relaxed. With the arm in a right-angled position there is very little tendency to displacement.

Of course, as Dr. Hewson has suggested, the epiphyseal element comes in in young subjects. I think that in such case subsequent trouble is oftener due to epiphyseal separation and the changes that follow than to any special displacement of the fragments. I think that we are less liable to have interference with function in adults than in young persons.

With regard to the extended position, in the past year I have known of two cases where the arm had been treated in this position, and where the arm had been left fixed in this position, requiring subsequent resection. I think that with the anterior or internal angular splint we get as good results as with any other mode of apparatus.

◆

Recent Literature.

Clinique des Maladies du Système Nerveux. Par M. le Professeur Charcot. Leçons du professeur, mémoires, notes et observations parus pendant les années 1889–90 et 1890–91, et publiés sous la direction de Georges Guinon, chef de clinique. Tome II, 8vo, pp. 482, with one plate and twenty-one illustrations. Paris: Aux bureaux du Progrès Médical. 1893.

The present work, which has appeared some months after the death of the great teacher whose name it bears, has naturally a melancholy interest. Only a small portion of the work, however, is actually the product of the distinguished professor. A lecture on Jacksonian epilepsy, another on vigilambulism, with hysterical double consciousness, and three lectures on various symptoms of hysteria are all that bear his name. The rest of the work is made up of various contributions by his assistants, chiefly among them his former chief of clinic, M. Guinon. Most of the articles have already appeared in the different French journals, so that an elaborate analysis is hardly necessary. The subjects discussed, beside those already mentioned, are hysteria, hypnotism, somnambulism, tabes and diabetes, and progressive myopathy. The collection, in one volume of these various articles, whose importance has already been recognized, will be welcomed by all who are interested in nervous affections. It is to be hoped that among Charcot's papers may be found material for yet another volume.

Exercise for Pulmonary Invalids. By Charles Denison, A.M., M.D. Denver: Chain & Hardy. 1893.

Denison, in this little book, which is a reprint of an article read before the Congress of Medico-Climatology of the World's Fair Congress Auxiliary, urges the necessity of properly selected exercise for all patients with past, existing or approaching respiratory disease. He calls attention to a method of treatment unfortunately often overlooked by the general practitioner, and describes certain forms of light exercise which, as he says, are "good at-home substitutes for more elaborate systems or for out-of-door activities."

---

[1] See page 208 of the Journal.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, AUGUST 30, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 WASHINGTON STREET, BOSTON, MASS.

THE PLAGUE IN CHINA.

IN the early part of this year the plague appeared in Canton; and in the month of May it spread to Hong-Kong, where it raged for two or three months, and has not yet entirely disappeared. An official report places the number of deaths from the plague in the latter city up to the first of August at 2,504. In June, Dr. Kitasato was sent by the Japanese Government to study the disease, and a month later sent his first report to the Minister of the Interior. It is recorded that in the fourteenth century the plague raged both in Europe and Asia. Since then it has prevailed in various parts to a limited extent, in gradually decreasing virulence; but during all this time it was endemic in China, and made its appearance on a limited scale year after year in the southern part of the country. In the present epidemic at Hong-Kong seventy-five to eighty per cent. of those infected died. The principal symptoms are as follows: After an incubation period varying from three to five days, and in some cases even to eight days, high fever appears, with swelling of the lymphatic glands, generally first in the femoral lymphatics, and subsequently spreading to those of the groin, armpits and neck. The tongue becomes covered with a whitish-gray or blackish fur, and the patient suffers, also, from severe headache, accompanied by delirium, and, in severe cases, vomiting and diarrhea. The third and fourth days are the most fatal. In cases which recover, the temperature drops gradually after about a week. The glands suppurate often persistently. The disease affects young and old of both sexes. With few exceptions the patients were Chinese, especially those living in the more filthy quarters.

Dr. Kitasato's report consists almost entirely of the description of a bacillus which he has isolated and has good reason to believe is the specific cause of this disease. This bacillus is found in the blood, the lymph and the internal organs of those afflicted with the plague — a fact which puts this disease in the category with splenic fever and relapsing fever. In no other disease has this kind of bacillus ever been discovered. When the bacillus is inoculated in other animals, appearances similar to those presented by human bodies are found after death. The bacillus is rod-like in shape, and its two ends are somewhat blunted. It can be stained with the ordinary aniline dyes, the two ends being more easily stained than the middle part. It is very slow in motion and is most prolific in its growth in blood serum at the normal temperature of the body, and develops most luxuriantly after twenty-four to forty-eight hours. The appearance of the cultures and their resistance to antiseptics is described.

Mice, rats, guinea-pigs and rabbits are susceptible to inoculation with cultivated virus, blood and fragments of the internal organs, contents of the lymphatic glands or the contents of the intestines of a plague patient; and according to their size contract the disease in one or two days. Pigeons are not affected. Blood from living patients always contains the bacillus, although in very varying numbers; and this bacillus is the same as that found after death in the spleen and other organs, except that the latter are somewhat longer and stain a little differently.

As precautions, the report urges ordinary sanitary rules, isolation and disinfection, and the hunting and destroying of the bodies of rats and mice which have dropped dead in any part of the house. Convalescent patients must be isolated for at least a month after recovery, since the bacillus may be detected for three weeks or more in blood and lymph.

◆

SMALL-POX IN THE SWEAT-SHOPS OF CHICAGO.

IN answer to a request from the Governor of Illinois the State factory inspectors have issued a report on small-pox in the tenement-house sweat-shops of Chicago. There are in that city about one thousand licensed shops, and about twenty-five thousand other rooms in which garments are manufactured. It was, of course, impossible that a proper investigation of all of these places could be made. When the presence of small-pox in the tenement-house shops became apparent, the office of the factory inspectors was already equipped with the latest lists of the wholesale houses, the contractors employed by them, and the addresses of the employés; but these lists had become extremely incomplete owing to the neglect of contractors to furnish the authorities with the names of the home finishers. The State Board of Health testified that no contractor or home finisher had ever voluntarily complied either with the State law or with the city ordinances requiring registration; that the lists had to be obtained entirely by sending out inspectors.

A random investigation of the thousands of rooms in which clothing was manufactured was not possible. The cases of small-pox reported to the State Board of Health was so small a part of those which actually occurred that other sources of information had to be sought for. Families in which the disease occurred had several reasons for concealment, the chief being the fear of the pest-house and financial loss. Parents sometimes hid their children in sacks, or locked them in closets, or smuggled them through the street-cars to other localities. The neighbors helped in the concealment, for fear of quarantine and loss of trade. After the middle of June, the State Board of Health declined to give information, and is generally censured by the report as inefficient and even culpable.

The report gives lists of cases occurring in the streets in which these clothing establishments abound, and traces the spread in several cases to these sources. The dangers, especially in case of an epidemic, from this system of tenement-house workshops arises from the fact that men, women and children are gathered together from other tenements where the disease may be, and thrown into direct contact with tenants living in the most unwholesome conditions. When the shops themselves are in an infected house the employés cannot know of this fact in time to avoid danger. The clothing also sent out from such places is a constant source of danger to the public. The report proves its case well that the system of sweat-shops, dangerous at all times, was in this outbreak of small-pox in Chicago a serious hindrance in finding and preventing the spread of the disease.

◆

IMMORAL MASSAGE.

In the **Journal** of last week, on page 202, we quote an interesting extract from the Diary of Capt. Cook, dated September, 1777, from the Society Islands, in which he describes his personal experiences while being massaged; a luxury which was then not known in Europe and practised apparently only by these islanders, sometimes by the men but more generally by the women. This account leaves us in doubt as to what the standing of these practitioners of the art would be in one of our modern cities, and hints at a fresh proof of the often repeated proverb that "there is nothing new under the sun."

Now, more than a century later, the *British Medical Journal* says that in London the legitimate massage market is overstocked, and that no woman, unless she has a private connection, has the slightest chance of getting a living by massage alone. It describes a comparatively new departure in the business of administering to the sexual entertainment of the public. It appears that many young women, believing that there is a promising prospect in the profession of massage, spend their time and savings in instruction in the art; and discover when too late that the field is overcrowded. They answer the advertisement of some establishment only to find that they are expected to do work which may be anything from indelicate to "accommodation." Although the *British Medical Journal* knows some stories that are almost incredible, it does not relate them, but leaves the particulars to our imagination. Young men about town often make a tour of these places, which are evidently serious rivals of older methods, especially as they advertise in the daily papers. But this is not all; it has become a fashionable fad for certain ladies of position to frequent the rooms of a young and good-looking masseur.

The matter is certainly a serious one. The London police have already taken it in hand; and the Home Secretary has ordered an investigation of so-called "massage rooms." London is unfortunately not the only city in which similar scandals need suppression. In our large cities the daily papers often contain advertisements which more than suggest similar nastiness. Although the profligacy of this country does not hold the same high social position that it does in England, especially among our women, there are, nevertheless, unsavory places which need overhauling. The *Medical News* notes that these revelations have already been followed by the arrest of a number of persons in Philadelphia by the police, for similar practices. The medical profession owes it to the community that abuses shall be called by their proper names, and shall not be allowed to masquerade under the protection of a medical title.

◆

MEDICAL NOTES.

The Cholera. — The disease keeps steadily increasing in the provinces outside St. Petersburgh; and in consequence the Russian army manœuvres have been prevented. It seems to be gaining also in Prussian Silesia. Two hundred cases daily are reported from Galicia with a mortality exceeding fifty per cent. Sixty cases have appeared during the past week in Nijni-Novgorod, where the great annual fair is soon to open.

The Contagiousness of Consumption. — The Toronto courts have recently had the question of the contagiousness of consumption before them. A health officer demanded the dismissal from school of a child suffering from phthisis, and his action led to legal proceedings. The judge sustained the action of the health officer, deciding that the disease is contagious.

Small-Pox and Vaccination. — The last quarter's statistics of Birmingham, England, report that the number of cases of small-pox notified was 651, and the registered deaths from the same disease 54, the cases and deaths arranging themselves in respect of vaccination as follows: Vaccinated cases, 560; deaths, 26; mortality, per cent., 4.6. Unvaccinated cases, 63; deaths, 18; mortality, per cent., 28.6. Doubtful cases, 28; deaths, 5; mortality, per cent., 17.9. The data for this city is not pleasant reading for the anti-vaccinator.

Small-Pox in Milwaukee. — Under date of August 18th, Dr. U. O. B. Wingate, Secretary of the Wisconsin State Board of Health, thus summarizes the small-pox situation in Milwaukee: "At present the city is orderly, and everything is being done that can be done to control the outbreak. There are at present about 55 cases in the city. There have been 31 deaths out of 121 cases reported up to this date. A large corps of physicians are vaccinating from house to house; extra barracks are being erected, in order to relieve the hospital, which is now full. Two sets of inspectors are on at the depot, one for day and one for night service; also at the steamboat wharves, doing everything possible to prevent suspects, or those coming from infected districts, from leaving the city. The railroad authorities and boards of health in the adjoining towns are co operating to prevent all such persons from boarding the trains at those points."

Anti-Cholera Inoculations. — There were 826 persons inoculated in Calcutta for protection against cholera during the month ending June 24, 1894. Cholera occurred in three houses in which inoculations had been made upon some of the inmates, but all the cases were among the uninoculated, none of the inoculated being attacked.

An International Medical Press Committee has been formed for the purpose of providing greater facilities for the report of the next International Congress.

Mississippi Valley Medical Association. — The twentieth annual meeting of the Mississippi Valley Medical Association will occur in Hot Springs, Ark., November 20, 21, 22 and 23, 1894.

A Memoir of Sir Andrew Clark. — The life of this famous physician is soon to be published. The fact that Mr. Gladstone will supply the sections on private life and character should make it a doubly interesting work.

Professor Bilroth's Widow. — The Emperor of Austria has granted to the widow of the late Professor Bilroth a yearly pension of 2,000 florins. This is to be interpreted as a mark of special favor, because, according to the law of Austria, the pension allowed to widows of professors is only of 600 florins. As the distinguished surgeon is understood to have left little or no private fortune, the Emperor's grateful act has given general satisfaction.

Lowered Duties on Drugs. — The Senate tariff bill lowers the duty on a number of drugs, that on castor oil being reduced 56 per cent. below the rate under the McKinley law, and that on Epsom salts 34 per cent. Other reductions are, 30 per cent. on cod-liver oil, 50 per cent. on bicarbonate of soda, 20 per cent. on sublimed sulphur, 18 per cent. on refined camphor, and 25 per cent. on strychnine. The duty on spectacle lenses is reduced from 60 to 35 per cent. *ad valorem*, a decrease of nearly 42 per cent.

Hydrocele in the Female. — In the *Centralblatt für Gynäkologie* this term is defined as fluid in an imperfectly obliterated canal of Nuck, and is usually detected in pregnancy and childbed. According to Wechselmann, it has been found twenty-two times on the right side, seventeen on the left, and in two cases on both sides. Lammert observed in a nullipara, aged thirty-nine, a hydrocele that formed an enormous pyriform, elastic, transparent and fluctuating swelling, as big as a man's fist, in the left groin. It was irreducible, and there was no impulse on coughing; it reached as far as the labium. On incision, a pint of serum escaped; the parts were explored, and the hydrocele was found ending as a blind pouch at the internal abdominal ring.

Prize for Essay on Diagnosis of Tuberculosis by Blood Examination. — The Colorado State Medical Society has offered a prize of one hundred dollars for the best essay on the diagnosis of tuberculosis by examination of the blood. Preference is to be given to the detection of the pre-tubercular stage. The prize is open to any essay written in the English language, condensed to read in thirty minutes' time; and the award is to be reserved for an essay deemed sufficiently meritorious, that is, one giving rules for the diagnosis to be made from the blood alone, without the patient being seen. The Prize Committee consists of Dr. Charles Denison, H. A. Leman, both of Denver, and Dr. S. E. Solly, of Colorado Springs.

Growth of the Railway Surgeons. — The following statistics in regard to the number of railway surgeons and their association are of interest: There are at present 147,704 miles of railways in the United States and Canada, and all but 17,088 miles are watched over, more or less, by surgeons in the employ of the corporations. The total number of railway surgeons is 5,466. The railways which possess a hospital system cover 36,751 miles; railways with a relief service, 13,446 miles; and railways with a surgical service and chief surgeon, 44,281 miles. There is a National Association of Railway Surgeons with a membership of 1,767 and an organ called *The Railway Surgeon*. According to this journal there are over 120 chief surgeons, representing 82,032 miles of railway, employing 3,384 surgeons, "all of which are working harmoniously under a chief surgeon, who in each instance has, to a greater or less extent, charge of the surgical department of the company he represents. We have great reason to rejoice and be glad and to congratulate this association on the work it has accomplished."

Gift of Dr. Wilson Fox's Plates of Diseases of the Lungs to Medical Schools. — In a letter to *The Medical Press and Circular*, Drs. Sidney Coupland and W. R. Gowers direct the attention of the managers of medical schools in England, the Colonies and America to the fact that there is a considerable number of the surplus sets of the colored plates of Dr. Wilson Fox's "Atlas of Diseases of the Lungs." These contain the most perfect representation of morbid states of the lungs ever produced. They will be of great value to medical schools, if framed and placed in the museum or post-mortem room. It is, therefore, proposed to give a set to each medical school the dean or manager of which desires it; a certain number will be reserved until October to give colonial medical schools an opportunity of obtaining them. Each set contains twenty-five colored plates. Brief descriptions can easily be prepared from the text of Dr. Fox's atlas and affixed to the plates. The cost of packing and transmission amounts to one shilling in the United Kingdom, two shillings, sixpence for America and the Colonies. This sum should be sent, with the application, to Messrs. Mintern Bros., 84 Southampton Row, London, W. C.

Experimenting with the Venom of Rattlesnakes.—Professor Beyer, of Tulane University, New Orleans, has recently allowed himself to be bitten by a rattlesnake, in order to determine if a person can be inoculated with poison and rendered proof against the venom of serpents. He intends to repeat the experiment.

Women Medical Students in Glasgow. — At the graduation exercises of the University of Glasgow, held on July 26th, the degrees of Bachelor of Medicine and Master in Surgery were conferred on Marian Gilchrist and Alice Cumming. Professor Charteris delivered the address to the graduates, and in congratulating the female recipients of degrees, he expressed a hope that the time would come when degrees would be bestowed which would do less violence to the sex, and that they would run as "spinster in medicine" and "mistress in surgery." The abbreviation of M.S., however, would not distinguish the sex. This is the first time in the history of any of the Scottish universities that a medical degree has been granted to a woman.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, August 29, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 47, scarlet fever 30, typhoid fever 31.

Boston Board of Health in New Quarters.— Hereafter the Board of Health will transact all its business from its new office in the Old Court House; its old rooms will be given up to the law department. The Board will occupy two large rooms at the southern end of the Court House. One of the rooms will be used by the clerks, while the other has been divided by a partition, and will be used on one side for the Health Commissioners and on the other for hearings.

Bequests to Hospitals. — The will of Mary W. Hyde, of Boston, gives to the Free Hospital for Women $2,000; the Children's Mission to the Children of the Destitute, and Home for Little Wanderers, $500 each.

Hospital for Contagious Diseases at Lynn. — Plans for a new hospital for contagious diseases, to be erected on Holyoke Street, Lynn, have been accepted by the committee on public property. Contracts will be made at once, and the work pushed so as to have the building completed in November.

New Hospital Buildings for Brookline. — The two new hospital buildings authorized by the town of Brookline for use in cases of contagious disease are now almost completed. They are located on town land off Newton Street at a safe distance from the poor farm and the small-pox hospital. They are built of wood, are one story in height, with a hip roof, and will cost when completed $4,000.

A Garbage Crematory for Newton. — The cremation of Newton's garbage is being considered by the board of health, and they expect to make a definite move in a few weeks toward the establishment of a plant. The present contracts remain in force until March, 1896. The board hope to get the indorsement of the city government for such an establishment this fall, and next year will make a move for the issue of twenty-year bonds for its construction.

NEW YORK.

American Association for the Advancement of Science. — At the sessions of the American Association for the Advancement of Science, which recently held its annual meeting in Brooklyn, and which was presided over by Dr. Daniel G. Brinton, formerly of Philadelphia, but now a resident of Media, Pa., a number of papers of interest to the medical profession were read. Dr. Franz Boas delivered an address before the Section on Anthropology on "Human Faculty as Determined by Race." In the course of it he spoke of the improvement caused in man by civilization, but expressed the opinion that it was doubtful if any progressive changes, or such as are transmitted by heredity, have taken place. In the same section Prof. W. J. McGee spoke of the operation of trephining among the ancient Peruvians, and illustrated his remarks by a collection of skulls on which it had been practised.

Antitoxine Treatment of Diphtheria. — At the last monthly meeting of the New York State Board of Health which was held at the Murray Hill Hotel on August 23d, Dr. Cyrus Edson, of the New York City Health Department, made some remarks in which he spoke in the most enthusiastic terms of the efficacy of antitoxine for the cure of diphtheria, Koch's latest contribution to medical science. He announced that Dr. Hermann M. Biggs, Chief of the Bacteriological and Pathological Bureau of the Department, had just returned from Germany, where he had made an elaborate study of the new lymph and its practical application in diphtheria, and stated that Dr. Biggs had become convinced that it was an almost infallible remedy for the disease if the inoculations were made within thirty-six hours after infection. In Berlin he ascertained that there were between three thousand and four thousand well-attested cases in which the antitoxine had proved successful, and he found that Virchow and other high authorities who had investigated the matter had confirmed Koch's conclusions as to its very great utility. Dr. Edson further stated that the result of Dr. Biggs's personal investigations were to the same effect, and that he himself was so thoroughly convinced of the soundness of the latter's opinion that he intended to ask from the Board of Estimate and Apportionment a special appropriation of $30,000 for the establishment of an experimental station for the manufacture and dissemmination of the antitoxine, as soon as all the necessary arrangements could be made. He felt sure, he said, that if this new agent could be placed in the hands of the Health Department it would result next year in the saving of at least fifteen hundred lives in the city. On the same day Dr. Biggs met, by invitation, a number of physicians at the Bureau of Bacteriology in Bleecker Street, and gave them the results of nine months' experience with antitoxine in Berlin, at the same time illustrating the subject with bacteriological and microscopical demonstrations.

◆

Miscellany.

A NEW METHOD OF MAKING PALATABLE AND DIGESTIBLE MILK.

Dr. Robert T. Edes, of Boston, gives a valuable way of preparing milk where other methods have not proved useful:[1]

A pint of milk is gently warmed. Into it is dropped, very slowly and with constant stirring, about twenty minims of the dilute hydrochloric acid of the United States Pharmacopœia. The milk should be stirred until it cools. In this way a very fine flocculent coagulum is produced, floating in the whey, which is easily accessible to the digestive secretions, while the whole fluid has lost somewhat of the flat and cloying taste which makes it unacceptable to so many. It will be noticed that milk prepared in this way differs from the various "wheys" in the highly important particular that the casein is retained and used, instead of being separated out as a distinct product, while it avoids the bitterness of pancreatized milk.

◆

THE CAUSE OF DEATH FROM CHLOROFORM.[2]

Heart weakness is so generally assumed to be the first warning of danger in chloroform narcosis that during the anesthesia the pulse is more closely watched than the breathing. That chloroform has no direct action on the heart, however, and that it kills by inducing respiratory paralysis, is the conclusion of Surgeon-Lieutenant-Colonel Lawrie, as reported in the *British Medical Journal* for July 7th. At a recent meeting of the Royal Medical and Chirurgical Society he contended that the experiments, including those performed under the auspices of the Hyderabad Commission, proved that death from chloroform was due to respiratory failure, and that the practical point to remember during its administration was that the condition of the pulse was quite subsidiary, but that the state of the respiration should be closely watched. Chloroform being an irritant, protoplasm is irritated and destroyed by either its liquid or its vapor. When it is injected into the substance of a muscle, such as the heart or the biceps, motion is arrested in the same manner as it is by hydrochloric acid or any other irri- detecte[illegible]e argued that in poisoning from the inhalation Wechseb[illegible]form this irritant action could no more take place in the heart than in the biceps, and hence might be ignored in considering the clinical question of accidental death under this anesthetic. In his experiments with animals, chloroformed blood sent to the heart alone produced no effect whatever, but when it was sent to the brain alone the narcotic acting on the brain centres produced its usual effects. From tracings of the pulse and of the breathing, he demonstrated that chloroform anesthesia without respiratory complication was free from risk.

From much experience with chloroform, Mr. Horsley also was convinced that it was the arrest of respiration which resulted in death, and that in the majority of cases of danger inversion of the patient and artificial respiration would cause recovery. Mr. Gaskell and Mr. Shore agreed that respiration failed first, but held that chloroform had a direct action on the heart also. Dr. Lauder Brunton's experience was that chloroform always paralyzed the respiratory centre before enough had been taken to paralyze the heart. A number of the accidental deaths were due, not to the chloroform, but to the operation itself, to asphyxia, or to noxious substances circulating in the blood. Mr. Lawrie concluded by stating that he had found it impossible to teach careless men to administer chloroform safely, and that heart failure might be indirectly produced by stimulation of the vagus through irregular breathing. He had noticed no difference in the effects of chloroform on different races or nationalities. In seven hundred cases of chloroform narcosis the pulse had been carefully watched, but it had given no reliable indications of danger.

◆

TREATMENT OF TUBERCULOUS PERITONITIS.

Guignabert[1] describes a method he employs in the treatment of tuberculous ascites which was first suggested by Rendu. It is most applicable to this particular form of peritonitis. It consists in introducing a fine trocar and canula through the abdominal wall, midway between the umbilicus and anterior superior iliac spine. While the flow is diminishing, a hypodermic syringe is five times charged with camphorated naphthol, and the contents are passed into the abdomen, the canula being made use of for the purpose. The puncture is subsequently closed by means of aseptic wool and gauze. Hereafter the peristaltic action of the intestine serves to distribute the naphthol, which produces insignificant pain for only a few hours. Furthermore, during the first few days the temperature shows an evening rise, and the ascites apparently increases, though the fluid subsequently disappears. Ultimately masses of adhesion will be felt, and these gradually diminish. During the operation the strictest antisepsis is required.

◆

INFANT MORTALITY IN LONDON.[2]

One of the most unsatisfactory features of English mortality statistics, taken as evidence of sanitary condition, is the comparatively slow rate of decrease of infant mortality. The death-rate at all ages in England and Wales in the ten years 1881–90 was 15 per cent. below the rate in the ten years 1861–70, — that is, before the passing of the Public Health Acts of

the righ

on both

---

[1] [illegible]ork Medical Record, August 18th.

[2] [illegible]k Medical Journal, August 11, 1894.

[1] Journal de Médecine de Paris, p. 155, 1894.

[2] Lancet, July 28, 1894.

1872 and 1875. The decrease in the death-rate of infants under one year of age in the same period did not, however, exceed 8 per cent., although it is in the first year of life that the excess of mortality due to distinctly preventable causes is largest. If we look at the London figures we find that while the mean rate of mortality at all ages declined 16 per cent. in the twenty years above referred to, the decline in the rate of mortality among infants did not exceed 6 per cent. It is also disappointing to find that in the first three years of the current decennium, 1891–93, the mean rate of infant mortality considerably exceeded the mean rate in the ten years 1881–90, both in England and Wales and in London. This result was in great measure due to the fact that in recent summers, but especially in 1893, the mean temperature was considerably above the average. The proportion of deaths under one year of age in London to registered births was last year equal to 164 per 1,000, and exceeded the rate in any year since 1874, when it was the same. The rate of infant mortality last year ranged in the five groups of registration districts from 158 per 1,000 in the north, to 175 in the east, and 181 in the central group of districts. In the 41 metropolitan sanitary areas, however, the range of rates of infant mortality was far wider; the rate did not exceed 102 per 1,000 in Hampstead and 128 in Lewisham, while it ranged upwards to 202 in Clerkenwell, 205 in Limehouse, 206 in St. George Southwark, 209 in St. George-in-the-East, 214 in Holborn, and 219 in Strand sanitary area. Although infant mortality may be more directly governed by maternal care and attention than by what is generally understood as sanitary condition, it is well to bear in mind that as a general rule infant mortality — that is, the rate of mortality under one year of age — bears a constant relation to the death-rate at all ages, which few now venture to disregard as evidence of sanitary condition.

◆

DJAMBOE.

The native population of Java use as a household remedy in choleraic diarrhea a decoction made from two muskat nuts, a handful of roasted rice and six or seven djamboe leaves, boiled for about ten minutes. There is rarely a generally used household remedy among simple people without some real virtue; and during the last two years, at the polyclinic in Wurzburg, a long trial has been made of the great therapeutic value of the djamboe leaves in diseases of the intestine, and Dr. Hergel has just published a report of the work.[1]

The leaves used were sent from Java, and were from the ***Psidium pyriforum***, a small tree of the myrtle family. The tree is a native of the West Indies as well as the East, and its fruit is known to most persons in the form of guava jelly. The same acidulous fruit in the East is called *djamboe-bidji*. The bark is also used as a medicine, being somewhat more active than the leaves.

Before giving the drug to any patients a trial was first made upon healthy persons. No toxic effects were observed in any case, either on the nervous or circulatory systems or on the secretion of urine. Small doses of half a gramme were effective, but larger ones of thirty grammes caused no obstinate constipation. As a therapeutic remedy it was first used in the diarrhea of children. An examination of the secretions and excretions was made before and after the exhibition of the drug, to discover the exact mode of action, but no results were obtained beyond the empiric effectiveness of the medicine.

In over one hundred cases of acute gastro-enteritis in children, it was shown that the most marked diarrhea and vomiting were checked after the third or fourth teaspoonful of a 5–80 infusion. The stools became firmer, fewer and less foul-smelling; and the appetite and strength rapidly returned.

The infusion was tried in five cases of severe acute gastro-enteritis in adults, accompanied by vomiting, ten to fifteen stools within a few hours, low temperature and muscular cramps. A small dose of calomel was given first, followed by the djamboe. The stormy vomiting and diarrhea quickly ceased, and after a few days of prostration the patients recovered.

In a few cases of the acute disease in children, the vomiting and diarrhea ceased but the prostration continued and the children died of exhaustion. At the autopsy no evidences of intestinal inflammation were found.

In about twenty-five cases of diarrhea in phthisical patients, the use of djamboe checked the diarrhea after the use of various astringents and opium had been ineffectual. The following forms were used:

℞ Infus. fol. djamboe 5–80
Syrup. 20
Sig. A teaspoonful every one or two hours.

This form was especially used for children.

℞ Pulv. fol. djamboe 5–1
Every hour or two.

A fluid extract in doses of twenty drops to a teaspoonful was found most useful in phthisical patients.

As a summary, it may be said that no toxic effects were noticed. The drug was readily taken, and appeared to act, first, as a styptic; and, secondly, as a stomachic.

Another allied plant is the myrtus, or ***Eugenia Cheken***, which under its last or Chilian name is already variously employed, chiefly in respiratory therapeutics.

◆

Correspondence.

A PHYSICIAN'S SERVICES GRATEFULLY REMEMBERED.

Boston, August 27, 1894.

Mr. Editor: — The following instance of long-remembered gratitude for gratuitous medical service may be of interest to your readers:

Many years ago a well-known physician of Boston attended a lady who was unable to pay for his services. Years passed: the physician died, and his family became scattered. But in 1893, thirty years after the doctor's death, information was received by his children that a general of the English army had died in London, leaving a will containing the following clause: "I give and bequeath to the heirs of the late Dr. —— ——, of Boston, for attendance on my sister when I was too poor to pay him, the sum of ——."

The bequest was duly received and divided among the doctor's surviving heirs, and a modest piece of silver plate now serves to remind each one that an act of professional kindness is not always forgotten, even long years after the doctor's labors are over.

Charles M. Green, M.D.

---

[1] Mün. Med. Woch., 29, 1894.

METEOROLOGICAL RECORD,

For the week ending August 18th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..12	30.15	64	70	59	79	65	72	S W.	S.E.	3	5	F.	O.	
M..13	30.02	63	65	61	93	92	92	E.	N.E.	10	9	R.	O.	.20
T ..14	30.10	65	68	62	92	91	92	N.	E.	7	7	O.	C.	.05
W..15	29.91	70	78	62	86	88	87	S.W.	S.W.	10	14	O.	O.	
T ..16	29.84	69	74	64	67	74	70	N.W.	E.	17	1	C.	C.	
F ..17	30.07	62	67	58	67	68	68	N.E.	S.E.	8	9	F.	C.	
S...18	30.05	70	80	60	83	80	82	S.W.	S.W.	14	14	O.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 18, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Whooping cough.	Diphtheria and croup.
New York . .	1,956,000	737	356	27.44	12.46	17.36	1.68	4.48
Chicago . . .	1,438,000	—	—	—	—	—	—	—
Philadelphia .	1,139.457	—	—	—	—	—	—	—
Brooklyn . .	1,043,000	445	215	24.42	10.78	15.18	1.32	5.94
St. Louis . . .	540,800	—	—	—	—	—	—	—
Boston . . .	501,107	217	105	27.60	10.58	18.40	1.80	5.52
Baltimore . .	500,000	—	—	—	—	—	—	—
Washington .	285,000	95	38	25.20	10.50	15.75	5.25	5.25
Cincinnati . .	325,000	115	53	20.01	11.31	12.18	—	3.48
Cleveland . .	325,000	—	—	—	—	—	—	—
Pittsburg . .	272,000	—	—	—	—	—	—	—
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	37	13	18.90	—	5.40	—	2.70
Charleston . .	65,165	—	—	—	—	—	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	100,410	38	21	18.41	7.89	13.15	—	2.63
Fall River . .	92,233	—	—	—	—	—	—	—
Lowell . . .	90,613	34	14	26.46	11.76	23.52	2.94	—
Cambridge . .	79,607	23	8	21.75	17.40	8.90	4.35	4.35
Lynn	65,123	—	—	—	—	—	—	—
Springfield . .	50,284	18	10	44.44	16.66	33.33	11.11	—
Lawrence . .	49,900	—	—	—	—	—	—	—
New Bedford .	47,741	25	15	28.00	8.00	28.00	—	—
Holyoke . . .	43,348	—	—	—	—	—	—	—
Brockton . .	33,939	9	3	18.18	—	18.18	—	—
Salem	33,155	22	14	31.85	—	31.85	—	—
Haverhill . .	32,925	12	6	25.00	16.66	25.00	—	—
Malden . . .	30,209	13	9	30.76	—	30.76	—	—
Chelsea . . .	29,806	13	6	23.08	15.36	—	—	7.68
Fitchburg . .	29,383	12	10	25.00	—	16.66	8.33	—
Newton . . .	28,837	7	5	57.12	28.56	14.28	—	—
Gloucester . .	27,293	—	—	—	—	—	—	—
Taunton . . .	26,955	11	6	36.36	—	18.18	—	18.18
Waltham . .	22,058	3	1	33.33	33.33	33.33	—	—
Quincy . . .	19,642	—	—	—	—	—	—	—
Pittsfield . .	18,802	5	3	20.00	20.00	—	—	—
Everett . . .	16,585	9	1	33.33	—	33.33	—	—
Northampton .	16,331	8	2	25.00	—	25.00	—	—
Newburyport .	14,073	—	—	—	—	—	—	—
Amesbury . .	10,920	2	2	—	—	—	—	—

Deaths reported 1,936: under five years of age 932; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 495, diarrheal diseases 310, consumption 207, acute lung diseases 137, diphtheria and croup 86, whooping-cough 34, typhoid fever 26, scarlet fever 15, cerebro-spinal meningitis 14, malarial fever 7, erysipelas 2.

From typhoid fever New York 10, Washington 6, Brooklyn 4, Nashville 3, Cincinnati 2, Worcester 1. From scarlet fever New York 6, Boston 4, Brooklyn, Cincinnati, Nashville, Cambridge and Newton 1 each. From cerebro-spinal meningitis New York 6, Washington 3, Cincinnati and Chelsea 2 each, Pittsfield 1. From malarial fever New York 5, Brooklyn 2. From erysipelas Brooklyn 2. From measles New York 1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 18, 1894, TO AUGUST 24, 1894.

Leave of absence for two months, to take effect on or about September 1, 1894, is granted CAPTAIN JOHN L. PHILLIPS, assistant surgeon.

Leave of absence for three months, to take effect on or about October 1, 1894, is granted FIRST-LIEUT. MADISON M. BREWER, assistant surgeon.

Leave of absence for one month, to take effect on being relieved from duty at Fort Supply, Oklahoma Territory, is granted CAPTAIN WILLIAM H. CORBUSIER, assistant surgeon.

FIRST-LIEUT. WILLIAM H. WILSON, assistant surgeon, will be relieved from temporary duty in the Department of Dakota by the commanding general of that Department, when his services are no longer required with troops in the field and will return to his proper station.

Leave of absence for one month, with permission to apply for an extension of one month, is granted CAPTAIN ALFRED E. BRADLEY, assistant surgeon, U. S. A.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 25, 1894.

I. W. KITE, passed assistant surgeon, ordered to hold himself in readiness for orders to the U. S. S. "Constellation."

T. B. BAILEY, passed assistant surgeon, ordered to hold himself in readiness for orders to the U. S. S. "Machias."

RECENT DEATHS.

DR. JAMES KITCHEN, who for many years was a prominent physician in Philadelphia, died August 19th, aged ninety-four years. He was graduated from the University of Pennsylvania in 1822.

DR. PHILIP LANSDALE, medical director in the United States Navy, on the retired list, died Tuesday, August 21st. He was born in Maryland in 1817. He entered the navy as an acting assistant surgeon in November, 1846; became an assistant surgeon in March, 1847; was promoted to the rank of surgeon in January, 1861; to that of medical inspector in March, 1871, and medical director in June, 1873. He was placed on the retired list in April, 1879, with the relative rank of captain, and since then had made Philadelphia his place of residence. During his long, active service of a third of a century he was on duty in all parts of the world. From 1866 to 1869 he was stationed in Philadelphia.

The death is announced of DR. DANIEL CORNELIUS DANIELSSEN, chief physician to the Bergen Leper Hospital, eminent for his lifelong researches on leprosy.

BOOKS AND PAMPHLETS RECEIVED.

Railway Spine. By Clark Bell, Esq. Reprint. 1894.

Abdominal Surgery on the Battle-Field. By N. Senn, M.D., Ph.D., LL.D. Reprint. 1894.

Can Typhoid Fever be Aborted? By J. E. Woodbridge, M.D., Youngstown, O. Reprint. 1894.

The Early History of the Bristol Medical School. By Augustin Prichard, F.R.C.S., Eng. Reprint. 1892.

The Johns Hopkins Hospital Reports, Vol. IV, Nos. 4–5. Report in Neurology, II. Baltimore: The Johns Hopkins Press. 1894.

Some Observations on Gonorrhea in the Male. Two Cases of Unclassified Infection. By W. F. Arnold, M.D. Reprints. 1894.

Differential Diagnosis of Alcoholic Coma from other Forms of Coma, with Especial Reference to the Care of Persons Found by the Police on the Streets in a Comatose or Semi-Comatose Condition. By Lewis D. Mason, M.D. Reprint. 1894.

A System of Genito-Urinary Diseases, Syphilology and Dermatology. By various authors. Edited by Prince A. Morrow, A.M., M.D. With illustrations. In three volumes. Vol. III, Dermatology. New York: D. Appleton & Co. 1894.

Materia Medica, Pharmacy, Pharmacology and Therapeutics. By W. Hale White, M.D., F.R.C.P. Edited by Reynold W. Wilcox, M.A., M.D., LL.D. Second American edition, thoroughly revised. Philadelphia: P. Blakiston, Son & Co. 1894.

Lectures on Gastro-Intestinal Surgery; A Modification of Kraske's Method of Excision of the Rectum; A Tunnelled Fistulatome; Gastro-Enterostomy with a Modification of Murphy's Button. By H. O. Walker, M.D., of Detroit. Reprint. 1894.

Original Articles.

THE PROTECTIVE POWER OF VACCINATION.[1]

BY JOHN H. MCCOLLOM, M.D., OF BOSTON.

When, in the latter part of the last century, Jenner's attention was called to the fact that milkmaids and others who had the care of cows, although exposed to small-pox, had extremely mild attacks of the disease, England was passing through one of the most frightful epidemics of variola that the country has ever experienced. So dire was the havoc, so great was the distress caused by this disease in the middle and latter part of the last century, that anything that would have mitigated its severity would have been hailed as one of the greatest boons to mankind. In the present century epidemics of small-pox have been comparatively rare, and their ravages can in no way be compared to those of the epidemics of the last century.

The 14th day of May, 1796, a day memorable in the annals of medical science, is the natal day of vaccination, for it was on this day that vaccine lymph was taken from the hand of Sarah Holmes, a milkmaid, who had been infected from one of her master's cows, and inserted in the arm of James Phipps, a healthy boy eight years of age. He went through the vaccine disease in a regular manner. On the 1st of July following, the crucial test of the protective power of vaccination was made. The boy, who had been vaccinated in May, was inoculated with matter taken immediately from a small-pox pustule. He did not contract variola.

On December 8, 1802, the Board of Health of Boston published a report of the investigations of eleven of the most distinguished physicians of that time on the protective power of vaccination. The report commences with the following paragraph:

> The Board of Health for the town of *Boston*, are happy to have it in their power, this day, to announce to their fellow-citizens the result of one of the most complete experiments which perhaps has ever been made, to prove the efficacy of the *Cow-pox*, as a preventive against the *Small-pox;* and while they take the liberty to congratulate the public on this important discovery, they do earnestly recommend its introduction generally, and are confident that it will be the means of preserving the lives and adding to the happiness of millions.

The report then gives in detail the arrangements that were made to prevent any mistake in the conduct of the experiments, the relation of which need not detain us. The most important part, however, is the report of the physicians themselves, and this is so manifestly important that it will be quoted in full.

The Physician's Report.

> With a view of ascertaining the efficacy of the Cow-pox in preventing the Small-pox, and diffusing through this country the knowledge of such facts as might be established by a course of experiments instituted for the purpose, and thereby removing any prejudices, which might possess the public mind on the subject, the Board of Health of the town of *Boston*, in the course of the last Summer, came to a determination to invite a number of Physicians to coöperate with them on this important design; and with a liberality becoming enlightened citizens, erected a Hospital on *Noddle's Island*, for carrying it into execution. Accordingly, on the 16th day of August last, nineteen boys, whose names are subjoined, were inoculated for the Cow-pox at the office, and in presence of the above mentioned Board, with fresh, transparent Cow-pox matter, taken from the arms of a number of patients then under this disease. These all received and passed through the disease to the complete satisfaction of every one present, conversant with the disease.
>
> On the 9th of November, twelve of the above children, together with one other, George Bartlett by name, who had passed through the Cow-pox two years before, were inoculated for the Small-pox on *Noddle's Island*, with matter taken from a Small-pox patient in the most infectious stage of that disease. The arms of these lads became inflamed at the incisions, in proportion to the various irritability of their habits, but not to a degree greater than what any other foreign, virulent matter would have produced. The Small-pox matter excited no general indisposition whatever, through the whole progress of the experiments, though the children took no medicines, but were indulged in their usual modes of living and exercise; and were all lodged promiscuously in one room.
>
> At the same time and place, in order to prove the activity of the Small-pox matter, which had been used, two lads, who had never had either the Small-pox or Cow-pox, were inoculated from the same matter. At the usual time, the arms of these two patients exhibited the true appearance of the Small-pox. A severe eruptive fever ensued, and produced a plenteous crop of Small-pox pustules, amounting by estimation, to more than five hundred in one, and two hundred in the other.
>
> When these pustules were at the highest state of infection, the thirteen children before mentioned, were inoculated a second time, with recent matter, taken from the pustules, which said matter was likewise inserted into the arms of the seven other children, who were absent at the first inoculation. They were all exposed, most of them for twenty days, to infection, by being in the same room with the two boys, who had the Small-pox, so that, if susceptible of this disease, they must inevitably have received it, if not by inoculation, in the natural way.
>
> Each of the children was examined by the Subscribers, who were individually convinced from the inspection of their arms, their perfect state of health, and exemption from every kind of eruption on their bodies, that the Cow-pox prevented their taking the Small-pox, and they do therefore consider the result of the experiment as satisfactory evidence, that the *Cow-pox is a complete security against the Small-pox.*
>
> James Lloyd.
> Samuel Danforth.
> Isaac Rand.
> John Jeffries.
> John Warren.
> Thomas Welsh.
> Benjamin Waterhouse.
> Josiah Bartlett.
> John Fleet, Jun.
> John C. Howard.
> Thomas Danforth.

It must be borne in mind that the men who signed this report had abundant opportunity for observing small-pox, and therefore their testimony regarding the condition of these children after vaccination and after inoculation is of the greatest value.

Having shown that small-pox virus inserted in the arms of vaccinated persons is inert, it may be well to take a glance at mortuary statistics before and after the introduction of vaccination. In Boston, from 1721 to 1792, a period of seventy-one years, there were three very severe and fatal epidemics of small-pox, or one about every twenty-three years. Since 1792 to the present time, a period of over one-hundred years, there has been no serious epidemic of this disease in Boston. The outbreak of small-pox in 1872–73, in this city, bears no comparison in severity to the epidemics of the last century. In this slight epidemic of twenty-one years ago, the ratio of deaths to the thousand of the living was 2.9 in 1872 and in 1873, 1.2, while in the epidemics of the last century from one-third to one-fourth of the population succumbed to the disease; or, to put it another way, if the disease had been as prevalent and fatal in 1872–73 as it was in any of the severe epidemics of the last century, the number of deaths would have amounted to 64,300 instead of to 1,040. The investigations of a committee of the Epidemiological Society of London showed conclusively that in England out of every 1.000 deaths in the half century from 1750 to 1800, there were 96 deaths from small-pox, while that out of every 1,000 deaths from 1800 to 1850 inclusive, there were only 35 from this cause; a diminution of nearly two-thirds. In the German States it has been shown that out of every 1,000 deaths before vaccination was employed, 66.5 were caused by small-pox; but that after vaccination came into use there were only 7.26. The report from the British army is very conclusive in favor of the protective power of vaccination, because the regulation regarding vaccination is very strict. Every man is vaccinated at the time of his enlistment. During the Franco-Prussian war, when the French and Prussian armies would alternately occupy the same villages and hamlets, it was found that the French soldiers, who were not carefully vaccinated, suffered from epidemics of small-pox of greater or less severity, while the Prussians, who were very carefully vaccinated, were almost entirely exempt from the disease. In the Prussian army from 1876–1885 inclusive, with an average strength of 300,000 men, there was only one death from small-pox; while in the French army for the same time, with an equal number of men, there was an average of 54 deaths from this disease each year.

---

[1] Read before the Massachusetts Medical Society, June 12, 1894, and recommended for publication by the Society.

The operation of compulsory vaccination was suspended in Zurich, Switzerland, in obedience to popular clamor in 1883. The deaths from small-pox, per 1,000 deaths from all causes for the two previous years and that year had been in 1881, 7; in 1882, 0; in 1883, 8. They rose after compulsion had ceased to be used to 11.45 in 1884; to 52 in 1885; and in 1886 to 85 per 1,000.

The history of the last small-pox epidemic in Montreal illustrates the beneficial effects of vaccination. As is well known, the French residents suffered much more severely than the English, because the latter were comparatively well vaccinated. It was not until the most stringent rules regarding vaccination were adopted that there was any marked abatement in the severity of the epidemic.

The public health records of Sweden show that the average number of deaths in each year from small-pox for one million of the living was from 1774 to 1801, before the introduction of vaccination, 1,973; while during the period of optional vaccination, from 1802 to 1816, the number fell to 479. The most marked diminution was reached, however, during the period of obligatory vaccination, 1817 to 1877, when the average number was only 189 per 1,000,000.

The difference in the number of deaths from small-pox in countries where vaccination is optional, as compared with those where it is compulsory, is very marked. For instance, in Austria-Hungary, in Russia and in France, where vaccination is optional, the death-rate from small-pox per one million of the inhabitants was in 1887 — 583.7; 535.9; 167.0; and in 1888 — 540.3; 231.5; 191.9; respectively. In the German Empire, where vaccination is compulsory, the rate per one million for these two years was in 1887, 1, and in 1888, .8. In Denmark, in Norway and Sweden, where the laws regarding vaccination are very stringent, the death-rate for the corresponding years per 1,000,000, was 0.

It may be of interest to compare the percentage of deaths in the unvaccinated with those of the vaccinated in some of the English Small-pox Hospitals. In the London small-pox hospital, from 1870 to 1872, of 14,808 cases treated, the percentage of deaths in the unvaccinated was 44.8, while of those alleged to have been vaccinated, with or without the evidence of a scar, the percentage was 10.1. In the same hospital from 1876 to 1880, the percentage of deaths in the unvaccinated was 44.4; in the vaccinated, 8.8. In the Homerton Hospital, from February, 1871 to December 31, 1877, during which time 5,479 patients were treated, the percentage of deaths in the unvaccinated was slightly greater than in the London hospital, being 46.1; in the vaccinated there was a corresponding slight increase, the rate being 11.5 per cent. In the Deptford Hospital, in 1881, the percentage of deaths in the unvaccinated was 47.4; in the vaccinated and in those alleged to have been vaccinated, 11.3. In the Fullam Hospital the proportion of deaths of the unvaccinated was 44.2; of the vaccinated, 10.1. In the Dublin Hospital 64.2 per cent. of the unvaccinated died; of the vaccinated, 12.0 per cent. The total number of patients treated in these hospitals was 48,594; the average death-rate of the unvaccinated was 46.9 per cent; of the vaccinated and those alleged to have been vaccinated, 10.35 per cent. The criticism cannot be made with truth that these statistics err on the side of the vaccinated, for, as a matter of fact, they are in favor of the unvaccinated. If only the individuals who had two perfectly characteristic scars of vaccination had been classed among the vaccinated, the percentage of deaths would have been much lower than appears from the figures just mentioned.

In the report of an epidemic of small-pox that occurred in Sheffield, England, in 1887 and 1888, it was found that of 4,493 vaccinated children under ten years of age exposed to the disease, 7.8 per cent. contracted it, and that only one-tenth of one per cent. died; that of 13,435 vaccinated persons of ten years of age and upwards, 28.1 per cent. contracted the disease and 1.4 per cent. died; that of 18,020 vaccinated persons of all ages, exposed to the disease, 23 per cent. contracted it, and the death-rate was 1.1 per cent. On the other hand, of 263 unvaccinated children under ten years of age, 86.9 per cent. had the disease and 38.1 per cent. died; of 469 unvaccinated persons, ten years of age and upwards, 68.6 per cent. had the disease and 37.1 per cent. died; of 736 unvaccinated persons of all ages, 75 per cent. contracted the disease and 37.2 per cent. died. It would seem that these figures ought to convince any one of the protective power of vaccination. Certainly a death-rate of one-tenth of one per cent. in the vaccinated as compared with a death-rate of 38.1 per cent. in the unvaccinated is a most conclusive argument in favor of vaccination.

The statistics of the epidemic in Sheffield also prove the importance of re-vaccination, which is just as necessary as primary vaccination. In every epidemic of variola the small number of the vaccinated who have died have been found, not among those who had recently been vaccinated, but among those who had been vaccinated fifteen to twenty years previous to the outbreak of the disease. This was found to be the case, in a marked degree, in the epidemic of 1872–73 in Boston. If we look at these Sheffield statistics again we find that the percentage of cases in the vaccinated under ten years of age was 7.8; that the deaths were .1 of one per cent.; while of the vaccinated of ten years of age and upwards the percentage of cases increases to 28.1, and that of the deaths to 1.4. In the class of the vaccinated of all ages, when those under ten years of age become a factor, the cases diminish to 23 per cent. and the deaths to 1.1 per cent. There is no such marked difference in the percentage of deaths among the unvaccinated, although there is a marked increase in the percentage of cases in those under ten years of age as compared with those of ten years and upwards; showing that unvaccinated children are particularly susceptible to the disease. The report of the Registrar-General of England for 1880 shows conclusively that during the period of optional vaccination in that country, from 1847 to 1853, the number of deaths from small-pox in children under five years of age, per 1,000,000 of the inhabitants, was 1,617; while in persons 45 years of age and upwards the number was only 22. In the period of obligatory vaccination, from 1872 to 1880, the number of children under five years of age, per 1,000,000 of the living, who died of the disease, was 323, as compared with 58 in persons of 45 years of age and upwards; showing a marked diminution in the number of deaths in children under five years of age, and a marked increase in the deaths of those of 45 years of age and upwards. These figures embrace both vaccinated and unvaccinated who died of the disease.

It has been claimed that the decline in small-pox mortality is due not to vaccination, but to improved sanitary conditions. If this were true, however, the diminution in other infectious diseases should be as marked as in that of small-pox, which is not the case. While the small-pox death-rate, in England, since the introduction of vaccination, has fallen 80 per cent. in children under five years, that of other diseases has fallen 6 per cent., while the small-pox rate has increased in a marked degree in persons over forty-five years of age, that of other diseases has fallen 3 per cent., or to look at it in another way, while the death-rate from other causes than small-pox, in persons of all ages, has fallen 7 per cent., the death-rate from small-pox has fallen 49 per cent. This marked diminution in the death-rate from small-pox can only be explained by the protective power of vaccination.

In Boston since April, 1881, there have been 217 cases of small-pox. Each patient has been carefully examined in regard to vaccination, and although some of these patients claimed to have been vaccinated, yet, if a satisfactory scar was not found, the patient was classed among the unvaccinated. Of these 217 patients, 121 had been vaccinated, and they all recovered. Of the remaining 96 who did not show any evidence of vaccination, 46 recovered and 50 died, or about 50 per cent. Four of the patients who died stated that they had been vaccinated some twenty-five or thirty years previous to their illness, but as there was no evidence to the fact, as has been before stated, these patients were classed with the unvaccinated. If, however, they had been classed with the vaccinated, the death-rate would still overwhelmingly prove the protective power of vaccination, being 3.2 per cent. in the vaccinated, as compared with 50 per cent. in the unvaccinated.

The influence of a successful vaccination on the course of the eruption of small-pox is very marked. In a case of unmodified small-pox, no matter how mild the attack, the eruption always passes through the regular stages of papule; vesicle and pustule; while in a vaccinated person part of the eruption aborts, that is to say, the papules never become vesicles. If vaccination did nothing more than simply abort the eruption it still would be of inestimable value. When, however, we see vaccinated infants nursing mothers who have small-pox, without the children showing the slightest indication of disease; when we see vaccinated mothers nursing infants ill of the disease, without contracting it, it would seem that any sane man could have no doubt of the protective power of vaccination. The degree of infectiousness of small-pox in the unvaccinated is not fully appreciated. Small-pox is one of the most infectious diseases among the unvaccinated. For instance, during the last winter, in a house containing 25 people, exposed to an unrecognized case of small-pox, 16 of whom were unvaccinated, 14 contracted the disease and five of them died. All of the vaccinated escaped except one man who had been vaccinated 45 years ago, and he had an extremely mild attack of the disease.

The whole matter of protective power of vaccination can be summed up in no better way than by quoting the words of Dr. Russell, health officer of Glasgow, who says:

"After closely observing over 1,000 cases of small-pox in hospital, I have become deeply impressed with the helplessness of medicine when face to face with the unmodified disease. In this sense, the only successful mode of treating small pox is by vaccination. To take firm hold of its efficacy and necessity, and enforce their convictions in practice without wavering, is the most useful, almost the only useful action the medical profession can adopt against variola. When a case presents itself, the first question in prognosis is regarding vaccination, although then the chief work of vaccination has been done, inasmuch as the only other circumstance in the patient's condition which is worth mentioning as affecting the prospects of recovery is the extent of the eruption, which I shall show is the direction in which post-vaccinal small-pox is chiefly modified. If *vaccinated*, then the attitude is one of hope that the disease may be cut short, however bad present appearances are, though, in fact, the probability is that the symptoms are from the first trivial. If *unvaccinated*, then the attack will probably be severe, the eruption copious or confluent, and we recognize a virulence and deep constitutional disturbance against which the resources of medicine are powerless. As regards the individual, the opportunity for medical interference is past, and we can only turn his case to profit by following on those about him the practice from the neglect of which he suffers."

Having proved by statistics from the most reliable sources the great protective power of vaccination, it may be of interest to inquire into the possible dangers and discomforts that may attend or follow the operation. Since the introduction of the use of animal lymph, the danger of inoculating syphilis has been entirely removed. The chance, however, of communicating syphilis by vaccination in the days when humanized lymph was used, almost exclusively, was very slight. There is no well-authenticated and reliable report of such an occurrence in this locality. The existence of many of the cases reported elsewhere, from careless and inaccurate statements regarding them, must be a matter of doubt to the careful, intelligent and unbiased observer. It has been too much the custom in the report of these cases to completely ignore the possible and probable existence of hereditary or acquired syphilis. If in a given case syphilis appears after vaccination, there should be the most careful and searching investigation in regard to hereditary or acquired disease; but this has not been the case in many instances. It is too much the custom of the laity and, I regret to say it, of some members of the profession, to apply the *post hoc ergo propter hoc* theory to explain the transmission not only of syphilis but of many other diseases by vaccination. Some few years ago a child, who had a slight eruption the nature of which was not evident at the time of the visit, was brought to me for vaccination. On account of this eruption the child was not vaccinated. When he was seen six weeks later he had a perfectly characteristic syphilitic eruption. If this child had been vaccinated no amount of argument would have convinced his parents that the disease was not caused by vaccination. A false keloid tumor may appear at the site of the vaccination, but this has nothing to do with the quality of the lymph used, but is due to some peculiarity of the individual constitution. These false keloids do not cause any pain nor discomfort, but are simply a source of annoyance from their unsightly appearance. These tumors are extremely rare and occur only about once in ten thousand vaccinations. Urticaria is an annoying complication of vaccination, but it is not in the slightest degree a cause for apprehension, and can in no way be attributed to the lymph used. The appearance of this eruption, therefore, cannot with justice be used as an argument against vaccination. The cases of vaccinal urticaria always recover in a short time. They are, however, a source of annoyance to the practitioner and are one of the most fertile sources of argument of the anti-vaccinationist; simply because the anti-vaccinationist is too ignorant of the whole subject of disease to appreciate the relative importance or non importance of any cutaneous manifestations occurring after vaccination. Six years ago I vaccinated a healthy boy three months old with fresh calf lymph. The vaccine disease went through its regular stages without any undue amount of constitutional disturbance. The vesicles were not especially large. On the eighth day after vaccination the mother of the child, who had never been vaccinated, was vaccinated from her child's arm. She had a perfectly characteristic vesicle, and she also had a very extensive eruption of urticaria. In this case the lymph itself, certainly, was not the cause of the attack of urticaria.

Eczema may possibly be aggravated to a slight extent by vaccination, and when there is no history of any special exposure it is well to postpone vaccination until the eczematous eruption has been relieved by treatment; but after a known exposure or during an epidemic of small-pox there should not be the least hesitation in vaccinating a person suffering from eczema. Dr. Lawson Tait reports in the *British Medical Journal* of 1871 two cases of eczema apparently cured by vaccination. These two cases are not sufficient to prove anything in favor of the curative power of vaccination on eczema, yet they are sufficient to show that vaccination does not always have a distinct injurious effect on this skin disease.

If a child when vaccinated is poorly nourished, and if there is no care taken of the arm, sometimes, by rubbing and scratching after the vaccine vesicle has arrived at maturity, and the retrograde process has commenced, pus organisms may be conveyed from the vaccinated arm to other parts of the body, causing an eruption of impetigo. Impetigo, however, is not a serious disease, and is very easily relieved by proper treatment. The eruption of impetigo has a very slight resemblance to that of small-pox, and this slight similarity has caused ignorant opponents of vaccination to assume that small pox is caused by vaccination. This argument against vaccination is too absurd to need confutation.

Cellulitis of a somewhat severe type sometimes follows vaccination, but in nearly every instance the attack is due to injury of the vaccine vesicle after it has arrived at maturity. The almost total lack of care of a vaccinated arm is one of the most productive sources of this complication. With proper care on the part of the individual vaccinated, this trouble can almost always be avoided. The glands in the axilla do sometimes suppurate, it is true, and give rise to considerable pain, but this occurrence is so rare, and is so manifestly due to the individual constitution, that it cannot with justice be used to the detriment of vaccination.

Regarding the transmission of tuberculosis by vaccination, there is no proof that this occurrence has ever taken place. Blenheim, it is true, in the *Centralblatt für Bakteriologie* for May 1, 1874, reports a series of experiments in which he states that rabbits inoculated with vaccine lymph from a tuberculous cow, died from tuberculosis, but the number of rabbits used in this experiment is too small, and the period of incubation too short to prove anything. Blenheim, however, makes the wise and pertinent suggestion that all animals before they are used for the propagation of vaccine lymph should be tested with tuberculin. In France, there is a regulation requiring that an autopsy be made on each vaccinated animal before the lymph from it is distributed.

When the specific organism of the vaccine disease is discovered, as some day it surely will be, and that before long, every specious argument against vaccination will be swept away. If the lamented Dr. Stephen C. Martin had not been removed by an untimely death, it is not too much to say that probably pure cultures of the specific organism of vaccinia would now be in use. The advantage of a pure culture of this specific organism is obvious, for instead of propagating the lymph from animal to animal the cultures could be made in a laboratory where every safeguard against contamination could be adopted.

Much has been said regarding deaths due directly or indirectly to vaccination, but the most careful search of the records of deaths in this city, for the past twenty years, fails to show a single instance. The few cases in which vaccination has been alleged to be the cause of death have been, upon investigation, found to be due to some other cause, dependent in no way, either directly or indirectly, on vaccination. One case in which a child was vaccinated and died two weeks afterwards from pneumonia, as proved by the autopsy, is a fair sample of the alleged deaths from vaccination. In another instance a child died from scarlet fever four weeks after being vaccinated, but as the arm was nearly well at the time, the death of the child could not be attributed to the effect of vaccination. Some few years ago a man about thirty years of age died, five or six weeks after he was vaccinated. There had not been the slightest irritation at the site of the scarification, although it was alleged that he died from the effects of vaccination. The autopsy proved that the man's death was caused by a complication of diseases due in no way to vaccination.

Since April 30, 1873, in this city there have been vaccinated at the public stations nearly 200,000 people, and although there have been some sore arms and a considerable amount of vaccinal uticaria, still there has been no instance of any serious trouble, causing the loss of either life or limb. Careful inquiries at the various hospitals show, that while a certain number of persons have applied for treatment for cutaneous manifestations following vaccination, and for sore arms, there has been no case where there has been any serious trouble.

If the dangers of vaccination were fiftyfold; if its protective power was only one-tenth of what it really is, no man, who has had any experience in the treatment of small-pox, could have any doubt of the value of vaccination to the community. No man who has been brought in daily contact with a person suffering from unmodified small-pox, one of the most repulsive diseases in existence; no man who can intelligently and with an unbiased mind study mortuary statistics, can have any doubt of the protective power of vaccination. This whole subject can be summed up in a few words by the quotation from Scripture placed on Jenner's tomb: "And he stood between the dead and the living; and the plague was stayed."

In no better way can this paper be brought to a close than by quoting Jenner's epitaph, which very concisely embraces the whole subject:

"Within this tomb hath found a resting-place
The great physician of the human race, —
Immortal Jenner! — whose gigantic mind
Brought life and health to more than half mankind.
Let rescued infancy his worth proclaim,
And lisp out blessings on his honored name;
And radiant beauty drop one grateful tear,
For beauty's truest friend lies buried here."

◆

THE ANTERIOR TRANSVERSE ARCH OF THE FOOT: ITS OBLITERATION AS A CAUSE OF METATARSALGIA.[1]

BY JOEL E. GOLDTHWAIT, M.D., OF BOSTON.

By far the most important feature of the human foot, when considered from a mechanical point of view, is the arrangement of the bones of the tarsus and metatarsus into arches, upon which the weight of the body is borne in standing or walking. These arches are arranged longitudinally and transversely, and the proper maintenance of both is important.

The longitudinal or antero-posterior arch is the larger and the more important. Anatomically it is thoroughly understood, its pathological conditions are well recognized, and the methods of treatment are well defined.

The transverse arch is smaller, less noticeable, and of much less importance in the large majority of cases. Anatomically it is recognized; but its pathological conditions have not been considered. It is most noticeable at the tarsus, where it is formed by the cuboid, scaphoid and the three cuneiform bones, but extends forward as far as the metatarso-phalangeal articulations, where, although much less clearly defined, it truly exists. Its presence at this point, a fact which has been denied by some authorities, has been proved to the satisfaction of the writer by the careful study of frozen sections of feet, and of impressions of the feet taken while supporting different degrees of the weight of the body. In the tarsus it is quite rigid, and is obliterated only as the longitudinal arch is obliterated, both being supported at this point by practically the same structures. In the anterior portion of the foot or at the metatarso-phalangeal articulations, it is less marked, and is present only when the foot is at rest or supporting comparatively little weight.

When the foot is first placed upon the floor, the heel and the outer and inner portions of the ball form the points of contact. In this position the heads of the second and third metatarsal bones are in a plane distinctly above the others, and no weight is borne directly upon them. As more weight is added, the ball of the foot is gradually widened and the heads of the second and third metatarsal bones are lowered; these, together with the first metatarsal forming the chief support when all of the weight of the body is thrown upon the foot. At the same time the foot rolls outward: partly owing to a yielding of the antero-posterior arch, which causes a slight lengthening of the foot, and partly owing to the way in which the weight is received upon an arch that is poorly supported on the inner side. In this way the inner side of the foot is brought nearer the floor, and the centre of bearing is moved toward the inner side, thus relieving the outer side from much pressure. When the foot is raised or the weight taken off, the reverse takes place; the foot shortens, owing to the re-forming of the longitudinal arch; the second and third metatarsal bones are raised — or the anterior transverse arch is re-formed; and the heel and the outer and inner portions of the ball of the foot form the last points of contact. From this it is seen that in walking the relations of the structures of the feet are constantly changing; the anterior transverse arch is continually being obliterated and re-formed, the longitudinal arch is alternately lower and higher, while the ligaments which are involved are constantly stretched and relaxed, and the muscles are in the state of alternate rest and contraction.

The anterior transverse arch is formed by the heads of the metatarsal bones; the first and the fourth and fifth (which act together) furnishing the base, while the second and third are raised above this plane, forming, as seen upon cross-section, a low arch. This relation is maintained by the transverse ligament, the transversalis pedis muscle, and the tendons of the peroneous longus and the tibialis posticus muscles. The planta fascia, which is reinforced in its anterior expansion by transverse fibres, and the tendon of the flexor longus digitorum muscles — from its insertion and its oblique course across the sole of the foot — undoubtedly also exert some influence.

After studying a considerable number of cases in which the symptoms were referred to the feet, and after experimenting with various lines of treatment, the author is convinced that the obliteration of this transverse arch is the direct cause of many of the symptoms, and that its restoration in these cases is of the same importance as is that of the longitudinal arch in the ordinary cases of valgus. With its obliteration, the weight is received directly upon the middle of the foot, the outer and inner sides no longer furnishing their normal support, so that nearly all of the impact comes upon the second and third metatarsal bones.

---

[1] Read by title at the American Orthopedic Association, Washington, May 30, 1894.

It is evident from the study of a large number of impressions of the feet that the obliteration of this transverse arch is very common — much more common than the flattening of the longitudinal arch — and that comparatively few persons suffer any inconvenience from it.

In a limited number of cases, however, this condition, usually so simple and of so little importance, becomes more serious, and symptoms develop which at times are most distressing and render treatment necessary. The two symptoms which are most common and which are present to a greater or less degree in almost all of these cases are irregular attacks of pain, referred to the anterior portion of the foot, and the presence of a painful callous in the middle of the ball. The pain, which at times is constant and at other times paroxysmal (similar to that which has been described as anterior metatarsalgia) is usually referred to the centre of the foot, near the head of the third metatarsal bone. The location of the pain in the interspace between the fourth and fifth metatarsal bones — that which is described by Morton as being the common one — is certainly unusual, and the cases are strikingly few when compared with those in which the pain is referred to the middle of the foot. The callous, which may vary considerably in size, is formed directly under the heads of the second and third metatarsal bones, as the result of the undue pressure at this point, and at times is so painful as to render locomotion difficult.

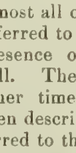


FIG. 1.

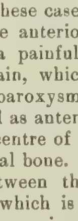


FIG. 2.

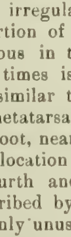


FIG. 3.

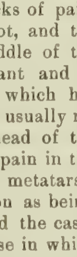


FIG. 4.

Besides these two symptoms, which are such constant ones and of so much importance as diagnostic signs, the diagnosis can be confirmed, in the majority of cases, by impressions of the feet, as with the ordinary cases of flat-foot. In the normal foot there is a sharp re-entering angle where the impression of the ball of the foot joins that made by the outer side, as is shown in Figs. 1 and 2. Both represent normal feet: Fig. 1, a foot of the long, slender type; Fig. 2, the other extreme. When the transverse arch is lost the impression presents an entirely different appearance as is shown in Figs. 3 and 4. In place of the re-entering angle the tracing bulges at that point. In both of these cases the longitudinal arch is still present.

While it is possible to obtain an impression that is characteristic when the anterior arch is obliterated, this characteristic outline is lost if, at the same time, the longitudinal arch is destroyed. After some experience it was found that in the cases where the valgus deformity was not rigid, the impressions to determine the condition of the anterior arch could be taken with the same degree of accuracy as when the longitudinal arch was present, simply by varying the amount of weight supported upon the foot. The anterior arch, when obliterated, does not re-form, so that even the lightest pressure will develop almost as characteristic an impression as when the foot is firmly placed upon the floor. With the longitudinal arch this is not so. When the foot is at rest (unless the valgus is of the rigid type), the arch appears very much as normal: but as soon as pressure is put upon it, it gives way. Figs. 5 and 6 are impressions of the same foot, taken at the same visit. The first was taken with the foot supporting all of the weight of the body, both arches giving way; while, in the second, the weight supported was very much less. In the latter instance the longitudinal arch remains, while the flattening of the transverse arch is clearly shown. The abduction of the foot which is present in the ordinary cases of flat-foot, does not, of course, occur when only the anterior arch gives way. This is also shown in Figs. 5 and 6, and is of importance in diagnosis.

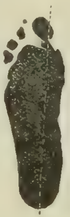


FIG. 5.

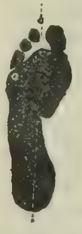


FIG. 6.

The causes of flattening of the anterior transverse arch are much the same as the recognized causes of flattening of the longitudinal arch: excessive standing or walking; injury, such as a sprain, or a fall in which the weight is received upon the front part of the foot; weakness following long sickness; and very probably improper shoes, chiefly those which are much too narrow.

The treatment of this condition naturally consists in the restoration of the parts to their normal relation — the re-formation of the arch. In some instances this has been accomplished by simply bandaging the foot tightly, a method which prevents the foot from widening when weight is borne upon it, and consequently the arch from lowering. In other cases it has been done by the use of felt pads, or leather inner soles so padded as to bring pressure just behind the heads of the second and third metatarsal bones. A metal plate has also been used in some cases, carried forward and raised to cause pressure, as with the inner soles. Pressure coming directly under the heads of the bones is, of course, to be avoided, as it would increase the sensitiveness of the callous. In connection with this mechanical treatment, exercises, massage and stimulating bathing are of value.

CONCLUSIONS.

At the metatarso-phalangeal articulations there is an arch, called by the writer the anterior-transverse arch. This, at times, becomes flattened, and symptoms develop which are characteristic.

The symptoms most commonly met with are pain, referred to the anterior portion of the foot — the so-called anterior metatarsalgia — and the presence of a painful callous in the centre of the ball of the foot.

The impression of the foot is typical, and can be developed in many cases, even when the longitudinal arch also is obliterated.

The treatment consists in the restoration of the arch by plates, pads or bandaging.

Clinical Department.

A UNIQUE CASE OF RENAL CALCULI.[1]

BY STEPHEN H. WEEKS, A.M., M.D., PORTLAND, ME.,
Surgeon of the Medical School of Maine and of the Maine General Hospital.

I AM indebted to the patient, General Seldon Connor, Adjutant-General of Maine, for the very concise statement of his gun-shot wound received on the battlefield in 1864, and the subsequent history. I write it in almost his own words, which are better than any I can use.

In the battle of "The Wilderness," on the 6th of May, 1864, he received a compound comminuted fracture of the left femur. Exsection was performed at the field hospital by Drs. Dyer and Heywood of Massachusetts. He was taken to Fredericks, where he remained several days — until the river had been cleared of torpedoes, to admit the passage of steamboats — and was then taken to Washington, where he had rooms at a private house for a few days, and was then removed to the Douglas Hospital, which was at that time under the superintendence of Dr. Thompson, afterwards of Dr. Norris. During this period the limb was kept on a double inclined plane, made on the field from bread-boxes. It was so difficult to take proper care under the circumstances that the wound, and sores caused by abrasions under the knee, became maggoty. Upon his arrival at the Douglas Hospital he was taken from the inclined plane to a bed, and the wounded leg was put in a bran-box.

He had been in the hospital some four or six weeks when a secondary hemorrhage occurred. The surgeons were hastily summoned. An operating-table was brought in, stimulants given, and other preparations made for amputation; but he had lost so much blood, and was in such a weak condition, that the surgeons concluded that it would be fatal to operate. The tourniquet which had been applied as soon as the hemorrhage was discovered, was removed, and the flow of blood was stayed by digital compression. For four weeks there was some one at his bedside continually — either a nurse, a personal friend, or a volunteer from the Maine men (clerks) in the department — holding the artery at the groin. Pressure was not required at all times; but occasionally there would be a cramp or contraction of the muscles which would cause the blood to spurt, and then pressure was necessary. The thigh became very much distended; and the danger of mortification was such that at the end of four weeks the clots were allowed to come away, and it was a great satisfaction to see that the after-flow was pus, and not blood.

He had been in the hospital some months, when one day he felt something pricking through the skin on the under side of his thigh as he lay on his back. The surgeon was called, and he extracted a flattened piece of lead equivalent to about a third of the ordinary elongated bullet. It was either a part of a bullet made in sections, as some were, or a piece of a solid bullet cut off by the bone "in transit" and making a separate track for itself, thus escaping the notice of the surgeon who made the exsection. The main part of the bullet went directly through the thigh.

In the spring of 1865 there seemed to be some signs that the bone was uniting, and to give him some relief by change of position, a Smith anterior splint was applied. It had not been on long when a pain in the knee caused him to have the surgeon called. He took off the splint, and found the knee-joint in a state of high inflammation, which was subdued by an application of ice for four weeks. At one time extension of the limb was maintained by a weight attached to the "bight" of a strip of adhesive plaster on each side of the limb. This caused a little sore at the ankle, which soon became an inflamed ulcer, extending for some distance around the ankle. This was healed, as the surgeon said, by the application of dry calomel.

He was very desirous of attending the "Grand Review" of the Army of the Potomac, May 23, 1865; and after some demurring from the surgeon in charge, he was allowed to go on a stretcher slung in an ambulance, with his leg encased in a plaster-of-Paris bandage. The ambulance was driven into an alley opening from the avenue, and he stayed there several hours. A few days afterwards he had a severe attack of chills and fever, caused, as it seemed to him, by the stay in the damp and unwholesome alley; and it was several weeks before he got relief.

In August, 1865, he was taken on a stretcher to his father's at Fairfield, Me. After a week or so, dysentery came on, and reduced him to one-half his normal weight. His stomach rejected everything, even cold water. His attending physician, Dr. Boutelle, of Waterville, Me., called in consultation Dr. H. H. Hill, of Augusta. Dr. Hill suggested a mixture of the white of eggs, sugar and a little brandy. In his characteristic manner he said, "It's victuals and drink; and if you put brandy enough in, it makes very good lodging." The mixture proved potent. It was not more than a week after he began taking it when his stomach became strong, and imperatively demanded food; and he began to eat beef and mutton, and to gain nearly two pounds a day in weight.

On the first day of January, 1866, he stood up for the first time, with the aid of crutches. In the spring of that year he accidentally fell and re-fractured the femur; and it was more than a year before the fractured bone united sufficiently strong to make it safe for him to use it at all.

When he was so much reduced and weakened by dysentery, his right leg drew up, and an abscess formed in his right groin, discharging a large quantity of pus when opened. So far as he knows, there was no other cause for the abscess than the low state of his system.

His health had always been good. The only serious illness he had ever had before his army service was typhoid fever when he was seventeen years old. He enlisted as a private in the First Vermont Volunteers, early in May, 1861. When he went into camp at Rutland, Vt., it was freezing weather in that mountainous region, though the month was May; and he took a severe cold, which assumed a chronic catarrhal form, and he did not fully recover from it until the following winter, though he was on duty all the time, going into the Maine regiment immediately after the conclusion of his three months' term of service in the Vermont regiment. In the spring of 1862 he had an attack of dumb ague on the Peninsula; and he also contracted the diarrhea from which few men who served in that pestilential region escaped. He was more fortunate, however, than many, because, by care and treatment and especially by wearing a flannel bandage around the waist, he practically recovered after a year or so.

---

[1] Read before the Maine Medical Association, June 13, 1894.

At the time he received his wound, he was in robust health and vigor, six feet one and one-half inches in height, two hundred pounds in weight, and twenty-five years of age. His sound digestion carried him safely through the long period when the suppurating wound required him to consume at least twice as much nourishment as his ordinary allowance in a normal condition. With the exception of the fever and ague and the supervening dysentery, which lasted about six months — from the attack of fever and ague, about June 1, 1865, until his recovery from the dysentery some time in the late autumn following — his general health continued good from the time he was wounded throughout his entire confinement on account of the wound.

The only illness he had after that period was an occasional headache. From his boyhood he had a headache now and then, but not of a severe type. After he got about on his recovery from the wound, his sick-headaches became more frequent and more severe. He thought that he could always trace the cause to some indiscretion in diet, to exposure to wet or cold, to want of exercise, to fatigue, etc. With that exception he had no ailment of any kind until 1887. In the summer of that year he had an illness to which his physician gave no name, and for which no cause could be assigned. He was weak and lethargic, and had profuse night-sweats; and his urine was dark-colored, turbid and of strong odor. He was ill two or three weeks, and then resumed his usual health, although his urine continued to be dark and to retain the peculiar odor it had during his illness.

He had it examined by Dr. I. E. Kimball of Portland, who reported that he found in it no indications of organic disease of the kidneys, only of functional derangement (indigestion).

In 1891 he was attacked one night, without any premonition, with a feeling of distress in the region of the stomach and bowels. He was not able to exactly localize the feeling. He was weak and began to have severe chills. The physicians who were first called were unable to account for these symptoms. After a few days, his brother-in-law, Dr. J. F. A. Adams, of Pittsfield, Mass., came to see him, and I was called in consultation. After learning the history of the case, and making an examination of his condition, together with an analysis of the urine, we were of the opinion that the trouble was in the pelvis of the kidney. After a short time pus became mingled with the urine, which tended to confirm our diagnosis. Through the month of June he was confined to the bed, and was quite seriously ill, the urine containing large quantities of pus. He did not recover his health and strength sufficiently to enable him to leave the house and attend to business, before the last of August following. He was as well as usual through the fall and winter, and a little fleshier than he had been for a long time.

In the spring of 1892 two large, painless swellings somewhat suddenly and unaccountably appeared; one in his right groin, and one in his right thigh, a few inches below the groin. For several weeks he was about his business without feeling much inconvenience or paying much attention to these swellings. I made applications of discutient lotions, and finally ordered poultices. Under the use of poultices the swelling in the groin softened, and I detected deep seated fluctuation. I then opened it, and for several weeks there was a slight discharge of pus. One morning, in dressing the opening, a small stone was found, which, on examination, was found to be a small renal calculus of uric-acid formation. This occurrence threw a flood of light upon the whole history of the case. The next day I put him under ether, made a free incision into the swelling in the thigh, enlarged the opening in the groin, and removed from each opening a renal calculus as large as a cranberry-bean. The facets on the stones would indicate that they were formed together, or in contact one with the other. The wounds healed; the one in the thigh completely, the one in the groin leaving a sinus extending upwards and backwards in the direction of the right kidney, and reaching well nigh down to that organ. This sinus was kept open, and was washed out daily — sometimes with a bichloride-of-mercury solution, then with tincture of iodine, and then with the peroxide of hydrogen. About one year ago another small stone, about the size of the first one that came out, came away.

This plan of treatment was continued up to a few weeks ago, when the discharge became so slight that I discontinued the injections into the sinus. It is now very small; there is almost no discharge; and from the depressed appearance of the external opening, I have no doubt that in a short time it will be completely closed.

There have never been any indications of urine in the discharge, and no pain has been felt in that region. He is now in good health and weighs 202 pounds. He has had few headaches the past two years, and they have been slight, and traceable to some sufficient cause.

To me this case is unique. This is the only one I have ever seen; and I have never read of one like it. These calculi must have formed in the pelvis of the kidney, and by their presence produced pyelitis, which was the nature of his sickness during the summer of 1891.

This suppurative inflammation of the pelvis of the kidney led to perforation by the process of ulceration, and the escape of the calculi from the pelvis of the kidney into the perinephritic tissue.

From the time of their escape from the seat of their formation, probably some time in June, 1891, to the time when I removed them in May, 1892 — about one year — they were slowly working their way in the cellular tissue down along the course of the psoas magnus muscle until they reached that point in the thigh and groin where they were removed.

It was a most marvellous feat of nature that closed up the large opening in the wall of the pelvis of the kidney, through which the stones escaped, thereby preventing the flow of urine through this artificial opening, and the formation of a permanent urinary fistula. It has seemed to me that a case so rare as this, and so fortunate in its termination is worthy of a permanent place in our published transactions.

Thus far I have said nothing of the cause of the formation of these calculi in the pelvis of the kidney. It has been my experience to find that calculi form in the kidneys from lying for a long time in the recumbent position; especially is this so where there has been great exhaustion from any cause. I feel confident that the long confinement after the gun-shot fracture of the thigh, together with the long-continued suppuration, which must have resulted in more or less absorption of decomposed pus into the blood, produced a peculiar diathesis of the system which predisposed him to the formation of the calculi, and may have even awakened a low grade of pyelitis which acted as an exciting cause of their formation.

Their formation was slow, I have no doubt, and may have extended over many years, the foundation of their formation being laid during his long hospital experience.

◆

TWO UNUSUAL CASES OF MALARIA: ONE OF REMITTENT FORM, FOLLOWED BY DEATH; THE OTHER A MARKED INTERMITTENT, SUCCESSFULLY TREATED.

BY ELDRIDGE G. CUTLER, M.D.,
Visiting Physician, Massachusetts General Hospital.

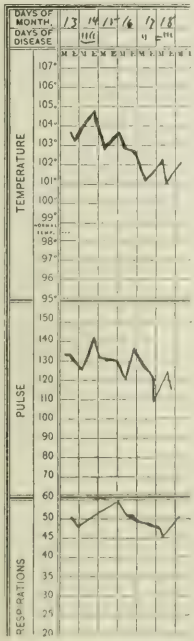
J. B. H., twenty-five years old, single, chemist, born in Lowell and living in Chelsea, entered the Massachusetts General Hospital July 13, 1892, sent in by Dr. Fenwick.

Family history negative.

Personal history: No alcohol or venereal diseases. Excess of tobacco. Lived in New Orleans, La., four months, returning north a year and a half ago. In North Weymouth for one year, and in the Bradley Fertilizer Company.

Present illness began five months ago, as "tertian chills and fever": and, with some intermissions, he has been sick ever since. There has been no chill for the past week, but high fever has been constant. The past few days there has been a slight cough. There has been no nose-bleed; the bowels have acted only with medicine. Delirious the past few days. Skin and eyes yellow one month ago. Urine coffee-colored at the time. No pain.

Examination: Cheeks flushed. Tongue dry, red, fissured. Patient has a peculiar animal odor. Heart sounds confused, lacking the usual booming quality. Pulse dicrotic. An edge of solid organ felt three inches below the left costal border in the splenic region, with which edge splenic dulness corresponds. Abdomen full, tympanitic. No rose spots. Stools diarrheal, yellow, involuntary. Urine involuntary: shows diazo reaction. (Typhoid precautions. Milk, eight ounces every two hours. Whiskey, half an ounce every six hours.) Urine was normal in color, acid, 1,012 specific gravity; albumin faint trace; no sugar; sediment slightly flocculent, and chiefly mucous, squamous epithelium and leucocytes; no casts found; heavy diazo reaction.



July 14th. Pulse dicrotic. Muttering delirium. Subsultus tendinum. Take snourishment fairly well. Does not attempt to get out of bed so much as last night. Whiskey was increased to half an ounce every two hours, and quinine given. Blood examination shows a few hyaline crescentic masses granular in centres.

July 15th. Abdomen more distended and tympanitic. Edge of spleen (apparently) felt as before, three inches below the costal border. Patient is quieter; nervous symptoms not so marked. Heart sounds still confused; no murmur. Petechiæ scattered over the abdominal integument. Pulse not quite so dicrotic. Fever continuous, but less severe than day before.

July 16th. The stimulus and quinine were increased, and digitalis added on account of the pulse. The patient was more stupid and quieter.

July 17th. The heart and pulse were improved a little by the treatment. Careful examination of the lungs did not account for the rapid respiration. The petechiæ increasing daily, and are situated principally in the upper abdomen above the umbilicus; they are larger over the splenic area.

July 18th. Respiration gradually became suspirious. Patient got weaker, the heart's action more feeble, and he died on the morning of the 19th.

The autopsy was made by Dr. F. B. Mallory, two and a half hours after death. Brain normal. Heart small; valves and cavities normal; muscular substance pale and firm. Lungs small; purple areas of atalectasis along lower border; considerable edema; small bronchi contain a grayish fluid. Spleen enlarged, weighed three pounds, five ounces; fairly firm; measured twenty-two centimetres long, twelve broad and five thick; dark color; borders thickened, and showed numerous yellow opaque areas under the capsule. On section, dark-purple color of surface; not soft or pulpy; showed numerous small, yellow areas surrounded by reddish gray, and containing in centre of many a small lumen. Supplementary spleen of small size. Kidneys, on section, pale and somewhat opaque. Stomach normal. Intestines normal. No swelling or ulceration of Peyer's patches. One small, irregular area of cicatricial tissue in colon a few inches from the ileo-cecal valve. A fecal concretion, size of and shape of pea, in the end of the appendix. Lymph glands in the region of the stomach and pancreas and along the abdominal aorta, to a much less extent in the mesentery near the cecum, were enlarged, and gray and translucent on section. Liver normal.

Dr. Fenwick, in answer to inquiries a few days later, wrote as follows of the patient: "Mrs. Andrews (where he had been boarding for the last year or more) states that Mr. Hovey came to her house a year ago last March. He had been in New Orleans, La., for about four months — on his way home stopping over in Washington, D. C., for a few days. After arriving home, he was in poor health. He had paroxysms of fever, and at times complained of being chilly; was confined to the house for a week or more, and finally got about. He stated that he thought he had malaria. On February 20, 1892, he came home complaining that he felt sick; had been exposed to severe cold, and had wet feet, and had been working fifteen hours a day during the week previous. On arriving home he went to bed, and was not up for a week. He could not be made to feel warm, although he was in a warm room, and amply covered with bedding. He referred his cold feeling to his stomach. After six or seven days he began to get better, and his appetite returned. About the last of February he again began to have a chilly feeling, followed by fever; these attacks were noticeable about every second day. Fever always followed the chilly feeling." This condition continued till the 18th of March, 1892, when Dr. Fenwick was called, and "found him with a high temperature (104° Fahr.), pulse 120, coated tongue. He had a chill, or cold stage, a few hours before I arrived. My history of the case is similar to that detailed by Mrs. Andrews. The patient was put on increasing doses of quiniæ sulph., the first twenty-four hours to take twenty grains, then to follow with five grains three times a day. Did not see the patient again for several days (think ten). On my second visit the condition had been more favorable. He discontinued the treatment on account of its being distasteful to take. He was advised to persist in taking the quinine, which he did with more or less regularity. I considered his case one of malarial fever, and persisted in the necessity of adhering to the treatment. I was not considered as having the responsibility of the case till about one week before I urged his going to the hospital. About seven or eight days before entrance to the hospital the fever assumed a continuous form. I have reason to suppose that the case was one of remittent fever, probably originating in New Orleans during the four months' stay in that city."

I report this case because it is the first remittent malarial fever I have ever seen. The sickness was reported to have begun as "tertian chills and fever," five months before he came to the hospital, though on what grounds it was called tertian is not clear. From the description it appears that the patient was sick for a week or more — at first with fever, and at times chilly sensations. The next attack lasted a week, and he was cold most of the time. In the next attack there was fever for a week, with chills about every second day. In other words the fever was continuous, with remissions and chills; finally, continuous fever for about two weeks. The crescents, granular in the centre, were found in the blood on the second or third day at the hospital by Dr. Stowell, the house-officer, who had had a good deal of experience in examining blood, and his report is reliable. This observation is of interest, in view of the assertion of Marchiafava and Celli that remittents have distinct species of organisms in the blood, and the crescents represent a phase in their development.

Dicrotic pulse is spoken of as occurring in this form of fever, though Osler says it is rare. The presence of the heavy diazo reaction is of interest in emphasizing the fact that it is of no importance in this disease in differentiating typhoid. In the post-mortem report I was struck by the absence of any mention of pigmentation of any of the organs. This, to be sure, may be a microscopic appearance, and it may have thus escaped notice. I had thought that the spleen was examined microscopically for organisms, but find no mention of such examination in the report.

Finally, a word about the giving of quinine. We have followed the method advised by Dock in ordinary cases. This patient received about forty grains a day for several days; and as it did not seem to do any good, it was omitted. I do not remember whether it was given subcutaneously or not. We had done so previously in other cases.

P. G. S., twenty-three years old, single, born and with his home in Long Island, a machinist, was admitted to the Massachusetts General Hospital Friday July 7, 1893.

Family history negative.

Personal history: Slight excess of tobacco. Denies alcoholic and venereal diseases. For eight years attacks like the present have come on, generally in August and September, not especially in hot times. No cause known. These attacks last three or four days, and he loses about a week's work. No special treatment. No delirium or coma in any previous attack.

Present illness: Four days ago, at four o'clock in the afternoon, bad headache; awake all night with the headache and tin horns (evening of July 4th). Steady headache and anorexia since; worse in the afternoon. Vomiting two nights ago. Hot and thirsty all along. Bowels have moved daily. Poor sleep. Has worked half-time till to-day. *No chill at any time.* No cough. No pain except in head. No special mental or physical strain. Remembers feeling sick about noon yesterday and going to the hotel. Remembers nothing since, till this morning (July 8th). Does *not* remember being brought here. Friends say he became delirious about noon.

Examination: Brought in herdic, wildly delirious, very weak, pale, cold extremities, hardly to be kept in bed. Answers irrational. No smell of alcohol. Pupils negative. At times double internal squint. Tongue straight, moderate coat. Pulse 100, regular, feeble. Temperature 102.6° Fahr. Respiration 40. Chest negative. No spots on the abdomen. Spleen at the seventh rib, and extending to one inch beyond the costo-articulation. No edge felt. Knee-jerks normal. No paralysis. No tenderness. Swallowed all right, and within a few hours was quiet and rational, and slept well. (Enteric precautions; liquids ordered.)

July 8th. The above history was got this morning. Feels perfectly well, and wonders why he came. Spleen palpable. Temperature normal. Respiration 23. After hunting for two hours, Dr. Richard C. Cabot found one plasmodium in active motion. *No chill at any time.* (Omit precautions.)

July 9th. Typical malaria chill. A few pigmented, actively moving plasmodiæ found. As temperature began to decline, five grains of quinine every hour, for five doses, were given; some of it was vomited.

July 10th. Feels entirely well, and anxious to go.

July 11th. No rise of temperature. Insists on going. So given directions for quinine, and discharged well.

In a letter received a month later from his home in Long Island, he says: "Some days I feel quite well, and some I feel miserable. If I forget the quinine, I have chills the next day, and some fever. I am satisfied that I got this malady in Boston."

Dr. Tenney kindly called my attention to two cases quite like this above, reported in the *Medical News* of April 7, 1894. Maniacal delirium occurred in each case, and lasted some time; but after some hours yielded to moderate doses of quinine.

AN experienced Medical Officer of Prisons has said that sick convicts reminded him of the lower animals by the uncomplaining, patient way in which they passed through severe illnesses.

Reports of Societies.

CLINICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

HENRY JACKSON, M.D., SECRETARY.

Regular Meeting, Wednesday, April 18, 1894, Dr. F. C. Shattuck in the chair.

Dr. E. G. Cutler reported

TWO UNUSUAL CASES OF MALARIA; ONE OF REMITTENT FORM FOLLOWED BY DEATH, THE OTHER SUCCESSFULLY TREATED.[1]

Dr. W. T. Councilman: With regard to the parasites in the first place; the crescents which Dr. Cutler described first are so perfectly characteristic that there would be no possibility of mistaking them for anything else. The crescents are interesting to me because they were first seen and described by Virchow, and accurately depicted in 1854. In the fourth volume of his *Archives* in an article on "The Pathological Pigments," he describes them as found in the blood in intermittent fever and considered them to be the endothelial cells from the spleen containing pigment; but there is no question that they were these crescentic organisms. They are crescent in shape, and contain a mass of intensely black pigment in the middle of them. We may have them in that shape, or simply as long oval bodies with this pigment in the centre. It is quite interesting that frequently there is a very fine line on the concave surface of the organism which may possibly represent the remains of a red blood-corpuscle, although the line has not been fully explained. I do not think, with regard to the development of these, that we know anything at all. These organisms are especially apt to be found in the cases with malarial cachexia, remittent fever, etc. It is very rare that we find organisms of this type in the typical intermittent fever; sometimes they may be found. They may be found when the intermittent type of fever is passing away, and it is passing into a condition of malarial cachexia.

The other forms of the organism are also perfectly characteristic. The other forms which we have in the ordinary intermittent types are totally different from this. The course of development of these organisms is perfectly simple. The first thing we see, if we follow the case from the end of the chill, is a very small body inside of the red corpuscles, which undergoes active ameboid movements. After a time, pigment begins to appear in this, and when the pigment begins to appear the corpuscle becomes paler. The body increases in size, the pigment increases in amount, takes on a more or less round shape, and finally may fill up the corpuscle almost entirely. It goes through that course of development in forty-eight hours; and some time before the development of the next chill we notice changes in it. Several hours before the chill is going to take place the pigment groups itself more or less in a line. The pigment ceases to be diffused in the corpuscle. In the next stage these segments become perfectly well marked. We see them radiating out from the centre of the organism, very much like the spokes of a wheel. Finally, the whole matter breaks up; the outer husk of the organism breaks up entirely, and these small masses become free in the blood — and we can find them free in the blood at the end of the chill. This process of segmentation takes place during the chill; and we may find masses that apparently result from segmentation of the group, or we may find a single one. We may find at this time masses of free pigment in the blood; and this free pigment in the blood which has come from the breaking-up of the organism is taken up by the white corpuscles.

The other form of the organism which we find is the one which always attracts the most attention, from the very peculiar whirling movements which it has. It is an organism about the size of this. It is freely pigmented; the pigment is in quite active motion, and after watching the pigment for a time in active motion, the organism apparently thrusts out long processes from various parts of its surface. These processes usually have small beaded masses on them, and these are in very active motion. The organism whirls round and round, and thrusts the red corpuscles aside, making little whirlpools and eddies in the blood, which in the preparation call attention to the organism. One of the most peculiar things about it — and which would show that these bodies are not the ordinary cilia — is that they become detached and undergo independent movement of their own, and when ordinary cilia are separated they cease to undergo active motion.

These are the organisms always found in the cases of intermittent fever. The observations I made on malaria were made quite a number of years ago, and I think the views have changed somewhat; but in an ordinary case of intermittent fever (tertian) we are sure to find these forms, and always find this segmentation just before the chill, and completed during the chill period. The spherical, ciliated bodies are peculiar. We find them only in a certain number of cases; and it has seemed to me they are more frequently found in blood drawn from the spleen than in any other place, and they have been found after death in the blood taken from the spleen. The crescentic forms I have scarcely ever found in the regular cases of intermittent fever; but they are found in cases of malarial cachexia and so-called dumb ague, remittent fever, etc.

I have seen seven cases of the comatose malarial fever, which is apparently the same fever which prevails on the coast of Africa, and in various other places. The patients have a chill and never recover from it, passing into a comatose state. In all seven of those cases, only one of which recovered, these organisms were found in the blood in enormous numbers. The presence of them with the pigment within in the capillaries of the brain gave the organ a perfectly chocolate color. These cases were usually brought into the hospital in a perfectly comatose condition, and the urine was usually examined and albumin found in it. They were put down as cases of uremic coma, and that condition of the brain and of the blood would be found on examination.

With regard to the absence of pigment in the spleen, I am rather surprised at that, because I have never seen a case of death from malaria without the presence of pigment in the spleen and liver as well. The pigment remains in the organs for a very long time after recovery from the disease.

Dr. Greenleaf: I have been much interested in the cases reported. The etiology also of intermittent fever assumes an especial importance to us at this time in connection with our contemplated park improvements. An impression prevails hereabouts that in some way our rivers are especially at fault in the causation of our recent epidemic. "Sewage" and "marsh miasms" also are still spoken of as causative factors. But we may dismiss all such except as possible transporting agents; for thanks to the researches of Professor Councilman and others, we now know that a definite micro-organism is the causative factor. This is frequently called a plasmodium; but as that name is already given to a lowly plant consisting of a mass of ameboid cells (the mass oftentimes being one, two and even more centimetres in diameter), it is better to speak of this as the hematozoon, which, as Dr. Councilman has so graphically described to us, is a micro-organism of a protean, unicellular character in the group of monads, the lowest in the ascending scale of animal life. It would seem a very easy problem to demonstrate the life history of the hematozoon outside the body, as in the soil. There are two obstacles to such demonstration. In the first place, inoculation experiments from the blood of intermittent fever cases in animals have proved failures. A second obstacle is that we find the soil teeming with micro-organisms. Numerous allied forms are found; and it would seem as if on finding a specimen of soil with such micro-organisms — if taken from the locality where intermittent fever cases had arisen — that the next step in establishing a very close connection would be an easy one. Such is not the case, as the soil is also rich in the bacillus of tetanus, and if inoculations are made with soil micro-organisms, the animals experimented on die from tetanus before signs of intermittent fever are produced. We must therefore rely on other data to give us an idea of the habitat of the hematozoon and its mode of entrance to the body.

---

[1] See page 237 of the Journal.

A study of the distribution of intermittent fever shows that it is widespread, being found almost everywhere except in the arctic regions and dry countries. It is more abundant in the tropical regions, and is always found in connection with moisture. It is rare among sailors, and rare in well-drained localities, even if rivers and ponds are present among them, showing that the micro-organism is not a water animal, though it may probably be carried in it. It is usually abundant where rivers or ponds have overflowed their banks and created conditions of decaying vegetation due to the retreat of the waters. It is common where water is collected in stagnant pools; so that we must look upon the association of moisture with decaying vegetation as a possible habitat of the micro-organism, which is known to be the case with some of its relatives. Furthermore, we shall find that intermittent fever is endemic in new countries, for instance, in the West; and when our own conditions were such, it was then present here. Dr. Holmes, in his prize essay, establishes beyond doubt that our ancestors found intermittent fever in this part of the country. There have been two or three notable epidemics, one at the close of the seventeenth and another at the beginning of this century. There have been periods in which it was absent for a long interval. It was so rare in this vicinity until about eight years ago that the diagnosis of intermittent fever would be questioned. However, if you compare the various reports of statisticians, you will find that intermittent fever has occurred in some part of New England during the intervals. In Brookline, where cases have occurred in abundance lately, cases did occur at quite a remote period; one case was reported in about 1855. That case was considered a foreigner then because the disease was so rare, and as the boy had previously lived in Brooklyn, N. Y., but he had lived solely in Brookline for the three years preceding his attack. That may fairly be looked upon, I think, as a possible case of intermittent fever arising in this locality. Then in Cambridge cases have occurred annually for the past twenty-three years about the clay pits. Two or three days ago I had a letter from a physician who practised in Boston about fifty years ago, and he wrote of a case in a boy on Eliot Street; so that we could hardly find a time when there was not intermittent fever during this long period.

Many writers regard our present epidemic as having originated from other areas, for example, some speak of it as coming from the endemic centre of New Jersey. But supposing it came from without, how did it get here? Certain observers consider air to be the active transporting agent, thus carrying the germs for short distances. Others look upon water as the vehicle, that is, our rivers. These latter regard the origin of our present epidemic as among the head-waters of the Charles and Sudbury. Supposing these rivers are the active cause in spreading the epidemic, how does it come about that the special cases are distributed in such localized areas? One of the established laws in the study of epidemics is that, as in the case of typhoid fever, when the cases are diffusely and uniformly distributed, when dotted on the map, they present a characteristic curve showing the action of a general widely acting cause; whereas if we have localized cases, the curve would be of a distinctly localized character, pointing to local causes. Professor Sedgwick brings this out in connection with milk-supply in reference to the typhoid fever epidemics. When we come to plot the cases of intermittent fever of this area, they do not show a general diffused distribution. They occupy local areas, so that we may assign to them local causes. That brings us back to the original question. There are numerous cases which point to just such conditions hereabouts as I spoke of at the outset, namely, conditions of local dampness in connection with decaying organic matter, the *débris* of swamps, *débris* on the mountain side where the vegetable growth has been disturbed.

The conditions at the School for Feeble-Minded in Waltham are most instructive in this connection. Four or five large buildings have recently been erected here. They are on a hill-top, some two miles from the river. One of the buildings was built over an excavation made through a considerable amount of decaying forest growth. Almost immediately after occupancy nearly every inmate was seized with malarial disease. Two of the other buildings presented somewhat similar conditions. On another part of the hill-top four buildings were placed in the form of a quadrangle, one was the executive building, one the school building, and the other two were occupied as dormitories — one for boys, the other for girls. The boys' dormitory was constructed on land which had been cleared and well drained for a great many years. The girls' dormitory was built on the same hill-top, but on a part covered with forest growth. The conditions otherwise, including milk, water-supplies, etc., were the same. When these buildings were occupied, scarcely a case occurred in the boys' dormitory, but the girls were taken sick, five or six of them a day, until a considerable number of them were affected with intermittent fever. In view of these cases, in view of the history of so many other cases, and also of the fact that our forefathers found intermittent fever here, are we not justified in concluding that the germs have been present in some of our woodlands all this time and may infect neighboring places whenever we combine the conditions favoring their development, such as the digging up of forest growth, decaying vegetation and swampy land? It would seem as if the reason we have been so free from it is because we have practically changed these conditions. Most of our towns were built years ago, were pretty well drained or sun dried at the surface; and we have freed ourselves from intermittent fever. In the last few years there has been a renaissance of buildings. Coincident with this great digging-up of the soil and cutting down of woodlands one epidemic has come in. We cannot say beyond a question that this has been an area with latent intermittent fever all this time, but in view of these facts it would be quite as probable an hypothesis as any. At all events it would be wise from a practical standpoint to take the same measures regarding new buildings as are taken by residents of the West, that is, not to live in such until the land has become thoroughly dried, and when no excavations are going on, and to take especial care in regard to cleanliness. I find that a great many of the cases occur among workmen, a possible method of introduction of the germs being their careless method of eating with soiled hands. Currents of air from affected localities may perhaps blow particles of soil for short distances, thus affording an entrance to our bodies by inhalation; and we must certainly regard the drinking of water from a suspected soil another possible source of infection, though if our rivers were full of the micro-organism, as some suppose, many more cases than we have had would have occurred and their distribution would have been different.

Dr. Councilman: I should like to ask if any cases of hematuria or hemoglobinuria of malarial origin have occurred in Boston or vicinity. It is very remarkable about that. We have in Maryland almost every possible form of malaria including the comatose form; but that so-called malarial hematuria or hemoglobinuria never appears there. It is a disease put down to malaria, but it has a very well-defined district of distribution. You find it in the eastern part of Virginia and in the Mississippi Valley; but I do not think it occurs in any other places in the country.

Dr. Cutler: The first year I was in the hospital as visiting physician there were no cases; the next year two or three; the next year several; and last year quite a number. Speaking about the occurrence of malaria in certain localities, I remember perfectly well to have seen a person who came from a distant place — not a malarial region. He was told that a very pleasant excursion was to go to Riverside and paddle in a canoe. He went by train, arriving about five o'clock, paddled a mile or two up the river, and took a swim. He did not duck his head under water. He came back, went to an apartment-hotel on Commonwealth Avenue, and had two days later a distinct malarial chill. I waited forty-eight hours, and he had another. A few doses of quinine stopped it. The man went away and lived in another place, and has never had anything of the sort since.

Dr. Blodgett: I am glad Dr. Cutler alluded to the particular locality of Riverside. I have a relative living on the sandhill from which the Riverside track is made to form the circuit line; and in several instances in that vicinity — all of them associated with boating on the river or residence near the river — I have observed cases of ordinary illnesses in which there seemed to be a distinct malarial tincturing, that is, an occurrence of chills with recurrent fever not following any special type; and in one or two cases there was evident remission with mild chills, reminding one of the presence of a malarial element. One case in particular simulated true malarial fever, in which there was no other complicating disease, and which subsided under quinine.

Dr. F. C. Shattuck: How common is it to see the organism escape from the corpuscle?

Dr. Councilman: One can see it escape from the blood-corpuscle during the beginning of the chill almost at any time; usually a little time before or in the very first part of the chill one can see the whole process of segmentation take place under the microscope.

Dr. Shattuck: I should like to say a word about the virulence of the infection which characterized Dr. Cutler's first case — the symptoms were so severe and so rebellious to quinine, and the case is so sharply contrasted with one which remains deeply impressed in my memory because it was the first case in which I saw the plasmodium and the first case, I think, in which the organism was seen in Boston. The case was one of Panama fever, under my care some eight years ago. The man was extremely pale, with malarial cachexia. It was the year Dr. Councilman published his paper on the plasmodium; and I was so much interested in this opportunity to observe the organism that I let the man's chills run longer than I should have done otherwise in order to study his blood. I waited as long as I dared; and yet one large dose of quinine practically cured him, causing total disappearance of the plasmodia. Dr. Cutler's man comes from New Orleans, and dies in spite of the best care and remedies.

Dr. Councilman: Quinine will have very little effect on the crescentic organisms, but the intracorpuscular forms yield quickly to quinine.

PATHOLOGICAL SPECIMENS.

Dr. Councilman: These specimens are rather interesting as showing as unusual degree of syphilitic infection. They come from a man who died at the City Hospital from facial erysipelas and erysipelas of the head. The man was exceedingly low when he came to the hospital, and died from the general syphilitic infection. I have quite a number of the organs which show the syphilitic lesions, and some of them show extremely unusual lesions. At autopsies, if we suspect a case of visceral syphilis, we look first at the testicles, because if there is any visceral syphilis the chance is almost sure that we will find it in the testicles. I have always thought that the testicle is the most frequently affected of any organ. The disease appears in the testicle in the two well known forms, both as a general and rather diffuse formation of connective tissue, and as the true gumma. The epididymis is very rarely if at all affected; the syphilis is always in that way sharply distinguished from tuberculosis, because in tuberculosis the epididymis is always affected and the testicle very rarely except as an extension of the tuberculosis from the epididymis, whereas in the syphilis the testicle is always affected. These are the two testicles of the individual; and in one of them particularly — it does not show so well after being in alcohol — there will be found numerous true gummatous masses. This small portion is the testicle and there are gummatous masses all through it. In the other testicle there was the more diffuse form. If we have a tuberculosis of the epididymis we almost always have extension of the disease up along the cord, and we may have tuberculosis of the seminal vesicles, of the prostate, or in some cases tuberculosis of the bladder. In this case there was no syphilis of the cord at all. The cord, so far as one could see, was free from any syphilitic lesions; but, on the other hand, here is a decided syphilitic affection of the seminal vesicle. The right seminal vesicle is enormously enlarged, and in the right seminal vesicle are these true gummatous masses scattered all through it and extending down into the prostate, so that there is a true syphilis — a true formation of gummata in the seminal vesicle on the right side. Of course, in cases of tuberculosis of the epididymis extending upwards, we would expect almost to have a tuberculosis of the kidney as well; although we cannot suppose that syphilis extends in the same way, still there is a perfectly well defined syphilis of the kidney here in the shape of a perfectly circumscribed gumma. The liver shows the syphilitic lesions perfectly. The liver was greatly enlarged; and in various places throughout the liver perfectly characteristic caseous masses are to be seen. We notice also the marked amyloid infiltration. I do not think the distribution of the amyloid substance is as marked immediately in the vicinity of the gummatous material as elsewhere. What makes the case exceedingly interesting is that there was a syphilis of the lung also. In the right lung there were numerous true gummata. At the edge of the posterior border is a circumscribed, more or less caseous mass with indurated lung tissue around it. The first idea would be to consider it as a tuberculosis of the lung, but it is not tuberculosis. In the fresh state the appearance of the caseous material in the centre of the gumma was essentially different from that presented by the tubercle. These masses were located in that part of the lung where we have syphilis, that is, on the posterior border of the lung and in the lower portion. That is a perfectly true gumma of the lung, and that induration of the lung which we find around that central caseous spot is an interstitial pneumonia which we find accompanying syphilis. There was no syphilis of the heart, no lesion of the heart. There is a well-marked endarteritis of the aorta, but I do not think there is anything at all to connect that with syphilis. The man was thirty years old, and there is no reason why he should not have had that due to something else. The case is an interesting one on account of the enormous extent of the syphilis. There was general amyloid and an enormous extension of the syphilis. It is particularly interesting to find syphilis of the seminal vesicles, because that appears to have been overlooked. I have not gone thoroughly over the subject; but as far as I have been able to look it up, I have not found any text-book which makes any reference to syphilis of the seminal vesicles. With regard to the lung, it is interesting to see the seat of the lesion in syphilis as compared with tuberculosis. In these two diseases, which would be most often confounded, we have an entire difference in the distribution of the lesion. In syphilis the apices are not affected. The part of the lung which is affected in syphilis, that is, as far as we can find out from the few cases of syphilis of the lung which have been reported, is the posterior border of the lower portion — the part of the lung ordinarily most free from tuberculosis, and in that portion of lung there is apparently no tendency for the material to break down. I think that syphilis of the lung is not so extremely rare; but I should think a syphilitic phthisis would be an exceedingly rare condition, because the syphilis, unlike tuberculosis, shows no tendency at all to break down. The necrotic tissue in the syphilis is not made up of cells alone, as in tubercle, but of fibrous tissue. The cells undergo metamorphosis into the fibrous tissue; and that fibrous tissue, even when necrotic, is much more permanent than the masses of dead cells which we find in tubercle. The case had not been under treatment in the hospital. The man came in, and died at the end of twenty-four hours.

DR. A. P. CHADBOURN read a paper on

THE CLINICAL USE OF MALAKIN.

He presented a short summary of an article by Jacquet reporting about seventy-five cases in which the drug was used, and added an account of his own experience in a single case.

DR. SHATTUCK: There are some cases of neuralgia so inveterate that it is important to have as long a list of agents as possible, because we need them all sometimes.

DR. BLODGETT: I saw an allusion to the drug Dr. Chadbourn has been giving, in which it was stated that the dose was a drachm three times a day. I am glad he has called attention to the possibility of toxic action from its use in large quantity. The administration of a drachm at once would liberate far more energy than the administration of half-drachm doses at short intervals, and might be the means of averting serious or even dangerous symptoms in patients possessing a peculiar idiosyncrasy to drugs, or unusual susceptibility to this particular drug.

◆

THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

EIGHTH ANNUAL MEETING, WASHINGTON, D. C.,
MAY 29, 30, 31 AND JUNE 1, 1894.

(Concluded from No. 9, p. 221.)

INFLAMMATION OF THE SEMINAL VESICLES.

DR. ROBERT W. TAYLOR, of New York, read a paper with this title.

This affection, which is also known as seminal vesiculitis, may be acute or chronic. The acute form has many points of analogy with epididymitis. Both affections are almost always secondary to gonorrhea, occurring in the third or fourth week, or to hyperemia of the posterior urethra due to masturbation and venereal excesses, or to inflammation of this region resulting from traumatism, catheterization, endoscopy and strong injections. The symptoms of the acute form of seminal vesiculitis are quite similar to those of posterior urethritis, and to those given as diagnostic of the several varieties of prostatitis. The patient first experiences pain, either of a dull or a throbbing character, or a sensation of weight, which he refers to the deep portion of the pelvis just within the anus or at the neck of the bladder or the perineum. There is marked increased frequency in urination and tenesmus, sometimes mild, again quite decided, and in some cases very severe. As the bladder fills the painful symptoms increase in severity, and there may be pain at the end and sometimes at the root of the penis. There may be fever, chills and malaise. All these symptoms may be present in posterior urethritis, so that the crucial test in diagnosis is palpation of the prostate and seminal vesicles by means of the finger in the rectum. If the case is one of acute posterior urethritis, the prostate will be tender, even painful on pressure, and perhaps swollen. If seminal vesiculitis is present and explored for early, one or both vesicles will be found to be much enlarged in all directions in the shape of a distended leech, hot, brawny, and exquisitely tender. Defecation is very painful and perhaps complicated with rectal tenesmus, and may be attended with vesical spasms; sleep is heavy and unrefreshing; and often during the night painful erections, perhaps bloody, may add to the patient's sufferings. In a few days the swelling may still further increase, and then moderate fluctuations may be felt.

The chronic form of seminal vesiculitis may result from the non-occurrence of resolution in the acute affection, and in this form the clinical history is tolerably clear and striking. But in the majority of cases it begins as a low grade inflammatory process, in persons particularly of neurotic type, who may suffer from chronic or sub-acute posterior urethritis or chronic prostatitis, and confirmed masturbators, and in those given to excessive venery and alcoholics.

In the acute form of this trouble resolution usually takes place. In the chronic form amelioration and cure may be obtained. In some cases, however, the morbid process goes on to the formation of large tumors, which require operative interference.

When recognized in the acute stage, seminal vesiculitis is to be treated on the general principles which govern the management of all phlegmasiæ of the genital and urinary organs. A good plan is to apply a large number of leeches upon the perineum and the margin of the anus. Injections of cold water may be used, and the rectum may be packed with ice if the procedure is pleasant to the patient. Opium in suppositories, diluents and saline cathartics may be administered as required. Should an abscess form, it may be reached by means of a long incision in the perineum, just anterior to the anus. The resulting cavity should be treated on general surgical principles. When the abscess is not large, but well defined, it may be aspirated through the rectum. In more acute and extensive abscesses, free incision through the rectal wall, followed by careful antiseptic packing, has been recommended.

In the treatment of chronic seminal vesiculitis, in which we may find distended, pouchy vesicles, much stress has recently been laid by Dr. E. Fuller upon what he terms stripping or milking the vesicles with the finger-tip, which is inserted in the rectum. Dr. Taylor said it was no easy matter in many cases to reach the vesicles with the finger, and to clearly define their size and shape. Moreover, the seminal vesicles are made up of blind-ended tubes or diverticula; and for anatomical reasons it will be clearly seen that the utmost that can be accomplished by stripping or milking a vesicle is to act upon about one-quarter of its whole structure. The author said he had no doubt that the ampullation of the vas deferens, which is commonly near the prostate, has often been mistaken for enlargement of the seminal vesicles.

Dr. Gardner W. Allen said that in the cases of seminal vesiculitis coming under his observation, the symptoms were not characteristic, and a diagnosis could only be made by a rectal examination. In these cases he thought he had succeeded in reducing the size of the organs by pressure with the finger-tip exerted through the rectum.

Dr. Martin expressed the opinion that in comparatively few cases of epididymitis was there any evidence of swelling of the seminal vesicles. In healthy men he had not been able to locate the vesicles at all.

Dr. George E. Brewer, of New York, mentioned frequent ejaculation on very slight provocation as a symptom of chronic vesiculitis. In spite of Dr. Taylor's demonstration, he thought it possible to express some of the contents of these over-distended sacs by pressure through the rectum.

Dr. James R Hayden, of New York, said that his attempts at milking or stripping the seminal vesicles had proved very unsatisfactory.

Dr. Bangs referred to the difficulty he had had in outlining the seminal vesicles, excepting in chronic cases. In some instances, by making pressure through the rectum, he had been able to express a fluid which contained spermatic elements; whether this came from the ampullated part of the vas or from the vesicles themselves he did not know.

Dr. Robert F. Weir, of New York, described the method of opening abscesses of the seminal vesicles through the perineum. He stated that in a number of instances he had removed the vesicles for tubercular disease, together with the testis and vas deferens.

Dr. Belfield called attention to the fact that the sinus pocularis, when distended, forms a swelling in the region of the seminal vesicles.

Dr. Bryson said that chronic inflammation of the vesicles might be mistaken for tubercular inflammation.

Dr. Taylor, in closing the discussion, said that when the seminal vesicles were inflamed and distended, severe pressure in that region was apt to produce rupture of their walls. In the majority of cases it was probably the ampulla that was manipulated through the rectum, and not the vesicles themselves

THE QUESTION OF SURGICAL INTERFERENCE IN TUBERCULOUS KIDNEY.

Dr. John P. Bryson, of St. Louis, read a paper on this subject. The author stated that of 174 cases observed by him sufficiently to justify the positive diagnosis of tubercular disease of the urinary organs, only eighteen gave unmistakable evidences of involvement of the kidneys. This statement is, of course, intended to apply only to cases of surgical as distinguished from the more generalized tuberculosis known as miliary. Surgical interference in tuberculous disease of the kidneys has been recommended (1) to clear up the diagnosis and remove possible stone; (2) to free sloughing portions of the renal substance; (3) to drain the renal pelvis and avoid the infection of the lower urinary passages by diverting the stream of tuberculous urine by the loin; (4) splitting the capsule to avoid extensive sloughing in cases where the onset is sudden and large portions of the organ are threatened; and (5) nephrectomy in cases where the kidney is sufficiently disorganized by "strumous" disease to be no longer useful as an excretory organ, and but threatens the general health.

The complexity of the problem of surgical tuberculosis, the fact that experiment is not an adequate substitute for experience, and the knowledge that here we are dealing with organs so essential to the maintenance of life, render it impossible to study these propositions otherwise than by trial; that is to say, by the light of what has actually been done clinically, and the results that have been thus obtained. The researches of Morris and others show that in a little more than one-half the cases examined, both kidneys were diseased, though not to the same extent. This fact is sufficient to warn against any serious interference with the diseased organ, excepting in cases of urgent necessity. Not only may the second kidney be diseased, but it may be absent, or other tuberculous foci may exist elsewhere in the body, which, though "latent," are ready to become active sources of infection at any moment. The author stated that merely draining a tuberculous cavity in any part of the body had not proved a satisfactory procedure in his hands, even where the drainage was complete, or combined with washing and the application of antiseptics. If we could reason by analogy from similar conditions of the testis, splitting the capsule in those cases of sudden onset, with rapid swelling, in order to prevent considerable destruction of gland-tissue, was not so effective as rest, combined with emollient and anodyne local applications. In one case of this kind coming under Dr. Bryson's observation, in which the capsule of the kidney was split, the patient died in a fortnight from general tuberculosis. Where the symptoms of stone were fairly clear, an operation for its removal seemed to be justifiable; but the danger of lighting a chronic into an acute renal tuberculosis was too great to justify an operation for the purpose of clearing up a doubtful diagnosis, when intelligent and patient watching would surely, in the great majority of cases, solve the problem. To remove a stone; to open an abscess that is not adequately draining by the ureter, and thus relieve fever and wasting suppuration; to free sloughing portions of the kidney, and thus prevent infection of the pelvis and peri-renal tissues; and, when we can satisfy ourselves reasonably well of the adequacy of the opposite kidney, to remove a kidney that is disorganized and causing wasting by suppuration, seem to be plain surgical duties; but to remove, or even to incise and drain any portion of a kidney with the object of removing a focus that is likely to infect the body, was not, in the writer's opinion, a justifiable proceeding.

Dr. Bangs said that after a good deal of experimentation in this class of cases, he had come to the conclusion that good hygiene was the chief, if not the only factor in the cure of tuberculosis.

Dr. Keyes expressed the opinion that in these cases the surgeon should either stand aside, or else play the physician, and only operate when emergency demands it.

Dr. Belfield said he thoroughly believed in noninterference in tuberculosis of the genito-urinary organs.

Dr. Bell said that in cases where the tubercular lesions were limited to the bladder and prostatic region, he had had very satisfactory results from opening the bladder above the pubes, and then instituting prolonged drainage after cauterizing the diseased areas.

Dr. Chismore said he had become very conservative as regards the use of instruments in tuberculous patients.

Dr. Bryson then closed the discussion.

A CASE OF CYSTITIS AND PYONEPHROSIS DUE TO COLON BACILLUS, REQUIRING NEPHRECTOMY,

by **Dr. F. Tilden Brown**, of New York.

The patient was a male, aged forty, who in 1888 was treated for cystitis. Upon leaving the hospital, the symptoms of cystitis were replaced by those of pyelitis or pyelonephritis; in this condition he continued for some years, during which time he steadily grew worse. On his re-admission to the hospital in January, 1894, there was pain and resistance on palpation on the left side, and well up under the border of the ribs an indurated mass could be felt. In February, 1894, an operation was undertaken, and on exposing the left kidney it was found to consist of a large, thin-walled sacculated bag, filled with fluid. Nephrectomy was accordingly done and the patient made a good recovery. In the course of the operation the renal artery was ruptured, producing alarming hemorrhage.

Cultures made from a sinus of the removed kidney yielded a pure growth of colon bacillus. Cultures of the urine drawn by sterilized catheter, six weeks after the operation and again three months after the operation, also yielded pure cultures of the same bacillus.

In conclusion, Dr. Brown said that the title of this report was purposely made assertive as regards its etiology, rather with the intent to elicit discussion upon the importance or non-importance of the bacillus coli communis as a pathogenic agent in urinary diseases, than because this particular case afforded unusual facilities for positive deductions.

FOURTH DAY. — FRIDAY.

Dr. R. W. Taylor exhibited a colored drawing showing

A MIXED MALIGNANT GROWTH OF THE TESTIS.

Dr. Bryson said that tumors in the region of the testis or cord were seldom typical; they were apt to be composed of mixed elements; and in the treatment of these cases radical measures were usually indicated.

Dr. Bangs said that in one case of carcinoma of the testis coming under his observation, the inguinal glands were not removed and two years later there was a recurrence of the disease in the kidney on the affected side; the inguinal glands were not involved.

Dr. Bryson said that in one case of sarcoma of the testis there was a recurrence of the disease in the intra-abdominal glands. The inguinal glands escaped.

Dr. Keyes said that in a number of these mixed growths of the testis coming under his observation, the recurrence in each instance was in the retro-peritoneal glands.

TWO CASES OF SYPHILIS THAT HAVE A BEARING ON THE QUESTION OF THE PERIOD DURING WHICH THE DISEASE IS COMMUNICABLE,

by **Dr. James Bell**, of Montreal.

(1) A case of transmission of syphilis from the male two years after the disappearance of all lesions. The patient presented himself some years ago with a well-marked and characteristic primary sore, followed by typical skin, glandular and throat symptoms. He was at once placed on specific treatment; and this was

faithfully continued for over two years, at which time the man had no further evidences of the disease. Two years and eight months after the disappearance of the initial lesion, the man was married; and about two months later his wife, who was in every respect above suspicion, developed unmistakable symptoms of syphilis. Dr. Bell said he regarded this case as one of blood inoculation.

(2) Conception occurring during the period of incubation of the chancre in the male parent, the product being a perfectly healthy non-syphilitic child. The patient was a male who exposed himself to inoculation in the latter part of October, 1891. Four days afterwards he was married. In January, 1892, he presented himself with a large, indurated chancre, and fully developed secondary symptoms. His wife had ceased to menstruate one week before marriage, and had not menstruated since. She showed other signs of pregnancy and her child was born about the middle of August, 1892. Conception must therefore have occurred during the interval which elapsed between the inoculation and the appearance of the chancre. The woman was at once made aware of the grave condition of affairs by her husband, and was put on specific treatment. She remained in good health, and was delivered at full term of a fine, healthy child. Up to the present time neither the mother nor child have shown any signs of syphilis.

Dr. Taylor said in the first case reported, there was possibly some extra-genital source of infection. The woman may have been infected by some other member of the family. In one case coming under his observation a servant was the source of infection; in another, a child. Or the infectious period of the disease may have persisted for an unusually long time. The blood is the least potent agent in the infection of syphilis. Dr. Taylor said he regarded the second case reported as fortuitous simply.

Dr. Judkins referred to a case coming under his observation in which the man married four months after the appearance of the initial lesion. Two months later the patient's wife showed unmistakable symptoms of syphilis, and since then she has aborted five times.

Dr. Keyes said that in the case reported the man married twenty-eight months after the appearance of the chancre. Clearly, he was not yet out of the highroad of possible infection, no matter what the treatment was.

Dr. Bangs said he had arrived at the conclusion that it was not safe to permit marriages in these cases until after several years have elapsed.

The following officers were elected for the ensuing year: President, Dr. L. Bolton Bangs, of New York; Vice-President, Dr. Francis S. Watson, of Boston; Secretary and Treasurer, Dr. W. K. Otis, of New York; Member of Council at Large, Dr. J. A. Fordyce, of New York.

It was decided to hold the next meeting of the Association at the Clifton House, Niagara Falls, during the last week in May, 1895.

The Czar's Interest in Medical Progress. — The Czar of Russia, who has from the first shown great interest in having the next International Medical Congress meet in Russia, has signified his intention of contributing fifty thousand rubles toward the expenses of the meeting.

Recent Literature.

Pain in its Neuro-pathological, Diagnostic, Medico-legal, and Neuro therapeutic Relations. By J. Leonard Corning, A.M., M.D. 12mo, pp. 328, with twenty-one illustrations. Philadelphia: J. B. Lippincott Company. 1894.

The first part of this work contains a hasty and imperfect review of the various morbid conditions which may give rise to pain, — a section, which, as it contains nothing new, seems to have no special reason for existence. The second part is devoted to the various methods of treating these conditions and of relieving pain. In these chapters considerable space is given to the various methods of local medication proposed by the author at various times; the local medication of the peripheral nerves and of the cord, and the methods of aiding the action of drugs by jugular compression and by compressed air. The latter method is claimed to be of special benefit with intra-cranial pain, and in cerebral difficulties of a functional character in which pain, exhaustion, insomnia, or depression are leading features. Full details are given for the use of these methods, and the more familiar methods of dealing with painful affections are also discussed.

Essentials of Practice of Medicine. Arranged in the form of Questions and Answers. Prepared especially for students of medicine. By Henry Morris, M.D., etc. With a very complete Appendix on the Examination of Urine, by Lawrence Wolff, M.D. Third edition, revised and enlarged by Three Hundred Essential Formulæ collected and arranged by William M. Powell, M.D. Philadelphia: W. B. Saunders. 1894.

This book forms a double number of Saunders's Question Compends, Nos. 8 and 9. In general, its aim is well carried out. The book is small and compact. Forty-eight additional pages of "essential formulæ" increase its size, and probably its popularity, rather than its essential value. The same space might better be used in the body of the book, in the revision of which "great care has been exercised not to increase the size." As the claim is made that the very latest physical diagnosis is given, some reference to the amebic form should be found under the head of dysentery.

The Healing of Rodent Cancer by Electricity. By J. Inglis-Parsons, M.D. London: John Bale & Sons. 1893.

This little book of eighty-two pages contains an account of the author's method of dealing with rodent ulcer, or rodent cancer, as many English authors prefer to call it. He claims for electricity several advantages, namely, absence of pain and hemorrhage, less destruction of tissue and a smaller cicatrix.

In the cases reported, the patients were anesthetized at each application. The results were very satisfactory. This is, however, generally the case when the treatment is persistently and conscientiously carried out by patient and doctor. There is, on the other hand, no disease which produces more frightful deformity if neglected. In the early stages excision is always practicable, and is far the more radical and rapid method of treatment. In the later stages there should be no hesitation about a free sacrifice of tissue, as it is only in this way that the disease can be arrested in its progress. We fear that a general adoption of Dr. Parsons's method would lead to inefficient work.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, SEPTEMBER 6, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 WASHINGTON STREET, BOSTON, MASS.

THE HYPODERMIC INJECTION OF MERCURIALS IN THE TREATMENT OF SYPHILIS.

AT the last meeting of the French Congress of Dermatology and Syphilography, held at Lyons, August 2d and 4th and reported in *L' Union Medicale* August 18th, M. Augagneur read an exhaustive report on the hypodermic use of mercury in the treatment of syphilis. He took a decidedly adverse view of its general use, stating that the indications for employing it were very hard to determine. From his large experience and thorough investigation of the subject he had come to the following conclusions:

(1) The use of mercury by hypodermic medication in the treatment of syphilis should be reserved for a few exceptional cases, because of the inconvenience and dangers to which it exposes the patient. In this connection he emphasizes the great pain of the injections, the dangers of abscess formations, of sudden deaths from syncope, fat embolism and rapid mercurial intoxication.

(2) It should be used only after careful deliberation in cases where it is needful to have large doses of mercury absorbed immediately, mainly in cases of cerebral syphilis.

If this urgency for rapid absorption does not exist, the method of treatment should always be by inunction or pills, one or both.

In the discussion which followed this paper the opinion of the Congress seemed about equally divided for and against M. Augagneur's extreme views. M. Staukowenkow, of Kiew, strongly defended the use of soluble mercurials hypodermically. He had used the following formula in 200,000 cases and always with success. Its action was sure and rapid, and he had never seen a serious accident. His preparation, invariably used, is:

Benzoate of mercury	0.25
Chloride of sodium	
Hydrochlorate of cocaine	āā 0.06
Distilled water	30.00

Of this he injects two grammes each day for a month; then waits two months, and again gives same treatment, continuing it at longer intervals.

M. Jullien also defended the hypodermic method. He used it in all grave and stationary lesions. He considered local abscess formation rare, if the asepsis was rigid.

The sentiment of the Congress in closing the discussion was that, while the hypodermic method was not to be advised for general use, it, nevertheless, was an invaluable aid in hospital practice and in grave cases, and that the accidents emphasized in M. Augagneur's report might, in the majority of cases, be avoided by care and rigid asepsis.

RED CLOVER.

ONE of the fads of the present day is clover extract, a somewhat expensive preparation made from the *trifolium pratense.* "It has," according to the advertisements in the daily papers, a "great and growing reputation as a blood-purifier, and as a specific for cancers." The number of individuals whose "cancers" are said to have been aborted or dispersed by clover tea is legion. It is not only good for "cancers," but for other morbid productions, even "carbuncle" and "scrofula."

It is needless to say that no medicinal principle has yet been obtained from the trifolium. We shall expect next to see an extract from the potato or turnip vaunted for cancer or syphilis! There is, by the way, still a belief in certain localities that the tomato is a cause of cancerous growths!

It is hard to account for the repute that clover has acquired among the laity of this country as a remedy for cancer. In many parts of New England, we know it to be almost impossible for a person to have a suspicious growth of any kind without being urged to take clover and the urging is persistent. In a certain neighborhood near Boston, one woman, afflicted with growing scirrhus, is said to have consumed in extracts and infusions of red clover the product of a ten-acre lot; but without saving her life. The fact that the cancers do not disappear, despite the free use of the antidote, appears to detract in no measure from the sale or use of the preparation.

There is no sound basis for the reputation which red clover has acquired, and the only persons who have ever derived any advantage from the use of clover in cancer, furuncle, or various "humors," are the venders of certain extracts, fluid and solid, which are in growing demand. It is to the credit of Mrs. Grant that during General Grant's last sickness she was wise enough to throw away the thousand and one nostrums containing clover which were sent.

Another of these absurd remedies is celery — *apium graveolens.* This vegetable has obtained a repute as a nerve sedative, and there is an increasing sale of various preparations that bear its name. It not only "quiets the nerves" and "restores sleep," but it has "a marked tonic and invigorating effect on the female generative organs," if we may credit the advertisements. It is true that apium petroselerium (parsley) has diuretic properties, and as such has a place in the *materia medica.* The medical profession would welcome a safe and good nerve sedative, especially if it were adapted to dysmenorrhea and similar affections, and would be glad to obtain proof that celery has such remedial virtues; but thus far its therapeutic status is on a par with that of the over-rated sarsaparilla. Nor do we need to add that there is no greater therapeutic desideratum than a remedy that will antagonize that "pernicious proliferation of embryonal epithelium" known as cancer, and physicians everywhere would hail with delight any clinical evidence that we have such a remedy in clover.

◆

WOMAN AND THE BICYCLE.

Should we encourage women to ride bicycles or should we discourage them from it? This question is one which is so often asked by patients that the opinion of an eminent physician of Paris, who has published a small treatise on the subject, may be of interest, although his conclusions after discussing the pros and cons and describing in detail first women and then bicycles, are about the same as those arrived at by other students of this subject. In order to form an accurate opinion we must first find the age, the weight of the woman, whether she can ride without falling off, what kind of clothes she means to wear, what condition her digestion is in, and any other facts which we consider essential. The bicycle requires a certain amount of muscular exertion. It is better, therefore, to warn our patients not to take more muscular exercise than their strength warrants. A woman who is young, quick, not too clumsy nor fat, may indulge more freely and ride longer distances than one who has not these advantages. More good is derived from the bicycle if the exercise is taken regularly and according to ordinary laws governing athletic exercises, and if the distances travelled are not too long and the clothing inappropriate. It is found that the danger of accidents is much diminished by riding on good roads which are little frequented and avoiding rough places or crowded streets.

A very important consideration is the appearance presented to the public by the bicycle rider of the gentler sex. Her self-possession and general feeling of well-being are much improved by an appropriate and becoming dress and by the ease and grace of her carriage. The details of the dress and the relative merits of different styles would require too much space for the limits of a medical essay and more knowledge than the male mind is capable of acquiring, but as a general rule it should be insisted upon that corsets should be discarded if it can be done without prejudice to the fit of the dress. In comparing a woman riding a bicycle to one riding a horse in Amazon fashion, that is, in a man's saddle, great injustice is done to the bicycle rider. The author considers that the Amazon seat is absolutely vicious, but no such epithet could with justice be applied to the proper seat on the bicycle. Women of a certain temperament should be cautioned that the riding of a bicycle may be the first step leading towards a sportive life. Such cases have been recorded, although not fully enough for us to judge of the ultimate results. A wise and proper use of the bicycle as a means of recreation has been followed by good results in the case of a number of women; on the other hand, an appreciable amount of harm has been done to other members of the sex by riding too much or by discontinuing the ride too suddenly or in badly chosen localities.

From this it will be seen that a request from a patient for the medical opinion of the value of bicycle riding for women should not be given without careful consideration of each individual case, and that no definite rule can be laid down which will cover all contingencies.

◆

MEDICAL NOTES.

The Cholera. — It is reported that cholera of a terribly virulent type is raging in Russian Poland. The medical authorities are unable to cope with the disease, owing to the fact that the inhabitants conceal their sick and treat them in their own way. The chief centres of the disease are Pinczow, Miechow, Stopnica and Dzialcszyce, where the inhabitants are camping in the woods. In Galicia, September 1st, there were 200 cases of cholera and 95 deaths from the disease. In Bukowina there were 14 cases and 10 deaths.

Small-Pox in New Jersey. — In consequence of the prevalence of small-pox, the Common Council of Newark, N. J., at the request of Health-Officer Lehlbach, has appropriated the sum of $20,000 to combat the disease.

Small-Pox Quarantine in Milwaukee. — The Milwaukee Board of Health in the past week has been powerless to enforce the law in regard to the quarantining of small-pox cases. Mobs of Poles and Germans have the infected portion of the city under complete control, and thousands of people have been recklessly exposed to contagion. The State Board of Health will probably call out the State troops to enforce the law.

Deaths from Chloroform. — Since August 10th there have been three deaths from chloroform anesthesia in London hospitals.

Monument to Charcot. — Earnest measures are being taken by prominent men in the profession in France and Germany to secure funds for the establishment of a fitting monument to Charcot in Paris.

Dedication of the Statue of Claude Bernard. — The statue of Claude Bernard at Lyons will be dedicated October 26th. Prominent members of the Academy of Sciences in France will take part in the ceremonies.

FOSSIL MICROBES. — At the meeting of the French Academy of Sciences on August 6th, Renault and Bertrand reported their bacteriological discoveries in fossil remains. In examining the fossil remains of the Permian epoch they constantly found a considerable quantity of microbes of different forms, mainly diplococci and streptococci. In every case these resembled the actual bacteria as we know them.

CATGUT DRAINAGE-TUBE. — M. Desguin, of Antwerp, at the last meeting of the Society of Surgery of Belgium, showed some drainage-tubes made by interlacing long, large threads of catgut, forming tubes of different dimensions. He was able to obtain sterilization by heat or chemicals without altering. They are less rigid than decalcified bone tubes, absorbable and porous, and constitute ideal drainage-tubes.

THE NEXT INTERNATIONAL MEDICAL CONGRESS. — Dr. Idelson has suggested to the Committee charged with the arrangements for the next International Medical Congress, which is to be held at Moscow in 1896, the advisability of organizing a group of "volunteer guides," consisting of young medical practitioners and students having a good knowledge of foreign languages, whose duty it should be to interpret for the foreign members, and generally look after the comfort of visitors.

THE AMERICAN ACADEMY OF MEDICINE. — The American Academy of Medicine held its annual meeting at Jefferson, N. H., last week. The following officers were elected: President, J. McFadden Gaston of Atlanta; Vice-Presidents, Rufus P. Lincoln of New York, William T. Smith of Hanover, Helen C. Putnam of Providence, Victor C. Vaughan of Ann Arbor; Secretary and Treasurer, Charles McIntyre of Easton, Pa.; Assistant Secretary, Edgar M. Green of Easton, Pa.; Member of Council, Charles C. Bombaugh of Baltimore. The next meeting will be held in Baltimore, May 4, 1895.

AMERICAN CATTLE QUARANTINED BY BELGIUM. — The United States minister in Brussels states that an order of the Belgium government subjects all American cattle to forty-five days' quarantine. An exception is made of cattle *en route* before August 29th, but this only on condition that they be killed at the public slaughter house on arrival. Dr. Salmon, chief of the bureau of animal industry, referring to this quarantine, said: "We are building up quite a trade in cattle with Belgium, a line of cattle ships having been established between New York and Antwerp. This order, if carried out, will destroy this trade. The alleged cause of these restrictions is the sickness of some cattle recently landed from the United States, which some wiseacre has pronounced to be contagious pleuro-pneumonia. The cattle in question were part of a shipment sent from Kentucky, and none of them could possibly have been subjected to infection."

INTERNATIONAL CONGRESS OF APPLIED CHEMISTRY. — The International Congress of Applied Chemistry took place at Brussels and Antwerp from August 4th to the 11th. More than 400 chemists, representing all civilized governments and a large number of scientific societies throughout the world, took part in the proceedings. Important resolutions were passed as to the unification of methods of analysis and the prevention of adulteration of food. The Congress also adopted the French litre in preference to the German (Mohr's litre) as the standard for gauging purposes and for the graduation of chemical instruments. The Centigrade thermometer was adopted to the exclusion of those of Reaumur and Fahrenheit. It was decided that the next meeting of the Congress should be held in Paris in 1896.

WOMEN DOCTORS IN AMERICA. — According to a statistical report drawn up by M. Louis Frank, of Brussels, there were in 1893 on this side of the Atlantic fully 2,000 women practising medicine in one or other of its forms and inclusive of 130 homeopathists. The majority were ordinary practitioners, but among the remainder were 70 hospital physicians or surgeons; 95 professors in the schools; 610 specialists for the diseases of women; 70 alienists; 65 orthopedists; 40 oculists and aurists; and finally 30 electro-therapeutists. In Canada there is but one medical school exclusively devoted to the training of medical ladies, but in the United States in 1893 there were ten, one of them being a homeopathic establishment.

FRENCHWOMEN AND THE MEDICAL PROFESSION. — According to the *Progrès Médicale*, the medical profession does not seem to have much attraction for Frenchwomen. Of 165 female students registered in the Paris Medical Faculty at the beginning of the present academic year, only 16 were French. On the other hand, of a total of 164 female students in the Faculty of Letters, 141 were French. There were 7 French female students in the Faculty of Science, and 3 in that of Law.

PROFESSIONAL SECRECY IN BELGIUM. — The *Gazette Médicale de Paris* states that a judicial decision given in Brussels is to the effect that a physician is never obliged, except in cases where the law expressly orders to the contrary, to reveal secrets confided to him in his professional capacity, even if the person who intrusted them to him consents to their being laid before a court.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, September 5, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 29, scarlet fever 25, measles 3, typhoid fever 38.

WORK OF THE BOSTON FLOWER MISSION. — Nearly 18,000 bouquets have been sent to the sick in hospitals during the summer. The work will be continued through September.

A STEAM DISINFECTOR FOR THE CAMBRIDGE BOARD OF HEALTH. — Application has been made by the Cambridge Board of Health to the City Council for a portable steam disinfector, and the matter has been referred to the committee on health. The disinfector is to be used for the disinfecting of the clothes of persons who have been ill with contagious diseases. The board desires to purchase a disinfector which is used extensively in England, but very little in this country. It is mounted on wheels and easily transported from place to place. The machine will cost $1,400, and its appurtenances $725 more. It is estimated that it would cost $960 a year to operate the machine, exclusive of the care and feed of horses.

PHARMACIST'S FAIR.—Some time during next May the pharmacists of the United States will hold a fair in Mechanic's Building. The exhibition will include the various articles used as medicines, curious chemical specimens and ingenious apparatus. The fine exhibit of Harvard at the World's Fair will be included in the list. The leading manufacturing chemists of the country have promised to participate. Special days will be devoted to nurses, physicians and associations of various kinds.

Miscellany.

THE STERILIZATION OF BREAD.

AT the meeting of the British Medical Association on August 3d, the investigations of Mr. Walsh, of London, and Dr. Waldo, of Southwark, as to whether baking sterilizes a loaf of bread, were the subject of an interesting discussion.

Mr. Walsh read a paper based on a large series of experiments. Its main conclusion was that baking does not necessarily destroy the vitality of micro-organisms contained in dough. With regard to temperature, they had found that the average maximum temperature in the centre of a large loaf varies from 163.4° to 186° F., and in a small loaf from 186.8° to 203° F. As the heat increases steadily in the centre of the loaf, any organisms present are exposed for a short time only to the maximum temperature reached. The average micro-organism will withstand a prolonged exposure to a much higher temperature without being destroyed. Spores are much more resistant again, so that on theoretical grounds alone, having ascertained the maximum temperatures in the centre of the loaf during baking to be those mentioned, they might venture to predict that organisms (or their spores) would not be destroyed by the process of baking. By the method of plate cultivations they succeeded in obtaining thirteen different species of micro-organisms from the centre of recently baked (a few hours after baking) loaves. The latter were obtained from bakeries in different parts of London, rich and poor. Numerous experiments were carried out for them by Mr. Walter Severn on sixty-two loaves. It was clearly shown, if the results were trustworthy, that certain non-pathogenic organisms are able to survive the process of baking.

By analogy Mr. Walsh reasoned that pathogenic organisms (or their germs) may also survive the ordeal of the baker's oven. Numerous experiments with pathogenic organisms have been made, but the results are not ready for publication. If bacteria (or their spores) may retain their vitality in the freshly-baked loaf, this fact would at once place the regulation of bakehouses on a different footing. Sewage pollution of such a place would mean that bread might be sent out to consumers charged with specific organisms. In conclusion, he said that there is no particular reason why the origin of many mysterious septic invasions of the human body may not eventually be traced to the agency of bread. A generation ago milk was not suspected of spreading disease. At any rate, the subject seems well worthy the attention of those who are interested in the scientific development of preventive medicine.

Continuing the study of the question, Mr. George Brown, of London, said that he had been under the impression for years that it was to the bread-supply of the public they must look for the causation of many cases of outbreak of disease, especially sporadic outbreaks of intestinal disease. He had met with many cases of choleraic diarrhea and troubles of that kind where, after investigating every probable cause, he had come to the conclusion the bread was at fault. He found it was of inferior quality, mouldy, doughy, tenacious, and disagreeable to the taste. Pursuing the question further as to what the bread was composed of, he came to the conclusion to put medical officers of health and sanitary officers on the track for finding out means by which very improper food was distributed among the poorer classes of the community, and that was the use of flour which had been kept in warehouses and stores, often damp and very unfit for the storage of food. Wheat would keep in the grain, unless exposed to unfavorable conditions, for many years, but flour began to deteriorate after two or three days, and that went on. Often it was taken from barrels, and had to cut with a hatchet, and could only be used by mixing it with other flour. It was almost invariably crowded with organisms, vegetable and animal, and it was well known billstickers would not use the flour — they would have fresh-ground flour. Yet it was used in poor neighborhoods. Officers of health should be given power to visit warehouses to examine the flour before it got into the bakers' shops.

STOMATITIS NEUROTICA CHRONICA.

AT the last meeting of the Society of American Physicians in Washington, Dr. A. Jacobi recorded three cases of a peculiar and rare form of stomatitis, to which he has given the name "stomatitis neurotica chronica." Very few similar cases have been reported. In severe generalized urticaria of the surface of the skin the author has often met with an edematous swelling of the mucous membrane in the mouth. Herpes febrilis, when severe on the lips and chin, often spreads over the tongue and cheeks, exhibiting the same character in all localities and following the course of the peripheral branch of the trifacial nerve. Pemphigus occurs on the skin almost exclusively, not on the mucous membrane. With the exception of a few cases collected by the author, literature fails to disclose but very few in which pemphigus was limited to the mucous membrane of the oral cavity. The great scarcity of pemphigus on the mucous membrane of the mouth has induced Dr. Jacobi to arrange them under a special heading. There is no doubt that the cases were all of a neurotic character. The temperature of the body was always normal. As distinguished from herpes, which heals readily unless maltreated, pemphigus of the mouth is of long standing and heals only slowly, giving rise to a great deal of protracted pain and discomfort. Blisters appear suddenly of about the size of peas. These soon break, forming whitish ulcers with considerable pain and slightly indurated base, which heal very slowly and tend to recur in different parts of the mouth.

◆

GUNJA-SMOKING AND THE "PUKHYS."

AT a recent meeting of the Calcutta Medical Society, Dr. K. C. Bose read a paper upon the native use of Indian hemp, in which he gave many interesting details of the social and historical uses of the drug.

"There are three forms in which hemp is prepared for use, *Bhang*, *Gunja* and *Churus*. However wild the plant may grow, its leaves and stems will always yield the narcotic element, and no cultivation is needed to produce *Bhang*, which is prepared from the dried mature leaves of the plant, and whose intoxicating power depends on the nature of the soil on which it grows. Much labor and special culture are required to grow *Gunja* and *Churus*. *Gunja* is the agglutinated female flowers carefully prepared by special process; while *Churus* is the resinous matter extracted from leaves, stems and flowers. *Gunja* is only cultivated in the district of Rajshahye and in the following manner: A moist but not shady site is selected, and the land (cleared of all weeds) is ploughed from four to ten times, and then thoroughly manured. This is generally done about the middle of March. After the rains have fairly set in, the ploughing is again repeated, and the seeds are sown during the early autumn.

"When the plants grow to a definite height they are trimmed. They flower in November, and come to maturity about the beginning of January. Gardeners go round the field and take out all the male flowers, for their presence is supposed to deteriorate the quality of the drug.

"Amongst the Jains the habit of taking *Bhang* is almost universal, but such is not the case with the people of Rajpootana and north-western provinces. The youngsters contract the habit of taking *Bhang* as a beverage from a comparatively tender age, and when they come of age they generally discontinue the habit and take to opium; whilst the still junior members chew *Bhang* with betel leaves (*pan*) simply to escape detection. Some take *Bhang* in the form of infusion; others prefer it in the form of decoction, and only a limited number take it in the shape of a bolus or pills. Out of five hundred men, three hundred would use it in the form of an infusion, one hundred in the form of decoction, and one hundred in pill form.

"*Gunja* and *Churus* are generally smoked by a low class of men, such as the *kahars*, boatmen, menial servants, *jogees* and *sanyasis* for the object of pleasure or relief from pain. The habit of *Gunja*-smoking has of late been contracted by the juvenile members of some respectable houses in Burra Bazar, and measures have now been taken to prevent its spread. The *Gunja*-smokers, in preparing their smoking stuff devise diverse kinds of formulæ, and the formula of one class of people will not correspond with the formula of another class. Reckless smokers would simply make their stuff poisonous by adding *dhatura* and opium to it. Luckily, however, the number of such smokers is only small. I would, with your permission, venture to describe the ingredients of two of the worst forms of formulæ now being in vogue among the respectable and well-to-do class of smokers. The one is known by the name of *panchoratno* or the five jewels; the other *novoratno* or the nine jewels. The former is made up of round *Gunja* thirty grains, *Bhang* one drachm, *Churus* fifteen grains, opium seven and one-half grains and *Dhatura* seed five grains. These agents are beaten up to the consistency of a paste and then put into a *chillum*, and smoked by a batch of five to their hearts' content. The latter, which is still more poisonous, contains all these ingredients, plus one grain of white arsenic, five grains of nutmeg, two grains of the milky juice of *akund* (*asclepias gigantia*), and twenty grains of the dried leaves of tobacco, mixed up and smoked by five men in a *ponchomookee chillum* specially prepared for the purpose. The arrangement of a *ponchomookee chillum* is quite usual. Five *chillums* made either of clay or brass are placed in a group and five separate bent tubes sufficiently long are attached to their lower ends; five men sit in a circle and smoke simultaneously. The success of such a procedure depends entirely on the quickness with which the hilarity is produced. Before smoking the parties repeat the following mantras to achieve success: 'O Rudra, we salute you! O Shiva, we pay you reverence! O Ishwara, O Sarva, O Bhadra, O Giver of all blessings, we salute your different forms and humbly ask your gracious help in rendering our smoke joyous and successful! O Omnipotent, shower your maledictions upon those who are our opponents and who work against us!' *Gunja* is sometimes, though very rarely, chewed by men."

In the discussion following the paper Dr. Ahmed related the following curious story:

"Some years ago there existed in Boseparah, in the Northern Division of the town, a society of some of the first-rate *Gunja* smokers of Calcutta. They used to hold their meetings in a hut, the roof of which was thatched with *Gunja*, the walls matted with sticks of hemp plants, and the floor made of tobacco (tobacco leaves mixed with treacle). Here the members met every day, smoked *Gunja*, and discussed on various interesting subjects of their own mould and imaginative production, and sung many a comic song of their own liberal composition to their hearts' content. No one was admitted as a member of this association unless he could smoke at least twenty-five *chillums* of *Gunja* every day. Every member of this society was called a 'Pukhy' (a bird of paradise). There were distinctions amongst these birds. Those that could smoke one hundred *chillums* of *Gunja* a day were called 'Bool-Bools.' The smokers of fifty *chillums* were given the titles of 'Chataras' and those of twenty *chillums* were distinguised as 'Toontoonies.' Very often the members of this notorious club of Calcutta competed amongst themselves with regard to the proficiency of their smoking *Gunja*. They all started smoking together at once and at the same time, and whoever smoked his *chillums* out first was pronounced to beat the others. He used to be awarded with a prize which consisted of a well-burnt clay brick to sit upon. This *Gunja* association is not in existence now, but two of its members are still living, one of whom is a Bengali poet of some renown."

THE NATURE OF INFLUENZA.

FOR the "Address in Medicine," at the recent annual meeting of the British Medical Association, Dr. Stewart summarizes the knowledge of influenza gained by the epidemics of recent years. So many parts of the body may be profoundly affected, and the sequelæ following the disease are so variable, that one is inclined to doubt whether so many processes can be referred to a single cause; but all of these sequelæ and complications have been proved to stand related to the influenza invasion. The essential cause of the disease the author considers unquestionably to be Pfeiffer's bacillus. The constitutional symptoms result indirectly from the growth of this micro-organism. The bacteria are found living, active, numerous in the blood and throughout the tissues generally, and the character of the symptoms corresponds to those due to poisoning by products of growth. These poisonous products act upon the nerve and other tissues, producing a great variety of structural changes which are met with in the later stages of the influenza process. The presence of the bacillus, or of its products, decreases the normal resisting power of the body to other micro-organisms, allowing, for instance, the entrance of pathogenic cocci into the lung. It has only recently been believed that the disease could be considered contagious. Investigation has in many instances proved that what appeared to be spontaneous outbreaks were clearly traceable to infection. The period of incubation is very short; sometimes the symptoms appear almost immediately after exposure. This alone explains the rapid advance of the disease in a community. Direct intercourse between the sick and the sound appears not to be essential. The bacillus seems to be capable of affecting the human subject only, and cannot multiply outside the human body at ordinary temperatures. It cannot resist drying, and the most careful search has failed to find evidence of any spore formation. The disease spreads equally well in cold and in warm weather.

For prevention of the disease these facts would indicate that isolation of those affected is the only rational measure. Every sneeze and every cough probably scatters the germs through the atmosphere. Much good may be done by the destruction of sputum and nasal secretion. Outside of the body the bacillus is not a hard one to kill.

METEOROLOGICAL RECORD,

For the week ending August 25th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: –

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..19	29.95	75	81	66	80	77	78	W.	S.W.	13	12	F.	F.	
M..20	29.86	70	76	64	90	92	91	S.W.	W.	8	10	O.	O.	2.10
T ..21	29.98	61	67	55	61	48	54	N.W.	N.W.	12	8	C.	C.	
W..22	30.06	61	75	47	54	51	54	W.	W.	14	11	F.	C.	
T ..23	30.10	74	87	60	56	56	62	W.	S.W.	6	11	S.	S.	
F ..24	30.05	78	89	66	66	66	64	S.W.	S.W.	8	12	S.	S.	
S...25	29.97	78	89	66	78	78	74	S.W.	S.W.	13	15	S.	F.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 25, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrheal diseases.	Scarlet fever.	Diphtheria and croup.
New York . .	1,956,000	766	331	27.69	12.09	15.11	4.68	5.17
Chicago . . .	1,438,000	—	—	—	—	—	—	—
Philadelphia .	1,139.457	—	—	—	—	—	—	—
Brooklyn . .	1,013,000	403	223	27.12	8.64	15.12	.24	7.92
St. Louis . . .	540,800	—	—	—	—	—	—	—
Boston . . .	501,107	241	72	25.06	15.17	17.22	2.05	6.15
Baltimore . .	500,000	—	—	—	—	—	—	—
Washington .	285,000	—	—	—		—	—	—
Cincinnati . .	325,000	109	38	13.80	4.60	10.12	—	2.76
Cleveland . .	325,000	—	—	—	—	—	—	—
Pittsburg . .	272,000	—	—	—	—	—	—	—
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	10	6	20.00	50.00	10.00	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	100,410	39	15	38.40	15.36	25.60	—	5.12
Fall River . .	92,233	48	29	22.88	4.16	20.80	—	—
Lowell . . .	90,613	42	19	30.94	7.14	28.56	—	—
Cambridge . .	79,607	40	19	37.50	12.50	20.00	2.50	5.00
Lynn	65,123	—	—	—	—	—	—	—
Springfield . .	50,284	16	7	25.00	6.25	25.00	—	—
Lawrence . .	49,900	—	—	—	—	—	—	—
New Bedford .	47,741	21	17	23.80	9.52	23.80	—	—
Holyoke . . .	43,348	—	—	—	—	—	—	—
Brockton . .	33,939	—	—	—	—	—	—	—
Salem	33,155	14	9	28.56	21.42	21.42	—	—
Haverhill . .	32,925	8	5	—	—	—	—	—
Malden . . .	30,209	13	8	38.45	15.38	30.76	7.69	—
Chelsea . . .	29,806	—	—	—	—	—	—	—
Fitchburg . .	29,383	16	12	37.50	—	37.50	—	—
Newton . . .	28,837	5	3	20.00	20.00	20.00	—	—
Gloucester . .	27,293	—	—	—	—	—	—	—
Taunton . . .	26,955	14	4	28.56	7.14	28.56	—	—
Waltham . .	22,058	6	2	—	33.33	—	—	—
Quincy . . .	19,642	—	—	—	—	—	—	—
Pittsfield . .	18,802	—	—	—	—	—	—	—
Everett . . .	16,585	—	—	—	—	—	—	—
Northampton .	16,331	4	2	50.00	25.00	25.00	—	—
Newburyport .	14,073	5	3	60.00	—	60.00	—	—
Amesbury . .	10,920	8	4	25.00	—	25.00	—	—

Deaths reported 1,852: under five years of age 833; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 497, diarrheal diseases 309, consumption 206, acute lung diseases 129, diphtheria and croup 94, scarlet fever 44, typhoid fever 22, whooping-cough 18, measles 5, erysipelas 3, cerebro-spinal meningitis 2.

From typhoid fever New York 7, Brooklyn 6, Boston 2, Cincinnati, Nashville, Lowell, Cambridge, Salem, North Adams and Clinton 1 each. From whooping-cough Brooklyn 5, New York 4, Worcester and Cambridge 3 each, Boston 2, Fall River 1. From measles Brooklyn 3, New York 2. From erysipelas New York and Brooklyn 1 each. From cerebro-spinal meningitis New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending August 11th, the death-rate was 17.6. Deaths reported 3,527: acute diseases of the respiratory organs (London) 151, diarrheal diseases 441, measles 81, diphtheria 81, whooping-cough 67, scarlet fever 39, fever 30, small-pox (London 10, Plymouth, Birmingham and Manchester 1 each) 13.

The death-rate ranged from 9.8 in Croydon to 29.2 in Liverpool; Birmingham 22.2, Bradford 13.7, Bristol 12.0, Gateshead 15.6, Hull 14.0, Leeds 17.4, Leicester 16.0, London 17.4, Manchester 21.8, Newcastle-on-Tyne 17.6, Nottingham [illegible], Plymouth 11.9, Portsmouth 16.5, Preston 25.3, Sheffield 20.3, Sunderland 22.2, Swansea 10.9, West Ham 17.7, Wolverhampton 21.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 25, 1894, TO AUGUST 31, 1894.

MAJOR JOHN D. HALL, surgeon, upon the arrival of MAJOR J. C. MERRILL, surgeon, at Fort Sherman, Idaho, will be relieved, and report for duty at Madison Barracks, N. Y., relieving MAJOR DANIEL G. CALDWELL, surgeon.

MAJOR CALDWELL, on being thus relieved, will report for duty at St. Francis Barracks, Florida, relieving CAPTAIN JEFFERSON R. KEAN, assistant surgeon.

CAPTAIN KEAN, on being thus relieved, is ordered to Key West Barracks, Florida, for duty.

CAPTAIN LOUIS A. LAGARDE, assistant surgeon, relieved from duty as attending surgeon and examiner of recruits, Headquarters, Department of the Colorado, and ordered to Fort Logan, Colorado.

Leave of absence for one month, to take effect when relieved from duty at St. Francis Barracks, Florida, is granted Captain Jefferson R. Kean, assistant surgeon.

Major Louis M. Maus, surgeon, U. S. Army. Fort Sam Houston, Texas, granted one month's leave of absence.

First Lieutenant Frederick P. Reynolds, assistant surgeon, U. S. Army, U. S. Military Academy, West Point, N. Y., granted thirty days' leave of absence.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 1, 1894.

Assistant Surgeons C. D. Brownell, Robert Boyd, and E. R. Pigott, ordered to examination for promotion.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIVE WEEKS ENDING AUGUST 25, 1894.

Bailhache, P. H., surgeon. Granted leave of absence for five days. August 3, 1894.

Hamilton, J. B., surgeon. Granted leave of absence for five days. August 16, 1894.

Sawtelle, H. W., surgeon. Granted leave of absence for five days. August 12, 1894.

Gassaway, J. M., surgeon. Granted leave of absence for two days. August 11th, 1894.

Stoner, G. W., surgeon. Granted leave of absence for seven days. July 28, 1894.

Irwin Fairfax, surgeon. To proceed to Brussels, Belgium, for special duty. July 24, 1894. To Rotterdam, Netherlands. July 27, 1894. To proceed to Hull, Liverpool and other English ports on special duty. August 9, 1894.

Mead, F. W., surgeon. Granted leave of absence for thirty days. August 4, 1894.

Banks, C. E., passed assistant surgeon. To proceed to Halifax, N. S , for special duty. August 16, 1894.

Glennan, A. H., passed assistant surgeon. Granted leave of absence for six days. August 14, 1894.

Brooks, S. D., passed assistant surgeon. To proceed to Duluth, Minn., and Superior, Wis., as inspector. July 24, 1894.

White, J. H., passed assistant surgeon. Relieved from duty at Savannah, Ga., and ordered to report to the medical officer in command of the Service at New York, N. Y., for duty. August 6, 1894.

Carrington, P. M , passed assistant surgeon. To proceed to Evansville, Ind., for duty. August 6, 1894.

Kinyoun, J. J., passed assistant surgeon. To proceed to Buda Pesth, Austria, to represent Department at International Congress of Hygiene and Demography. August 14, 1894.

Vaughan, G. T., passed assistant surgeon. Granted leave of absence for six months. August 23, 1894.

Wertenbaker, C. P. To report at Bureau for instructions. August 4, 1894. To proceed to Cape Charles Quarantine for temporary duty. August 7, 1894. To proceed to Delaware Breakwater Quarantine for duty. August 20, 1894.

Gardner, C. H., assistant surgeon. Granted leave of absence for fifteen days. August 18, 1894.

Norman, Seaton, assistant surgeon. To proceed to Baltimore, Md., for duty. August 6, 1894.

Sprague, E. K., assistant surgeon. To inspect unserviceable property at St. Louis, Mo. July 26, 1894.

PROMOTION.

Houghton, E. R., assistant surgeon. Commissioned as passed assistant surgeon. July 20, 1894.

AMERICAN PUBLIC HEALTH ASSOCIATION.

The American Public Health Association will convene at the city of Montreal, Canada, Tuesday, September 25th, at 9 o'clock A. M., and continue four days.

The following topics have been selected for consideration at this meeting: (1) The Pollution of Water-Supplies. (2) The Disposal of Garbage and Refuse. (3) Animal Diseases and Animal Food. (4) The Nomenclature of Diseases and Forms of Statistics. (5) Protective Inoculations in Infectious Diseases. (6) National Health Legislation. (7) The Cause and Prevention of Diphtheria. (8) Causes and Prevention of Infant Mortality. (9) The Restriction and Prevention of Tuberculosis. (10) Car Sanitation. (11) The Prevention of the Spread of Yellow Fever. Upon all of the above subjects special committees have been appointed; therefore all papers upon these topics should be presented to the appropriate committee in season to be incorporated as a part of the report of the committee, if deemed advisable.

The Executive Committee announces the following additional subjects upon which papers are invited: (12) On the Education of the Young in the Principles of Hygiene. (13) Private Destruction of Household Garbage and Refuse. (14) Disinfection of Dwellings after Infectious Diseases. (15) Inspection of School Children with Reference to the Eyesight. Papers will be received on miscellaneous sanitary and hygienic subjects, but preference will be given to the topics announced above.

All persons who purpose to present papers at the next meeting of the Association, will be governed by the following By-Laws of the Executive Committee:

"4. All papers presented to the Association must be either printed, typewritten, or in plain handwriting, and be in the hands of the Secretary at least twenty days prior to the annual meeting, to insure their critical examination as to their fulfilling the requirements of the Association.

"5. If any paper is too late for critical examination, said paper may be so far passed upon by the Executive Committee as to allow its reading, but such paper shall be subject to publication or non-publication as the Executive Committee deem expedient.

"6. All papers accepted by the Association, whether read in full, by abstract, by title, or filed, shall be delivered to the Secretary as soon as thus disposed of, as the exclusive property of the Association. Any paper presented to this Association and accepted by it shall be refused publication in the transactions of the Association if it be published, in whole or in part, by permission or assent of its author in any manner, prior to the publication of the volume of transactions, unless written consent is obtained from the Publication Committee.

"7. Day papers shall be limited to twenty minutes, and evening papers to thirty minutes, each."

Invitations extended to individuals to prepare papers for the Association do not imply their acceptance by the committee, merit alone determining that question.

All persons attending the meeting should obtain a standard certificate of the agent of whom they purchase their ticket, certifying that they have bought a ticket to Montreal and over what lines they will travel, which certificate must be countersigned by the Secretary of this Association at Montreal, in order to secure the reduction for the return trip.

All communications relating to local matters should be addressed to Dr. Elzéar Pelletier, Secretary of the Local Committee of Arrangements, No. 76 St. Gabriel Street, Montreal, Can.

The meetings of the Association are open to the public. All persons, of whatever profession or occupation, interested in the work of the Association, are cordially invited to be present. Ladies are especially invited to attend the evening meetings.

Irving A. Watson, *Secretary*, Concord, N. H.

AMERICAN MEDICAL ASSOCIATION.

The Secretaries of the Medical Societies of the United States are earnestly requested to send the undersigned the following: Name of society; officers, with post-office address; time and place of meeting.

Wm. B. Atkinson, M.D., *Permanent Secretary.*
1400 Pine Street, Philadelphia.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the Medical Society of the State of California, Session of 1894.

Medical Tuberculosis. By Hugh Hamilton, M.Sc., M.D., of Harrisburg. Reprint.

Practical Application of the Principles of Sterilization. By Hunter Robb, M.D., Baltimore. Reprint. 1894.

The Contagious Aspect of Pulmonary Tuberculosis. By A. M. Cooper, M.D., of Point Pleasant, Va. Reprint.

La Femme et la Bicyclette. Par le Dr. Just Championnière, Chirurgien de l'hôpital Saint Louis. Paris. 1894.

Bulletin of the Psychological Section of the Medico-Legal Society. Published quarterly by Clark Bell, Esq.

The Significance of Albuminuric Retinitis in Pregnancy. By Robert L. Randolph, M.D., of Baltimore. Reprint. 1894.

A Treatise on Diphtheria. By Dr. H. Bourges. Translated by E. P. Hurd, M.D. Published in Physician's Leisure Library Series. 1894.

A Contribution to the Study of the Solvent Action of Piperazine on Uric Acid. By John Gordon, M.D., of Aberdeen. Reprint. 1894.

A Handbook of Obstetric Nursing. By Francis W. U. Haultain, M.D., F.R.C.P., Edinburgh, and James Haig Ferguson, M.D., F.R.C.P., Edinburgh. Second edition. Lippincott & Co. 1894.

Original Articles.

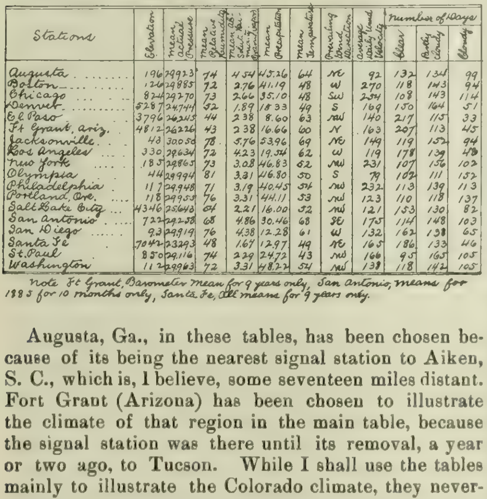
SOME METEOROLOGICAL DATA.[1]

SAMUEL A. FISK, A.M., M.D., DENVER, COL.

At the last annual meeting of this Association a committee, of whom I am one, was appointed to collect meteorological data of the resorts in this country and report to this body. With a view to carry out the wishes of the Association, in regard to the Colorado climate at least, I have had compiled from the statistics of the United States Weather Bureau a series of tables which will, I trust, convey some information, both by means of comparison and directly, with reference to the nature of the Colorado climate. I have selected eighteen stations scattered all over the United States, chosen with the object of their illustrating the climate of some of our larger centres and of our resorts as well, and aiming to further illustrate the climatic conditions of the various portions of our country.

Table I

Meteorological Data for Ten Years compiled at the Denver Weather Bureau Office



Stations	Elevation	mean actual Pressure	mean Relative Humidity	Mean Absolute Humidity (grains vapor)	mean Precipitation	mean Temperature	Prevailing Wind Direction	Average Daily Wind Velocity	Number of Days		
									Clear	Partly Cloudy	Cloudy
Augusta	196	29923	74	4 54	45.26	64	NE	92	132	134	99
Boston	126	29885	72	2.76	41.19	48	W	270	118	143	94
Chicago	824	29.270	73	2.66	35.10	48	SW	234	108	143	114
Denver	5287	24.744	52	1.89	18 33	49	S	169	150	164	51
El Paso	3796	26.245	44	2 38	8.60	63	NW	140	217	115	33
Ft Grant, Ariz.	4812	26226	43	2 38	16.66	60	N	163	207	113	45
Jacksonville	43	30.050	78	5.76	53.96	69	NE	149	119	152	94
Los Angeles	330	29.634	72	4.23	19.54	62	W	119	178	139	48
New York	185	29.865	73	3.08	46.83	52	NW	231	107	156	102
Olympia	44	29994	81	3.31	46.80	50	S	79	102	111	152
Philadelphia	117	29.948	71	3.19	40.45	54	NW	232	113	139	113
Portland, Ore.	118	29955	76	3.31	44.11	53	NW	123	110	118	137
Salt Lake City	4346	25.648	54	2.21	16.00	52	NW	121	153	130	82
San Antonio	722	29.258	68	4.86	30.46	68	SE	175	114	148	103
San Diego	93	29.919	76	4.38	12.28	61	W	132	162	138	65
Santa Fe	7042	23293	48	1.67	12.97	49	NE	165	186	133	46
St. Paul	850	29.116	74	2 29	24.72	43	NW	166	95	165	105
Washington	112	29.963	72	3.31	48.22	54	NW	138	118	142	105

Note Ft Grant, Barometer mean for 9 years only, San Antonio, means for 1885 for 10 months only, Santa Fe, All means for 9 years only.

Augusta, Ga., in these tables, has been chosen because of its being the nearest signal station to Aiken, S. C., which is, I believe, some seventeen miles distant. Fort Grant (Arizona) has been chosen to illustrate the climate of that region in the main table, because the signal station was there until its removal, a year or two ago, to Tucson. While I shall use the tables mainly to illustrate the Colorado climate, they nevertheless will serve to demonstrate very well the climates of the several portions of our country, and being compiled as they are from United States weather bureau statistics and by an officer in its employ, they are worthy of the highest credence. (See Table I.)

Elevation. — A glance at the columns giving the elevations shows that Denver is a fair example of a high altitude resort, so far, at least, as its climatic conditions are concerned. Situated as it is just one mile above sea-level, it must necessarily have a lighter barometric pressure and those accompaniments of climate that are coincident with high elevations. So far as altitude is concerned, it will be seen that Denver is about 1,800 feet lower than Santa Fé; that it is about 1,500 feet higher than El Paso and some 2,800 feet above Tucson. It must, therefore, fairly stand as a type of a high altitude resort; and by "Denver" I mean that portion of the eastern slope of the Rocky Mountains contained within the State of Colorado.

Dryness of the Air. — In addition to the element of altitude must be added that of dryness of its air. This is very well shown by the columns of the mean relative humidity and the mean absolute humidity in grains of vapor, which means, together with others given in Table No. I, are the means of ten years of observations. In these columns it will be seen that both as regards the relative and absolute humidity of its air Denver stands in the fore front. While in its relative humidity it does not rank quite as high as El Paso, Fort Grant or Santa Fé, it is, in common with them, greatly drier than the other resorts, including San Antonio and San Diego, and immensely drier than the centres from which most of our phthisical patients come.

A glance at the table of absolute humidity, by which I mean the actual number of grains of vapor contained in a cubic foot of air, will show that Denver is outranked only by Santa Fé, and should not be mentioned in the same class with Jacksonville, Augusta, Los Angeles, San Antonio or San Diego, which have moist climates.

Precipitation. — So far we have two prominent characteristics illustrated by this table, namely, elevation and atmospheric dryness. To these must be added a small amount of precipitation, by which I mean rain and snow. The mean for ten years gives Denver but 15.33 inches, which is but about a third of that in Augusta, some 38½ inches less than the rain- and snow-falls of Jacksonville, Fla., half that of San Antonio and greatly under the rainfalls of the larger cities of the East, though it is somewhat in excess of the rain-and snow-fall of El Paso, San Diego and Santa Fé. We must, therefore, add this peculiarity of a small amount of rain- and snow-fall to the other climatic conditions of elevation and dryness as factors to be regarded as favorable to the cure of the phthisical condition.

Temperature. — When we come to the question of the mean temperature, the table shows that Denver must be classed amongst the cool climates. The mean for St. Paul shows an average of 6 degrees lower temperature than Denver, while Denver ranks 14 degrees below El Paso, 11 degrees lower than Fort Grant, 20 degrees lower than Jacksonville, 15 degrees lower than Augusta, 13 degrees lower than Los Angeles, 19 degrees lower than San Antonio, 12 degrees lower than San Diego, exactly the same as Santa Fé, and about that of Boston and New York. To the qualities of elevation, atmospheric dryness and small amount of precipitation must be added that of a cool climate.

Winds. — The table shows that the prevailing direction of the wind is from the south, which is a particularly mild wind, coming as it does over a long stretch of dry land with the nearest water of any consequence, the Gulf of Mexico, some 900 miles away.

The table showing the average daily velocity of the wind will probably be a surprise to most readers, as Colorado, somewhat unjustly, has acquired the reputation of being subject to frequent and disagreeable winds. This table, it must be borne in mind, gives an average for ten years; and it is to be relied upon, because if there is any one department in the weather service in which observations have been accurately recorded, it is this one of wind velocity. This table shows that the average daily velocity in Denver is considerably greater than that of Augusta and Olympia (Washington); that it is somewhat in excess of the daily velocity in Portland, Salt Lake City, Los Angeles, San Diego, El Paso and Washington, D. C.; that it ranks along with St. Paul, Santa Fé and Fort Grant; that it is under San Antonio; that it is greatly under Philadelphia and New York; that the daily average is 85 miles less than that of Chicago and 101 miles less than that of Boston. From this it will be clearly seen that Denver is in no way — and by "Denver" I mean the country for which it stands — entitled to the epithet "windy," and that on the contrary the daily motion of the wind is much less than prevails in our large cities from which most of our patients come. This point I hope to illustrate further on. We may then add to the other characteristics of elevation, dryness, small amount of precipitation, cool climate and prevailing mild wind that of only a moderate daily motion of the wind.

---

[1] Read before the American Climatological Association, Washington, D. C., June 1, 1894.

Table II
Seasonal Meteorological Data – 1892

Stations	Relative Humidity					Absolute Humidity.				
	Winter	Spring	Summer	Autumn	Average	Winter	Spring	Summer	Autumn	Average
Augusta	76	67	79	75	75	2 56	395	474	438	438
Boston	73	61	71	73	74	1 36	2.05	576	308	266
Chicago	83	75	76	71	76	1 30	2.38	5.70	2 80	2 60
Denver	60	54	45	45	51	096	1.48	308	1.74	1.67
El Paso	47	33	32	39	36	148	092	276	205	167
Jacksonville	78	70	82	82	78	3.68	486	825	595	5.38
Los Angeles	71	75	74	71	72	308	308	486	393	381
New York	74	69	74	70	73	154	2.47	636	3.19	297
Olympia	90	77	70	84	80	2.56	247	395	308	314
Philadelphia	72	66	71	71	70	1 54	247	6.58	3 31	308
Portland, Ore	86	74	64	84	77	247	308	345	3.81	331
Salt Lake City	79	61	38	47	56	148	2.38	297	205	2.13
San Antonio	62	57	64	63	61	2.66	4.23	702	470	438
San Diego	73	77	78	74	76	3.43	4.09	5.20	452	438
Santa Fe	59	40	33	40	43	104	1.19	1.97	148	1.42
St. Paul	79	72	71	41	73	0.84	1.97	520	256	224
Tucson	57	39	31	36	41	197	1.97	3.31	247	2.47
Washington	74	68	75	71	72	154	2.76	702	3.31	319

Note- Elevation of Tucson, Arizona, 2432 feet.

CLEAR DAYS. — We next come to a consideration of the number of clear, fair and cloudy days in a year; and here again it must be borne in mind that the table is a mean for ten years, and so can be considered to give a fair average. By the term "clear" in this connection is meant a sky that is absolutely free from clouds, or only three-tenths clouded. A fair sky is one that is from four-tenths to seven-tenths clouded. A clouded sky is one that is from eight-tenths to ten-tenths obscured by clouds. These statistics are based on frequent observations from sunrise to sunset. The figures show that El Paso and Fort Grant greatly outnumber Denver in the number of clear days, averaging the one 67 and the other 57 more absolutely clear days in a year than Denver. Los Angeles shows a preponderance over Denver of 28 absolutely clear days, San Diego of 12 and Santa Fé of 36. Salt Lake City is only 3 days in excess of Denver, Augusta 18 days less, Jacksonville 31, San Antonio 36 and St. Paul 55 less. As compared with Boston and Washington, D. C., Denver has an excess of 32 clear days. She has 43 more clear days than New York and 42 more than Chicago. Perhaps the point will be more clearly illustrated by considering the absolutely cloudy days, for these are the days on which it is not possible for the invalid to go out at all. Here we find a preponderance in favor of El Paso of 18 days and of Fort Grant 6 days, Los Angeles 3 days, and Santa Fé 5 days in a year; but, as compared with Jacksonville and Augusta, Denver leads by 43 and 48 days. She has only half the number of cloudy days that New York, Chicago, St. Paul and Washington are blessed with, and 62 less absolutely cloudy days than hang over Philadelphia. We may then add this element of an open sky, as a climatic condition favorable to the phthisical invalid, to those other favorable conditions, which we have seen to exist in Denver, namely, elevation, atmospheric dryness, a small annual precipitation, a cool climate, a mild prevailing wind and of only moderate velocity.

Table III
Seasonal Meteorological Data – 1892

Stations	Total Precipitation					Number of Cloudy Days				
	Winter	Spring	Summer	Autumn	For Year	Winter	Spring	Summer	Autumn	Total for Year
Augusta	11.93	8.84	1142	7.08	3927	38	21	24	15	98
Boston	7.89	999	1048	866	37.02	33	27	26	28	114
Chicago	5.19	11.15	14.66	5.56	36.56	42	39	27	25	133
Denver	2.47	5.09	3.10	4.36	1502	16	24	11	8	59
El Paso	2.43	0.41	1.21	1.27	532	9	4	3	8	24
Jacksonville	7.28	2.21	1438	18.02	4189	37	23	41	37	138
Los Angeles	8.25	5.67	2.07	4.73	18.72	26	20	1	11	58
New York	8.52	11.28	9.32	9.78	3890	43	28	21	21	113
Olympia	14 00	10.32	2.73	1948	4941	54	50	31	39	144
Philadelphia	7.55	1147	7.69	8.07	34.78	41	38	29	19	127
Portland, Ore	13.96	9.21	2.28	8.13	33.58	47	28	18	34	127
Salt Lake City	4.64	5.76	1.26	2.42	1408	45	41	7	15	108
San Antonio	6.38	2.80	12.96	3.66	2581	29	17	12	15	73
San Diego	523	2.52	0.18	116	9.09	26	23	12	16	77
Santa Fe	326	2.70	3.98	1.68	11.62	7	9	3	10	29
St. Paul	1.99	6.89	2020	3.47	32.55	32	41	24	24	121
Tucson	4.40	1.33	3.24	0.64	9.61	22	14	20	9	65
Washington	12.30	14.29	848	7.27	42.34	39	31	12	22	104

Table IV.
Seasonal Meteorological Data – 1892.

Stations	Average Daily Velocity of Wind					Number of Days with Gales (40 miles per hour or over)				
	Winter	Spring	Summer	Autumn	For Year	Winter	Spring	Summer	Autumn	For Year Total
Augusta	127	118	67	115	108	0	0	0	1	1
Boston	295	326	252	276	288	1	6	0	1	8
Chicago	415	475	324	401	403	12	28	7	12	59
Denver	149	209	173	180	178	0	1	1	1	3
El Paso	178	278	180	163	202	2	11	1	1	15
Jacksonville	187	194	168	163	178	1	0	0	0	1
Los Angeles	82	94	84	114	84	0	0	0	0	0
New York	302	293	192	254	259	3	1	1	1	6
Olympia	77	84	62	79	77	0	0	0	0	0
Philadelphia	274	259	209	233	245	4	0	0	1	5
Portland, Ore	130	187	144	168	144	0	1	0	1	2
Salt Lake City	91	139	151	149	132	0	0	0	0	0
San Antonio	173	233	156	144	175	0	0	0	0	0
San Diego	101	127	125	101	113	0	0	0	0	0
Santa Fe	161	218	187	173	185	0	2	0	1	3
St. Paul	168	202	146	180	175	0	2	1	1	4
Tucson	154	190	185	190	180	0	1	5	1	7
Washington	182	194	127	156	166	0	3	0	0	3

BY SEASONS. — The study of the main table has given us some positive ideas about the nature of the Colorado climate, both regarded by itself and as seen by comparison with other climates. It would be of great value to study it more closely with reference to the seasons and to see how far the general conclusions are borne out when applied to the seasons, more especially the spring, autumn and winter months, when an invalid should be away from his home. With this in view I have had additional tables compiled for the year 1892, the most recent year wtih regard to which the data are published; and I shall also introduce other tables that I have previously published in other articles to help illustrate the subject.

SEASONAL DRYNESS. — The elevation, of course, is a constant factor. The barometric variation is so nearly constant as to cut but a small figure in the main question. We will now look to a consideration of the seasonal relative and absolute humidity (Table 2). By comparison, we see that the average relative humidity and the average absolute humidity for the year 1892 is about the same as the mean obtained in our first table, which shows that the year 1892 was a fair one to select with regard to these two points. Our table shows that while there was a slight increase in the relative humidity for the winter months, there was an absolute diminution. The spring and autumn months were approximated to the average. A closer study of the table shows that Denver maintains about the same position, seasonally, with reference to the other stations under consideration that she did when taking the range of ten years. It is not worth while to go over this ground again. The tables on this and other points are worthy of careful investigation, but a detailed accounting would be tedious. (See Table III.)

Seasonal Precipitations. — It is of very great importance to determine the amount of precipitation (rain- and snow-fall) seasonally, as it, together with temperature and sunshine, determines largely the patient's ability to lead an out-of-door life. The earlier consideration showed us the very small amount of rain- and snow-fall, on the average, to which Denver is subjected. Here, again, the comparison with the main table indicates that the year 1892 was an average one. Looking over the column for the winter months, it is interesting to note that Denver's total precipitation of 2.47 inches is virtually the same as that of El Paso, about .5 inch in excess of that of St. Paul, about 6 inches less than that of New York, 5.4 inches less than Boston, 6.8 inches less than that of Los Angeles, and about 10 inches less than that of Washington. The spring and autumn months have a larger amount of precipitation, but even here we find it much less than that of any of the centres from which our invalid population comes. It must further be borne in mind that the character of the soil along the eastern slope of the Rocky Mountains is sandy and porous and that any moisture that falls is rapidly absorbed, so that virtually the invalid is not incommoded to any very great extent by the question of snow- and rain-fall.

Seasonal Temperature. — The question of temperature should be studied carefully, for in this respect, as well as with reference to the character and velocity of our winds, there has been a widespread misunderstanding. It is a well understood fact that elevation, coupled with dryness, are factors favorable to diathermancy, and it is to be expected that that condition would exist in Denver. Our climate has been severely criticised for its extremes of temperature, and I myself will acknowledge to having seen a variation in twenty-four hours of eighty degrees. I have seen, though rarely, a registration at night in midwinter of 18° below zero and at noon the next day of 62°. It behooves us, therefore, to investigate somewhat more closely with reference to the question of temperature, if we desire to obtain a fairer understanding of the subject. It should go without saying that the temperatures that concern the invalid are those of the hours of sunshine, for these are the hours in which he is out-of-doors, and the remainder of the day he should be in-doors, where he can easily regulate the temperature to suit his individual case. So, then, we may fairly, it seems to me, eliminate the night temperatures and see how it is with reference to the temperatures by day.

Table V
Denver, Colo, mean Temperature - 1884-5.

months	9.08 am	1.08 pm	5.08 pm
September	[illegible]	754	74[illegible]
October	[illegible]	[illegible]	641
November	416	533	499
December	25[illegible]	[illegible]	368
January	270	35.8	333
February	3[illegible]9	380	378
march	[illegible]	[illegible]	477
april	[illegible]	530	543

In the years of 1884 and 1885, the local observer took observations at 9.08 A. M., 1.08 and 5.08 P. M.; and I introduce a table (Table V) giving the means of these several observations for the eight months, from September to April inclusive. The table shows conclusively that Denver, when regarded seasonally, must come under the head of a cool climate. If we take the one o'clock observation, however, as a fair representative of the temperature for the invalid, we will see that at no time is it so low as to preclude living out-of-doors. The temperatures given here are air temperatures, and are the readings of the thermometer placed in a shelter-box on the top of one of our highest buildings; the registrations are, therefore, likely to be somewhat lower than the temperature closer to the ground, and are very different from the temperature that one feels when exposed directly to the sun's rays. This question of diathermancy plays a very important rôle in this respect. One has simply to have experience to know the great difference between the temperature of the sun and that of the shade in Colorado. So marked is this that one intuitively seeks the shady side of the street in summer, and the sunny side in winter. Table VI illustrates this point very clearly. The solar temperature was taken by a blackened-bulb thermometer *in vacuo* and exposed to the direct rays of the sun. The table shows the solar temperature, the air temperature, and the difference between the two at the one o'clock observation for the twelve months of the year 1886. One is appalled at reading the differences, ranging from 54.7° to 67°. For instance, with a solar radiation of 92.5° at one o'clock in January, we find an air temperature of 27.3°, or a difference of 65.2°. In July, we find an average solar radiation at one o'clock of 146.5° and an average air temperature of 85.2°, or an actual difference of 61.3°, and in November a solar radiation of 100° and an air temperature of 41.3°, or an actual difference of 58.7°.

Table VI
Denver, Colo
mean Temperature - 1.00 pm

1886	Solar	Air	Difference
January	925	273	65.2
February	1063	480	583
march	1078	411	667
april	1106	52.3	58.3
may	1413	743	670
June	1422	75.1	571
July	1465	85.2	61.3
August	143.7	815	622
September	132.3	72.0	60.3
October	119.5	64.2	55.3
november	1000	413	587
December	100.2	45.5	547

Table VII
mean Solar Radiation:

Maloja	Fahr	Denver - 1.00 pm	Fahr
November, 1883	113	November, 1886	100.0
December, 1883,	89	December, 1886	100.2
January, 1884,	105	January, 1886,	92.5
February, 1884	108	February, 1886,	[illegible]
average - - -	103.75	average - - -	97.75

Table VIII
Denver, Colo. High winds (18 miles per hour or over) - 1886.

January	1	July	0
February	5	August	1
march	4	September	1
april	1	October	3
may	2	november	6
June	0	December	2

In an article published some years ago by Prof. Edward Franklin, F.R.S., he laid great stress upon this element of solar radiation as being valuable to the high altitude resorts of the Engadine. He called attention to the fact that "even with a much lower thermometer the air, if still, feels warmer at an elevated station than in lower and denser regions of the atmosphere"; and that further, "the sun's rays are far more powerful at greater than at lower elevations, and their intensity is much more equable throughout the day." Experience shows that in midwinter, during the hours of sunshine, we can sit with open doors and windows, and it is a common thing for the invalid to plan picnics and excursions without regard to the cold — all due to this element of solar radiation. I remember distinctly having vaccinated a man, who sat in his shirt-sleeves out-of-doors to allow the vaccination to dry, on one of our days in January.

For the sake of comparison, I introduce the mean solar radiation of Denver as compared with that of the Maloja for four months, which contrast is not unfavorable to Denver (see Table VII). It is probable that in the Maloja the solar radiation was somewhat increased by the reflected rays from the sun.

Sunshine. — In dwelling on these points it would be of great interest to investigate more closely with reference to the clouded days and hours of sunshine. The tables on this point are quite full (see Table III). In the year 1892, we see that there were 59 days that were totally clouded, which is somewhat in excess of the average obtained by a previous table. Glancing through the table, it is seen that this is in excess of that which existed in El Paso and Santa Fé, but that it is greatly under San Diego, San Antonio, Los Angeles, Jacksonville, Augusta and Tucson, and still more decidedly under Washington, Philadelphia, New York, Chicago and Boston, maintaining in this particular the reputation of Denver as a resort characterized by an open sky. It will be of interest, however, to study the question still more closely; and the table for the winters of 1884 and 1885 (see Table IX) will show the number of days in the month that were clouded (in the interpretation of the signal service) at each one of the three observations, 9, 1 and 5 o'clock, and the number of days that were clouded all day long at each one of these three observations, which shows that in the eight months under consideration, from September to April inclusive, there are only 11 days that were completely clouded; that is, 11 days out of 242 that were clouded all day long, which is certainly a very great showing in favor of a possibility to an out-of-door life in Colorado.

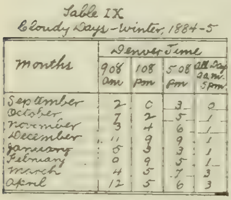


Table IX
Cloudy Days – Winter, 1884–5

Months	Denver Time			
	908 am	108 pm	508 pm	All Day 9 am–5 pm
September	2	0	3	0
October	7	2	5	1
November	3	4	6	1
December	11	9	9	1
January	5	3	3	1
February	0	9	5	1
March	4	5	7	3
April	12	5	6	3

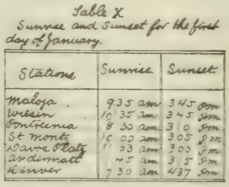


Table X
Sunrise and Sunset for the first day of January.

Stations	Sunrise	Sunset
Maloja	9.35 am	345 pm
Wiesen	10 35 am	345 pm
Pontresina	8 30 am	3.0 pm
St Moritz	10 00 am	305 pm
Davos Platz	11 03 am	300 pm
Andermatt	45 am	3 5 pm
Denver	7 30 am	437 pm

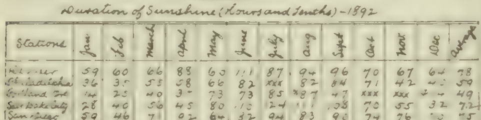


Table XI
Duration of Sunshine (Hours and Tenths) – 1892

Stations	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Average
Denver	59	60	66	88	60	1.1	87	94	96	70	67	64	78
Philadelphia	36	35	55	58	66	82	xxx	82	84	71	42	40	59
Portland Ore	14	25	40	3[illegible]	73	73	85	*87	47	xxx	xxx	[illegible]	49
Salt Lake City	28	40	56	45	80	.10	24	[illegible]	.08	70	55	32	72
San Diego	59	46	71	02	64	32	94	83	90	74	76	[illegible]	75
Santa Fe	*44	67	72	98	[illegible]	33	14	09	08	[illegible]	72	04	87
Tucson	xxx	xxx	xxx	xxx	xxx	30	02	33	10.7	35	57	8	36
Washington	36	37	50	58	79	26	90	22	8	78	43	45	65

xxx – no record. * – For 16 days. ϕ – For 27 days

I wish to introduce now another table to illustrate the absolute number of hours of sunshine in Denver and other stations in the United States for the twelve months of the year 1892 (Table XI). The observations are recorded by photographic instruments and are scientifically obtained. The table shows clearly the great excess of hours of actual sunshine in Denver over either Philadelphia or Washington, though not as daeat as are found in Santa Fé or Tucson. If we comprep the hours of sunrise and sunset of the first days San Dinary in Denver with those of the favored resorts is only Engadine, it will be seen that we have nearly two hours to their one of possible sunshine (Tables X and XII). Another table giving the percentage of possible hours of sunshine shows that in January, 1892, we had an average of 60 per cent. of our possible sunshine as against 37 in Philadelphia and 36 in Washington. A somewhat similar and favorable comparison will run through the table, so that we learn that seasonally Denver's climate affords favorable opportunities for an out-of-door life as regards the dryness of the air, the small amount of precipitation, the temperature and the number of clear days, the large amount of possible hours of sunshine and an equally large amount of actual hours of sunshine.

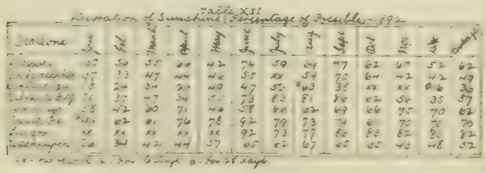


Table XII
Duration of Sunshine (Percentage of Possible) – 1892

Stations	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Average
Denver	[illegible]	50	55	60	42	74	59	64	47	62	67	52	62
Philadelphia	37	33	47	44	46	55	xx	54	70	64	42	42	49
Portland Ore	[illegible]	24	34	20	49	47	52	*63	33	xx	xx	ϕ6	30
Salt Lake City	56	37	47	34	[illegible]	73	83	81	86	62	56	35	57
San Diego	58	42	60	71	40	58	60	62	69	66	75	70	62
Santa Fe	*40	62	81	76	78	92	79	73	[illegible]	6	70	76	70
Tucson	xx	xx	xx	xx	xx	92	73	77	86	83	82	82	82
Washington	30	34	42	44	57	65	62	67	65	65	43	48	52

xx – no record. * – For 16 days. ϕ – For 28 days

SEASONAL WINDS. — The question of winds remains staring us in the face (see Table IV). Examining with reference to seasons we find the same relative small daily velocity of wind as we found to exist by a previous table. While this might be granted, we are constantly being reminded of our occasional high winds and dust storms, so that this really demands a closer attention. If by high wind is meant a gale in which the wind blows forty miles an hour or more, we see that in the year 1892 we only had 3 such winds in Denver, as against 15 in El Paso, 3 in Santa Fé, and 7 in Tucson; and as against 3 in Washington, 5 in Philadelphia, 6 in New York, 59 in Chicago and 8 in Boston; which fact would possibly astonish our critics. If, however, we take a wind of much less velocity, to quote from a previous article, we learn that even in Denver the days in which there was a wind of 18 miles or over for two consecutive observations of the three (nine, one and five P. M.) in 1886, were as shown in Table VIII.

We also learn that there were about an equal number of days when there was a wind of 18 miles or over at only one of the three observations, a showing that is very favorable to the Colorado climate, so that we learn from this table that while the average daily velocity is small, there is also a very favorable showing with reference to the number of days to which we are subjected to wind of any great velocity.

A statistical report must perforce be somewhat prolix and dry; I feel, therefore, that I should beg your indulgence for having detained you with a consideration of figures; but I cannot but hope that the tables introduced may be of service to the members of this Association in assisting them to a knowledge, not only of the climate of Denver, but of the other centres and other resorts throughout our country.

THE TECHNIQUE OF VACCINATION.[1]

BY WILLIAM N. SWIFT, M.D., NEW BEDFORD.

I HAVE collected a few statistics in regard to the manner of performing the operation of vaccination in different localities.

I have answers to a list of questions on this subject from the health officers of ninety-nine of the largest cities in the United States and Canada.

Question 1. Have you any prescribed rules in regard to the manner of performing the operation of vaccination?

I find twelve cities have such rules, while eighty-seven have no prescribed regulations and the matter is left to the physicians who are detailed to this work.

---

[1] Read before the Massachusetts Medical Society, June 12, 1894, and recommended for publication by the Society.

Question 2. Is it the custom of vaccinators in your city to wash the skin before vaccinating?

In thirty-nine cities it is the custom to wash the skin; in sixty cities this is not done.

Question 3. Are any other antiseptic precautions used?

There were eighty-eight negative and eleven affirmative answers to the question, and in only four cities is it the custom to use any antiseptic solution. The other seven affirmative answers referred to the cleaning of instruments.

Question 4. At how many points is the virus inserted?

In fifty-one cities it is the custom to vaccinate at one point; in twenty-six cities at two points; in eleven cities at one or two points; in three cities at three points; in one at four points; in one at five points; in one at one to four points; in one at two to five points, and in two the answer was variable.

The cities where it is the custom to vaccinate at one point include Chicago, New York, San Francisco, Philadelphia, Washington, New Orleans, Brooklyn, Detroit, New Haven, Portland, Me., Richmond, Va., Lowell and Lynn, Mass.

It is the custom to vaccinate at two points in Quebec, St. Louis, Milwaukee, Pittsburgh, Pa., Worcester, Mass., Savannah, Ga. At three points in Boston, Providence, and Toronto, Canada. In St. Paul, Minn., two to five insertions are made, and at Minneapolis, Minn., five.

Question 5. Is any bandage or dressing used to protect the point of inoculation?

In seventy cities no bandage or dressing is used. In only twenty-two is it the custom to apply one, and in seven it is sometimes used.

Question 6. Have you in your experience seen septic infection follow vaccination? In what proportion of cases does septic trouble follow vaccination?

To the first part of the question sixty-two had never seen septic infection follow vaccination, while twenty-six answers were in the affirmative. The statements in regard to the proportion of cases in which septic trouble occurs varied very much from five per cent. in Allentown, Pa., and three cases in three hundred and fifty in Newton, Mass., to one case of erysipelas in 30,000 in Providence, R. I.

Vaccination in England is controlled entirely by an act of the Privy Council, and is under the direct supervision of the Local Government Board. The public vaccinators are appointed by guardians of the poor in the different parishes. The rules require the careful registration of all cases and the results in each case. In all primary vaccinations such insertions of lymph must be made as will produce at least four separate good-sized vesicles or groups of vesicles, not less than an inch from one another. The total area of vesiculation on the same day, in the week following the vaccination, should not be less than half a square inch. The rules advise against the use of any needless means of protection or of dressing to the vaccinated arm.

I have an answer to my letter from Dr. Robinson, public vaccinator in Birmingham. He said patients must come clean, no especial washing is done. Sometimes a boracic-acid solution is used. No bandage is applied. The virus is inserted at two points on each arm. He has seen sepsis from filthy clothing and from wounds other than those of vaccination. He thinks sepsis occurs in about one to five or seven hundred from unclean applications.

In Glasgow, Scotland, there are no rules. Washing is only done when plainly needed. No other antiseptic precaution is taken. The lymph is inserted at from twelve to sixteen points. No sepsis is seen except from filth.

An answer from Belfast, Ireland, states that they have no prescribed rules; that it is not the custom of vaccinators to wash the skin. The virus is inserted usually at two points, but frequently at three or four. No bandage is used. Sepsis only comes from gross carelessness and filth.

In Stockholm, Sweden, there are no regulations. They wash carefully. No other antiseptic precautions are taken. Five insertions of lymph are made on each arm. No dressing is applied. They see no sepsis.

In Amsterdam, there are no rules. No washing is done or other antiseptic precaution taken except to have clean instruments. The virus is inserted at ten points. No septic infection follows vaccination.

In Antwerp, there are no regulations. Washing the skin is sometimes done, usually no other antiseptic precautions are taken. From three to six insertions are made. A dressing is used, cotton with a light bandage. Sepsis is very seldom seen; perhaps one case in 1,000.

In Hamburg the regulations for Germany are in force. Filthy subjects are not treated, but no washing is done. No other antiseptic precautions are taken, except to have aseptic instruments. The lymph is inserted at six points. No dressing is used. Septic infection can only come from impure lymph or from filth coming in contact with the ruptured pustule. Sepsis is very rare. Careful registration is kept of all vaccinations made and the result. The patient is required to report at the end of seven days, and any one who does not report at the end of ten days without sufficient reason is subject to a fine.

In Berlin the regulations for Germany are in force. They sometimes wash the skin with soap and water, and sometimes with antiseptic solutions. They insert the virus at six points. They use no dressing, and see no septic trouble.

In Dresden the German regulations apply. The patients must come with clean arms and clean clothing, otherwise they are refused. The instruments used are sterilized. Three to five insertions are made on each arm. No dressing is used and no sepsis seen.

In Vienna they have the Austrian regulations. The arm is washed with soap and water, and a two-per-cent. solution of carbolic acid. They insert the lymph at two or three points on each arm, and use no dressing or bandage. No fatal case following vaccination is on record, but a relatively small number of cases of erythema, erysipelas or phlegmonous inflammations occur.

In all the departments in the city of Paris the vaccinating is under the direction of the Institute of Animal Vaccine. Vaccination is always done directly from the heifer to the patient.

It is a regular rule in all the Paris schools that the skin shall be washed. This precaution is becoming little by little a custom with doctors. No other antiseptic precautions are taken. They vaccinate at two points on each arm, use no bandage, and never see sepsis.

In Lisbon, there are no rules. They seldom wash the skin and no antiseptic precautions are taken. The virus is inserted at three points on each arm. No dressing is used, and septic infection is rarely seen.

In Rome the regulations for Italy are in force. The skin is not usually washed, and the only antiseptic precaution is to use clean instruments. They vaccinate at two points on each arm. Usually no bandage is used, but sometimes a gelatine plaster is applied. At the time of the popes, when the humanized virus was used, syphilis was not uncommon. Now that animal lymph is used no bad results are seen. Careful records are kept of the results of vaccination. The whole matter of supplying lymph is in the charge of the National Vaccine Institute. One regulation is that no one shall be allowed to use vaccine lymph that is more than ten days old.

The evidence I have collected shows important differences in the manner of performing the operation of vaccination in the different localities.

Only a small proportion of public vaccinators take the precaution to wash the skin before vaccinating.

The number of points at which the vaccine lymph is inserted varies very much.

Marson's statistics based on 5,000 cases of small-pox in the London Small-Pox Hospital give the following results:

Classification of Patients.	Per cent. of Deaths in each class.	Dr. MacCombie's statistics for 11,724 cases.	Mort. p. c.
1. Unvaccinated	35.		
2. Stated to have been vaccinated, but having no cicatrix	23.5		
3. Vaccinated:			
a. Having one vaccine cicatrix	7.73	Good, Indifferent,	6.4 16.7
b. Having two vaccine cicatrices	4.70	Good, Indifferent,	3.7 11.2
c. Having three vaccine cicatrices	1.95	Good, Indifferent,	3.7 7.4
d. Having four or more vaccine cicatrices	0.55	Good, Indifferent,	2.7 4.8
A. Having well-marked cicatrices	2.52		
B. Having badly-marked cicatrices	8.82		
4. Having had small-pox	19.		

In patients with one well-marked vaccine cicatrix the death-rate was 3.83 per cent. Among cases where it was badly marked the death-rate was 11.91 per cent.

In patients with two well-marked cicatrices the death-rate was 2.32 per cent. Among cases badly marked 8.34 per cent.

Dr. Seaton in quoting these figures says: "In regard, therefore, to the expectation of any case of small-pox turning out badly, the question is not merely whether the patient has been vaccinated or not, but also how he has been vaccinated."

Dr. Seaton and Dr. Buchanan, during the epidemic of small-pox in London in 1863, made observations on upwards of 50,000 children in various national and parochial schools and workhouses:

Classification of Children Examined.	Proportion marked with Small-Pox per 1,000 Children.
1. Having no vaccine marks	360.00 in 1,000
2. Vaccinated:	
a. Having one vaccine cicatrix	6.80 in 1,000
b. Having two vaccine cicatrices	2.49 in 1,000
c. Having three vaccine cicatrices	1.42 in 1,000
d. Having four or more vaccine cicatrices	0.67 in 1,000
1. Having cicatrix or cicatrices of bad quality	7.60 in 1,000
2. Having cicatrix or cicatrices of tolerable quality	2.35 in 1,000
3. Having cicatrix or cicatrices of excellent quality	1.22 in 1,000

The evidence is conclusive, as Dr. Seaton states, "that the liability of any individual to take small-pox severely after vaccination, and probably the liability to take it at all, will be inversely as the goodness and amount of the vaccination."

He also says: "To produce at least four perfect vesicles, leaving four characteristic cicatrices, should be the aim of every vaccinator."

Dr. J. S. Billings writes me: "The character of the vesicle is more important than the number, but there seems to be a definite relation between the extent of surface involved in the vesicle or vesicles to the amount of protection afforded."

With such strong evidence as I have quoted in favor of multiple vaccination, it is astonishing that in fifty-one out of ninety-seven cities in the United States it is the custom to vaccinate at only one point.

It is proved by statistics that such vaccination does not give the protection from small-pox that vaccination is capable of doing.

There has been lately a great outcry against severe vaccination. This comes, perhaps, from the fact that small-pox is so uncommon, the public and physicians also have almost forgotten what a terrible disease it is. Any one who has seen small-pox in an unvaccinated subject must hold the opinion that no vaccination can be too severe if its severity aids in protecting the individual from this disease.

In regard to a dressing, I think it is much better to use one in spite of the almost universal custom of public vaccinators not to do so. It is certainly most desirable that the vesicles should not be ruptured and the crusts should be allowed to dry up; but, I think, a small dressing of sterilized gauze and a light bandage help very much in securing this object. Any form of adhesive plaster is, I think, very injurious. Primary sepsis, that is sepsis immediately following the operation of vaccination, I believe does not occur. The bad results are all secondary, caused by the infection of broken vesicles or pustules. Such complications can be avoided if the points of inoculation be kept perfectly clean by an antiseptic dressing through the whole process. Septic infection from vaccination is certainly surprisingly rare considering the careless way in which vaccinations are made and the cases left to take care of themselves. It is my opinion, however, that sepsis to a greater or less extent is more common than statistics show. I have noticed that the smaller cities have reported a larger proportion of cases. This may be because in the larger cities the cases are lost sight of. A careful record ought to be kept certainly of each public vaccination, and the result. This is especially important when our lymph comes to us, as it does, from private individuals and about the freshness of which there is often doubt.

In a communication from the secretary of the Local Government Board the following statement is made in regard to the occurrence of sepsis and the use of dressings after vaccination: "The official data on these matters have been stated in evidence before the Royal Commission on Vaccination which may be expected shortly to issue its report." This shows the English authorities have considered these matters of sufficient importance for investigation by the royal commission.

Except in epidemics of small-pox, children should only be vaccinated when in good health. Cutaneous eruptions of all kinds are a contraindication.

Vaccination should be done with the same care as any minor surgical operation. The skin should be carefully washed with soap and water.

The vaccine lymph must be fresh, certainly not more than one week old.

The virus should be inserted at more than one point. The point of inoculation should be kept perfectly clean throughout the whole course of the disease, and protected from friction. The patient, meanwhile, should be considered as suffering from a mild disease.

My observations show that public vaccination in this country is not, as a rule, done as it ought to be. The question of a proper technique for vaccination is a matter of very great importance, and the whole subject needs careful investigation and revision.

◆

RADICAL DIFFERENCES IN METHODS OF PRODUCTION AND CULTIVATION OF VACCINE LYMPH.[1]

BY SAMUEL W. ABBOTT, M.D., WAKEFIELD.

IN this paper I shall point out briefly some of the different conditions under which vaccine lymph is cultivated and produced for the purposes of vaccination, at the present day, having special reference to that which is termed animal or bovine vaccination.

Biologically speaking, all vaccination is animal vaccination. At the present day vaccination with non-humanized or bovine lymph is the rule in the United States, and probably ninety per cent. of all vaccinations throughout the country are made in this manner. With the exception of the infinitesimal liability to infection by syphilis or other human disease, as was conclusively proven by Dr. Cory, of London, in July, 1881, by submitting himself for experiment, there can be no objection to the method with humanized lymph.

In many countries of Europe humanized vaccination is practised to a considerable extent. The old Jennerian method has taken so strong a hold in England that it is not an easy task to change it. Another reason exists in the peculiarity of the English law, which requires every child vaccinated at the public expense to be presented again to the vaccinator for inspection at the end of a week, under a penalty of £1, the vaccinator having the legal right in every case to obtain a supply of lymph from the child for future use. The tendency of this law is to make the change from humanized to non-humanized lymph somewhat difficult. The use of bovine lymph, however, is steadily gaining ground in England.

In France, on the contrary, the fact that it was lawful to pay to the mothers of children a fee of several francs for the privilege of taking lymph from the arms of infants may have been one of the minor causes which proved a hindrance to "arm-to-arm" vaccination, and may have led to the more rapid introduction of animal vaccination.

The greatest advance in use of calf lymph in foreign countries has been in Germany, where the ratio of such lymph used increased from about 2.5 per cent. in 1879 to 7 per cent. in 1882, and then still more rapidly to 78 per cent. in 1888, and 89 per cent. in 1889, and will probably soon entirely displace the use of humanized lymph.

The radical differences in the methods in use in different countries for the production of calf lymph may be stated as follows:

(1) The existence to a greater or less extent of *government supervision or control* in nearly every foreign country.

In England the Local Government Board, which constitutes the general sanitary authority of the country, established a station in London about 12 years since, which has been constantly under the supervision of Dr. R. Cory.

In Belgium a National Vaccine Institute was established by the government in 1865, under the direction of Dr. Warlomont, who is one of the highest authorities on the subject in Europe. His works are accepted as standards as to the technique of calf vaccination.

In France Dr. Lanoix introduced the practice in 1865, having learned its value from Dr. Negri of Naples while the former was on a visit to that city. As a result of the efforts of Dr. Lanoix several private establishments followed the introduction of the practice at Paris, and some of the French cities have establishments maintained at the public cost. There are also one or more societies in Paris which maintain calf vaccination and furnish vaccination free to those who apply for it.

In Germany the government provides by law for the establishment of public stations for the production of calf lymph in all of the large cities, at present twenty-five in number. It also provides for the general supervision of all these establishments under the most careful and minute regulations. Each establishment is required to give an annual report of its operations, a summary of which may be found in the reports of the Imperial Board of Health. These stations furnish annually enough lymph to vaccinate about two million persons.

Similar though not so careful regulations exist in Holland, Austria, Italy, and in Japan.

Contrast with the foregoing statements the methods in vogue in the United States. With the exception of one station in Minnesota, now successfully conducted under the direction of the State Board of Health by Dr. Hewitt, I know of no establishment which has any supervision whatever.[2] As a consequence there must be a great diversity in the methods employed and in the material produced.

(2) *Vaccine Lymph as an Article of Commerce or Trade.* Partly as a consequence of submitting quietly to the method of production of vaccine lymph by private parties in this country, the business has become very largely commercial in its character, the private producer conducting his operations in such a manner as to secure the greatest possible returns with the least possible outlay of money. Vaccine lymph is bought and sold, and competition in prices naturally leads to deterioration in the quality of this important article, which should be freed from every influence which may in any way lead to its impairment. But the danger lies not only in the fact that it is an article of commerce, but still more in the *methods* of its sale. The business is entrusted to druggists, middlemen and travelling agents who solicit orders very much after the manner in which boots, shoes, dry goods and patent medicines are sold. But vaccine lymph is an extremely

---

[1] Read before the Massachusetts Medical Society, June 12, 1894, and recommended for publication by the Society.

[2] At the time of writing this paper this statement was correct.

perishable article, while dry goods are not. As a consequence of this method of sale, vaccine lymph often remains for weeks or even months in the drawers and unbroken packages of the middlemen or agents, and when needed for use the guarantee of the producer is disregarded, and the lymph of several weeks or months ago is sold and finally used for vaccination. As a result it proves inert, and the consequence is charged to the insusceptibility of the infant or vaccinated person. As a matter of fact, when vaccination is conducted under the best possible conditions of fresh lymph, insusceptibility is found not to exist, or at least to be a matter of the rarest occurrence. Dr. Cory stated that he had vaccinated nearly 50,000 infants with but one unsuccessful result, and in this exceptional case the usual opportunity for repeated trial was not afforded. (See Second Report of Parliamentary Commission, 1890, p. 142.) If such vaccinations are being made during a brisk epidemic of small-pox, and in families which have been exposed to the disease, it may happen that some children will take the disease and die, during the delay occasioned by waiting to ascertain whether the lymph of uncertain source and age will prove successful or not, and thus the practice of vaccination falls into disrepute. Guarantees, it is true, are given that a new supply will be furnished in case of failure, but of what avail is a guarantee if the exposed person meanwhile contracts small-pox and dies while trying the experiment of waiting to see whether the old lymph will "take" or not?

Now, one remedy for this condition is the abolition of middlemen, the procuring of lymph direct from the producer, and the stamping of every package of lymph with the date of its collection — an improvement which cannot very well be accomplished under existing conditions in this country. Government production can do away with the incentive to profit, and furnish the lymph either at cost or free of all cost. The question of expense ought to be the last consideration which should be allowed to interfere with the production of an absolutely faultless lymph.

In an excellent paper by Dr. Harvey Reed, of Ohio, some of these points are highly commended. (See Monthly Record, published by State Board of Health of Ohio, Vol. vii, p. 97, 1894.)

(3) *Methods of Insertion and Implantation.* Bovine vaccination is initiated in the heifer or calf by several different methods, or rather from different sources:

(*a*) By the introduction of humanized lymph taken from the vesicles of a primary vaccination.

(*b*) Animal lymph, subject to the same conditions as humanized lymph: that is, direct or fresh lymph dried upon quills or ivory points, or mixed with glycerine and carefully preserved.

(*c*) The solid and fluid parts of the so-called natural cow-pox.

These are the methods advised by the German government in its law of April 28, 1887, and, as may be seen, preference is given by this law to the use of humanized lymph for the purpose of initiating a series of calf vaccinations. If this government gives such counsel, a government which does not enact laws except upon the basis of careful observation and experiment, and employs for its purposes men who are acknowledged experts, are we to blindly follow the statements of those who have taken up this line of work merely as a source of profit or trade, without giving scarcely a thought to the scientific side of the question?

There has been much speculation upon the question whether small-pox and cow-pox are one and the same disease, the latter being only a modification of the former, and this speculation has continued for a century. But the brilliant discoveries of modern bacteriology throw a flood of light upon the question, by experiment, by observation and by analogy. We are forced to conclude that vaccinia bears very much the relation to small-pox, after transmission through the cow, that attenuated rabies after transmission through the rabbit bears to the exceedingly fatal and virulent disease in the dog, or that anthrax after successive attenuations bears to the extremely fatal disease in its natural form, as was demonstrated in the most brilliant manner by the experiments of Pasteur upon a herd of sheep and cows at Melun in 1881. All these experiments are only applications of the process of artificial selection by the hand of man to those organic bodies known as bacteria by the proper use of soils and methods of cultivation. And if it is possible to diminish the virulence of infectious processes by such methods while the protective power still remains, is it not also possible by certain methods to re-establish the original virulent characteristics, while still retaining the protective power? Or, if those original virulent properties are not re-established, may not other and abnormal processes of a dangerous character be established in their place?

At a meeting of the Suffolk District Medical Society in February last, a committee who had witnessed the process of animal vaccination at some establishments in this State, stated that animals were being vaccinated by means of large scarified patches, each of which would cover an area of several square inches, and were more or less exposed to soiling by the excreta of the animal. It is a question worth considering whether this plan continuously pursued may not in time re-establish to some extent the serious characteristics of the original disease.

There is no clear evidence to show that cow-pox originates in the cow. The mere fact that casual cases of cow-pox are to be found in the cow proves nothing. To call them "spontaneous" is contrary to all progressive knowledge as to the natural history of infectious diseases. One might as well call an oak-tree in the forest "spontaneous" because he cannot find the acorn from which it was produced.

In 1870 or 1871 great pains were taken to import vaccine lymph from Paris for the purpose of animal vaccination, and the name "Beaugency" curiously enough became a symbol of purity in this important article, as though this infectious disease "cow-pox" was unknown except in foreign lands, and yet at that very time dairymen within a dozen miles of this city were separating infected animals from their herds to prevent its further spread, being themselves familiar with the peculiar characteristics of the disease.

Let us now consider for a moment the following points, which have a direct bearing upon the natural history of casual small-pox. By the term "casual" I mean those cases which have been occasionally found among dairies, and were not intentionally inoculated, that is to say, vaccinated for the purpose, either for experiment, or for the production of an increased quantity of vaccine lymph.

(*a*) Casual cow-pox in the cow usually occurs during epidemics of small-pox among men. All of the cases which I find on record in this country for the last half century, about forty in all, occurred in years of small-pox epidemics. In Europe its occurrence was still more frequent in the early half of the century. It still occurs in Gloucestershire where Jenner first saw it, but not so often as in his day when small-pox was much more common than now.

Ceely's cases, recorded in his papers, occurred in 1838, a year in which there were 16,000 deaths from small-pox in England. One case is recorded in which some old clothes, stripped from the small-pox patient, were thrown into a meadow where cows were feeding; and the cows, having access to the clothing, were attacked with cow-pox.

The famous so-called spontaneous case at Beaugency occurred in the French department of Loiret in 1866. In this same department, during the ten years 1861–71, there were more deaths from small-pox in a population but little larger than that of Essex county, than there have been in the whole State of Massachusetts in the past twenty years, in a population of 2,000,000 or more. Now when we know from experiments, not only of early observers but of quite recent experimenters, such as Haccius, Eternod and others, that vaccinia may be induced by the inoculation of small-pox upon animals, is it strange that such cases should occur casually in times of epidemic?

(*b*) There is no evidence that cow-pox occurs among animals in the wild state. No doubt, it may be induced among them, but I find no record of its casual occurrence among them. Buffaloes are susceptible to inoculation with vaccine lymph, when artificially introduced.

(*c*) Casual cow-pox does not occur among bulls. (Ceely.)

(*d*) It does not occur among cows which are dry. (Ceely.)

(*e*) There is no evidence that cow-pox is transmitted from one animal to another in herds except through human agency.

From these facts it would appear that cow-pox occurs, not only among those animals which are associated with man, but with those which are associated with him in the most intimate and daily contact and handling of the animal; and it is manifested upon those parts of the animal which are chiefly exposed to such contact; such a contact, in fact, as would be likely to impart infection to her by the hands, provided such infection should in any way be possessed by the milker.

In the case of horse-pox, a disease of the heels or hoofs, what part of the horse is more often touched by human hands than his hoofs and heels?

The cow is, therefore, simply our ally or efficient helper in the great scheme of disease prevention, enabling us for the time being to employ her as the means of procuring, cultivating, multiplying and diminishing the virulence of the proper means of defence.

So also the rabbit plays no part in the natural history of the rabies, but yet acts as an important ally in preventive treatment.

I speak of these points because too great importance has been attached, in this country, to the comparatively unimportant question of pedigree, or stocks of animal lymph, to the exclusion of far more weighty questions which have been neglected.

But to return to the question of the best mode of insertion or implantation of lymph in the animal. Three methods are chiefly practised: (*a*) Puncture, (*b*) Incision, and (*c*) Scarification.

These terms are in themselves sufficiently explicit as to the modes of insertion. In foreign establishments the first two methods are chiefly practised, though scarification is also sometimes employed. In an inspection of certain Continental establishments which Dr. Murphy made for the Local Government Board in 1883, he found that in the Dutch establishments vaccination by puncture had entirely taken the place of incision, for the reason that the "vesicles resulting from incision have a greater tendency to become advanced and purulent than those resulting from puncture." In Brussels incision is still practised.[8]

The incisions referred to are not more than 10 to 12 mm. in length, and 4 to 5 mm. in depth. Now, if incisions were abandoned for reasons of this character, what can be said of the method by scarification in practice in some places in this country, where many surfaces having an area of from one to four square inches (6 to 25 cm.) are inoculated? These scarifications, too, are allowed to progress two days beyond the usual period advised by the best authorities, and are made in a region where the daily soiling of urine and feces may have free access to the scarified surfaces. These large surfaces are attended by swelling, not only of the surrounding integument, but also often of the neighboring lymphatic glands, and if there is any reason for imitation of natural processes, that is to say, in the production of vesicles like those of variola, having a diameter of 5 to 12 mm., then the process of scarifications of large size carried on through 500 to 1,000 generations as has been done, may in time reproduce the severe type of vaccinia which shall possess far more virulence than the form with which we have for a long time been familiar.

(4) *Age of Animals.* Unvaccinated bovine animals of any age are susceptible to cow-pox artificially implanted. As a general rule the average age of animals used for purposes of vaccination in the United States is greater than that of animals used in most foreign countries. At two of the establishments in Massachusetts adult animals, or at least animals over one year old, are used, and at two others calves of three to eight months, while in several establishments in other parts of the country animals varying from six months to two years are employed.

In two or three small German cities heifers of one and two years are employed, but in most of the German establishments the average age is about three months. The law upon this point reads as follows:

> SECTION 2. The older animals are only to be used when calves cannot be had. The calves should be at least three weeks old . . . calves of five weeks old and upward are to be preferred. Law of the Bundesrath, April 28, 1887.

The average age of calves used in Holland, as stated by Dr. Murphy, was "three to five months." Those used at the principal station in London are about five months old.

Warlomont states the question by weight and says that the calves should weigh at least 100 kilogrammes (about 220 pounds) each.

Vaillard says: "Il y a cependant un reel avantage à utiliser de préférence les jeunes sujets, âges de deux mois et demi à trois mois."

From the point of economy there are some advantages in the use of adult animals. The chief end secured is the increased product of lymph.

---

[8] Thirteenth Annual Report of Local Government Board, Supplement, p. 27.

This is offset to some extent by the increased cost of care and food.

On the other hand, the advantages of employing young animals are mainly those of convenience and sanitary security. Young animals can be more conveniently handled and are almost absolutely free from the danger of tuberculosis.[4]

Vaillard further says: "Out of 21,320 calves slaughtered at Augsburg, not one was tuberculous, while out of 10,988 horned adults 321 or 2.9 per cent. were tuberculous. At Munich there was scarcely one tuberculous calf in 100,000, and at the slaughter-house at Lyons the record showed only five tuberculous calves out of a total of 400,000 animals in a period of five years."

In summing up this phase of the subject, then, the transmission of the infection of tuberculosis is rendered extremely improbable by the following facts:

(*a*) By reason of the age of vaccinifers, calves or young animals are chiefly used. The young of the bovine species are more exempt from tuberculosis than the young of the human species.

(*b*) Supposing an animal to be tuberculous (that is, having tuberculous organs), there is but little reason to believe that the tubercle bacilli will be found in the serum of vaccine lymph taken from the integumentary portions of the animal.

(*c*) Finally, if the vaccine lymph should actually contain tubercle bacilli, experiment has shown that, by the ordinary methods of superficial insertion, there would be no danger of implanting the germs of tubercle where they would infect the subject, since tubercle bacilli can only be successfully transmitted by deep inoculations, not by superficial scarifications.

Upon this point, then (the age of animals), the preference does not appear to be a matter of so great importance as might at first thought be supposed. But, all things considered, animals of less than one year of age ought to be employed.

Bovine animals, it is true, are subject to other diseases beside tuberculosis, but it does not appear that there is danger of their transmission to man by means of vaccine lymph.

(5) *Time of Collection of Lymph.* — In no point does American practice, so far as I can learn, differ from that of foreign establishments so radically as in the time which is allowed to elapse between the vaccination of the animal and the collection of the lymph. In the United States, the older vaccinators, following blindly the same practice employed for collecting lymph from infants, as a rule established the custom of taking the lymph at the end of a week, and this has become almost an established rule of practice, with possibly some exceptions in which collection has been made a day earlier. A better way of expressing the time, in order to avoid ambiguity, is to state it in hours, as multiples or fractions of 24. The average time in practice in the United States then may be stated as 7 times 24 hours (168), or in exceptional instances 6½ times 24 (156) hours from the time of insertion, while the average period in Germany, Holland, Belgium and England is at least as brief as 5 times 24, or 120 hours. This custom in the last-named countries has been established as the result of careful observation and experiment of a very large number of observers, most of whom are acting under government supervision and have nothing in view but the absolute welfare of the community, independent of pecuniary considerations.

The practice of short periods has certain decided advantages:

(*a*) The shorter the time the less the liability of the vesicle to become purulent at the time of collection.

(*b*) During a period of four, five or six days the vesicle is much less liable to become ruptured or infected from without than when it is allowed to continue to the seventh day (168 hours) before the lymph is collected. This is a matter of vital importance, and when viewed from a bacteriological standpoint, involves to a very considerable extent the purity of the lymph produced.

The *disadvantage* of short periods, when the question is viewed from the standpoint of private ownership of vaccine establishments, consists in the fact that the quantity of lymph to be obtained from a vesicle or group of vesicles at the end of 120 hours from the time of insertion of lymph, is very much less than that which can be obtained from the same vesicle or group of vesicles at the end of 168 hours when the vesicle has attained a greater size and degree of development. This is, however, a purely economic and not a sanitary view of the question.

(6) *Disinfection. Cleanliness.* The term "asepsis," as sometimes used in connection with this important work, may almost be deemed to be synonymous with absolute cleanliness in every detail.

Vaccination is itself an infective process, hence the use of disinfectants, if they are used at all, must be intelligently conducted, and they should be so employed that nothing of a disinfectant character can touch or enter, or otherwise affect the lymph itself during the process of collection or afterwards. Not only should the buildings themselves be constructed of materials which will admit of thorough cleaning, but the administration should be such that the animals shall have the best possible care, grooming and feed; the stalls, floors, mangers and walls must be kept clean, the excreta frequently removed, the operators and attendants must have scrupulously clean hands, and all instruments used should be thoroughly cleansed in boiling water after each use.

The following provisions of the German law of 1887 relate to this subject and are worthy of general adoption.

> Sect. 14. All of the implements used in vaccination and the collection of lymph, as well as those used in the subsequent handling and transporting of it, must be of a material and shape permitting thorough cleansing and disinfection. They must be used for one purpose only, and before and after each use they must be cleansed and disinfected when necessary.
>
> Sect. 16. The surface selected for vaccination must be shaved, and thoroughly washed with soap and warm water. Afterward it must be disinfected with a solution of mercuric perchloride (1 to 1,000), or a three-per-cent. solution of carbolic acid, and finally rinsed with boiled water.

(7) *The Slaughter of Animals before the Use of Lymph.* This practice, so far as I have any knowledge of the question, is not carried out in the United States. It has, however, been the rule for many years at the Belgian Institute under the charge of Dr. Warlomont.

---

[4] Vaillard: Manuel pratique de la Vaccination Animale.

All possible danger of suspicion as to the preparation of animal vaccine may be removed, "by delivering it only after the animal from which it is taken has been proven by autopsy to be perfectly healthy. This is a precaution that should not be neglected." (Warlomont.)

Here again the German law is quite explicit, and reads as follows:

> Sect. 5. After taking the vaccine lymph the animals must be killed and examined by a veterinary surgeon. The examination should especially be directed to the condition of the navel and of its vessels, the peritoneum and pleura, the lungs, liver and spleen.
>
> Sect. 6. The veterinarian must give a certificate of every examination.
>
> Sect. 7. The lymph must only be issued to the vaccinating physicians when the autopsy shows that the animal was healthy.

The following section of the same law, although not related to this special subject, shows the general progressive character of modern legislation in Germany in this direction.

> Sect. 33. The public vaccine establishments are in duty bound scientifically and practically to improve vaccination, and consequently to carry on investigations by way of experiment, clinical observation or otherwise.

In summing up this phase of the subject, then, I believe that improvement may be made in the production of vaccine lymph in this country by the adoption of the following general and special measures.

(1) Cultivation and production of vaccine lymph by the United States Government for the use of the Army, the Navy and the Marine-Hospital Service, and for all public institutions managed by the government.

Each State to produce its own lymph for the use of its public institutions and for the use of all local boards of health of cities and towns.

(2) The abolition of agents and middlemen and the issuing of lymph directly from the producers to the parties who use it, every package to be stamped with the date of its collection.

(3) The employment of better and more uniform methods of inoculating animals.

(4) The exclusive use of animals less than one year old.

(5) Limiting the time of collecting of lymph to a period of five days, or at the outside to six days from the date of its insertion.

(6) The adoption of careful rules for every establishment relative to cleanliness, the care of animals, etc.

(7) If adult animals are used, a requirement that they shall be slaughtered before the lymph is issued.

◆

LATERAL TRACTION IN HIP-DISEASE.[1]

BY CALVIN GATES PAGE,
Harvard Medical School.

Lateral traction was applied to the following eight cases at the Children's Hospital, in order to throw some light on the following problems in traction suggested by Dr. E. H. Bradford. By his kindness and that of Dr. H. L. Burrell, I am able to add notes on three adult cases treated at the Boston City Hospital.

Problem 1. Are there cases which are distinctly relieved by lateral traction, and by what weight?

Problem 2. Are cases more comfortable with lateral traction alone, without, in addition, longitudinal traction?

Problem 3. What are the limits of weight in lateral traction?

Problem 4. Is the limit of longitudinal traction, gradually applied and increased, the tension on the skin — provided the limb is so placed as not to pull on the stretched Y-ligament or contracted muscles, and that the limb be not adducted?

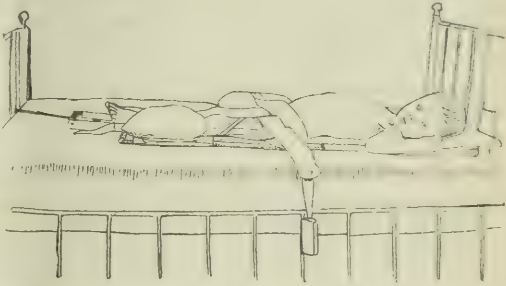


Fig. 1. From photograph of Case VII. Pulley and weight at foot of bed not shown.

The method of application is shown in Figure 1. Longitudinal traction is obtained by a weight and pulley at the foot of the bed. The cord is tied to the middle of the wooden cross-piece or spreader, which in turn is buckled to the straps of the adhesive-plaster extension. The foot of the bed should be raised to give counter-extension. The patient lies on a Bradford frame, with shoulders strapped down. The frame, made of quarter-inch galvanized-iron gas-pipe, should be as wide as the hips, and should extend four inches above the head, and as much below the feet, for a child, though it may be considerably shorter if more convenient. It is firmly padded with canvas, with a space opposite the buttocks to allow for the use of the bed-pan without disturbing the child. A folded towel pinned about the knees and another about the hips, ordinarily give sufficient fixation.

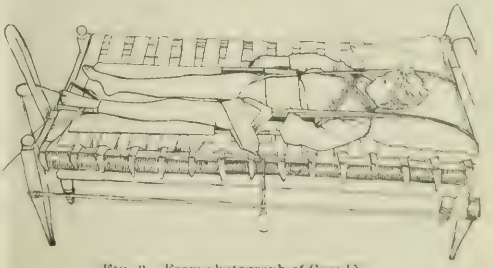


Fig. 2. From photograph of Case IX.

Lateral traction is obtained by a band of Canton flannel, or linen, passed about the thigh as close to the groin as possible, and attached to a weight over the side of the bed. At the Boston City Hospital a side pulley is used, so that the cord does not press on the mattress (Figure 2). Counter-traction is made by a similar band about the pelvis, fastened to a weight, or to the other side of the frame as shown in Figure

---

[1] Read, by invitation, before the American Orthopedic Association at Washington, D. C., May 30, 1894.

1 and Figure 2. A sand-bag at the ankle prevents abduction of the limb.

In order to test the amount of lateral traction a child can bear, I made use of a short, steel upright, clamped to the side of the frame (Figure 3). Through the top of the upright an octagonal bar was fitted to slide freely. By means of a thread cut on the bar, it could be drawn through the upright by turning a thumb-screw. The upright was made adjustable, so that the bar could be moved in any desired direction. A spring-balance was hooked to the bar, and its other end passed through the thigh-band. The bar was gradually shortened by the thumb-screw, and the band pulled tight. With a frame several inches too wide, the pelvis could be fixed close to the farther side, leaving plenty of room for the stretching of the band and the spring, and the yielding of the thigh. By simply tightening or loosening the screw, it was possible to vary the tension at will.

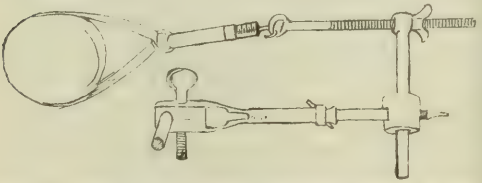


FIG. 3. Diagram of lateral-traction apparatus clamped on side of frame, with band around thigh.

CASE I. March 7, 1894. John C., six and a half years old. Double hip-disease; right, eighteen months, left, eleven months. Hips sensitive, but no night-cries.

March 10th, longitudinal traction increased to five pounds for each leg. 15th, lateral traction three pounds each. Patient more comfortable. 17th, lateral traction omitted for several hours twice. Each time patient asked to have it reapplied. 23d, end weights, 5 pounds each, omitted. Lateral three pounds each, and sand-bags to prevent abduction. Two hours later no pain, but not so comfortable. 24th, no pain or night-cries. Leg abducted. End weights reapplied after being off for twenty-four hours. More comfortable.

April 8th, has continued with three pounds lateral weight and four pounds end weight. Motion increasing in both hips. Not sensitive. 10th, lateral weights omitted to-day without discomfort.

In this case lateral traction made the patient more comfortable. Omitting end weight caused discomfort.

CASE II. March 5, 1894. Maggie J., five years old. Right hip-disease eight months. Moderately sensitive. Longitudinal weight three pounds. Lateral weights applied. Test for few minutes with screw: three and a half pounds, no discomfort; four and a half pounds caused pain. Lateral weights omitted for a few hours at a time. More comfortable when reapplied.

March 23d, lateral weight two pounds. End weight omitted. 24th, cried twice last night. Says wants end weight off. 27th, end weight has been off three days. Lateral weight two pounds. Seventeen cries last night. End weight, three pounds, reapplied. 28th, cried eight times. End weight increased to four pounds. 29th, cried fourteen times. End weight increased to six pounds. 30th, cried only four times. Lateral weight increased to three pounds. 31st, no cries. Lateral weight omitted.

April 2d, has had no cries. Splint applied in day-time. 8th, up in chair. Learning to use crutches.

Applied an extra-long Taylor splint, in bed, with spreader and spring-balance — tension nine and a half pounds, in evening eight and a half pounds. Next morning tension had diminished to eight pounds, later to six pounds. Adhesive-plaster extension had pulled down one-half inch.

This case was more sensitive after omitting end weight.

CASE III. Arthur L., eight years old. Hip-disease three years. Some subluxation and permanent flexion. Lateral weight one and a half pounds. Test with screw up to four pounds without pain.

March 23d, end weight omitted. Lateral traction with screw up to four pounds. No pain. Straps loosened during night and weight diminished. 26th, end weight reapplied after two days. No result. Lateral weight omitted. Hip has not been sensitive at any time.

April 8th, some flexion still remains. Not sensitive.

This case could bear lateral test up to four pounds. Omitting end weight gave no advantage.

CASE IV. March 14th. Mary D., four years old. Hip-disease seven months. In hospital before. Hip now sensitive and 20° flexion. Night-cries. Longitudinal traction three pounds.

March 17th, lateral weight two pounds. Night-cries worse. 19th, lateral weight omitted. Cries ceased. 20th, night-cries again. End weight increased to five pounds. 24th, no cries since.

Lateral traction apparently made cries more frequent. Relieved by increasing longitudinal traction.

CASE V. March 12, 1894. Deborah Y., five years old. Hip-disease one year. In hospital before. Old splint. Hip sensitive for three weeks. Very sensitive on entrance. Lateral test with screw caused pain, when only two and a half pounds, at first. Lateral weights one and one-half pounds. No advantage noted.

March 23d, hip less sensitive. Lateral weight continued. 24th, lateral weight omitted. End weight three pounds.

April 8th, hip has continued sensitive, but no night-cries. Splint applied in day-time. Hip chair. 12th, an extra-long Taylor splint applied in bed, with spreader and spring-balance. Tension three and a half pounds caused pain at first, later increased to four and a half. 13th, tension remains about four pounds. Increased to five pounds. 14th, tension has remained five pounds for twenty-four hours. Skin reddened by perineal bands. Splint omitted.

Later. Hip has been more sensitive. End weight increased, and lateral weights worn with comfort.

This sensitive hip could not bear much lateral traction.

CASE VI. Elsie S., seven years. Acute symptoms two months. Probable duration two years. Sensitive hip. Marked flexion. Traction in line of deformity by means of inclined plane. Flexion gradually diminished, for four weeks.

March 11, after flexion had gone lateral weight applied, with apparent benefit. Lateral weight omitted. 17th, splint applied during day. Night-cries. 23d, hip still sensitive. Sat up, and walked a few steps with high sole and crutches. 26th, cried several times, with pain in leg. End weight increased to eight pounds. 28th, cried out three times. Lateral weight two pounds at night.

April 8th, no cries since, and hip less sensitive.

Here was marked benefit from lateral traction at night.

Case VII. March 5, 1894. Allen W., six years old. Acute hip-disease; less sensitive after a few days' longitudinal traction. See Figure 1.

March 8th, lateral weight one and a half pounds. When omitted, at intervals, patient was glad to have it replaced. Test, with screw and spring-balance, showed that four and a half pounds could be borne for a few minutes without pain. When increased, there was pain due to pressure of strap on skin. Lateral weight continued. 17th, longitudinal weight increased to five pounds. 24th, longitudinal weight increased to seven pounds.

April 8th, has continued with seven pounds end; and one and a half pounds lateral. No cries. Not sensitive. 12th, plaster has caused excoriation. Stocking extension. Extra-long Taylor splint, in bed. Spring-balance, six and a half pounds, caused stocking extension to slip. Reapplied nine pounds. Slipped down to seven pounds. One-half hour later, six and a half pounds. Increased to seven and a half pounds. At end of one hour complained of pain in perineal band; loosened, and remained comfortable at four pounds.

Lateral traction apparently made this patient more comfortable.

Case VIII. March 17, 1894. Minnie K., seven years old. Acute recent hip-disease. Duration six months (?). Pain in knee four weeks. Marked abduction and outward rotation. End weight four pounds. No night-cries. Lateral weight one and a half pounds.

March 23d, some motion. Can be brought into better position. Lateral test with screw and spring balance for two days. Seven pounds could be borne without pain. Owing to slight change of position or stretching of straps, there remained after a time only three or four pounds tension.

As there were no night-cries and little sensitiveness, lateral traction was omitted.

This case could bear seven pounds lateral; but a weight of three or four pounds was more comfortable.

Case IX. Boston City Hospital, January 16, 1894. Rachael E. S., nineteen years old, married, housewife. Pain in knee and thigh for three weeks. Flexion and abduction. No motion. Traction for five weeks.

February 20th, traction omitted. Up.

March 4th, pain in hip again. Traction reapplied. 18th, considerable pain. 30th, worse pain. Loses sleep.

April 5th, fracture-bed (Figure 2). Pain in hip and groin. 7th, severe pain in back. 10th, side pulley put on leg, over thigh near perineum. Makes leg more comfortable. 13th, lateral traction increased to ten pounds. Patient continues more comfortable. 20th, lateral traction continued. Patient has had less pain of late. Leg kept fully extended. Extension thirteen pounds. Lateral traction eight pounds. 25th, no pain in hip except when weights are disturbed.

May 27th, has had relatively little pain, weights changed to give best results. Just now extension eighteen and lateral three pounds. To have Taylor hip-splint soon.

This case had very marked pain, requiring morphia and a fracture-bed. Relief from lateral traction was immediate and permanent.

Case X. Boston City Hospital, January 18, 1894. Bridget N. Hip-disease two months. Right thigh abducted and flexed. Luxation head of femur. Swollen, tender and sensitive.

February 4th, extension three pounds. 8th, pain; morphia to reduce pain. 17th, improving, little pain. 27th, leg gradually being straightened, slight amount of pain.

March 4th, fifteen pounds extension. Some pain. 11th, leg almost straight. 27th, right leg one and a half inches shorter than left.

April 10th, canvas stocking uncomfortable. Extension ten pounds. Pain on motion. 22d, extension ten pounds. Lateral traction five pounds. 29th, no redness, swelling or tenderness about hip. No pain. Weights continued. Measured for splint.

May 27th, has continued without pain, and improving. Weights as before, except extension temporarily reduced to five pounds. Can turn onto left side.

Acute symptoms subsided before lateral traction was applied.

Case XI. Boston City Hospital. Sadie J., seventeen years old, table-girl.

March 20, 1894. Fell, striking right hip, ten days ago. Marked pain. Rest in bed. 28th, improved by rest. Extension, three pounds, applied. 30th, little pain.

April 5th, intense pain from knee to groin. 10th, some pain, extension eight pounds. 13th, extension ten pounds. Lateral traction. 19th, diminished redness of right hip. Patient has had very little pain since lateral traction, five pounds, was applied. 25th, no pain at all.

May 2d, no pain. Measured for splint. 27th, doing well; remains comfortable with weights as above.

Very marked relief from lateral traction.

In answer to the first problem, therefore, we find that a majority of these cases were distinctly relieved by lateral traction. Case IV seemed a little worse for it. Cases III, VIII and X are practically negative, as far as benefit is concerned. Case V probably was benefited.

A good many other cases at the Children's Hospital have been benefited by the application of lateral traction, but I think these cases, all of which have come under my own observation, are enough to establish the point. In general, lateral traction may be of use in relatively acute cases when pain or night-cries persist, after traction has been applied. It may serve to make some cases more comfortable, even though they have but little pain.

Treatment by lateral traction may be continued if necessary, as long as the hip is sensitive, by some special lateral traction splint.

The answer to the second problem is, No; cases are not more comfortable with lateral traction alone. Case II was made decidedly worse by leaving off the end weight. Cases I and III showed no advantage in leaving off the end weight, and, indeed, it is hard to see, even on theoretical grounds, how there could be any advantage. For there would be nothing to counteract the spasm of the long flexor muscles.

The third problem deals with the amount and limit of the traction.

Before discussing the figures in detail let us see what we expect traction to do.

The irritation of the roughened surfaces of the diseased joint causes a reflex spasm of the muscles, which drives the head of the femur upward and backward against the acetabulum. The object of traction is to relieve the pressure of the opposing surfaces and to separate them slightly, or in other words, to produce distraction.

There is a limit to the amount of traction that can be applied, varying with the size of the limb, the kind of extension, and the sensitiveness of the skin; but a continuous force considerably less than this limit is usually enough to overcome the muscular spasm.

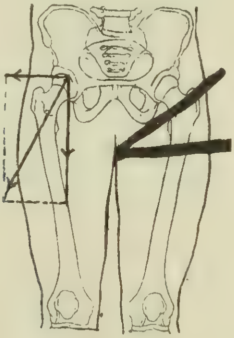


FIG. 4.

With sufficient traction the muscles gradually "tire out," and relax the spasm. Though they retain a certain amount of their normal tension and elasticity, yet they may lengthen appreciably, and will adapt their shape to the position of the limb.

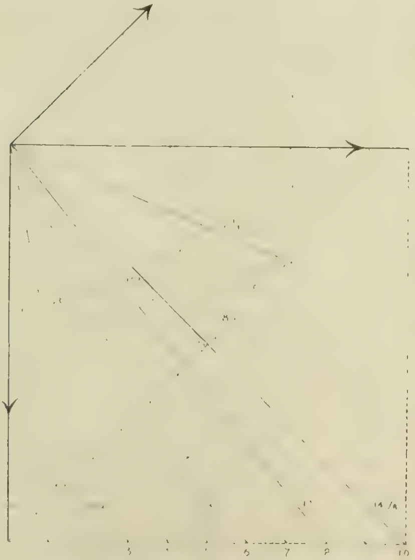


FIG. 5. Diagram showing effect on a longitudinal force of ten pounds, of a lateral force of from one to ten pounds applied at 90°, and at 135°.

When traction is applied in the axis of the limb, the head of the femur presses directly upon the lower edge of the acetabulum. In a young child, it can easily pass this, but in an adult it must first move outward in a line with the axis of the neck of the femur. We cannot apply a single force to act on the thigh in this line, but we can apply two forces whose resultant will so act. By the aid of a well-known principle of physics called the "composition of forces," we are able to calculate exactly the direction and the intensity of the resultant force. For example, suppose a longitudinal traction of ten pounds and a lateral traction of five pounds applied at right angles. When these forces are represented by lines of proportionate length, the resultant is determined by the diagonal of the parallelogram made by the two lines and their projections. (See Figure 4.) In this case the resultant is eleven and a quarter pounds, and makes an angle with the longitudinal force of twenty-six degrees.

In order to show the possible effect of different amounts of lateral traction, I have made a diagram (Figure 5) showing the result of a lateral force of from one to ten pounds upon a longitudinal force of ten pounds applied at a right angle and also at forty-five degrees more than a right angle, as indicated in Figure 4. The results are shown in the following table. To find the result when the longitudinal force is different from ten pounds, it is only necessary to reduce the ratio between the lateral and the longitudinal to a decimal. The figures are approximate, and correct to the nearest degree and fraction of a pound.

Ratio, Lat. and Long.	Applied at 90°. Result.		Applied at 135°. Result.	
	Angle.	Pounds.	Angle.	Pounds.
.1	6	10.05	4	9.25
.2	11	10.25	10	8.75
.3	17	10.50	16	8.25
.4	22	10.75	22	7.75
.5	26	11.25	29	7.33
.6	31	11.75	37	7.25
.7	35	12.25	45	7.0625
.8	39	13.00	52	7.125
.9	42	13.50	60	7.33
1.0	45	14.125	67	7.75

The action of the muscles in modifying the traction is too complex to be stated accurately. It varies with each case according to the age and the muscular development. We are not able to estimate the force exerted by muscular spasm; it is probably a good deal more than any traction we can apply; but we are now considering the muscles are tired out by continued traction, as lengthened and moulded into shape by the position of the limb and the traction straps. Still, the muscles have some effect on the movement of the femur. There is resistance to the long pull and to the lateral pull, but the difference between the two is sufficiently small, it seems to me, to leave the result of traction as expressed in the table substantially correct within a reasonable limit of error.

The point of application of the lateral force to the femur is necessarily considerably below the head, but it is nearer the head when the lateral traction is directed upward. The objection has been raised that lateral traction applied close to the groin tends to shorten the abductor muscles and so draw the femur against the acetabulum. Also, that the same bad result might occur by leverage of the femur, — the short rotators acting as a fulcrum when a lateral force is applied and the leg free to abduct. To the first objection we may answer that under the influence of continued traction the muscles become longer and shape themselves to the new condition. The second objection is not valid, if the leg is fixed by sand-bag or strap to limit the amount of abduction. Care must be taken, also, to keep the lateral traction-band in place.

From these somewhat theoretical considerations let us now turn for a moment to the weights actually used in the cases reported. By writing the lateral over the longitudinal, we get their ratios.

Case I. $\frac{3}{5}, \frac{3}{4}, = .6, .75$
Case II. $\frac{2}{3}, \frac{2}{4}, \frac{2}{6}, \frac{3}{6}, = .66, .5, .33, .5$
Case IV. $\frac{2}{3} = .66$
Case VI. $\frac{2}{8} = .25$
Case VII. $\frac{1.5}{3}, \frac{1.5}{5}, \frac{1.5}{7}, = .5, .3, .21$
Case VIII. $\frac{1.5}{4}, \frac{3}{4}, = .37, .75$
Case IX. $\frac{8}{13}, \frac{3}{18}, = .61, .16$
Case X. $\frac{5}{10} = .5$
Case XI. $\frac{5}{10} = .5$

These seventeen ratios vary from .16 to .75, the average being about .50. They represent fairly the limits that are practical. Less than .10 or .15 would hardly be of any use, while more than .75 or .80 would not be needed. By using the ratio, we are able to compare the child requiring 1.5 pounds lateral and 3 pounds longitudinal with the adult requiring 10 and 15 pounds.

There remains the question of applying the lateral traction exactly at right angles to the longitudinal force or inclined upward. It cannot be applied downward because the band will slip. From the diagram (Figure 5) it is clear that the greatest amount of pull can be obtained by applying the lateral weight at a right angle. But the greatest change in direction can be secured by inclining the traction band upward twenty-five degrees for a ratio of five-tenths, and more when the ratio is larger.

For the fourth problem I have not made any special experiments. Dr. Bradford[2] has shown conclusively that the hip-joint is in the best possible anatomical position to yield to traction when the thigh is slightly flexed and abducted. If lateral traction is to be applied, the thigh should also be slightly everted. With the limb in this position, the limit of traction may be stated as follows:

(1) Amount that can be made to hold on, that is, tension on skin.

(2) Amount possible to apply. Strength of cord or splint, and skin. Skin of perineum.

(3) Muscular resistance.

(4) Pain due to stretching capsular ligament.

(5) Limit of usefulness. When the surfaces are distracted and held so, there is no need for further pull.

Experience at the Children's Hospital has shown that when a weight of more than ten or twelve pounds is applied, the adhesive-plaster extension slips down, and has to be renewed every three or four days. Also, that a heavy weight on a patient with sensitive skin will cause excoriation sooner than a light one.

SUMMARY.

(1) Lateral traction properly applied in connection with longitudinal traction gives relief in some acute cases.

(2) Lateral traction alone has no advantage.

(3) The amount of weight in lateral traction should be in relation to the amount of longitudinal traction. A good proportion is five pounds lateral to ten longitudinal, applied twenty-five degrees beyond a right angle. The minimum useful proportion is one to ten, the maximum eight to ten.

(4) The tension on the skin is the most important factor in limiting the amount of traction when the thigh is slightly flexed, abducted and everted.

Note.—In discussing this paper, Dr. A. M. Phelps, President of the American Orthopedic Association, said that about two-thirds of the longitudinal force applied is expended in moving the weight of the limb, so that one pound lateral traction is as efficient as three pounds longitudinal. Ordinarily, then, two and a half to ten would be a sufficiently large proportion to move the head of the femur in the direction of the axis of the neck.

* * *

Clinical Department.

A CASE OF ACNE ROSACEA HYPERTROPHICA, WITH OPERATION.[1]

BY F. B. LUND, M.D.

The patient whom I have to present is an Englishman sixty years of age, a cabinet-maker by trade, and the subject of a chronic bronchitis. He has been a steady workman, and his indulgence in alcoholic stimulants has been limited to one or two glasses of beer a day.

About eight years ago his nose began to increase in size and grow very red. Marked venous engorgement is produced whenever he coughs, so that the condition is aggravated by the bronchitis. When I first saw him last December his nose had become a source of great trouble to him, and had given him a reputation, as unsavory as it was undeserved, of being a hard drinker. He has been unable to get work owing to the opprobrium attaching to his nose, and has even been refused board and lodging when he has been able to get work. He was willing to submit to any treatment which promised the slightest improvement in his personal appearance.

Early in January I operated, under ether and with careful antisepsis, by a method suggested to me by Dr. George H. Monks, who kindly saw the case with me.

A vertical incision was made in the median line, extending from about the centre of the bridge of the nose over the large globular mass which formed the end, and underneath about half way to the upper lip. Two thick, lateral flaps were reflected back about half the way to the cheek, and the subcutaneous tissues trimmed down with scissors nearly to the cartilages. A wide redundant edge was then trimmed off the skin flaps, and they were sewn together with fine silk-worm-gut sutures. The flaps healed aseptically; but although great pains had been taken to prevent tension and ensure good circulation, a small portion sloughed, leaving a depressed scar. The removal of so large a portion of the end of the nose resulted in a decided rounding of the bridge, giving an undesirable profile.

About a month later, in order to correct this deformity, a boat shaped piece was removed, under cocaine anesthesia, from the bridge of the nose, starting near the root of the nose, and extending nearly to the tip. By this incision, which extended down to the cartilage, the scar left by the sloughing flap was removed, and the bridge of the nose brought into the shape which you see in the second photograph.

---

[2] Transactions American Orthopedic Association, 1893.

[1] Read at the Surgical Section of the Suffolk District, Wednesday, May 2, 1894.

After this had healed, two similar pieces were removed from the sides of the nose, the incisions being so placed that the linear scars lie in the alar grooves, and as you see are hardly noticeable.

Although the man has a linear scar down the middle of the nose, the shape is very much improved. He is able to go among people without attracting attention, the chief disfigurement (the overhanging bulbous enlargement of the end) has been removed, and he is very much gratified with the result.

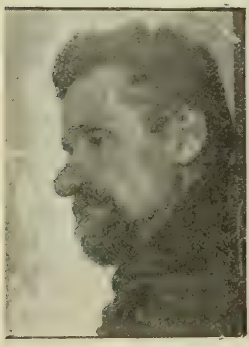
It is evident that the method of operating adopted in this case does not get rid of the disease, although the bases of the enlarged follicles are removed in taking the skin flaps.

It remains to be seen whether the cicatricial contraction resulting from the operation will prevent further hypertrophy or not.

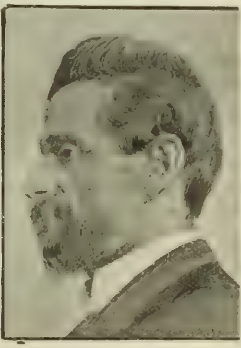
The operation of shaving off the hypertrophied skin and allowing the nose to become covered by granulation and cicatrization is said to have given good results.

Skin-grafting by the method of Thiersch is a method which would seem to promise well.

The dilated veins which were superficially under the skin have been successfully treated in this case with the thermo-cautery.



December, 1893.



April, 1894.

The accompanying photographs show the patient's profile before and after the operative treatment, the first having been taken in December, 1893, and the second in April, 1894.

◆

Reports of Societies.

NEW HAMPSHIRE MEDICAL SOCIETY.

One Hundred and Third Anniversary Meeting, Concord, N. H., June 18 and 19, 1894.

PUERPERAL SEPSIS.

Dr. J. Elizabeth Hoyt, of Concord, referred to an article in the *Medical and Surgical Journal* of June, 1893, by Dr. Edward Reynolds, who says that severe labor is not infrequently followed by moderate pyrexia, and when this is limited to the first forty-eight hours, it is strictly comparable with similar elevations of temperature so frequently observed after surgical operations and is independent of sepsis. But when this pyrexia becomes aggravated or is even continued after the first two or three days of convalescence, or when, after a similar period of normal temperature, even a very slight elevation is observed upon the third or fourth or fifth day (or even later), a suspicion of the presence of sepsis should be excited.

Obstetric sepsis is characterized by elevation of temperature, abnormal tenderness of the abdomen especially localized over the uterus or its adnexa, diminution and foulness of the lochial discharge, diminution of the amount of milk, and frequently of all other secretions and excretions of the body. Dr. Hoyt reported several cases.

Dr. Conn, of Concord: I heard a portion of the paper by Dr. Reynolds and the discussion which followed it; and the discussion brought out this fact, that many of our medical teachers say that douches should not be given subsequent to the first twenty-four hours after confinement on account of the danger of carrying septic matter into the uterus.

Dr. Hill, of Dover: I do not consent to that. I think water ought to be used.

Dr. Conn: It is considered better to use gauze, to use the curette, rather than carry the nozzle of the syringe through the *débris* that is in the vagina and introduce that into the uterus.

Dr. Hoyt, of Concord: If the irrigation is done through the speculum, and the vagina thoroughly washed out, I see no reason why foreign matter should be introduced into the uterus (if care is used), and no more so than with the curette.

Dr. Adams, of Manchester:

UNUNITED FRACTURES.

When they are the result of lack of proper nourishment, from old age, long continued debility, or diseased bones, we can do but little to remedy them. When the result of syphilis, slight debility, or loss of blood, we can do much with proper internal remedies, the free use of iodine, rigid exercise, and the judicious use of the rubber mallet. In these cases the question of splints is often very perplexing, for when we have kept the limb perfectly still for from six to eight weeks with no union, if we remove the splints and give the limb its entire freedom, union often takes place. Usually the reaction following the injury is sufficient impetus to complete the cure; but this sometimes fails, while at other times it overshoots the mark. When it falls short a new impetus is demanded, and we get this from the use of the parts, the use of iodine, and the use of the mallet.

Cases of fractures ununited by reason of suppuration. Often the end of the bone when it penetrates the skin comes into contact with dirty clothes or skin, or dirt gets into the wound and causes suppuration in spite of antiseptic washing, and, like many minor injuries by machinery where the dirt is ground in, unless you sacrifice parts that are often of measureless value to the patient, you must take the risk of suppuration. Where suppuration does take place, I would advise a counter-opening from the side where your compound puncture is and thorough drainage by tubes if possible. Often it is difficult to pass a tube; in such case make your opening so as to get a fairly free stream of water through the limb, and then tie a little cotton on the end of a silk thread and pass it into one side with more or less thread, and wash it through; then attach your tube and draw it through.

Cases of ununited fractures from the interposition of the soft parts. The surgeon cannot always remove the soft parts from between the ends, nor can he always tell whether he has accomplished it or not. Frequently the muscles are drawn very tense, and the bone may bend considerably before it gives way and the splinter may penetrate a fascia and muscle so that when the muscle relaxes and the bone straightens the bone has penetrated so deeply that it is impossible to release it without cutting down on it; and as one cannot always tell whether he has released the bone or not, no one would think of converting a simple into a compound fracture on uncertainties.

Lack of proper support ought nearly always to be avoided; yet in some cases we cannot hold our splints with bandages or straps, and the skin is so tender that we cannot use adhesive plaster, and plaster-of-Paris is very unsafe, and some patients are so irritable and intractable that we can do but very little with them.

In operations nothing will take the place of coarse well-cromated catgut for fastening the bones together. It may be put in on all four sides, and it will do much to hold the bones in apposition.

TUBERCULAR BONES AND RESECTIONS.

The most frequent exciting cause is slight trauma that causes a subacute inflammation from the beginning, or one that is just sufficient to unbalance the pressure from within, and the contractile force of the capillaries, so as to cause a determination of blood to the parts and extravasation into the tissues and obstruction of the lymphatics, thus accumulating the tubercle bacilli that are floating in the fluids of the body. It may affect nearly every bone and joint in the system, and it may appear in almost every form of bone and joint disease. These cases usually take place in what are commonly known as scrofulous subjects, or what we now know as tubercular subjects. Often by injecting iodoform into a tubercular focus in a bone it will effect a cure without resorting to more radical means. This is best used in the form of a ten-per-cent. emulsion of olive oil or pure glycerine, and should be repeated about once in two weeks until a cure is effected.

A. Y., age fourteen, slipped and fell, striking the right hip on a stone. Pain and swelling gradually came on; and in about eight weeks we aspirated, and took about two ounces of a gelatinous liquid from the hip-joint. Slight extension put on limb; iodine used over joint; cod-liver oil and tonics given; slow and steady improvement; at the end of ten weeks was dismissed well.

G. R., age three, about last March fell from chair, catching a foot in the rounds; wrenched ankle and injured lower end of tibia of right leg. In a few weeks a sore broke out a little above the ankle. Cut down, and found distinct tubercular focus, softening nearly all the cancellous tissue in the lower end of the tibia. Nearly all the cancellous tissue in the expanded portion of the bone was scraped out and filled with a ten-per-cent. paste of iodoform and lanolina, a large rubber tube inserted, and the external wound closed down. Through this tube olive-oil emulsion was injected about once a week, and syrup of the iodide of iron was given internally. Wound is healed and general health excellent.

E. F., age fourteen. A slight injury to hip began to cause her trouble a little more than three months previous to admission to hospital, July 27, 1892. At time of admission there were the ordinary symptoms of quite advanced hip disease. Placed in bed and extension applied, but in a short time an iliac abscess pointed at the notch between the anterior superior and inferior spinous processes of the ilium. Diagnosis clear, as hip disease with suppuration and perforation of the acetabulum and the internal periosteum, or peeling off of the internal periosteum and pointing at this notch. Abscess opened November 5th, and fourteen ounces of pus discharged. Cleansed thoroughly and often, but it burrowed down the course of the sartorius about two-thirds of the distance to the knee in spite of antiseptic treatment. Lost flesh rapidly; became pale and anemic; pulse rapid, 100 to 120; temperature as high as 104°. Hip-joint resected February 8, 1893. It was cut down from the anterior aspect, the periosteum peeled back, the shaft sawed through three inches below the trochanter, and the upper portion removed. Found the acetabulum diseased; it was scraped and a portion of the rim with some of the ilium posterior to the acetabulum removed. Cavity packed with iodoform gauze and the external wound partly closed, leaving opening for introduction of Polk's uterine speculum, through which cavity was packed every second or third day with iodoform gauze, and about eight pounds extension put on. Rapid improvement in general health. Suppuration checked at once. Temperature soon dropped to normal; pulse steadily improved; cavity along the sartorius rapidly healed. Last May nearly healed; drainage-tube put in, through which it was daily cleansed until about July 1st, when it was allowed to close. Dismissed August 1, 1893.

RESECTION OF THE SUPERIOR MAXILLA FOR SARCOMA.

Mr. U., entered hospital September 5, 1893. A tooth had troubled him for some time, which he had had extracted, and a few months following a growth projected down through the opening. This was removed; but in about three months it returned, while at the same time a tumor became apparent in the jaw above. Jaw removed September 7th. Patient on the back; an excision, starting a little below the inner angle of the eye, was carried down the side of the nose to the ala, thence around the median line and down through the lip. During this an assistant compressed the left facial artery and the upper part of the wound with a sponge, while a second compressed the coronary arteries at the two angles of the mouth. Then all bleeding vessels were secured. Then an incision was carried from the starting-point of the first horizontally outward along the lower margin of the orbit, nearly across the malar bone. The cheek flap was then dissected back, the head being inclined a little to the left to prevent the blood from entering the mouth. The bone was then sawed, commencing at the nasal cavity and sawing across the nasal process and just below the margin of the orbit nearly across the malar bone, thence down. The tumor impinging on the median line, we now sawed through the nasal septum into the right cavity nearly back to the soft palate; then beginning in front we sawed through from below backward just to the right of the septum, as far as the soft palate, leaving this portion until the very last on account of hemorrhage. A transverse incision was then made, separating the soft from the hard palate, and the bone was seized with strong forceps and wrenched from its position, cutting with scissors what few attachments remained. The head was then turned to the left and hot water used until the bleeding nearly stopped; then the cheek flap was turned back and sewed in place. Primary union and rapid recovery. This is usually considered a dangerous operation on account of blood getting into the air-passages; and tracheotomy has often been performed as a preliminary step, which is avoided by this method.

EXSECTION OF THE ASTRAGALUS.

DR. BURNS, of Plymouth, reported the following case:

W. B. was struck by a "shifter" locomotive backing down upon him; was thrown on his face, and the tender and most of the engine passed over him, November 10, 1892. Heart stimulants were administered until he rallied somewhat from the severe shock. There were several long scalp wounds; left arm hung, at about four inches below the shoulder, by a few crushed shreds of tissue and skin; bad fracture in middle third of left leg, which was comminuted for a distance of from four to six inches; astragalus of right foot fractured, and ankle distorted, forcing the foot into a marked position of varus. The arm was amputated just below the shoulder-joint, the scalp wounds dressed, and left leg put up in a strapped-pillow dressing — a safe protection where swelling is considerable and there is danger of fracture becoming compound. Manipulation and guarded force had no effect upon ankle. Patient's condition did not permit further surgical interference at this time. There was pressure over external malleolus, which was lessened by the application of splints. Next day splints were removed and cold applications made. On fifth day after accident incision was made just below external malleolus, the tendo-Achillis having been first cut subcutaneously. A large external fragment of the astragalus, almost wholly freed from its attachments, irregular in shape and rotated upon its axis in such a way as to render replacement absolutely impossible, was easily removed. On the inner side of the foot were found several small pieces of bone, and also a large irregular fragment, the longest diameter of which was antero-posterior, firmly bound to its normal position. The ligaments were so strong that an incision was made on the inner side of the foot, and the attachments severed before removal could be effected. Thorough antiseptic irrigation; heavy baked-gauze dressings applied, with side-splints. Following the operation was but slight pain or inflammation, though ultimately a large slough formed, owing to the nature of the injury and the tension over and below the external malleolus. When the slough separated, the joint was left freely open. In about two months the joint had closed and the wound had granulated, so that a Thiersch skin-grafting was done. As soon as advisable light plaster splints were applied, a fenestra being cut for irrigation and application of dressings. To-day the patient is walking about attending to his work. Cutting the tendo-Achillis simplifies the operation, and prevents spasm and contraction. The removal of the bone through one lateral incision may not be easy in all cases, unless a second lateral incision is made, which also permits more effective irrigation. One of the cuts should be allowed to heal by first intention. When we consider the severe multiple injuries in this case and the satisfactory result obtained, where the deformity is considerable and fracture irreducible we may fairly expect a useful foot.

DR. CONN, of Concord: I saw the case just reported, and was pleased with the result. I think it is the best treatment for such cases. It is easy enough if you have a fracture of the astragalus, but a fracture with dislocation is another thing. In such case, where one or more fragments of the astragalus are turned completely over, the attachments nearly all severed, I believe it is impossible to return the pieces back into their places, even after you make incision. The only thing to be done is to remove them; there is left sufficient motion of the ankle for walking, and it is much better than a wooden leg.

Most cases of fracture with dislocation are from railway accidents, and other injuries generally complicate the case, from loss of blood and the greater danger of collapse. In this case it was necessary to operate on the arm at once, and the depression was so great that it was inexpedient to go any further the first day. The patient was left until reaction had taken place and the wound made in the left arm had probably substantially closed in.

PROF. SMITH, of Dartmouth College: A man leaning over to pick up a stick threw his foot up, and his ankle came on a saw, so that the edge of it took off the lower end of the internal malleolus, cutting off two tendons and the posterior tibial artery, clear into the joint, so the articular surface of the astragalus could be seen. The artery was tied and the wound washed thoroughly. There was the usual amount of saw-dust, dirt and other things ground in. We tied the tendons together; and after using antiseptic solutions freely, we sewed the wound up tight, covered it with gauze and put it in splints. There was no rise of temperature. In four or five days the dressing was removed, and there was no pus. Treatment continued. After a time he was put in plaster. In about two weeks the wound completely healed, and the prospect is that he will have a good ankle.

EMPYEMA.

DR. LYONS, of Manchester: In the tubercular form thorough tonic and hygienic treatment is most likely to prove successful, especial care being given to the nutrition of the patient.

In the sthenic forms, the pain, which is often intense, demands morphine, and when practicable it is best given hypodermically. Dry cupping is often a useful adjuvant, and in the milder cases may suffice alone. We know that accompanying the rheumatic diathesis there is a strong tendency towards inflammation of the various serous membranes. In such subjects we would do well to try the effect of large doses of salicylate of soda. Not many of the older practitioners would discard Dover's powder for the modern antipyretics. Care should be taken that the skin and kidneys do not fail to properly perform their functions; and here the time-honored remedies are as reliable as any.

A serous effusion has frequently been converted into a purulent one by tapping, even when the strictest precautions are taken to avoid infection. Therefore, if an effusion is not causing urgent symptoms, and is not increasing too rapidly, we should strive to accomplish resorption by such means as repeated blistering and the free use of sulphate of magnesia. If there be already a purulent effusion the only proper treatment is opening and thorough drainage.

When the operation should be performed, whether irrigation is necessary or lawful, whether it is necessary to remove a portion of the rib, which is the best place to make an opening, and whether more than one opening is necessary, are questions to be answered only by considering them in relation to each particular case, bearing in mind that the opening must be free and the drainage thorough.

LACERATION OF THE CERVIX UTERI.

Dr. Stillings, of Concord: Many troubles arise from this accident, some of which are very grave in their consequences. This disturbance of the functions of the sexual organs, and the general health, is usually marked.

The injury causes the uterus to remain large, giving a sense of weight to the pelvis. In many instances much cicatricial tissue results, and generally there is enlargement and hardening of one or both lips of the cervix. The dragging of the scar tissue causes local irritation and frequently general disturbance through reflex action. Inflammation of the cervical mucous membrane develops, the parts are bathed in a stringy catarrhal flow, the cervix becomes edematous, and the divided walls become everted and are constantly irritated by friction with the vaginal wall and its acid secretions. This condition is extremely obstinate. The application of strong caustics early in treatment, while checking the catarrhal flow at first, sears the mouths of the mucous follicles, and they become closed and distended, giving a lumpy appearance. As the follicles become more distended, they cause absorption of the cervical tissue, while giving a bulbous look to one or both halves of the divided cervix.

The os is so dilated and distorted after delivery, that it is difficult to determine that laceration has occurred; and if the tear were found, it would be difficult to decide how much of the cervix should be closed, to say nothing of the improbability of getting union while the lochia are bathing the parts. First secure involution of the uterus by means of uterine massage, daily douches of hot water, and the application two or three times a week of glycerine tampons; and sometimes it can be much hastened by curetting its interior thoroughly with a sharp curette, washing out the cavity with a mixture of creolin tincture, green soap and water. It is important that the surface be left smooth, not plowed into furrows. I prefer the following method of operating: The patient on her back, hips brought to the edge of the operating-table, thighs flexed on abdomen and held there; field of operation thoroughly cleansed with the soap and creolin mixture above referred to. After the speculum and retractors are in position, the tenaculum forceps are inserted, one into the anterior and one into the posterior lip, taking care to place them so that they do not embrace any of the tissue it is desired to remove. Drag down the uterus as far as it will come, and approximate the several portions to as near the normal positions as possible, in order to determine the amount of tissue to remove. Give the anterior forceps into the hands of an assistant; introduce the hawk-bill scissors up to where the points will engage the upper angle of the rent. Draw the anterior and posterior lips together closely with the forceps, that the scissors may grasp as long a strip of the cicatricial tissue on each side as possible. The hawk-bill scissors always make a clean cut at the upper angle, but the lower ends of the divided cervix are apt to roll out from between the blades and leave the lower portion of the rent uncut. This may be finished with straight or curved scissors, but many prefer the knife, with which a smoother cut can be made and the work done more quickly. It is desirable that all the cicatricial tissue be removed and the lines of incision be as straight and smooth as possible. Do not remove too much tissue or notch the inner edge of the incisions, lest the cervical canal be made too small. Dry the cut surfaces with mops. Introduce the sutures from behind forwards, beginning at the lower end, the parts being held exactly in apposition with the tenaculum forceps. Continue the sutures to the angle of the wound, each being drawn tightly with a knot-tier; and after all are in position cut the ends short, if silk is used, but if the wound is closed with silk-worm-gut leave the ends long to prevent chafing the vaginal walls. Remove the forceps and stop the bleeding of their punctures by dry sponging and exposure to the air, or by touching the bleeding points with very hot water. Douche the vagina thoroughly with hot water, wipe dry the edges of the wound and the vagina with mops, and place on the wound, and, if possible, surround the cervix with finely powdered salacin. Pack the cervix on all sides with small tampons, and place one or more large tampons in the vagina. Keep the patient quiet in bed. If there is no discharge, or it is slight, do not remove the packing until the third or fourth day; and if there is then apparent union, one or two of the upper stitches may be removed, and new salacin and tampons applied, and after two or three days longer the remaining stitches may be removed.

I had a case recently where there were four lacerations. After operation one did not unite. As considerable tissue had been sacrificed, I determined to operate without cutting away the edges. I anesthetized the parts with cocaine, and with a small triangular knife split the two sides of the rent to the depth of a little more than an eighth of an inch. I then entered a suture at the end of the cervix just outside the bottom of the wound, carried it up to the angle, dipped it into the opposite side and brought it down and out at a point corresponding to its entry. Making traction on this caused the split edges to bulge and brought the two raw surfaces together. I tied this moderately tight, and united the edges with fine superficial stitches. The parts firmly united.

Dr. Adams, of Manchester: I have adopted a little different method of operating. Often when we have a double laceration laterally, we find that the anterior and posterior lips are both greatly hypertrophied, and by cutting with the hawk-bill scissors at the angles and then by cutting out the sides, leaving the mucous strip down through the middle, we find it very difficult to bring the two edges together. I have adopted this plan: Leave a mucous strip in the middle of the anterior lip, and cut the posterior lip right straight across, taking all the mucous membrane off. Then it adapts itself to the anterior lip very much easier, and I never have had any trouble in getting union.

Dr. Russell, of Concord: I would emphasize these three points: Curetting previous to any operation for the repair of the cervix, the sacrifice of as little tissue as possible in all recent cases, and the thorough removal of degenerated tissue in cases of long standing.

PINK EYE.

DR. CARVELLE, of Manchester, read a paper "On the Importance of the Early Recognition of Certain Diseases and Conditions of the Eye by the General Practitioner, with Suggestions regarding their Management." It is the fashion to call every eye that is red "pink eye," which is equivalent to saying that it is not a serious thing and does not require any attention. The term should not be used. It is applied to cases of acute catarrhal conjunctivitis, which is characterized by redness, and swelling of the conjunctiva of the lids and eyeball, and accompanied by more or less mucopurulent secretion. Both eyes are usually attacked, the second eye from twelve to twenty-four hours after the first one. There is no pain or tenderness of the eyeball, the pupil reacts to light and shade, and the vision is not disturbed.

GLAUCOMA AND IRITIS.

Glaucoma and iritis are often mistaken for neuralgia by the general practitioner, and in too many cases the patient is hopelessly blind before he discovers his error. Bear in mind that neuralgia is not accompanied by any disturbance of vision or inflammation of the eye, while in glaucoma and iritis there are marked characteristic symptoms peculiar to each disease. They both have pain in and around the eye, but in iritis it is more in the brow, while in glaucoma the pain may be more severe on the side of the nose or in the temples. The pupil in glaucoma is large, while in iritis it is small and immovable. In iritis the eyeball is tender, and the tension is usually normal, while there is not always tenderness of the eyeball in glaucoma, but the tension is increased. In iritis the sight becomes blurred after a few days, while in acute glaucoma vision may be lost in twenty-four hours. If a patient beyond middle life is taken suddenly in the night with severe pain in and around the eyes; with nausea, and disturbance of vision; if the pupil is dilated and immovable and the tension of the eyeball increased, you may be sure that it is glaucoma and nothing else.

ERRORS OF REFRACTION.

Many who have vainly tried every kind of headache remedy are relieved by having their refractive error corrected. It is the exception to find an optically correct eye; and under the pressure of our school system, and in the struggle for life, it is often necessary to correct even the smallest muscular and refractive errors. I have had four cases of epilepsy in young people whose fits have been stopped by correcting their refractive errors. It should be done only by the ophthalmologist, and in young people only after a mydriatic has been used, and not, as is often done, by ignorant opticians and itinerant peddlers of spectacles. If a patient complains of headache, poor sight and pain in the eyes, the probability of a refractive error being the cause is now generally recognized; but if the sight is normal, and there is little or no discomfort in using the eyes for near work, and if the headaches are not frontal, an ocular defect as a possible cause does not usually receive much consideration. It is, however, a fact that many who have good sight for distance and near, and are able to sew for hours without discomfort, suffer from neuralgic headaches that are relieved by the correction of some refractive or muscular defect. I would advise all cases of chorea, epilepsy and habitual headache to have their eyes examined.

POTABLE WATER.

PROF. EDWIN J. BARTLETT, of Hanover, described in detail the different methods of water analysis.

There is no absolute standard of chemical results upon which all waters stand or fall. A chemist may condemn a water for some purposes and approve it for others. He may say this water is too filthy to use. He may say, from previous examination, this water is far below its usual condition; or this water is much inferior to similar waters of the region; or this gives strong evidence of excessive vegetable matter, or even of sewage pollution. He cannot say this water does or does not contain the germs of disease; his methods do not touch this question. The biological methods go farther and repeated examinations accomplish valuable results. But they do not permit the statement from a single sample that no pathogenic germs are in the water-supply.

The methods of water analysis are very delicate, and the most absolute cleanliness in the sample is essential. Samples taken by the unskilled are seldom fair. Samples taken at different times are often very unlike.

Chemists have not the same competence; but even when they have, there is a reasonable margin of variation from different samples and a considerable margin from differing methods which may be equally correct. It is important, therefore, that the chemist should state his methods of work. Usually there is a distinct disadvantage in sending to different chemists; if neither is honest or competent, the results are worthless any way. The repetition of analyses in the same laboratory with the same reagents, methods, and personal equation, gathers value in going, while scattered results bring doubt and confusion.

The chemist employed should be trusted. It is a common notion that the less he is informed about the matter in question the more honest and reliable his data will be. He would have little cause to complain of this if the public were content with data; but they ask for a professional opinion in addition. That is, he is to throw away all his knowledge and experience and breadth of vision, and hazard his reputation on a guess; because his data commonly do not touch the question of the absolute healthfulness of the water. Every possible source of knowledge is desirable; and it is the duty of the chemist either to give no opinion, or to make it clear that his opinion does not go outside of his analytical data, which can tell him nothing about cholera or typhoid fever or diarrhea or any other disease.

The historical, comparative, systematic study of potable water is of great benefit and importance to a community. The States of Vermont and New Hampshire, with their throngs of summer visitors, their superb water sources, their frequent epidemics of typhoid fever, would be greatly benefited by elaborate modern study; and the world would profit by the examination and history of waters so pure at their source.

Other papers presented were "On the Prevention of Communicable Disease," by Dr. Sullivan, of Concord, N. H.; "Sleep, How Best Induced in Certain Pathological Conditions," by Dr. Raynes, of Lebanon; "Retrospective Glances," by Dr. Straw, of Manchester; "On the Differential Therapeutics of Strophanthus and Digitalis," by Dr. Wadleigh, Hopkinton; "On the Pathology and Methods of Treatment of Hypertrophic and Atrophic Rhinitis, with Especial Reference to the Work of the General Practitioner," by Dr. Albert Pick, of Boston; "Glimpses of Fifty Years in the Medical Profession," by Dr. Kelley, of Plymouth; "On Sanitation in Mexico," by Dr. Conn, of Concord, N. H.

Dr. David P. Goodhue, of Springfield, was elected President; Dr. G. P. Conn, of Concord, N. H., Secretary; Dr. M. H. Felt, of Hillsboro Bridge, Treasurer.

Hereafter the annual meetings of this society will be held Thursday and Friday of the last week in May.

◆

INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

BUDAPEST, SEPTEMBER 1–9, 1894.

THE Eighth International Congress for Hygiene and Demography met at Budapest from September 1st to September 9th. It was largely attended, there being about 600 in the sections for Hygiene, and about 200 in the section for Demography. Among the number were many English and Americans.

Of special interest in the general discussion was the question of the sanitary condition of the great cities of the world and a comparison of mortality-rates. In Budapest, in 1893, the mortality-rate per 1,000 was but 14.459; whereas, in 1874, it was 40 per 1,000.

The Congress was opened on the 1st by the Archduke Karl Ludwig, the representative of the emperor; and then followed immediately an act that is of world-wide interest, the formal homage to one of the greatest sanitarians, Ignatius Phillipus Semmelweis. The whole Congress in a body assisted at the unveiling of a monument over his grave, and Dr. Prof. Ferdinand Hüppe delivered an oration on the life of Semmelweis and his efforts to establish the fact that puerperal fever was caused by lack of attention to cleanliness and antisepsis on the part of the attendants.

Semmelweis was born in 1818 at Buda. He was graduated in medicine at Vienna in 1844, and took up midwifery as a specialty. In 1846 he was appointed assistant in midwifery to Dr. Klein at Vienna. Puerperal fever was at that time very rife in this department, the mortality being seldom under 5 per cent., while during one period of twenty months (1841–43) it had been 16 per cent. Many expedients were tried to alter this state of things, among them the division of the department into two clinics, one under Dr. Klein where students alone were taught, the other in which midwives were trained. The mortality was found to be much greater in the former than in the latter — 9.27 to 3.38 per cent. Dr. Klein's clinic was also removed to another building, but without avail. The high rate of mortality had a very deep effect on Semmelweis, and caused him to set to work to discover the "mysterious cause." He noticed that the seasons of the year had no very appreciable effect on the mortality, and that women delivered outside the clinic in Vienna and the neighborhood had a much lower percentage. Semmelweis, therefore, came to the conclusion that the cause must be local; but before he could make further investigations he was called upon to resign his post in favor of a senior, being, however, soon re-elected for a term of two years. About this time his friend Koletschka died from pyemia following a dissection wound. Semmelweis compared the symptoms which led to this death with those of puerperal fever, and came to the conclusion that the latter, like the former, were caused by decomposing animal matter, which he traced to the hands of professors and students, who were often summoned from the dissecting-rooms to do duty in the clinic, and merely washed their hands hastily with soap and water, thus conveying particles of decomposing animal matter on the skin and under the nails directly to the genitals of parturient women during examination.

Convinced of the correctness of his views, in May, 1847, Semmelweis ordered that the hands of all those making examinations should first be washed in chlorine water, and the death-rate fell in six months from 12.24 per cent., to 3.04 per cent. He also noticed a series of eleven fatal cases of puerperal fever occurring in twelve women who had been examined directly after a case of cancer of the uterus, which confirmed him in the correctness of the conclusion that "not only do particles from dead bodies set up septic fever, but also any material in a state of decomposition proceeding from a living organism."

Semmelweis, aided by the encouragement and coöperation of many eminent men — such as Rokitansky, Skoda, Hebra, and Helm in Vienna, Michaelis in Kiel, Tilanus in Amsterdam, and Arnett in Paris — roused the interest of the profession all over Europe. As long as Semmelweis was content to work in a subordinate position as an assistant, he was left undisturbed in his efforts at improvement; but when his views became a topic of public attention, not only he, but his friends, especially Skoda, became objects of malevolent attacks, particularly in Vienna.

Semmelweis died August 17, 1865. The cause of his death was pyemia, the very disease to the study of which he had given the best years of his life. He had performed an operation on an infant and wounded his right hand, which was followed by a whitlow; pyemia and death ensued. In 1890, at the instance of his relatives, the remains of Semmelweis were removed to Budapest and reinterred there amid manifestations of universal sympathy and respect.

On the last day of the Congress, a long list of resolutions were submitted, causing great confusion owing to the linguistic difficulty. Often the recommendations of the resolutions were not printed nor translated, and there was nobody present to explain or defend them. Dr. John S. Billings of Washington protested against the general adoption of resolutions which were imperfectly understood. After considerable confusion his position was sustained by the Congress.

Madrid was selected as the place of meeting for the next Congress.

A NEW TEST FOR MORPHINE.— The *Presse Médicale* for July 28th, publishes an abstract of a note on a new reaction by morphine, by M. Laneal, published in the *Bulletin de l'Académie de Médecine de Bruxelles* for May 26th. This reaction is said to reveal the presence of morphine and oxymorphine in a solution of the strength of 1 to 20,000. A few drops of the liquid to be examined are placed in a porcelain capsule, and then there is to be added an equal volume of a solution of thirty parts of uranium acetate and twenty parts of sodium acetate in 1,000 of distilled water. The mixture is then to be evaporated over the water-bath. If the liquid contains morphine, there remains a prominent deposit in the form of brownish-red or orange concentric rings.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, SEPTEMBER 13, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

ANNUAL REPORT OF THE BOSTON CITY HOSPITAL.

The Annual Report of the Trustees of the Boston City Hospital shows that the existing accommodations are insufficient for the amount of work which is done by this institution; but that this overcrowding is soon to be relieved by the new buildings and extensions already approaching completion, although additional room may still be needed for medical cases and special diseases. The two wards for contagious diseases were full at all times and during a large part of the year excessively crowded, a condition which seriously hindered the proper care of patients and affected the health of the nurses and house-officers in that service. The epidemic hospital on Swett Street, which had been erected two years ago at the time of the threatened invasion of cholera, was turned over to the hospital, by which 32 extra beds were acquired for scarlet-fever patients. A serious complication in the proper isolation of contagious cases arose from the fact that a very large number of patients were admitted suffering from more than one contagious disease at the same time; 101 patients having both diphtheria and scarlet fever. The Trustees congratulate themselves and the citizens of Boston that before the close of the present year the new hospital, exclusively for contagious diseases, will be completed and occupied, after which time no cases of contagion will be received into the general hospital. The buildings consist of an administration building, a domestic building, a lodge or entrance, two two-storied wards, two nurses' homes, a laundry building and a mortuary building. The hospital will have accommodation for 250 cases of contagious disease.

Among other new buildings for which plans have already been made is an enlargement of the present surgical operating building, which will be practically doubled in size. There will be five accident-rooms, small wards and other rooms so arranged as to make it possible to properly and promptly care for all cases that naturally come to an operating-room. It will then not be necessary to take moribund cases to the general wards on entrance, nor accident cases in the middle of the night. There will also be built two two-storied surgical wards in addition to the present accommodations. Plans are also ready for a group of three buildings to embrace the pathological building, mortuary and mortuary chapel. This building will contain seven laboratories for scientific work, with accessory rooms for special surgical work. The mortuary building will contain special rooms for the medical examiners' cases. The additional buildings will give an increased capacity for 388 patients, making 850 beds available for the hospital.

The report of the superintendent shows that 8,292 patients were admitted during the year, of whom 3,525 were medical, 3,172 surgical, 890 contagious, 562 gynecological, and the remainder in special services. The number of accident cases received was 1,495, the daily average in the wards 457, an increase of 24 over the previous year. The total number of deaths was 1,153, of which number 447 died within forty-eight hours of admission, and 203 of diphtheria. Solely for want of proper accommodations in the hospital, 428 persons had to be rejected.

The weekly cost per patient averaged $10.09, while the average stay of patients in the hospital was 19.05 days. The growth of the hospital and the improvements in various departments during the last few years are striking and promise to become even more so in the near future.

◆

IS OUR RACE DEGENERATING?

It has been asserted that modern nations are degenerating; that decadence is stamped on the constitution of the races of to-day; that the high-pressure conditions of life are so exacting that the race must inevitably deteriorate, and the fate which befell all the ancient civilizations is sure, soon or late, to befall our civilization. The people of this century, it is said, are neglecting those means of physical robustness which made the men and women of earlier times healthy; while the brain is overstimulated, and the nervous forces overstrained so that exhaustion and decadence are inevitable.

Dr. Percy Dunn, in the last number of the *Nineteenth Century*, has taken a more cheerful view of the situation. He admits that the conditions of present-day life among civilized peoples are not precisely those which can conduce to a high standard of health, but he doubts whether they lead to any deterioration of race which calls for alarm. Nature is always apt at adapting herself to circumstances, and whatever calls may be made upon her resources, so far as man is concerned, in the altered circumstances of his existence, she can, as the past has shown, prove herself equal to the occasion. He asks the question: "Is the dawn of the twentieth century bringing with it new diseases, new complications of existing maladies, new varieties of physical suffering, as the result of the exacting conditions of the present struggle for existence?" He answers emphatically, No! There is no evidence to show that the normal life of any individual organ of the body in which organic disease most commonly occurs is shorter now than the records would indicate was the case in earlier days. In other words, it is shown that the organs of the body can bear the strain of present-day life without prematurely becoming the seat of organic mischief. He reminds the reader that hysteria, hypochondria and neurasthenia, in respect to the alleged increase of which so much stress has been laid, do not belong to the category of organic affections. The same may be said of what is known as "nervousness." All these latter forms of human ills are merely disorders of function. There is no pathological condition, for example, associated with "nervousness" — so called. Often this psychical disorder is an inherited one, a fact which is commonly illustrated in certain families. When acquired, it tends to be only of temporary duration, and can be recovered from. "Nervousness" perhaps is largely the result of habit. But in all cases, it may be said to be harmless — harmless, that is to say, in the sense of not provoking the development of organic disease. Discomforting it may be to the individual who suffers from it; but whether the increase, as it is alleged, of "nervousness," hypochondria, hysteria and neurasthenia should be taken as indicating the advent of the decadence of the human species and regarded as worthy of being made the basis of a profound pessimistic doctrine is at all events open to serious doubts.

Dr. Dunn thinks that the explanation of the fact that the civilized races of mankind are not "falling to pieces" in physique in consequence of the severe high-pressure conditions of life is to be found in the phenomenal improvement which has been effected in the sanitary, hygienic, and perhaps social environments of the people. Obviously, that which conduces to human health must also conduce to human energy, and out of the human machine that is in a good state of order, more work may be expected than out of one the surroundings of which are not favorable to the development of its best features.

With regard to degeneracy from the effects of "the great town system" to quote from Dr. Morel, whose chief elements are unhealthy situation, noxious local and general atmosphere, insufficient and improper nourishment, deleterious avocations, moral and social misery, wretchedness and crime, the writer makes some judicious remarks. It has, he says, been repeatedly pointed out and universally accepted as a truism that the herding together of large communities of people in towns is associated with the worst effects upon the health of the population. In support of this statement, statistics show that there is a marked difference between the urban and the rural death-rates; in other words, the former is distinctly higher than the latter. The point, however, to be inquired into in this connection is, Can it be asserted that the higher mortality of town districts is necessarily associated with race deterioration? Is it true that the effects of the "great town system" are to cause deterioration of the race as the result of which a high rate of mortality follows? There are undisputed facts on record which practically prove the contrary. The following is an extract from the report of the Anthropometric Committee of the British Association which will be found in the volume of the Proceedings of the Association published in the year 1883.

> Physical Improvement or Degeneracy of the Population. — Few statistics are in existence which help to throw light on the subject. It is generally believed that the population in the manufacturing towns of the North of England is rapidly degenerating, but a comparison of the measurements of stature and weight given in the report of the Factory Commissions of 1833 and in the report to the Local Government Board on "Changes in Hours and Ages of Employment of Children and Young Persons in Textile Factories," 1873, shows that this is not the case. On the contrary, an examination of Table XXIV, showing these measurements, indicates a slight but uniform increase in stature, and a very large increase in weight at corresponding ages. The increase in weight amounted to a whole year's gain, and a child of nine years of age in 1873 weighed as much as one of ten years in 1833, one of ten as much as one of eleven, and one of eleven as much as one of twelve years in the two periods respectively.

This is perhaps the only instance in which a trustworthy statistical inquiry has been undertaken, and the results are such as to accord with the view that no racial deterioration is in progress. In time it may be that more figures will be forthcoming to testify to this fact, but meanwhile it is obvious that the discussions on this subject must to a large extent be based on mere speculation.

DEATH OF PROFESSOR VON HELMHOLTZ.

As will be seen from the letter of our correspondent, the scientific world, the medical profession, and every civilized community has suffered an irreparable loss in the death of one who was among the first of the distinguished men of this age. Few among the most eminent men of science, or of our own profession, have made such important contributions, not only to science, but to human welfare as Helmholtz has done in his sagacious and accurate researches, especially in physiological optics; and in the priceless endowment he has made us of a practical and simple instrument for exploring the interior of the eyeball — inestimable, not only for its revelations and demonstrations of the normal physiological conditions and functions of its deeper-seated structures, but as, moreover, affording what had seemed to be impossible revelations as to the nature and the course of hitherto unsuspected morbid processes, and of the resultant changes in structure and functions; thus opening a new field for physiological and optical research, and disclosing what is virtually a new world for opthalmology, not only in showing important local changes, but in demonstrating the existence of grave and progressive conditions affecting the whole system in advance of any other means of diagnosis.

The almost feminine modesty of Professor von Helmholtz had not prevented a recognition of his merits, as shown in his advancement from professorships in minor universities to those of higher distinction, notwithstanding his lack of self-assertion. It may, indeed, be said of him, " His works do praise him " ; and he will long be held in affectionate remembrance by those who had the privilege of a personal acquaintance.

◆

MEDICAL NOTES.

THE CHOLERA. — Since the last week of August there has been a marked spread of the disease, especially in Austria-Hungary, Germany and Holland. It may be said that cholera has shown a power of recrudescence in Russia, Galicia, Northeast Germany and Holland, which is greater than could have been expected, and in excess of that which obtained last year. It is extremely difficult to obtain reliable information from France or Belgium. In France, for example, Marseilles has for some time past been under suspicion, although the existence of cholera is strenuously denied by the authorities. Late last week a fatal attack occurred at Bordeaux in a person who had come from Marseilles within the previous forty-eight hours. Marseilles must be regarded as a place where cholera is existing, especially as most of the ports of the Mediterranean have now quarantined against it. In Austria-Hungary the spread of the disease during the past ten days has been very great in Eastern Galicia, along the river Zebrucz and in Bukowina. In the week August 27th, September 3d, there were 801 deaths from cholera in Galicia and Bukowina. Since the disease became epidemic there have been 6,958 cases of cholera, and 3,000 deaths in those provinces. In Germany, cholera has spread along the Vistula. Centres of infection have been established near Dantzig and Johannesberg and isolated cases reported at Berlin, Bremen and Cologne. It is a question, now, as to whether the Rhine is infected. Certain it is that cases have occurred on Rhine steamers. In Holland, there has been a small epidemic at Maestricht, in the province of Limbourg, while many cases are reported in various towns in both North and South Holland. In France the disease is only termed cholerine, but this has been reported at Paris, Marseilles, Bordeaux, Sassey, Mancel-sur-Scille, Avignon, Rheims and Reuil. Officials of the Marine-Hospital Service display undisguised anxiety as to the continued spread of cholera in Europe and fear that the United States may not be able to escape unless strenuous precautionary measures are taken at every point.

RESTRICTION OF PILGRIMAGES TO MECCA. — The crowds of pauper pilgrims who annually flock to Mecca have long been known to be one of the most potent causes of the spread of cholera. The last number of the *Indian Medical Gazette* discusses this question, and states that there is a strong probability that the governments of England and France will unite in restricting all pauper Moslem pilgrims from entering India.

STATUE OF DR. SIMS IN NEW YORK. — A statue of the late Dr. J. Marion Sims is shortly to be erected in Bryant Park, New York. The well known French artist, M. Dubois, is the sculptor.

OPIUM SMOKING IN NEW YORK. — According to the testimony of one of the police before the Lexow Committee in New York there are about ten thousand opium smokers in that city.

THE PLAGUE IN LONDON in 1664, which is believed to be identical with the present epidemic in China, caused 69,000 deaths out of a total population of 460,000.

THE MEDICAL OFFICER OF HEALTH TO THE CITY OF LONDON receives a salary of $7,500, and an additional sum of $1,000 as analyst; but he is obliged to give his whole time to the duties of the office.

MEDICAL SCHOOLS OF THE UNITED STATES. — The last two numbers of the *Progrès Médical* have a long and elaborately illustrated article on the medical schools of the United States. Much space is given to the Universities of Harvard and Yale. The fact that there are so many small medical colleges throughout the country is greatly deplored as tending to diminish the value of American degrees in general.

ANTHRAX IN LONDON. — During the past twenty years 118 cases of anthrax have been reported to the sanitary authorities in London. Of this number, 90 were in persons engaged in the hide and skin trade, 5 in persons engaged in slaughtering animals, 7 in persons engaged in the manipulation of horsehair or the manufacture of brushes, one was employed at a bacteriological laboratory, while in 15 instances the source of infection was not traceable.

FATAL ALCOHOL POISONING IN A CHILD. — Battrich in the *Jahrbuch für Kinderheilkunde* mentions the case of a boy nine and a half years old who drank a quarter liter of whiskey. This was shortly followed by dizziness, loss of consciousness, and convulsions, which were chronic in character, involving the extremities and the muscles of the face. The pupils were contracted, the head hot, the trunk cool, the pulse slow. The convulsions subsided, but were followed by pulmonary edema, high fever, and extremely rapid respiration, and death in three days.

HABITATION AND OCCUPATION IN THEIR RELATIONS TO THE MORTALITY OF TUBERCULOSIS. — M. Lagneau, in comparing various European statistics, concludes: (1) That occupations exposing to dust cause a marked predisposition to tuberculosis, the mortality of stone-cutters, according to Swiss statistics, being 10 per cent. (2) Sedentary occupations predispose to the disease more than any others. Students and seminarians, according to Italian and English statistics, show 459 deaths per 1,000 from the disease. (3) Printers in England and lithographers in Italy show from 300 to 400 deaths per 1,000. (4) On the other hand, individuals living in the open air, as mountaineers, farmers and boatmen, enjoy almost complete immunity from tuberculosis; Swiss statistics show a mortality among them of only 1 to 2 per 1,000. As regards habitation, the sanitary statistics of 662 towns in France prove that the more dense the population, the greater the spread of tuberculosis.

Statistics of German Medical Students. — The number of medical students enrolled at German universities in the spring and summer of 1894 was 8,012, of which 4,505 were Germans and 3,507 were foreigners. This proportion of German to foreign students it is said remains about the same each year. Munich had the largest number of students, 1,211 and Berlin came second with 1,059. The least favored universities were Giessen and Rosbloch. Munich and Wurzburg were especially frequented by foreigners.

Peritonitis following Mumps. — The *Archives de Médecine et Pharmacie Militaires*, gives this rare case. During an epidemic of mumps a soldier, twenty-two years old, presented himself with a double orchitis. It was not due to gonorrhea, and he had never had the least venereal infection. It had come on after a few colicky pains followed by an abundant movement of the bowels. Both testicles were affected in an equal degree. The temperature was 103.1° F. Topical treatment was prescribed for the orchitis, but as early as on the second day it was found that the patient had peritonitis, which resulted fatally in forty-eight hours. At the autopsy the testicles were found transformed into purulent collections with no trace of seminiferous tubules. The spermatic cords were bathed in pus, which continued beyond the inguinal canal. The intestinal coils and the mesentery were covered with purulent and fibrinous deposits.

Medical Work among the Women of India. — The ninth annual report of the Lady Dufferin Fund for Medical Aid to the Women of India shows that the annual number helped by the society has risen to 12,500 in-patients and 600,000 out-patients. Through the aid of local committees, medical treatment is now extended to women whose caste prohibits them from coming to the hospital, and who are too poor to pay fees. Lady Dufferin's aim was to restore health to thousands of Indian women and children who needlessly suffered and died from ignorance of sanitary principles, and whose caste, customs and prejudices cut them off from the services of male physicians. The scheme has not only saved much suffering, but has been the source of a liberal education to the native communities in which women physicians have done their work. Many natives have contributed to the fund, and a number of Indian and Eurasian women have been induced to study medicine. Funds are being raised in England to increase the number of scholarships for native women.

Increase of Lunacy in Great Britian. — The forty-eighth report of the British Commissioners in Lunacy, states that there were in that country on January 1st, 92,067 lunatics, idiots, and persons of unsound mind, according to the various returns. This number is 2,245 in excess of the corresponding returns from the previous year, and shows the largest increase in the number of lunatics yet recorded. The report says: "This large increase calls the more for some special consideration, because it follows an increase of 1,974 in the preceding year, that being far above the average for the ten years 1882 to 1892, which was only 1,300. The increase seems to have been fairly general throughout England and Wales, but the predominant feature of the figures is the great increase shown in the county of London, its pauper lunatics numbering on January 1st, 800 more than they did a year previously. It is perhaps right in this connection to point out that from the administrative county of Middlesex, which is fast becoming metropolitan, there is shown from last year an excessive increase of 103, against an average for the previous ten years of 42. From one of the tables attached to the report it appears this state of affairs, though alarming, is not quite so serious when considered in conjunction with the increase of population, the ratio being one insane person in 326, as against one in 331 for the previous year."

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, September 12, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 30, scarlet fever 32, measles 2, typhoid fever 40.

Bequest to Newton Hospital. — The will of the late Nathan P. Coburn, of Newton, gives $15,000 to the Newton Cottage Hospital.

Professor Richards of Yale on Football. — Prof. E. L. Richards, of Yale, will have a timely article on "The Football Situation," in the *Popular Science Monthly* for October. He is an intelligent sympathizer with the game and will set forth its many advantages, maintaining that the evils ascribed to it are unreal or can be removed by changes now contemplated.

A New Laundry for the McLean Insane Asylum at Waverley.—It has recently been decided by the trustees of the Massachusetts General Hospital to build a steam laundry at a cost of $10,000 on their grounds at Waverley. This laundry will have all the latest improvements, much in advance of any in this section. It will be of brick, fifty by eighty feet in size, and two stories high. It will have a sterilizing room, where all the germs from the insane patients' clothing will be scalded by steam under great pressure. Another room will be devoted to the making of the soft laundry soap, which is to be manufactured entirely from the kitchen grease, of which there is a great quantity. The laundry and service-room will be connected by a covered runway, built partly above, and partly below ground so that the grease can be easily wheeled directly from the kitchen to the laundry.

There will be one room for receiving the clothes, and another for distributing them, and a steam drying-room, as well as a large ironing-room on the first floor.

An Optical Library. — The New England Association of Opticians, recently chartered, is to establish a library covering optical science more thoroughly than is now possible in any general library in this country. The members are to contribute individually, and, as the society is distributed through six States, an exceedingly valuable reference collection is already assured. During the coming winter the association will secure rooms in some centrally-located business block in Boston and open a reading-room in connection with the library.

◆

Miscellany.

INCREASED CLINICAL FACILITIES OF THE UNIVERSITY OF PENNSYLVANIA MEDICAL SCHOOL.

During the coming year the clinical facilities at the University of Pennsylvania will be largely increased by the addition of three valuable buildings to the already extensive equipment of the institution. The new buildings are the Agnew Memorial Wing to the University Hospital, the William Pepper Clinical Laboratory, and the main ward connecting the two smaller wings of the Maternity Hospital already constructed. Ground for all three structures has been broken, and the foundation walls are well under way.

The purposes of the William Pepper Clinical Laboratory are in the same general lines as those of the Wistar Institute of Anatomy, recently dedicated; both are intended for advanced study. The new laboratory is designed for post-graduate work, and will possess especial facilities for microscopic and chemical investigations in pathology and bacteriology. It is being built and richly endowed by Dr. Pepper as a memorial to his father. The building is to be simple but massive. A corridor will connect the laboratory with the Gibson wing of the main hospital. The building will be four stories high, with a basement for heating and ventilating purposes. The first, second and third floors will be devoted entirely to laboratories, and the fourth will contain quarters for the curator and janitor. Especial care has been taken to secure light, particularly from the north and west.

The new hospital wing, a memorial to Dr. Agnew, is intended to accommodate very nearly all of the surgical departments now belonging to the general hospital. It adjoins the main hospital on its eastern end. In shape, the new portion is very irregular and consists of a central pavilion, flanked by wings set farther back from the street, long wards extending from each wing towards the rear of the grounds. Between these long wards there is a court sixty feet wide. The wing has three floors, with a basement standing clear of the ground. The servants will be quartered in rooms under the wards, while the basement of the central body of the building will contain the waiting-rooms and dispensaries for the orthopedic department and a gymnasium. The first floor will be given up to the orthopedic wards, the surgical and gynecological dispensaries and the ophthalmic wards and rooms; it will also have a small clinical theatre seating about 130. On the second floor the surgical and gynecological departments will each have a ward, but this floor will be mainly given up to a large clinical theatre seating 400 students, fitted with private operating and etherizing rooms and a laboratory. A smaller clinical theatre will be in the rear of this. Thus there will be three theatres in this building. The third floor will have the nurses' dormitories and private rooms for patients. Each department is to have its own dispensary, private operating rooms, a main ward with 26 beds, diet kitchen, etc.

The third building under construction connects with the wards of the present Maternity Hospital and when completed will make this one of the best appointed obstetric hospitals in this country.

◆

THE "SLEEPING SICKNESS OF WEST AFRICA."

This curious disease occurs oftener in males between twelve and twenty years of age, although all ages and both sexes may be affected with it. Enlargement of the cervical glands is seen at the onset; drowsiness and actual sleep at unusual hours are followed by profound and lethargic slumber lasting weeks or months. At first, active purgation arouses the patient, but later he succumbs to the lethal slumber and refuses all food; emaciation with increasing atrophy, exhaustion, and starvation causes death at the end of from three to twelve months. When moribund, the coma ceases for a short time and the mental faculties are clear immediately before death. The most frequent and virulent cases occur in the valley of the Congo; others from the Congo to Senegal, in the Sierra Leone district, and in the Hinterland. Slaves taken from the Congo or Sierra Leone districts suffer from the disease when in the West Indies, etc. The prognosis is bad. Guèrin reports 148 cases, all fatal. Gore says 80 per cent. are fatal. Forbes[1] reports eleven fatal cases, also two which passed out of observation. At autopsy hyperemia of the arachnoid and slight chronic pachy, and lepto-meningitis are found; the cerebral substance is pale, indicating anemia of cortical centres. In one case splenic enlargement occurred, in two cases filaria sanguinis hominis were found, probably coincidences. The cause is unknown.

Theories are: (1) septic condition of the blood, as suggested by the arrest of development of active glandular elements; (2) presence of filaria, as advocated by Manson; (3) a neurosis affecting the neurotrophic system, Forbes's suggestion. Treatment has proved useless.

◆

DANGERS OF THE LONG RECTAL TUBE.

It has long been a disputed question as to whether the long rectal tube can safely be passed into the sigmoid flexure. In this connection the opinion of Mr. Harrison Cripps in a recent number of the *British Medical Journal* is of interest.

In spite of the condemnation of the long rectal tube by Brodie, Treves, and many other eminent authorities, he still finds that in most cases of obstruction or supposed obstruction the tube has been introduced. Fortunately these tubes are fairly soft, so that in a capacious rectum, when they impinge and are arrested about opposite the promontory of the sacrum, they simply coil up and do no harm. If stiffer ones are used the patient's life is placed in imminent risk. A patient at St. Bartholomew's Hospital was to be operated on for ruptured perineum. In order to increase the supposed efficacy of the injection, a quart of soap and water, with some ounces of oil, were injected by means of a long tube. The injection never returned. A few hours afterward, owing to the acute symptoms of the patient, Mr. Cripps assisted one of his colleagues in opening the abdomen. The soap and water and oil were found in the abdominal cavity, and a hole below a reduplicated fold in the upper part of the rectum. The patient died. He says that the idea that these tubes can be generally passed into and beyond the sigmoid flexure is a pure delusion, save in the rarest circumstances. As a means of diagnosis, or of treating stricture beyond the reach of the finger, tubes of any kind are absolutely useless. If a stricture is actually present it would be one-hundred to one against the long tube or bougie entering it, for it would almost certainly catch in the cul-de-sac generally caused by the invagination of the stricture. If a stricture is not present, the arrest of the bougie by the sacral promontory leads to delusive diagnosis. Brodie, in his lecture, alludes to a case in which a worthy practitioner had spent over one hundred and fifty hours in dilating a supposed stricture situated high up. The treatment had extended over a period of a year. Brodie, who was present at the post-mortem examination, found there was no sign of a stricture, the bougie becoming arrested by a curve of the sacrum.

---

[1] Lancet, 1894, p. 815.

◆

Correspondence.

DEATH OF PROFESSOR BARON HEINRICH VON HELMHOLTZ.

Boston, September 10, 1894.

Mr. Editor: — The announcement in the last number of the Journal of the grave illness of this pre-eminent man foreshadowed — alas! too certainly — what we must regard as the greatest loss which the scientific world, the medical profession, and all who hail with pleasure discoveries which are to be an inestimable blessing to the human race, have suffered within our generation.

Previous to Helmholtz's careful and intelligent investigations which led to his invention of the ophthalmoscope, no adequate means existed for the exploration of the delicate and complicated structures of the deeper-seated and most important structures of the interior of the eyeball which are essential to its visual function.

We could watch the course of diseases of the cornea and the iris, and observe the loss of transparency of the crystalline lens, constituting cataract; but were wholly at fault as regarded morbid changes in the retina, the seat of visual perception. In the vast majority of cases of this class, no explorations, by the means then in use, revealed the causes of the lessened vision, and the term amanrosis was used to designate an unknown cause and degree of enfeebled sight — this vague term being substituted, in the lack of positive diagnosis, in cases where, as Walther wittily expressed it, "the patient sees nothing; and the doctor also — nothing."

This opprobrium of ophthalmic medicine continued until 1851, when — thanks to Helmholtz — out of the darkness came indeed a great light. In all this century there has been no revelation of more importance for science and for humanity.

Apart from the optical scientific value of the ophthalmoscope in aiding in the determination of questions relating to the refraction and accommodation in the eye, and the conditions which may disturb these optical functions, this simple and inestimable ophthalmoscope has a supreme importance in offering to us a clear revelation of the normal appearance of the deeper interior structures of the eyeball; of their actual adaptability for these essential purposes; and, moreover, in affording accurate revelations of the infinitely varied morbid conditions, often previously unsuspected or unexplained, which it renders discoverable.

To cite a single instance of its important revelations: it had not seemed an imaginable condition that highly near-sighted eyes — which seemed, when assisted by suitable glasses, to possess even higher visual capacities than eyes of normal formation — were, in reality, but treacherous friends, liable to great and progressive changes of structure, which gradually, or perhaps suddenly, resulted in great impairment or even complete loss of vision. Happily, knowing as we now do, this liability to progressive changes in near-sighted eyes, and being able to detect these at an early stage by means of the ophthalmoscope, we can, cautioning myopic young people against excessive continuous use of their eyes upon near objects, or in insufficient light, avert mischief which cannot be repaired if our admonitions are unheeded. Unfortunately, young people, especially girls, are extremely unwilling to forego the literary work in which they have become interested, especially the study of languages requiring lexicon work, which is, more than almost anything else, fatiguing to the eyes; or they continue some minute occupation which too often results in blindness of greater or less degree, from sudden increase of the pathological alterations in the retina, and which easily becomes irreparable.

The revelations of the ophthalmoscope have also bestowed great benefits in increasing our knowledge of various affections of the general system. By its means we discover, in the eye, the presence of Bright's disease, of cerebral tumor or congestion, of diabetes, months, and even in some instances years, before a sudden invasion of severer symptoms becomes the forerunner of speedy death.

I speak enthusiastically of the many forms in which the ophthalmoscope has added to the knowledge and the usefulness of the general practitioner as well as the specialist, because during my first visit of nearly three years in Europe, I had enjoyed the opportunity of studying ophthalmology, as it was, with nearly all the most celebrated teachers in various countries, returning home but a short time before Helmholtz had made his splendid endowment to ophthalmology and to science. When the announcement was made of Helmholtz's invention, I took an early opportunity of making another visit abroad, to observe its application, finding everywhere enthusiasm over the advance, which was no less than a re-creation of ophthalmology, and was, moreover, an immense addition to our knowledge of general diseases of the human system, through this new interpreter of numerous pathological and physiological conditions.

The recent session of the Pan-American Medical Congress, at Washington, was honored by the presence of the Baron Professor von Helmholtz, who afterward, with other delegates, and accompanied by the Baroness, visited the Chicago Exposition, and came thence to Boston on his homeward journey. Here he highly enjoyed his opportunity of seeing the facilities for scientific study afforded at Harvard University and the Institute of Technology.

When paying my respects to him, I said, "Professor, we know a hundred times as much in ophthalmology as we did before you gave us the ophthalmoscope." The charming modesty of his reply was never excelled. With his slight German accent, he said, almost deprecatingly: "I was not even a Doctor of Medicine — I was only Professor of Physics in the University; but I set myself this problem, to illuminate, if I could, the interior of the eye. And I succeeded."

Henry Willard Williams, A.M., M.D.,
Late Professor of Ophthalmology in Harvard University.

METEOROLOGICAL RECORD,

For the week ending September 1st, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..26	30.02	66	72	61	74	79	76	N.E.	E.	7	4	O.	C.	
M..27	30.13	58	63	53	70	84	77	N.	E.	7	6	C.	C.	
T ..28	30.02	63	73	53	94	75	84	W.	S.W.	2	10	G.	O.	
W..29	30.06	60	64	57	68	79	74	N.E.	S.E.	10	8	O.	C.	
T ..30	29.93	60	65	56	93	91	92	S E.	E.	7	4	O.	O.	
F ..31	29.94	68	77	59	85	57	71	W.	W.	8	8	O.	C.	
S... 1	30.12	66	75	58	65	69	67	N.W.	S.W.	4	13	C.	O.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, September 1, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,956,000	726	321	24.64	12.60	14.70	1.96	5.60
Chicago . . .	1,438,000	—	—	—	—	—	—	—
Philadelphia .	1,139.457	363	161	18.20	9.24	9.32	2.34	5.20
Brooklyn . .	1,043,000	424	201	24.48	11.28	14.16	.72	7.92
St. Louis . . .	540,800	—	—	—	—	—	—	—
Boston . . .	501,107	213	99	33.84	12.22	15.98	2.35	11.28
Baltimore . .	500,000	—	—	—	—	—	—	—
Washington .	285,000	95	47	31.50	16.80	11.55	6.30	6.30
Cincinnati . .	325,000	113	41	21.36	12.46	14.24	.89	4.45
Cleveland . .	325,000	117	68	31.45	9.35	15.30	2.55	6 80
Pittsburg . .	272,000	—	—	—	—	—	—	—
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	27	10	—	—	—	—	—
Charleston . .	65,165	28	9	3.57	17.85	—	3.57	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	100,410	—	—	—	—	—	—	—
Fall River . .	92,233	23	10	43.50	4.35	30.45	—	8.70
Lowell . . .	90,613	34	18	32.34	11.76	26.46	2.94	—
Cambridge . .	79,607	35	14	22.88	14.30	14.30	—	5.72
Lynn	65,123	31	12	35.53	19.38	22.61	3.23	6.46
Springfield . .	50,284	16	7	37.50	6.25	25.00	—	—
Lawrence . .	49,900	—	—	—	—	—	—	—
New Bedford .	47,741	19	12	31.56	5.26	31.56	—	—
Holyoke . . .	43,348	—	—	—	—	—	—	—
Brockton . .	33,939	8	3	37.50	12.50	25.00	—	—
Salem	33,155	16	10	25.00	—	6.25	6.25	6.25
Haverhill . .	32,925	—	—	—	—	—	—	—
Malden . . .	30,209	4	1	25.00	25.00	25.00	—	—
Chelsea . . .	29,806	14	7	14.28	21.42	14.28	—	—
Fitchburg . .	29,383	8	4	50.00	—	25.00	—	—
Newton . . .	28,837	15	8	26.66	—	13.33	6.66	—
Gloucester . .	27,293	—	—	—	—	—	—	—
Taunton . . .	26,955	—	—	—	—	—	—	—
Waltham . .	22,058	8	1	—	12.50	—	—	—
Quincy . . .	19,642	—	—	—	—	—	—	—
Pittsfield . .	18,802	3	3	33.33	—	33.33	—	—
Everett . . .	16,585	3	3	66.66	—	33.33	—	—
Northampton .	16,331	8	2	37.50	12.50	37.50	—	—
Newburyport .	14,073	—	—	—	—	—	—	—
Amesbury . .	10,920	1	1	—	—	—	—	—

Deaths reported 2,375: under five years of age 1,078; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 596, consumption 278, acute lung diseases 160, diarrheal diseases 334, diphtheria and croup 144, typhoid fever 47, whooping-cough 28, scarlet fever 19, cerebro-spinal meningitis 11, malarial fever 4, measles and puerperal fever 3 each, small-pox 2, erysipelas 1.

From whooping-cough New York 5, Philadelphia, Brooklyn, Boston and Washington 4 each, Cincinnati, Cleveland, Springfield, Brockton, Salem, Fitchburg and Newton 1 each. From scarlet fever Cleveland 6, Boston 4, New York and Philadelphia 3 each, Cincinnati, Lowell and Cambridge 1 each. From cerebro-spinal meningitis New York 4, Washington 3, Philadelphia, Boston, Cleveland and Worcester 1 each. From malarial fever Brooklyn 2, New York and Philadelphia 1 each. From measles New York 2, Brooklyn 1. From small-pox New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending August 25th, the death-rate was 16.8. Deaths reported 3,369: acute diseases of the respiratory organs (London) 148, diarrheal diseases 395, measles 63, whooping-cough 59, diphtheria 58, scarlet fever 40, fever 31, small-pox (London 2, Plymouth and Birmingham 1 each) 4.

The death-rate ranged from 10.7 in Plymouth to 27.6 in Preston; Birmingham 15.9, Blackburn 16.2, Bradford 16.1, Cardiff 12.3, Gateshead 19.0, Hull 13.2. Leeds 20.1, Leicester 13.5, Liverpool 27.2, London 15.4, Manchester 17.4, Nottingham 16.3, Portsmouth 18.3, Sheffield 17.3, Sunderland 26.1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 1, 1894, TO SEPTEMBER 7, 1894.

Leave of absence for twenty days, to take effect October 10, 1894, is hereby granted **Captain Jefferson R. Kean**, assistant surgeon.

Leave of absence for one month, to take effect on being relieved from duty at Washington Barracks, D. C., with permission to apply for an extension of fifteen days, is granted **Major Joseph K. Corson**, Surgeon.

Leave of absence for four months on surgeon's certificate of disability, is granted **Major Washington Matthews**, surgeon.

Leave of absence for one month and fifteen days, to take effect on or about September 10, 1894, is granted **Captain Charles B. Ewing**, assistant surgeon.

First Lieutenant James M. Kennedy, assistant surgeon, will be relieved from duty at Fort Custer, Montana, and will report in person for duty at Camp Merritt, Montana.

By direction of the Secretary of War, the following changes in the stations and duties of officers of the Medical Department are ordered:

Major W. H. Gardner, surgeon, relieved from duty at St. Paul, Minn., and ordered to Fort Custer, Mont., for duty.

Major Henry McElderry, surgeon, relieved from duty at Omaha, Neb., and ordered to Fort Robinson, Neb., for duty.

Major George W. Adair, surgeon, relieved from duty at Fort Robinson, Neb., and ordered to Washington Barracks, D. C., for duty.

Major Joseph H. Corson, surgeon, relieved from duty at Washington Barracks, D. C., and ordered to Fort S. A. Russell, Wyo., for duty.

August 20, 1894. S. O. 204, A. G. O.

RECENT DEATHS.

Professor Herman Louis Ferdinand Helmholtz, the celebrated physiologist and physician, died September 8th at Berlin, from the effects of a stroke of paralysis. He was born in Potsdam, August 31, 1821. After studying medicine in the Military Institute at Berlin and being attached for a time to the staff of one of the hospitals there, he returned to his native town as an army surgeon. In 1848 he was appointed professor of anatomy in the Academy of Fine Arts at Berlin; in 1855, professor of physiology at Konigsberg, whence he removed in 1858, to Heidelberg, where he also filled the chair of physiology. He was afterward appointed professor of physiology at Berlin. The works of Helmholtz, which are well known throughout Europe, have reference principally to physiological conditions of the impressions on the senses. On December 1, 1873, the Copley Medal of the Royal Society of London, was awarded to him in recognition of his eminent services to science.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the South Carolina Medical Association, 1894.

Transactions of the Obstetrical Society of London, Part II, 1894.

Aseptic Surgical Technique. By Hunter Robb., M.D., Baltimore.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland. Baltimore. 1894.

Inebriety as a Disease, Analytically Studied. By R. M. Phelps, M.D., of Rochester, Minn. Reprint. 1894.

Pharmacopœia of the Hospital for the Diseases of the Throat. Fifth edition. Edited by F. G. Harvey, F.R.C.S., E.D. 1894.

An Operating Table. Asepsis in Minor Procedures. Notes on Gynecological Technique. By Hunter Robb, M.D., of Baltimore. Reprints. 1894.

Massage Methods for the Relief of Tinnitus and the Improvement of Hearing. By Louis J. Lautenbach, M.D., Ph.D., of Philadelphia. Reprint.

Original Articles.

SOME MENTAL DISORDERS OF CHILDHOOD AND YOUTH.[1]

BY HENRY M. HURD, M.D.,
Superintendent of the Johns Hopkins Hospital, Baltimore.

It is daily more evident that the domain of neurology is widening and comprehends both morbid psychology and morbid neurology, and that neurologists and alienists are co-laborers in co-ordinate departments of a growing science. Permit one whose work has been in clinical psychology to express the conviction that in the future the problems of psychology must be approached more and more from the side of scientific neurology. The need of a definite study of mental phenomena through the methods of scientific precision adopted by the neurologist is apparent to all who seek to advance psychology. Every alienist ought to be a trained neurologist and every neurologist ought to study morbid mental phenomena as carefully and precisely as he studies nervous diseases. Although neither born nor educated in New England, I have always felt a peculiar interest in the work of her sons in these broad fields of knowledge. The list of names of those who have attained eminence in such studies is a long one; and I can only mention a few like Luther Bell, Edward Jarvis, the elder Stedman, Howe, Brigham, Bancroft, Earle, Butler, Ray, Draper and Goldsmith in my especial line of work — all of whom have passed from earthly work. Most of them died full of years and of honor after laborious and useful lives devoted to science and philanthropic efforts; but some like Bell, Draper and Goldsmith, were cut off in the maturity of their powers with long years of increasing professional activity before them. Bell's essay "On a form of disease resembling some advanced stages of mania and fever, but so contra-distinguished from any ordinarily observed or described combination of symptoms as to render it probable that it may have been an overlooked and hitherto unrecorded malady," has the honor of being the first clear, accurate and discriminating description of the fatal disease now known as *delirium grave* or Bell's disease. Jarvis's paper on the "Influence of distance from and nearness to an insane hospital, on its use by the people," had probably more influence upon legislation looking to provision for the dependent insane in the United States than any other paper of similar length ever published. It gave a death-blow to the theory that one hospital for the insane could be useful to a large State. In all the range of painstaking investigation, I know nothing to compare with the thoroughness and masterly character of the statistical work contained in this inquiry. Howe's various reports to the Legislature of Massachusetts on Idiocy, Deaf-Mutism and Blindness inaugurated a philanthropic movement for the education, training and development of these defective classes which has spread over the whole United States. These and similar papers prepared by their authors in the line of chosen professional study are passing examples of the work which has done so much honor to Boston and New England medical and psychological thought in the past. It is most gratifying to be able to congratulate you upon the higher character of the work done here to-day by Putnam, Edes, Folsom, Knapp, Cowles, Channing, Stedman, Walton, Fisher, Webber, Prince and others. The era of pioneer work in nervous diseases and in behalf of the defective and insane is now happily over. It is no longer necessary to urge the erection of buildings for the accommodation of the latter upon an unwilling or indifferent public. Special institutions exist for the proper treatment of all classes of the insane and of many forms of nervous disease; neurology and psychology are now on a higher plane. The neurologist of to-day is free to occupy his thoughts and employ his energies in the study and treatment of disease. The contributions to medical literature now made by the specialists of Boston testify convincingly to their appreciation of the opportunity which has come to them through the self-sacrificing labors of earlier men.

It is my design to present to you briefly, to-night, "Some Mental Disorders of Childhood and Youth."

The problems of mental disease or of morbid mental phenomena in childhood are complicated by a variety of causes incident to age, hereditary tendencies to disease, immaturity and physiological development — each bringing new factors into the mental life of the child and adding fresh causes of disturbance or disease. Goubert, who has recently studied the morbidity of childhood in Paris, in the light of mortuary statistics, has deduced the interesting result that each stage of childhood possesses peculiar tendencies to disease and death. For example, up to the sixth month the infant is liable to the diseases which follow mal-nutrition; from the sixth to the thirtieth month, to diseases due to inherited tendencies of whatever character they may happen to be; from the third until the seventh year, to epidemic diseases; from the seventh until the tenth year, there seems to be a period of normal vitality and a comparative immunity from epidemic diseases; and from the tenth until the fifteenth year, to cardiac, rheumatic and nervous affections. A similar study of the liability of childhood to nervous disorders reveals the facts that before the sixth month we have congenital epilepsy or idiocy; from the sixth month until the seventh year, convulsive affections, night-terrors, delirium, transitory manial and acute maniacal attacks; from seven to ten years comparative immunity from disease with the exception of chorea; and from ten to fifteen years, melancholia, imperative conceptions, convulsive tic, hysterical affections, paranoia and the like.

Hereditary tendencies to mental and nervous diseases also complicate the relations of the child to good health. Inherited defects of nerve or brain tissue, as has been pointed out by Clouston, are more apt to develop during the period of the rapid growth of the brain when muscular co-ordination and speech are developed, and when the first strain is put upon the growing brain by educational requirements. The brain and nervous system are developing new functions; and if the inherited quality of the brain cells is unstable or the character of the tissue does not fit it to assume an independent originative life, weaknesses are developed and defects become apparent. Such inherited defects appear in early childhood in the form of squint, stammering, inability to learn, night-terrors, transitory delirium during febrile attacks, infantile paralyses, etc.; and later in the form of chorea, epilepsy, asthma and ocular defects; and finally, at puberty, as hypochondriasis, hysteria, emotional instability, moral perversions, imperative conceptions and insanity.

Brain immaturity, in connection with faulty educational methods, also adds another disease-producing factor. Protoplasmic energy required for the growth and development of brain tissue cannot be expended in molecular activity without dangerous drafts upon the future stability and permanent dynamic activity of that organ. According to Boyd, quoted by Clouston, the brain acquires 90 per cent. of its growth by the seventh year, and its full growth between fourteen and seventeen years of age; but many years must elapse thereafter before it reaches its full maturity and perfection. If in the process of education, energy designed to further its growth is dissipated in functional activity, hereditary tendencies to disease become thereby developed, or the development of the brain is limited and defects become evident which under more favorable circumstances would not have existed.

---

[1] Read before the Boston Medico-Psychological Society, April 19, 1894.

A fourth most important factor is introduced by the changes which accompany the development of puberty in both sexes, marking the period when nature is beginning to develop the reproductive function. Prior to this time her effort has been to promote the growth of the individual; now she initiates a bodily and mental activity which looks to the perpetuation of the race. The pubescent change is coincident with growth of body; but it introduces new functions, fresh causes of derangement, and taxes the physical and nervous energies to satisfy the desires, longings and aspirations which are the legitimate result of the development of the second stage of life. Nature prepares the way for the function of reproduction long before the system is mature enough to exercise it. In other words, after puberty is established, in both sexes, years are required before the system is mature and perfect enough to permit the subsequent perpetuation of the species. During this long period the influence of the maturing function is felt upon the whole mental life of the individual. Before puberty, mental disorders are simple, and mental phenomena are largely automatic and easily understood. After puberty, new powers of mind are developed, and greater complexity is introduced into mental phenomena.

An interesting analogy exists between the mental states of childhood and those of primitive people. The primitive man is imaginative, unreasoning, full of superstition, credulous, and the creature of desire and of impulse. His intellectual processes are automatic, spontaneous, instinctive, and his conclusions are not elaborated by thought or by painstaking inquiry. The same peculiarities characterize his mental derangements. He is the victim of mania or dementia — more rarely of melancholia. He has few systematized delusions, and his mental symptoms lack complexity or coherence. Beyond hallucinations of hearing or of sight, which are to be traced directly to his imaginative temperament and his early training, his insanity presents little of interest. In childhood, up to the age of puberty, a similar simplicity of mental phenomena exists. Light is also thrown upon the hallucinations and morbid mental states of children by the religious ordeals of savage life. The savage who is to undergo the religious initiation prior to becoming a warrior lives in solitude, abstains from food, and is deprived of sleep; his imagination is excited by tales and traditions, and his expectation is strained to receive the inward vision or to hear the voice which shall proclaim him acceptable to the deity. Solitude, starvation, lack of sleep, high-wrought enthusiasm and expectant attention all contribute to produce the longed-for hallucination. In the morbid mental states of children in a similar manner, malnutrition, poor sleep, an overexcited nervous system, improper educational pressure and undue stimulation of the imagination produce analogous results. Children have hallucinations of sight and hearing, but rarely fixed delusions except in reference to bodily conditions. They are impulsive and lack self-control; they may have imperative conceptions and fixed or insistent ideas after puberty, but no elaborations of thought and no systematized delusions.

In the present paper I shall not consider idiocy, imbecility or cretinism, moral imbecility or epileptic degeneration, which are not forms of insanity so much as symptoms of mental degeneracy; nor shall I speak of mania or melancholia occurring in those suffering from congenital mental defects. I desire, therefore, to limit my paper to the consideration of imperative conceptions, mania (confusional insanity), melancholia, convulsive tic and pubescent insanity. In what classes of children do these disorders develop?

(1) In neurotic children with unsymmetrical heads, with brains of feeble resistance to disturbing influences, and nervous organizations quickly responsive to bodily disorders however slight. They suffer from night terrors and show delirium after slight febrile attacks.

(2) In children who have a hereditary tendency to mental disease. In many of these an apparent symmetry of head and a well-developed body exist, but the quality of the brain seems at fault. It is lacking in the ability to will efficiently, to inhibit morbid impulses or to resist imperative conceptions.

(3) In children with a feeble physique who are unable to join in the out-door sports of others, and who thus become overstimulated by reading or have an overdevelopment of their imaginative powers.

(4) In backward children who develop slowly. The backward child is not necessarily a defective child, any more than the child who gets his bodily growth slowly is defective. Slowness of development in body and brain have sometimes been associated finally with peculiar powers. This, however, is generally more true after puberty than before. Slowness of bodily growth commonly implies nutritive debility; and backwardness of mind an allied defect in the metabolism of the brain cell. A wise educational method would conserve this energy until nature is ready to use it. Too often, however, it is recklessly exhausted by high-pressure educational efforts, and disease results.

Simple Psychoses. — Simple psychoses in childhood are not uncommon. They often develop in strict conformity to the classic physiological axiom of Cullen, who said a century ago, that "certain impressions and certain states of the body, like to those which produce the sensation of consciousness, may both of them act upon the nervous system without producing any sensation" (of consciousness). These impressions and states of the body would have little weight in the adult, but are effective in children because of the nervous instability of childhood. The delirium of children — night-terrors so-called — is a familiar example of this. The sleep of the child is broken by digestive derangements, and the child suddenly awakening cries out and has active hallucinations of hearing and of vision which may last several hours.[2] A better example, however, may be found in the mild melancholia which often develops in nervous, delicate children with feeble vitality, impaired nutrition and overactive brains. In her autobiography, Harriet Martineau gives from personal recollection an account of the morbid character of her own mental processes when but seven years of age. She says: "I must have been a remarkably religious child, for the only support and pleasure I remember having from a very early age was from that source. While I was afraid of everybody I saw, I was not in the least afraid of God. Being usually very unhappy, I was constantly longing for heaven, and seriously and very frequently planning suicide in order to get there. I was sure that suicide would not stand in the way of my getting there. I knew it was considered a crime, but I did not feel it so. I had a devouring passion for justice; justice, first to my own precious self and then to other oppressed people. Justice was precisely what was least understood in our house in regard to servants and children. Now and then I desperately poured out my complaints, but in general I brooded over my injuries and those of others who dared not speak; and then the temptation to suicide was very strong. No doubt there was much vindictiveness in it. I gloated over the thought that I would make somebody care about me in some sort of a way at last; as to my reception in the other world, I felt sure God could not be angry with me for making haste to Him when nobody else cared for me and so many people plagued me. One day I went to the kitchen to get the great carving-knife to cut my throat; but the servants were at dinner, and this was put off for that time. By degrees the design dwindled down into running away. I used to lean out of the window and look up and down the street and wonder how far I could go without being caught. I had no doubt at all that if I once got into a farm-house and wore a woollen petticoat and milked the cows, I should be safe and that nobody would inquire about me any more." When older she suffered acutely from ill-defined terrors, or even harmless noises "like the beating of feather-beds on Castle Hill at Norwich"; and her whole life was made unhappy by horrible dreams which left persistent impressions upon her mind. These mental states were directly traceable to a state of innutrition. She had diarrhea, and little ability to assimilate food. In some of these overwrought and underfed children we have a development of distrust and morbid fear. In a little fellow of nine years of age who had been improperly urged in school, a morbid conscientiousness developed and an anxiety to do what he conceived to be right. He was fearful that he might not say his prayers correctly, and often passed half the night upon his knees repeating his petitions over and over until he thought them to be "perfect."

---

[2] Henoch has given a graphic description of this affection: "In the midst of a deep sleep, especially a few hours after falling asleep, the children suddenly start up, cry out aloud and continuously, grasp in the air with their hands or sit in bed with a fixed stare and anxious expression of countenance, muttering unintelligible words

Imperative Conceptions. — In this case as in many others, imperative conceptions were observed which impelled him to strange acts, like kissing the ground, putting mud into his mouth, placing his knife and fork in strange positions at the table, throwing his cap without apparent reason into the different corners of the room in turn, etc. These and similar imperative conceptions do not seem so much imperative ideas as imperative motor acts. This is not surprising when we call to mind that the mental concepts of a child, except possibly those which have been especially called into activity by religious training or by nursery tales addressed to the imagination, are of the crudest character and do not possess the dominating force of the imperative conceptions of an adult paranoiac. The child may have imperative conceptions about God or in reference to wild animals or hobgoblins as the result of education, it is true, but generally they are developed in connection with isolated motor acts, and do not lead to insistent or fixed ideas. Such imperative conceptions are instinctive in character, and are due to reflex bodily irritations acting upon the brain. Morbid self-distrust is not uncommon among those who have been religiously educated. A little patient under my care became fearful she would not speak the truth if any question were answered by a simple "yes" or "no," and invariably replied, "It may be so," or "It may not be so"; and repeated questioning could elicit no positive affirmation or denial.

Convulsive Tic. — In others, convulsive tic or coprolalia in a disgusting form are present. A conscientious child may be conscious of the infirmity, but is powerless to control the morbid impulse. One victim of coprolalia was so much annoyed by her tendency to utter indecent words, she remained constantly with her mouth widely opened and when the impulse to speak could no longer be resisted, attempted to substitute a more seemly word, but always without avail. My friend the late Dr. Gundry, in a private letter, related a similar case of coprolalia in a boy, which persisted to manhood. This child had an insane brother, mother and grandmother. He was bright, ambitious and truthful, and was neither profane nor obscene in conversation. Often, however, in company at dinner, when listening intently or when studying his lesson alone absorbed in his task, his throat would give a gulp and some vile word would be belched out, as if unconsciously. Sometimes the word would be plainly uttered, sometimes indistinctly. He never recovered from this peculiarity. Many years afterwards Dr. Gundry met him in a court-room, as a newspaper reporter. Several times during the season of the court he uttered a single profane or obscene word. He was respectable and had a position of responsibility upon a newspaper, but was occasionally troubled with this incontrollable tendency. He was conscious of some absurd thought intruding itself upon his mind, but no idea of speaking until he heard the vile word uttered loudly and explosively. Dana has reported a case of a similar character in a backward boy of twelve years, who prior to a similar speech disturbance had convulsive seizures and afterwards chorea. In this case, however, a congenital mental defect seems to have existed.

Maniacal Attacks. — In my experience maniacal attacks are apt to take the form of confusional insan-

---

or words intelligible with difficulty. Many tremble in all their limbs, throw themselves terrified into the arms of the frightened mother or nurse, without clearly recognizing them, and it becomes difficult to soothe them. After a short interval the scene is repeated, not infrequently several times in succession, so that half an hour or more may elapse before complete quiet ensues and the exhausted child again falls soundly asleep. As a rule, the remaining part of the night is passed in quiet repose; and on awaking the child knows nothing of the events of the night, and does not even remember the physician who was seated before the bed during the attack. Attacks of this kind are repeated at irregular intervals, sometimes every night, sometimes a few times a week or even more infrequently. Two attacks rarely occur in one night. The children present no symptoms during the day which can be brought into any relationship with the nocturnal paroxysms. . . . That dream visions and hallucinations play a part in the process, is evident from the fact that they are often distinctly mentioned by the children. I have heard them beg that the chains be taken away, that the animals be driven away, etc. It also happens that they want to jump out of bed in order to escape their fears. A boy, aged four years, who had been very much frightened by a bee, had an attack of *pavor nocturnus* during the following night, in which he was constantly talking of a fish which was threatening him. This was repeated for a few nights until the child was afraid to enter his bedroom, and always wanted to be in the open air."

ity. They generally proceed from some bodily disease like chorea, or are due to fright or shock or injury. The attacks of transitory mania which have been described so frequently by French writers are probably due to nocturnal epilepsy. The distinguishing feature of the mania of childhood is the absence of fixed delusions and the presence of great motor activity. The excitement in fact seems more like a very active delirium than an acute mania. This is especially true of choreic mania.

Melancholia. — Actual melancholia does not generally develop much before the onset of puberty, and the delusions which are present are of much the same character as the melancholic delusions of an adult. In the majority of cases they are of a hypochondriacal nature and relate to bodily conditions. With the religiously educated or overconscientious, they relate to a failure to perform religious duties or to a fear of harm to others from their presence. In two cases under my care there were present delusions of poison, which interfered with the proper taking of food. The most common delusions of these patients, however, are those which relate to bodily conditions. In certain rare cases hallucinations are observed. Among young girls approaching puberty hysterical phenomena are present, and complicate the mental symptoms. Suicidal impulses are not uncommon.

Pubescent Insanity. — The most characteristic form of mental disturbance at puberty is pubescent insanity. As at this period the intellectual side of the individual is not accentuated and the emotional nature is disproportionately developed, the morbid symptoms relate almost wholly to the latter. They are in the domain of the affections, and lead to perversions of feeling, eccentricities of conduct, and personal acts which are inconsistent with the previous character of the child. Self-control is lessened, natural instincts are perverted and healthy sentiments are lost. Unpleasant and abnormal traits of character become unduly prominent — so prominent in fact that many persons, losing sight of the non-development of marked intellectual traits at this time, disregard them altogether, and speak of these cases as cases of moral insanity. If, however, an actual outbreak of insanity can be prevented until puberty becomes fully established, especially in girls, perversions of sentiment disappear, and the "moral insanity" is no longer apparent. If, on the contrary, appropriate treatment is not initiated, intellectual derangements sooner or later appear, and actual insanity with delusions becomes fully established. Heredity plays a most important part in this form of disease. I cannot remember a single patient who did not have a hereditary tendency to insanity. As before remarked, emotional disturbances and moral perversions precede the manifestation of any intellectual disturbance. Evil propensities, wayward conduct, irritability, inattention, impatience of control and general irresponsibility marks the conduct. Such patients frequently possess the precocity which characterizes a nervous temperament. They are stimulated in school by the presence and competition of others, and early become proficient in study; but they are impressible, excitable and ill-balanced. Prior to the development of actual insanity, they display many unnatural characteristics. They are alternately elated and depressed. Their periods of depression are characterized by stupor, listlessness, indifference and lack of the power of application. Their periods of elation, on the other hand, lead them to do extravagant acts. They are restless, excitable, loquacious, and have wild schemes for business or study, or extravagant views as to the spending of money. They are uncontrollable at home, and cause friends and relatives great sorrow by their waywardness. After being on the border-line of mental disease for months and years, alternately reproached by relatives for stupidity and idleness, or punished for ugliness, insubordination and vicious conduct, their morbid mental condition is finally recognized and they are placed in asylums. In a few instances, habits of self-control and composure are re-established by a long period of treatment, and they return to their friends to live as mental invalids, unable to do anything but routine work and destitute of self-directing power. In the vast majority of cases they develop what is known as periodic or recurrent mania, more commonly known as *folie circulaire*, and oscillate between depression and elation. Most cases of recurrent, circular or periodic insanity have their origin at puberty, and are due to an original unstable state of the nervous system, as is shown by the mental failure which follows an attempt to take on the second stage of physical and mental development. The inherent vice of the constitution is so great, the mental faculties yield to the first strain which is put upon them. The partial recovery which follows is rarely a complete restoration, and a vicious cycle of depression and exaltation, excitement and stupidity is established. Hence pubescent insanity is generally an evidence of a degeneration which is congenital, and from its nature, incurable. Among this class of cases, rapid recoveries and speedy relapses are found to occur. The mind has no tenacity, no fibre, and cannot hold a condition of health or disease long. The apparent health is a sham, and the symptoms of disease are not continuous. The delusions do not become systematized, and the morbid manifestations are those of depression, purposeless excitement or moral perversion.

In the foregoing brief and necessarily incomplete sketch of the common and simpler mental disorders of children, I have omitted any allusion to the startling phenomena of morbid impulsions to crime in childhood. Impulses to kill, to burn, to steal, to commit sexual crimes, it is true, are not uncommon; but as a rule are developed in epileptics and children who suffer from congenital mental defect. They are of interest as illustrative of premature criminality; but they are the results of an originally abnormal personality and throw little light upon the genuine insanities of childhood.

In conclusion, permit me to add the conviction that I shall be remiss in professional duty if I do not urge upon you as medical men to call a halt in the present high-pressure educational methods in vogue in our primary schools. The feeble mental powers of growing children are taxed to the utmost by excessive memorizing of isolated and miscellaneous facts. Nervous and conscientious children are rendered morbid by the exactions of oppressive regulations or a foolish routine, which confuses moral distinctions and gives peace to the untruthful alone. Knowledge is not imparted as a means of strengthening and developing the mind, but for its own sake as useful facts. Little children are subjected to the worry of examinations and to the ruinous competition of marking and of weekly report-cards. Growing children are drilled to carry out elaborate mathematical calculations in haste, and a premium is often placed upon rapidity of performance rather than correctness. Too many branches are taught and too many hours are spent in school. In many schools children of ten years of age are compelled by reason of excessive lessons to spend hours at home which should be devoted to play or to sleep in the preparation of lessons. To regular school duties in many instances, especially with young girls, is added a semi-weekly music lesson which involves several hours a day of close application to routine "practising" at the piano in a constrained position. The exercise is monotonous and wearisome to the last degree to minds and bodies already overtaxed by study and several hours of confinement to the school-room. Recreation even is converted into a fresh tyranny. Almost every girls' school has a well-equipped gymnasium where muscular exercise is made compulsory in movements designed to cultivate the physical system and where all movements must be executed with the precision and exactness of military drill. While engaged in writing this paper I chanced to visit a gymnastic exhibition in a well-appointed school where girls varying from ten to fourteen years of age were taught. Their movements were marvellously precise and correct, and were executed with dash and enthusiasm. I was struck, however, with the nervous strain apparent in the countenances of many of these young girls. It did not seem play or recreation, but a task to be executed with as much expenditure of nervous and mental energy as any form of study. These are every-day examples of the trend of our present educational methods, and they might be indefinitely multiplied; but I spare you the further details. Is it any wonder, under these circumstances, that the mental disorders of childhood are increasing in frequency? Is it not our duty as medical men to protest against the burdens which are thus unnecessarily placed upon growing and immature brains?

THE DECLINE OF THE PESSARY.[1]

BY JOHN G. BLAKE, M.D.

THE writer who states that fac-similes of the cylindrical vaginal speculum were found in the ruins of Pompeii and Herculaneum makes no mention of a pessary; and yet when we stop to think that the genius who hit upon the means of exploring the vagina and cervix must soon have been convinced of the necessity for something to maintain a corrected displacement, or straighten a tortuous canal, we are disappointed at his inventive limitations, which exhausted themselves so soon. However, we may feel certain, that when the need became urgent, the man appeared, as in the other emergencies of life. When the race needs anything badly, it usually goes to work and produces it. Unfortunately the names of both inventors of the original instruments are lost to fame as completely as the builders of the Pyramids, the Cathedral of Cologne, and other world wonders.

Their modern followers have been more successful; and we have Smith, Brown, Jones and Robinson's pessaries without number. In fact, as the "Encyclopedia of Gynæcology" states, there is scarcely a man prominent in this department of disease who has not either invented or improved a speculum or pessary. They seem to have emulated the example of the gentleman who was claimed to be a benefactor of his race, because he made two blades of grass grow where but one sprang before. Dr. Bigelow once remarked in my hearing, when examining and explaining the merits and defects of aural specula to a class of medical students, that one could see almost as well with some of them as without them — which might in another sense be applied to pessaries. However, as their production belonged to a certain stage — long since passed away — in the mechanical development or evolution of knowledge of the treatment of uterine disease, they have deserved well for what they have accomplished. To those of them that are dead and buried, we will remember that "nil nisi bonum mortuis" is a generous and manly motto. No one invents pessaries now. To the practitioners of to-day, the condition of things gynecological existing in our medical community only a generation ago can hardly be realized. A view of the os a few times during my course in the school, through a cylindrical speculum in the hands of Dr. Minot, and the application of argt. nit. (which was the classical treatment for that classical but misnamed disease, ulceration of the womb,) was the extent of instruction. Lectures were delivered by the elder Storer on the diseases of women, mostly on those connected with parturition, and that was all. Indeed, there was a well-marked scepticism in the older medical mind about the existence or necessity for much treatment beyond the use of a ring or some simple form of support; and other treatment was formed on this view. It would be difficult to convince my younger hearers of the extent to which their use was carried. An anecdote will best illustrate. A well-known professional brother was called upon by a young lady for advice and treatment. After examination he introduced a pessary. On returning home, and reporting to her mother, the latter visited the doctor and reproached him with considerable warmth for resorting to such measures. The doctor in his blandest tones assured her that there was no impropriety whatever, and then began to talk of her own condition. Before she left the office, she, too, wore a pessary.

This is among the humorous features; but there is another and graver side, in the evils resulting from their abuse and non-fitness. Most of us have seen more or less severe pelvic inflammations and ulcerations resulting from their use under wrong conditions. This applies to all forms, but perhaps more especially to the varieties of stem pessaries. Many treatises on uterine disease contain plates showing the evil of their use in ill-selected cases and unsuitable conditions, resulting in laceration and deviation of the uterine canal. Skene, in one or two plates, shows it very clearly. Indeed, these evils had reached such a height, that for a time it was quite the correct thing to inveigh against the use of stems under any conditions. Yet of all the forms of mechanical devices available, the stem, under proper restrictions and in appropriate cases, was most capable of good results. It is so now, for certain purposes; although the necessity for its use has diminished with the adoption of other methods of treatment.

This leads me to speak of the conditions which call for such use. As we all know, the vast majority of uterine displacements are of the backward variety — either retroversion or retroflexion, of various degrees, accompanied by more or less hypertrophy of tissue of the fundus and body. In flexions there is atrophy of the muscular fibre at the point of flexion. One would naturally suppose that a knowledge of this fact would be followed by efforts to remove this condition before attempting to restore and maintain the organ in its normal position. As one writer puts it, you cannot have pathological displacement without inflammation; and without the removal of this condition, no permanent result can attend any plan of treatment. Before recent measures were devised, this was not always easy of accomplishment; a partial removal was not followed by permanently good results with any form of pessary. In the minds of some of the best gynecologists the whole plan (treatment by pessaries) is unsatisfactory. Here is the view of one. Fritsch, a German writer, declares that it is easier to perform laparotomy than to apply an accurately fitting pessary. He had spent ten years in learning the treatment by pessaries, and considered it the most difficult in the whole range of gynecology. The same author criticises their use, declaring that the pessary heals palliatively, but injures definitively; for it distends the fornix vagina so enormously, that even after it has been worn for years, a cure is not to be hoped for. On the contrary, retroflexion of the uterus returns after the removal of the pessary. The longer the uterus has been displaced, the longer the time necessary to enable the relaxed ligaments to return to a normal condition; and a few days have been sufficient after its withdrawal, to have the uterus fall back into its old position. Other authors disagree with this view, and claim permanently good results in a large number of their cases. The truth is, that where the circumstances of the patient admits of the necessary rest and time, good results attend their use in a large number of cases. The constitutional requirements should be always carefully and faithfully attended to.

---

[1] Read before the Obstetrical Society of Boston, April 14, 1891.

Among the means for attaining permanent cures, may be mentioned narrowing the vagina, pregnancy followed by prolonged rest in bed, dilating and curetting, and shortening the round ligaments. The first, as we know, is only called for in complete prolapse, where no instrument, without external support, will keep the uterus within the vagina, but where it can be accomplished by narrowing the canal and outlet. These cases are comparatively rare. Pregnancy, followed by long rest in bed, has in my experience perfectly cured many cases of severe long-standing backward displacement. The operation of dilating, curetting and packing is particularly adapted to the cure of anteflexions, and to the removal of enlargements which attend all forms of backward displacement. In the conditions of narrow cervical canal so common in anteflexions, giving rise to painful menstruation and producing sterility, there is no procedure which is followed by happier results than this. In my experience, it has never been necessary to use a stem pessary after its thorough performance. Occasionally a repetition may be called for, but rarely. The combined dilating, curetting, and Alexander, is to my mind the true solution up to date of the vexed problem of backward displacements.

Ventral fixation, by opening the abdomen, and by various other methods (the vaginal, for instance) of fastening the uterus, has been advocated by many writers; I see no advantage in them over the simple, harmless, and in most cases effective operation in proper cases, of dispensing with pessaries. In my hands, it has certainly yielded satisfactory results, and has been wholly free from danger. I know this view differs f[illegible] many. Lawson Tait, for example, speaks [illegible] it because his two cases did not turn out [illegible] Perhaps after having done it fifty or a hundred times, he may change his opinion. The early ovariotomists were not so easily discouraged, and did not condemn the operation because their first trials were not successful. *Experentia docet;* familiarity with the technique, and a more careful selection of suitable cases, combined with proper preparation by reducing the size of the uterus, may be followed by a more favorable view of its merits. To my mind, neither he nor any one else has yet devised a simpler, less dangerous, or more effective measure for the emancipation of women from the wearing of pessaries, than the two operations of dilating and curetting, and Alexander.

At a recent meeting of the Gynecological Society of New York, the merits and demerits of Alexander's operation were fully discussed. The views of Dr. Edebohls and Dr. Cleveland were so fair, and represented my own judgment so accurately, that I venture to present a condensed report for the benefit of those who may not have seen the original account in the *Gynecological Journal.*

Dr. Edebohls said that he didn't like Alexander at first. Abandoned it for six months after first five operations, and used anterior abdominal fixation. Didn't like the latter, because of the adhesions. He thought Alexander most nearly restored the uterus to its normal position, and most nearly allowed it its normal mutability. It did not fix the uterus by adhesions, nor bend it, nor tie it down to the vagina. It produced good and permanent anatomical results, if properly performed. The therapeutic results depended upon the clearness of the indication for operation. Absolute indications: freely movable retroversed uterus, and perfectly normal tubes and ovaries. One accident was caused by failure to recognize a small ovarian cyst. He had satisfactory therapeutic results by observing these indications. If retroversion returned, operation had been incorrectly done. In one failure, the operator had been unable to anteflex the uterus at the time of the operation. Hernia might occur. He had had two cases. One woman became pregnant three weeks after leaving the hospital, and had a well-marked hernia after several months. In the other case he operated both for retroversion and hernia, and hernia returned. Since he began closing inguinal canal, and uniting ligament with buried silkworm-gut sutures, he no longer feared hernia. The operator needed fine anatomical dissection, which only certain methodical minds were able to give perfectly. Failure was always due to lack of pursuing a certain measure carefully. He knew of no operation in gynecology more beneficial if properly done in proper cases.

Dr. Cleveland said he had taken up Alexander slowly, and only in the last few years. He done thirty cases, with results good enough to make him continue. Round ligaments are intended for a good purpose; they are fibro-muscular, and well adapted for suspending the uterus in its normal position, if there be such a thing. Indications should be as Edebohls said; though in some cases existing adhesions had been separated, and operation done with good results. Edebohls's operation was not identical with Alexander, and he preferred the latter. Buried sutures were unnecessary; suture the round ligament in the canal. Had some failures, but thought he was to blame; they were in early cases. Hernia was likely to follow the appearance of pus (or incorrectly inserted sutures). Knot sutures under fascia; one and a quarter inch incision enough, except in a very fat person. In cutting down on the canal, feel for the least resisting point; this is the ring. Pressing thumb and finger on either side of ring, cut intercolumnar tissue, and bulging cushion of fat appears. Grasp this with forceps, and almost sure to get ligament, which is drawn down and sutured with silkworm-gut. Don't cut ligament after suture. Pass Hagedon, with carrying thread, under fascia, at lower angle of incision, and out on mons, three-quarters of an inch below; end of ligament put in loop of carrying thread, pulled through, sutured, and cut off. Necessary to draw ligament four inches out, to antevert uterus enough to make it remain. Afraid of buried silkworm-gut; had trouble from it. Used kangaroo tendon instead. Draining, like Edebohls, with silkworm-gut; removed them in twenty-four hours (Edebohls in one week). Two months necessary for sufficiently strong union. He recommended pessary for three months; though there were good results in some cases without it. Thought ligaments, even small ones, strong enough to hold uterus. Believed in old operation where sutures remained temporarily, but should stay in four weeks; then, after removal, a canal was left which gradually filled up with fibrous tissue, holding uterus firmly. Had recently seen patients twelve months after operation. Position good, all symptoms relieved. When this is not the case, there must be adhesions, or ovarian disease not discovered. Alexander is a good operation.

◆

CHRONIC TUBERCULAR PERITONITIS IN CHILDREN.[1]

BY FRANK E. PECKHAM, M.D., PROVIDENCE, R. I.

THIS paper will be confined to the chronic tubercular peritonitis in children where the disease is not due to tubercular extension from the lungs, pleuræ or some neighboring organ or structure, but to a tubercular peritonitis which in itself constitutes the disease.

It may begin very slowly and almost imperceptibly, or it may come on suddenly with very acute symptoms. Beginning gradually, the first symptom which attracts attention is the enlarged abdomen; and at the same time the child begins to lose flesh, although this is not very marked in the earlier stages of the disease. This enlargement consists of some tympanites and more or less fluid in the peritoneal cavity. This may subside in a few weeks or months if not interfered with, but is pretty apt to recur as the disease continues its course.

Some cases will recover, just as we see some cases of tuberculosis of the lungs recover under favorable circumstances; but the usual course of a tuberculosis, unless arrested by some active interference, is a steady advance towards a fatal ending.

If the fluid disappears or (what up to within a few years has been the usual treatment) has been removed by tapping to give relief, then the enlarged tuberculous glands may be felt by palpation; and in the later stages of the disease, masses and constricting bands may also be felt. The masses are composed of patches of omentum matted together, and the bands are formed by adhesions. These masses are sometimes very large, and give one the impression of a solid tumor.

If the disease is uninterrupted in its course, the child becomes emaciated, there is loss of appetite, and the hectic fever of tuberculosis may be present. The child will naturally assume the position so common in peritonitis, lying flat on the back with the knees drawn up; and many cases are so sensitive that to jar the bed causes pain.

As the patient lies on the back in bed, the fluid will remain in the flanks and the tympanitic intestines will naturally gravitate to the epigastric region. Percussion will then demonstrate the presence of fluid, the area of dulness changing with the changed position of the body. The fever does not run so very high, 100° to 102.° The bowels may be constipated or diarrhea may be present. In the later stages other parts of the body may become involved, especially the lungs.

In marked contrast to the course of the disease just described, the onset may be sudden, with abdominal pain, considerable tympanites, vomiting, coated tongue and high fever. The whole course of the disease in such a case would be much more severe and the termination much quicker.

Fluid is not always present in this tuberculous process, and when present the amount is not usually large. The most frequent cause of abdominal effusion is cirrhosis of the liver. During the atrophic stage, the portal congestion results in effusion, and any marked congestion in the portal circulation would also cause some splenic enlargement. Therefore a careful examination of the outlines of the liver and spleen would eliminate cirrhosis. An effusion from cardiac and renal disease would be eliminated by an examination of the heart and urine. Pressure effusions from neoplasm, etc., would be recognized by palpation, and the history of the onset would also be of assistance.

The prognosis in these cases is excellent, the death-rate being about three per cent.; and even in the three per cent. that die the operation does no harm, and may prolong life even if only for a short time.

If the lungs have become involved, it is not a contraindication to operation; for if only slightly affected, when the primary disease in the peritoneum is checked, this may all clear up. On the other hand, if the disease in the lungs is well advanced, operation is still indicated for the relief it affords, for the improved condition and for the additional strength imparted.

TREATMENT.

The treatment formerly was medicinal and waiting for the end, which was almost invariably fatal.

Then a little later, in the cases where the fluid collected in large enough quantities to distend the abdomen markedly, this was removed by paracentesis to give relief. Usually it reaccumulated; and repeated tappings were necessary, until the child, emaciated and exhausted, succumbed to the inevitable. It was especially in this class of cases, after several tappings, that the constricting bands and lumps were to be felt.

Next we come to treatment by laparotomy, and doubtless you are all familiar with the fact that Sir Spencer Wells did the first one by mistake, opening the abdomen for what he supposed to be an ovarian tumor, and finding tubercular peritonitis present, in which a cyst had been walled off by the inflamed peritoneum. The abdomen was closed, and the patient recovered. This was in 1862. Since then, laparotomy has come to be the recognized treatment in such cases; and the method has been perfected, until now the drainage-tube is dispensed with, the abdomen closed, and union by first intention obtained.

---

[1] Read before the Medical Improvement Club of Providence, June 18, 1894.

There have been various theories advanced as to why a laparotomy should result in a cure of the disease. At first, an antiseptic solution was used in washing out the abdomen, but it was necessarily so weak that it seems impossible to believe that it alone had much effect upon the tuberculous process. Boiled water was gradually substituted for the antiseptics, and is now generally used.

It has also been held that it was contact with the air which caused this miraculous result; and Nolen has concluded from a number of observations, that the injection of sterilized air into the peritoneal cavity through the opening made for the evacuation of the fluid, is sufficient for a cure. He has tried it in three cases. In two the cure was permanent. In the third the patient was too much exhausted prior to treatment to have recovered.

If this method should prove to be efficacious, yet it cannot be attempted as early as a laparotomy, for in both my cases to be reported here the amount of fluid was so small that the entering needle might have punctured the intestine, and probably such a small quantity would not have flowed through the canula but would have remained in the pelvic region.

Yet another method of treatment is the injection of a ten-per-cent. emulsion of iodoform and glycerine; but I have seen no results published as yet which would lead me to try this method.

Given a case with considerable fluid present, paracentesis, with the injection of sterilized air, might be given a trial; and in case the abdomen refilled, a laparotomy would be in order.

Given a case in the early stages, with a small amount of fluid, a laparotomy would be the most rational treatment.

I shall report two cases, one operated as a last resort and the other in the early stages, showing the results at the two extremes of the disease.

Case I. The patient was a girl, ten years of age. Another child in the family had died about a year before of "consumption of the bowels." Patient had been sick for about six months, gradually losing flesh and complaining of pain across the abdomen.

When I saw her early in December, 1891, she was very much emaciated. There was quite severe abdominal pain, which interfered with sleep at night. She was practically confined to bed, being lifted into a large rocking-chair for a portion of the day. When lying in bed, the knees were flexed and the face wore a painful expression. The weight of the clothes caused discomfort, and even a jarring of the bed caused pain. There were several loose, watery movements daily. She was taking very little nourishment.

Physical examination revealed an extremely tender abdomen, some tympanites and a slight dulness, which changed its location as the child was slowly turned from one side to the other. In this case the lungs had become involved, and so, of course, made the prognosis anything but favorable.

Several cases having been reported where the lungs were affected and the whole thing had cleared up after operation, I concluded that an operation was justifiable as a last resort. For the week preceding operation the temperature had ranged from 100.5° to 101.5°.

On December 8th, with the usual antiseptic precautions, a median incision was made two and a half to three inches in length. Drs. Day and H. P. Abbott assisted. At the line of incision the peritoneum was adherent to the abdominal wall. About three ounces of fluid were found free in the abdominal cavity. No tuberculous foci could be seen upon the parietal peritoneum; but it was markedly injected, and was adherent upon the right side of the abdomen but not on the left. The intestinal peritoneum was covered with tuberculous points varying in size from a millet seed to that of a small pea. The mesenteric glands were also enlarged, some of them being as large as marbles. The abdominal cavity was thoroughly irrigated with hot boiled water, and carefully sponged out. Silk sutures were used, and made to include skin, muscle and peritoneum. The wound was closed without drainage. Baked dressing applied.

Everything went along smoothly. The bowels were quite readily controlled by bismuth. The abdominal pain was no longer troublesome, the patient being able to sleep and so was much refreshed. There was firm union by first intention, and all the stitches were removed on the tenth day.

By the end of the second or the beginning of the third week, the patient was about the house, feeling and looking much better. The pain in the abdomen gave her no further trouble, and there was no reaccumulation of fluid. The tuberculous process in the lungs, however, was not checked at all, but continued on its course; and early in the fifth week the little patient yielded to the inevitable.

Even in such an extreme case, a laparotomy relieved the abdominal symptoms, and undoubtedly prolonged life, although for a short time.

Case II. Patient was a girl, five years of age. The mother died with phthisis about a year after the birth of the child. She was a native of the Cape de Verde Islands. The father is a strong, healthy laboring-man. Until the present sickness the child has always been healthy. For about ten days previous to my first visit, the child had not been feeling well, complaining of headache and loss of appetite, and insisted on being held in the lap most of the time. Did not sleep well at night, tossing restlessly about a great deal of the time.

I saw the patient for the first time January 21, 1894. The face wore an expression of pain, and she complained of pain across the abdomen. A slight cough was noticeable. Tongue slightly coated. Bowels constipated. Temperature 103°. Pulse 120. She moaned continuously, but was told this was more pronounced while I was present, apparently on account of fright.

Physical examination showed that the lungs were all right, not an abnormal sound to be heard anywhere. The abdomen was somewhat distended and tender to the touch. Very slight dulness was present, changing from side to side as patient was turned, the upper side being tympanitic. No diagnosis made, but a suspicion of tubercular peritonitis entertained.

January 22d. Condition remains same. Temperature 103°. Pulse 100. Another careful examination shows nothing in chest, but the same very slight dulness in abdomen on percussion. Liver normal in size. Spleen not enlarged.

January 23d. A third slow and careful examination still brings me to the same conclusion. Temperature 103°. The dulness is so slight that before advising operation I asked Dr. Day to examine the patient without telling him my conclusion, in order that he might arrive at a diagnosis without any influence. He made a very careful examination, finding nothing in the chest, but did find the same slight dulness, which would change from side to side as patient was turned, and thought just as I did that it must be a tubercular peritonitis. I immediately advised operation, as really the only method of treatment, and at this early stage of the disease the prognosis would be excellent.

January 30th. The temperature the day before the operation was 102°. Everything having been prepared, the abdomen was opened by a median incision about two and a half inches in length. Dr. Day and Dr. E. B. Harvey assisted. The peritoneum looked perfectly healthy, and was not adherent anywhere. There were not over two drachms of fluid in the peritoneal cavity, which was sponged out. A small quantity of boiled water was poured into the abdomen, and immediately expressed rather than sponged out. The wound was closed with one set of silk sutures, including the various layers. Sterilized dressing applied.

January 31st. The morning after operation the temperature was normal, and remained so throughout convalescence. The dressing was removed for the first time on the tenth day. There was perfect union, and the stitches were removed.

The appetite returned immediately after operation; the tongue cleared up. The child was anxious to get up, and was with difficulty kept in bed the two weeks, at the end of which time she was allowed to get up with an abdominal bandage applied.

The child has remained well, except in the latter part of May, when I attended her through an acute lobar pneumonia. She is now in excellent health, with no return of the ascites.

◆

Clinical Department.

A CASE OF ACCIDENTAL CONCEALED HEMORRHAGE.[1]

BY EDWARD REYNOLDS, M.D.

On March 29th, I was asked by Dr. E. L. Twombly to see with him a patient with the following history:

The night before, when eight months pregnant, she had begun to suffer moderate labor-pains, and after they had continued a few hours felt very faint; but on Dr. Twombly's arrival, shortly afterwards, she appeared in her usual health. Slight labor continued during the night, and early in the morning she again felt faint. There was at this time an external discharge of a small amount of reddish sero-sanguinolent fluid. She had been rather over-active for several days, but there was no history of any accident.

When I saw her, at about 9.30 A. M., March 29th, her face was pale and slightly drawn, and her lips considerably blanched; the pulse was very feeble, but its rapidity was only 60. I regret that I did not count it at the heart, as its character and the subsequent history leads me to think that I should have found a greater rapidity there. On palpation the uterine parietes yielded to the fingers some slight suggestion of an undue tonicity. The contour of the uterus was uniformly rounded, with the exception of a spot on the left side of the fundus, where a circular area of about six inches in diameter seemed to project slightly above the general level and to be of a softer consistency. The fetal heart was absent. On vaginal examination the cervix was found firm and resistent, not at all shortened; the internal os barely admitted the finger to the surface of the membranes; the head presented; no previa was felt. There was, at this time, no external bleeding.

I was inclined to make a diagnosis of the existence of an internal concealed hemorrhage, but in view of the rigidity of the cervix thought that any attempt at immediate delivery would be extremely hazardous, from the grave liability which I thought existed, that a profuse hemorrhage might start up while the os was still but partially dilated and undilatable. I recommended a policy of inaction, except in so far as it might be possible to expedite labor by cautious stretching of the os at intervals with the fingers, without ether.

I saw the patient again at one P. M. Her condition was then unchanged, except that the labor-pains were stronger and the cervix decidedly shortened. There had been no further hemorrhage.

At eleven P. M. I was again called, to find the accessory tumor larger, the patient decidedly more feeble, the uterus in a state of marked tonic contraction, the cervix spasmodically rigid, and the os about a third dilated, the membrane still unruptured. The patient was at once etherized: under ether the os became thoroughly relaxed, and was easily stretched to an almost complete dilatation by the hand. The membranes were then ruptured, and a considerable amount of liquor amnii, slightly tinged with blood, escaped. The patient was allowed to recover from her ether, and within five minutes a dead, but unmacerated, eight months' fetus was expelled from the vulva. The birth of the body was followed by the spontaneous and forcible expulsion of the placenta, with from a quart and a half to two quarts of dark clot. On examination of the uterine aspect of the placenta, it was found that small, firm clots existed in the spaces between the cotyledons over the greater part of its surface. The mother's recovery was uninterrupted.

The history of this case, together with that of the very similar case which I reported to this Society two months ago, leads me to question somewhat the correctness of the position I have hitherto held in regard to the treatment of these most alarming accidents.

In 1891, in the course of a discussion before the American Gynecological Society upon the extremely able paper of Dr. Henry C. Coe on accidental hemorrhage during the first stage of labor, I stated my own opinion that this hemorrhage could be checked by one means and by one means only, that is, by securing contraction and retraction of the uterus after the delivery of the child, and advocated that measure for all cases where the condition of the patient is not so bad as to preclude all interference. That opinion was based not only upon my small previous experience with this rare accident, but upon the statistics of the operation previously published in the paper referred to, which is, so far as my knowledge extends, the latest statement of the experience of the profession on this subject; Dr. Coe places the general mortality at 51 per cent., the mortality under the expectant treatment at 75 per cent., and that which attends immediate delivery at 30 per cent. I am led to question whether, with regard to treatment, we are not bound to classify the cases in accordance with the severity of the symptoms and the condition of the cervix. It is theoretically possible that there may be cases in which the strength of the uterus is sufficient to keep the hemorrhage within bounds for a length of time sufficient to allow a dilatation of the os to occur, or, at least, softening of the cervix by the natural forces. Upon the other hand, no obstetrician of experience will doubt the statement that a dilatation of the rigid cervix may well occupy sufficient time to allow the hemorrhage to become fatal if it should start up during the operation, an accident which the history of these cases shows to be not unusual.

---

[1] Read before the Obstetrical Society of Boston, April 11, 1894.

The treatment which I should propose for myself in future cases of this desperate nature is as follows: If the hemorrhage is from the start so profuse as to occasion great distention of the uterus and an early and alarming collapse of the patient, a large majority of the women will be lost under any method of treatment; but I still believe that a prompt delivery then offers the only chance that there is for the life of the mother.

[The question of the possibility of saving such cases by the prompt performance of Porro's operation has been suggested, but the time does not seem to me ripe for more than the merest mention of this question.]

If the onset of the hemorrhage is gradual, if the initial collapse is not extremely alarming, and the progress of the hemorrhage seems to have become arrested before any extreme distention of the uterus occurs, I shall determine my choice of treatment by the condition of the cervix. If this is so rigid as to offer a prospect of extreme difficulty in its dilatation, I shall confine myself, as in this last case, to efforts at promoting the action of the natural forces by moderate dilatation of the os with the fingers, stimulation, and other measures intended to sustain the strength of the patient. But I wish to be understood that if this method of treatment is adopted, a physician competent for prompt delivery must be continuously by the bedside of the patient and ready to interfere.

If, in this latter class of cases (with limited hemorrhage and moderate collapse), the conditions are such as to warrant the belief that immediate dilatation and version will be reasonably easy, I believe that will offer the best chance of saving the patient. The life of the mother is always so seriously endangered, and the fetus has in the past so rarely been saved, that the existence of the latter should ordinarily be left out of consideration in determining the plan of treatment which should be adopted.

◆

SPONGE BATHS AND FULL BATHS IN TYPHOID.

BY RICHARD C. CABOT, M.D.

During the summer of 1893, both sponge baths and full baths were used for typhoid cases in the service of Dr. E. G. Cutler at the Massachusetts General Hospital. With his kind permission, I report results observed in 1,000 baths given while I was interne there.

Out of this number only 200 were full baths, as it was only at certain times of the day that two ward-tenders could be had to lift the patient in and out of the bath. To children light enough to be moved by one attendant, only full baths were given.

The body of the tub used was of rubber cloth, hanging from a frame of oak which was supported on four legs with castors and rolled to the patient's bedside. It was filled and emptied in the ward by means of a rubber tube connected with a sink outside. All baths, whether by sponging or in the tub, were given once in four hours in case the temperature was at or over 102.5° F.

Tub baths were all at 65° F., and lasted twenty minutes, vigorous skin friction being given throughout.

Sponge baths were given according to a schedule, starting with 65° F., for a fever of 102.5° and using water five degrees colder, for each one-half degree of fever above 102.5°. For a temperature of 103°, the bath was at 60°; for 104°, 50°; for 105°, 40°; above that, ice-water.

Sponge baths lasted half an hour, the patients lying on a rubber sheet, and the water squeezed and rubbed upon them with a large sponge.

Half an hour after each bath the temperature was recorded again.

Eight hundred sponge baths gave an average drop in the temperature half an hour after, of *two-fifths* of a degree, Fahrenheit.

Two hundred tub baths gave an average drop in temperature of *two and two-fifths* degrees, Fahrenheit.

After a tub bath the temperature often fell to normal or even subnormal. The largest single drop was from 105.5° to 96.5°. This was in a child of six. No untoward results followed in this case nor in any other.

The number of baths needed under the tub-bath system was much less than under sponging, for after a full bath it often took eight hours, and sometimes twelve, for the temperature to get up to 102.5° again.

Sponge baths brought the temperature to normal only three times in 800 baths given. Not infrequently the temperature would be from one-fourth to two degrees higher after a sponge bath than before, and in a few cases this happened after tub baths.

After the first almost all patients liked the sponge bathing, but not one liked the tub at any time.

Shivering, cyanosis and feeble pulse were the rule after a tub bath, and lasted generally about twenty minutes. One patient always shivered so as to shake his bed for nearly an hour after his bath. He made a good recovery.

These symptoms were very slight after sponge baths.

After all baths patients were wrapped in blankets, and sometimes half an ounce of whiskey was given. I was generally present to watch each patient during his first tub bath, not after that, unless for some special reason. Hemorrhage or perforation were the only counter-indications for a bath.

Ward-tenders lifted the female patients to and from the tub wrapped in a sheet. The baths were given by the nurses.

The course of cases treated by tub baths did not materially differ from that of those sponged, so far as observed. For relief of delirium, insomnia, stupor, twitching and other nervous symptoms the sponge baths seemed to answer as well as the tub baths, and were unquestionably less fatiguing to the patient.

The number of cases is too small to draw any conclusions as to the effect on the mortality. The above facts are reported simply to show the great superiority of the tub bath in reducing temperature (supposing that to be desirable), and the absence (so far as observed) of any difference in the effect of the two methods of bathing on symptoms referable to the nervous system.

Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Meeting, April 14, 1894, the President, **Dr. Charles M. Green**, in the chair.

Dr. J. G. Blake read a paper entitled

THE DECLINE OF THE PESSARY.[1]

Dr. G. H. Washburn reported

SOME CASES OF RETROVERSION.

Dr. F. H. Davenport said: The sentiment in regard to pessaries had changed in the last ten or fifteen years. They were formerly looked upon as a definite method of cure in the majority of cases, whereas now they have come to be regarded as useful in relieving symptoms in many cases, as affording temporary relief, but as curative in a very small proportion. This change of opinion is largely the result of the development of the various operative procedures for the relief of backward displacements.

I have recently been interested in studying my cases of uncomplicated retroversion and retroflexion treated by pessary, with the object of ascertaining the ultimate results, and helping me to decide in what proportion of cases operation was necessary or advisable. I found that in only a very small per cent. (ten or twelve) was there a perfect cure both anatomically and symptomatically; that is, after a longer or shorter use of the pessary, the uterus remained in its normal position, and the patients were relieved of their symptoms. In a larger per cent., which I should estimate roughly at thirty per cent., there was symptomatic cure; that is, after removal of the pessary the uterus returned to its old retro-displaced position, either partially or fully, yet the patient suffered no inconvenience from it. This is not strange when we consider that a backward displacement does not necessarily of itself cause symptoms. Undoubtedly, many women go through life with such a malposition without ever being conscious of any trouble.

The rest of the cases were either obliged to wear the pessary constantly, or were advised to have some operation performed for their relief.

In my experience there are very few cases which cannot be fitted to a comfortable pessary, and the necessity for a resort to the Alexander operation does not often occur. The operation is not a simple one in the sense that it may not have unpleasant after-effects. The wounds may suppurate, there is apt to be pain and dragging on the incisions for weeks or possibly months, the uterus does not always hold, and the patient is not always relieved of her symptoms. For these reasons I recommend the Alexander very seldom, not because I do not believe fully in its use in suitable cases, but because such cases present themselves rarely.

Dr. A. Worcester said he felt greatly in doubt as to the value of the Alexander operation. The simple cases, where the uterus is freely movable, are easily relieved by pessaries holding the uterus in place. The difficult cases, where there are uterine adhesions, are not proper cases for the Alexander operation, for it is not right to tie a uterus forward that is constantly pulled back by adhesions. In three or four cases he has done laparotomy, cut the adhesions after properly ligaturing them, and has performed ventral fixation of the uterus. This seems to him a more rational method as one can see exactly what he is doing.

Dr. J. G. Blake said that very few men now do an Alexander unless the uterus is perfectly freely movable. The field for this operation is narrowing.

Dr. Worcester said that uteri which may seem perfectly freely movable, on bimanual examination are often bound by adhesions. Packing and massage may loosen these, but still they exist.

Dr. W. E. Boardman said that the pendulum was swinging strongly at the present day in the direction of surgical interference for all gynecological ills. He had had considerable experience with pessaries, and had considered himself successful in the results obtained. Often we have a return of the trouble, but with each return the patient is more quickly relieved. He has seen cases of Alexander where there was no relief, others where the suffering was greater than before the operation. He feels sure that the cases where the operation is really demanded are comparatively few.

Dr. E. J. Forster, since the first of January in his service at the City Hospital, has been watching for indications for an Alexander, but has found none that could not better be remedied by curetting and repairing lacerations.

Dr. Edward Reynolds said that what he would have said had been said almost word for word by Dr. Davenport. He believed that all discussions as to the value of the Alexander operation should be limited to the movable uterus, and that an Alexander should never be done in place of repairing lacerations or curetting.

The question then lies between the pessary and the Alexander, and he believed that the answer depended on the class of society to which the patient belonged. In classes who could take care of themselves and are not laboring, the Alexander he considered unnecessary, whereas among the ignorant and working women the Alexander could be employed more efficiently, as the use of pessaries was apt to result in harm.

Dr. George Haven said that he had found in working women perfect results from the Alexander operation for a year or eighteen months. After that backache recurred and the uterus was found to be as retroverted as ever. In women who do not have to work and are able to rest, but who cannot wear a pessary owing to nervous symptoms, the results of the Alexander operation are very good.

Dr. Davenport: I wish to emphasize one point which Dr. Washburn made, namely, that often by some slight modification in the shape of a pessary it can be made comfortable. I have a number of times with bulb pessaries so hollowed out one side or the other or the middle as to relieve pressure on a prolapsed ovary or a tense, sensitive sacro-uterine ligament. Attention to the special condition of the case will often result in a satisfactory solution of a difficult task in the fitting of a pessary.

Dr. C. M. Green said he had found the continued use of pessaries still a useful thing, notwithstanding the advent of Alexander's operation. Patients can wear pessaries without being conscious of their presence in the vagina. If there is any discomfort from their use, he would consider the physician at fault in not using the proper pessary, rather than that the pessary *per se* was to be blamed.

---

[1] See page 285 of the Journal.

Dr. Blake, in closing the discussion, expressed surprise at the Society's qualified endorsement of the Alexander operation, and the continued belief in extensive use, by many members, of the pessary. It was certain that for years the great body of eminent gynecologists were dissatisfied with their results, looking upon it as a temporary expedient or makeshift, hence their efforts to find a substitute in the various methods of ventro-fixation. That one satisfactory to everybody has not been found is not surprising, but that a substitute yielding admirable results to those who have worked steadily, patiently and perseveringly on the class suitable for the operation, judging by their results, is to them no longer a matter of doubt.

Dr. Edward Reynolds reported

A CASE OF ACCIDENTAL CONCEALED HEMORRHAGE.[2]

Dr. C. W. Townsend asked, and the question was seconded by **Dr. A. Worcester**, how the operator dared to wait after having made the diagnosis of internal hemorrhage, with a pulse already very weak from loss of blood. Might not a slight loss of blood further render the operation of version of no avail? The results in this case certainly justified his action, the delay making the complete dilatation of the os a simple matter, but should this case be an example for treatment in other similar cases? They believed not.

Dr. Edward Reynolds said that he knew the conservative treatment he had adopted was radically opposed to the routine treatment of immediate delivery in cases of concealed hemorrhage, but he believed that each case should be judged as it merits, no one method being used for all. Moreover, the English statistics bear out the value of conservative treatment in these cases.

◆

AMERICAN GYNECOLOGICAL SOCIETY.

NINETEENTH ANNUAL MEETING, WASHINGTON, MAY 29, 30 AND 31, 1894.

The meeting was called to order by the President, **Dr. William T. Lusk**, at 10 A. M., Tuesday, May 29th.

ADDRESS OF WELCOME.

Dr. Fry, of Washington, read a brief address, welcoming the members to Washington again, where, in accord with the rules of the Congress, the meetings were to be held every third year.

EXTIRPATION OF THE UTERUS IN DISEASE OF ADNEXA.

The discussion upon this subject was opened with a paper by **Dr. J. M. Baldy**, of Philadelphia. He said the question of the propriety of removing the uterus where it was necessary to remove the adnexa could only be determined by experience. Related questions were: (1) Is the uterus essential or useful after the ovaries have been removed? If not, are all patients cured after operation for double ovariotomy? (2) Are patients cured by hysterectomy after double ovariotomy has failed? (3) Does removal of the uterus at the time of removing the adnexa add to the mortality?

The author proceeded to answer these questions categorically. The uterus has but one use in the body, he said, that of containing and nourishing the embryo. It is not true, as has been held, that it has anything to do with those peculiarities which go to make woman womanly. This duty rests with the ovaries; nor is it necessary in the support of the vagina. The cervix, if useful in rounding the vault of the vagina, could be allowed to remain where cancer or other condition did not demand its removal in the particular case. That all cases are not cured after removal of the adnexa is a fact which has been attested by the experience of all operators. The second question is answered in the affirmative by the author's limited experience, namely, that patients not cured by double oöphorectomy are cured by subsequent removal of the uterus — cured of leuchorreal discharge and of pain. His own experience had been that extirpation of the uterus in connection with the tubes and ovaries had not added to the fatality of double oöphorectomy alone, while it had been more effectual in relieving the symptoms permanently.

A fourth question, whether retention of the uterus is of any disadvantage to the patient, has certainly to be answered in the affirmative. It not infrequently is the seat of a discharge, of disease, liable to become displaced, to undergo malignant degeneration, and, should the tubes have been tubercular as could only be determined with certainty after their removal, to be or become the seat of tubercular disease. Then, too, there were some cases in which the uterus should be removed at the time of removal of the adnexa, not because it was the seat of inflammatory or other form of disease, but because of adhesions and extensive denudation. Regarding the manner of operating, it should be by the suprapubic route. The only condition in which vaginal hysterectomy might be preferable was in cases of large pelvic abscess accompanied by dense adhesions which it would be impossible to successfully separate.

HYSTERECTOMY IN BILATERAL DISEASE OF THE APPENDAGES.

Dr. Florian Krug, of New York, continued the discussion with a paper. He said that careful observation devoted to cases through some time, demonstrates that while pathologically they are cured, few are symtomatically relieved by removal of the adnexa. The cause of failure to accomplish all that might be desired lies in our failure to remove the original and persistent source of infection. The question simply resolves itself into this, that either the cases operated upon by those who claim that the uterus when left is not a cause of further symptoms and may be rendered innocuous by mild treatment, are not thus cured, or else gentlemen making these statements have submitted to their skill the most simple cases as a rule, and in the severe ones have failed to observe the results of their work. The cause of continuance of distressing symptoms is the primary lesion in the diseased uterus; the adhesions formed between the intestines and raw surfaces in the pelvis; the possibility of repeated inflammations of the uterus; the possibility of ventral hernia owing to the different methods of drainage; and many other lesser lesions, together with malposition natural to a uterus repeatedly inflamed and deprived of its natural supports.

The following reasons and the results of his experience, appealed to Dr. Krug for removal of the uterus where it was necessary to remove the adnexa. The uterus without the adnexa is a useless organ and devoid of physiological function; it is not innocuous, but, on the contrary, positively diseased and therefore a harmful organ. Histologically the tubes are but part of the uterus, and therefore removal is partial amputation of the uterus; therefore, why should we not go a step farther and remove the rest of the diseased organ. Is it conceivable — clinically is it a fact — that these projections of uterine tissue which we call tubes are alone diseased and not the rest of the uterus? Leaving the uterus merely invites future infection. The artificial menopause is easier after removal of both uterus and appendages than after removal of the appendages alone. In Dr. Krug's experience, the complete operation is attended by less mortality than the incomplete.

---

[2] See page 289 of the Journal.

That he might not be misunderstood, he said that he wished to emphasize the fact that he was dealing solely with those lesions of the adnexa which unquestionably demanded their removal, where both were the seat of disease precluding the possibility of cure by all conservative methods.

Dr. H. T. Hanks read the next paper upon the same subject. He said the question whether the uterus should be left in or removed in any given case of disease of the adnexa could only be determined by the character of the disease, the condition of the uterus, and the experience of the operator. Leaving out the question of fibroids and malignant disease, he believed we were justified in doing suprapubic hysterectomy where the operation could be completed within forty-five minutes, in the following conditions: "Pyosalpinx when there is possibly a purulent or chronic endometritis; for puerperal metritis or perimetritis of a purulent character; for chronic salpingitis when the uterus, tubes and ovaries are diseased, displaced, and embedded in plastic exudation. There are other conditions, undoubtedly, in which I would advocate extirpation of the uterus, but in these three classes of cases I have had actual experience, and the results have justified these conclusions."

Dr. Bache McE. Emmett, of New York, was the first reader on the programme to take the negative side of the question. The question, he said, had been fairly before the profession for six months, or since Dr. Polk read his paper before the New York Obstetrical Society last fall. Taking that paper and the remarks which it had elicited from Dr. Krug as the basis of his own remarks, Dr. Emmett assumed that what gynecologists were asked to do was to remove the uterus in all cases calling for removal of the adnexa. It was not a question, he said, whether it was legitimate to do hysterectomy when the adnexa were removed in fibroid and malignant disease, nor in suppuration within the pelvis where hysterectomy would give the best possible drainage, nor in cases of pus within the uterus or pus sac with spreading peritonitis.

Excluding these cases, and confining his remarks to the question of more limited area, Dr. Emmett was ready to take the negative side. It had been claimed that without hysterectomy some disease might be left at the uterine end of the tube; but this, he thought, could be obviated either by deeper incision or the use of the cautery. As to disease possibly springing up in the uterus after double ovariotomy, no one, he supposed, could say positively that it would not; but it was his opinion that where more than atrophy had taken place the trouble with the uterus was independent of removal of the adnexa, or was due to failure to curette the organ and treat it before or subsequently, to imperfect diagnosis, or to incomplete removal of the adnexa. He agreed with Dr. Coe, that those who advocated removal of the uterus along with the tubes and ovaries, underestimated the additional shock due to the hysterectomy.

Dr. W. Gill Wylie, whose name also appeared upon the negative side, thought the further discussion which had taken place upon the subject since Dr. Polk had written his paper, went to show that there was more apparent than real difference of opinion between the speakers. The only remarks to which he seriously objected were those of Dr. Krug, who had said that in all cases in which the tubes and ovaries were completely removed, one should remove the uterus also. If he were asked to say yes or no to the question whether the uterus should always be removed when the tubes and ovaries were removed, he would say, no. The conditions under which he would go on to do hysterectomy were malignant disease, uterine fibroids, indications of septic disease within the uterus or other incurable affection and, as a rule, where the patient had passed the age of thirty-five, but more especially forty. Removal of the uterus with the adnexa must always be a more dangerous operation than removal of the adnexa alone, although it might not so appear in a limited number of cases.

Some verbal discussion took place upon the subject by Drs. Wathen, Byford, Edebohls, Cushing, Mc Kinloch, Janvrin, Gordon, Noble and A. P. Dudley, nearly all of whom would object to the statement that the uterus should be removed in all cases calling for removal of the adnexa.

Dr. Krug, in his closing remarks, explained that his reason for taking the affirmative upon this point was the fact that where complete removal of the adnexa was indicated there was always disease of the uterus.

THE MANAGEMENT OF FACE PRESENTATION.

The first paper in discussion on this subject was by Dr. Edward Reynolds of Boston. His conclusions were as follows:

When a face presentation is detected, before the engagement of the face and before rupture of the membranes occur, there is always reason to hope for spontaneous restoration of flexation. The obstetrician should, therefore, confine himself to the adoption of postural treatment and gentle external manipulation till the occurrence of engagement or rupture of the membranes renders spontaneous flexion possible. When the membranes rupture early, an external or bipolar version should be at once performed in any case in which the condition of the cervix renders manual dilatation of the os dangerous; but in ordinary conditions of the cervix manual dilatation should be undertaken immediately after rupture of the membranes; the head should be flexed by the hand, and the subsequent treatment should be operative, but its details should be dictated by the position.

When the membranes persist until the cervix is completely dilated, an anterior position of the chin should be left to nature so long as its progress is rapid and the fetal heart is steady; but when any irregularity of the fetal pulse, or even moderate delay at the brim has been detected. the patient should be anesthetized and the head flexed. The posterior position of the occiput so produced should not be left to nature, but should be either treated by version or, preferably, rotated to the front by the hand. It may then be left to nature or treated by forceps. Posterior position of the chin should never be left to nature even though the os has been completely dilated by the membranes, but such cases should always be subjected to immediate manual flexation. The anterior position of the vertex may then be left to nature or forceps may be used. In neglected cases in which manual flexation is contraindicated, version should be chosen if it is practicable, whatever the position of the chin. If version is contraindicated such cases should be treated by immediate application of forceps to the face as such; but in posterior positions of the chin this operation should always be preceded by rotation of the chin to the front. In cases in which the face presentation is due to some other mechanical obstruction, the treatment should be determined by the latter factor. The abdominal methods of delivery are never indicated in uncomplicated face labor.

Dr. Charles Jewett, of Brooklyn, read the second paper on "The Management of Face Presentations." In all cases it was desirable to know the relative size of the mother's pelvis and child's head, which might necessitate giving an anesthetic and introducing the hand. Other conditions might then be discovered on introducing the fingers into the uterus. In treatment two general classes of cases were recognized, namely, those in which the head was movable at the brim or could be made movable by pushing it up, and those in which the head was permanently engaged in the pelvis. In the first class, if the chin were anterior, interference might not be necessary. When the chin was towards the posterior half of the pelvis, if other conditions were favorable, spontaneous birth was generally possible. It could not be denied, however, that the child was more exposed to injury than in vertex cases. He therefore preferred to reduce the posterior presentation of the chin, if possible, to a simpler presentation. The first choice was, as a rule, to bring down the occiput. Dr. Jewett also spoke of the influence of position and of the application of forceps in cases where there had been engagement in the pelvis during face presentation.

Dr. C. P. Noble, of Philadelphia, said he had no formal paper to offer, as he was not very familiar with the subject, but he wished to suggest resort to symphyseotomy in cases of face presentation in which the waters had drained off, as being more likely to succeed and with less danger than version; and especially should symphyseotomy be tried in posterior presentations, with the head fixed in the pelvis, demanding craniotomy or symphyseotomy.

Dr. E. P. Davis, of Philadelphia, said the best results in face presentation had been obtained in Germany, and implied that in that country the proper means were more commonly taken to make an early diagnosis upon which successful termination of these cases depended largely. When an early diagnosis was made, posture of the mother would have an influence; if the child's face looked to the left the mother should lie upon the left side, thighs flexed, the uterus being thrown as nearly as possible into the long axis of the body; she should lie upon the right side when the face looked to the right. Under these precautions it was quite possible for a face to change into an occiput presentation and the latter to be changed into a front occiput presentation. The likelihood of a face presentation going on favorably depended much upon the relative size of head and pelvis, and one had to be guided to some extent by this fact in treatment. Where trouble arose without the interference of art, there was apt to be disproportion between the head and pelvis, a fact which constituted a strong argument in favor of symphyseotomy, and enlargement thereby of the pelvis in the diameters in which enlargement was most needed.

Dr. Fry, of Washington, emphasized the importance of posture in correcting face presentations, and suggested the use of Trendelenberg's posture in place of the knee-chest position, because of the great difficulty of applying the latter to a patient under anesthesia. The Trendelenberg posture could be employed by reversing a chair and drawing the patient's legs up over the back of it. He thought this position would aid materially in attempts to flex the head or perform version.

The president, **Dr. Lusk**, had performed symphyseotomy in a case of face presentation engaged in the pelvis after several physicians had badly injured the mother with forceps. He was surprised to find how easily the child could be extracted after doing symphyseotomy. The mother having been practically moribund before he saw her, died after a few hours.

There was some further discussion by **Drs. R. A. Murray, H. T. Hanks**, and others.

THE ABUSE OF TRACHELORRHAPHY.

Dr. William R. Pryor, of New York, read this paper. The question of immediate closure of torn cervices was not under discussion. Trachelorrhaphy is performed, he said, for the cure of erosions, cervical hypertrophy, cystic degeneration, sterility, subinvolution, to prevent cancer, and for reflex symptoms, and perhaps some other conditions. Dr. Pryor went on to discuss these points in detail. His views upon them can be inferred from a few closing paragraphs:

Emmett's teachings, he said, have been so misapplied that now a condition (torn cervix) which is natural to the mother, is considered pathological and is subjected to operation. When the cervix uteri is so far advanced in disease as to require an operation, I do not believe trachelorrhaphy the preferable procedure. When the laceration is of such degree that a cosmetically perfect cervix can be secured by trachelorrhaphy, I do not consider any operation necessary. Erosion after labor requires the same treatment as in the virgin.

Hypertrophy in the parous woman needs the operation applicable to hypertrophy in the nulliparous. And those other conditions of the cervix which follow labor, whether associated with a slight or a severe laceration, necessitate the removal of more tissue than trachelorrhaphy secures.

The great objections I have to trachelorrhaphy are that it does not give a cervical canal of dimensions equal to the requirements of a woman who should, as she grows older, bear each successive child with greater ease and security than the preceding; it does not remove sufficient tissue where operation is indicated; and it does not appeal to me as a rational procedure, believing, as I do, that most of the cases subjected to it require no operation whatever on the cervix, inasmuch as a generous laceration is normal and necessary.

Dr. Byford agreed with Dr. Pryor, that the ordinary laceration of the cervix should not be united. If there was disease, it should be cut out. Simply cutting out the angle, as in trachelorrhaphy, did not cut out the disease. The disease was below the mucous membrane; and where interference was called for, he found Schroeder's amputation indicated in three out of four cases.

Dr. Baldy agreed with the remarks of Byford, while Dr. Noble considered the original paper, Dr. Pryor's, as revolutionary and without basis of fact. It was certainly a strong statement to say that the normal condition of the cervix in mothers was one of laceration. He, too, had done Schroeder's operation for a long time in certain cases, but they constituted a small proportion of those calling for repair of the lacerated cervix.

Dr. Baker, of Boston, had seen more than one case in which he thought it would tax the obstetrician's ability very much to say that there had been laceration of the cervix from childbirth.

Dr. Gordon, of Maine, had long taught that lacerations of the cervix were often sewed up with injurious consequences because of narrowing the orifice, causing stenosis and giving rise to tubal and other disease.

MYOMECTOMY CONSIDERED AS A SUBSTITUTE FOR HYSTERECTOMY.

Dr. E. C. Dudley, of Chicago, who read this paper, said that the objection to hysterectomy, depriving the woman of her reproductive function, was self-evident, and raised the question whether, in a certain proportion of cases at least, we might not have recourse to a substitute which should adequately remove the disease and at the same time preserve in whole or in part the uterus and its appendages. We already had this in the abdominal operation for pedunculated myomata and in the vaginal operation for intra-uterine and submucous myomata not larger than the fetal head, and in the operation through the sacrum for cancer. This later might possibly be applicable to some cases of myomata situated low in the posterior walls of the uterus. The special object of his paper, however, was the presentation of an operation for the preservation, when possible, of the reproductive organs in the surgical treatment of uterine myomata by laparotomy. Dr. Dudley had reported his first case so operated upon five years ago, in which the abdomen was opened, the uterine myoma enucleated, and the cavity thus left stitched into the abdominal wound. After giving details of the operative procedure, the author went on to say that two deaths during the first three years had discouraged him from extensive application of the method, but during the last two years he had operated in about twenty-five cases with no deaths. There was good reason, therefore, why the method should become more general, especially in cases where it was not necessary to remove the adnexa.

Discussion upon this paper, and upon Dr. Wathen's, was postponed until after the reading of the president's address Wednesday morning.

RETRO-PERITONEAL AND INTRA-LIGAMENTOUS TUMORS OF THE UTERUS AND ADNEXA.

Dr. William H. Wathen, of Louisville, treated of this subject in a systematic manner. Operative treatment had come to be attended by as low a mortality as ovariotomy some years ago. The dangers were: (1) hemorrhage — from separating the adhesions, from the capsule, from the denuded surface of the tumor, from injury of the uterine artery, arteries and veins, and inferior vena cava; (2) wounding the ureter, bladder and intestines. The causes of death were hemorrhage, shock and sepsis. He operated in Trendelenberg's posture. There was no uniform way of treating the capsule. It might be drained or not drained at all. He advised against uniformly suturing the incision in the capsule. Dr. Wathen read a letter recieved from Dr. Battey regarding fastening the sac in the abdominal wall and draining in that direction, and the use of sulphurous acid (1–10) for washing out the tumor sac.

FATAL NAUSEA AND VOMITING OF PREGNANCY.

Dr. Edward P. Davis, of Philadelphia, read a paper on this subject, and reported three cases. In 1888 Graily Hewitt had contributed a paper on severe vomiting during pregnancy, in which he drew attention to anteflexation and impaction of the pregnant uterus as conditions encountered in these cases and undoubtedly concerned in their causation. This condition was present in two of Dr. Davis's cases, while in the other a close examination of the uterus post mortem revealed the cervix composed of dense connective tissue arranged in whorls, and amidst this tissue were cysts, one an inch and a quarter in diameter, and the other half its size, undoubtedly retention cysts from retained secretion of mucous follicles.

In summarizing these cases, their significance to my mind lies in the fatal condition of anemia which was present. The literature of pernicious anemia in pregnant and puerperal patients affords abundant illustrations of serious impairment of the blood, sometimes accompanied by ulcer of the stomach.[1] Atrophy of the gastric mucous membrane, often associated with hypertrophied polypoid villi, is not infrequently seen in pernicious anemia, in cases in which pain and coffee-ground vomit are familiar symptoms. The condition of the heart may be partially responsible for the substernal pain in these cases, while changes in the marrow of the bones of the thorax are thought by some to produce it (myelogenic leukemia). It is also a recognized fact that, in anemia, pain may be reflected to the central ganglia of the trunk, so that the substernal distress of which these patients complain may be properly considered as a reflex from an uterus in a pathological condition.

In conclusion, I desire to advance the following propositions, of which the cases reported are illustrations: Nausea and vomiting of pregnancy are dangerous in proportion as they induce pernicious anemia. Such a condition of danger is to be recognized by studying these cases in the light thrown upon them by the pathology of anemia. While it is possible that sudden and radical improvment may occur in cases in which a functional neurosis is the predominant factor, only when pernicious anemia is once established delay is dangerous, no matter at what period of pregnancy the patient is seen. While it is true that raising and sustaining an impacted uterus will relieve many milder examples of this affection, cases in which danger threatens should be met by prompt dilatation and emptying of the pregnant uterus, which are to be effected by modern surgical methods.

Drs. H. P. C. Wilson, Gehrung, Reynolds, Engleman, W. G. Wylie, A. P. Dudley, and the author continued the discussion. It seemed there was usually a local condition to account for the persistent vomiting, which when removed relieved the patient; but when treatment usually directed to the cervix in the way of dilatation or removing any diseased condition, failed to give prompt relief, the uterus should be emptied — certainly before the stage at which blood changes begin to take place and the appearance of coffee-ground vomit.

---

[1] Leube and Fleisch: Virchow's Archives, lxxxiii., 124

PRESIDENT'S ADDRESS.

PROPER POSITION OF RECENT SURGICAL METHODS IN THE TREATMENT OF UTERINE FIBROIDS.

Dr. William T. Lusk read his address upon this subject Wednesday morning, and invited discussion thereon. There is nothing, he said, which in equal degree marks in gynecology the boundary line between the old order of things and the new as the recent discussions upon the surgical treatment of uterine myomata. In mentioning recent measures, certain points in the biology of uterine fibromata should not be forgotten. For instance, all were, he believed, agreed that myomata might remain of small size for many years, and in rare instances diminish or disappear without treatment. In view of reported cases of this kind it might be well in cases of uterine myomata of small size and causing little discomfort to wait a while before resorting to radical measures. A number of cases had been reported of successful treatment by ligating the uterine arteries.

A large amount of work was being done abroad in the line of removing uterine myomata through the vagina, although the method had so far met with little approval here. The operation was, of course, applicable only to tumors of small size, and was also contraindicated in multiple subserous fibroids, in inflammatory conditions, and in fixation of the uterus by old adhesions. Doubtless more ready access could be gained to the tumor by the plan of Péan — circular incision through the vaginal walls, separation of the cervical tissue from the surrounding walls, avoiding the peritoneum.

Where radical operation was necessary, the vaginal method should take precedence over the abdominal where practical, in order to save the woman an abdominal scar, possibility of hernia, and the greater shock attending abdominal operations.

When the tumor has been exposed and is found of medium size, the question of castration *versus* extirpation is a legitimate one, although it has been the fashion the last two years to discredit it. Castration, however, is no longer advocated in large tumors, cystic tumors, extensive adhesions; and it is questionable in tumors occupying the lower uterine zone and mainly fed by the uterine arteries. In all cases in which the abdomen is opened, the possibility of saving the uterus and appendages should not be lost sight of.

Regarding treatment of the stump, it was yet to be decided by final results whether it was best to entirely extirpate the uterus by the method so well described by Polk, or to leave the cervix, after the manner of Goffe, Dudley, Baer, and others.

A lengthly discussion took place upon the President's address, in connection with preceding papers upon tumors of the uterus, which was participated in by **Drs. Polk, Baldy, Cushing, Dudley, Engleman**, and others.

RUPTURE OF THE UTERUS: PALLIATIVE VERSUS SURGICAL TREATMENT.

Dr. Charles M. Green, of Boston, opened the discussion upon this subject.

It is improbable, he said, that any authority at present would advocate any specific treatment in all cases of rupture of the uterus. No one should argue surgical *versus* palliative measures in all cases, but should choose the method best suited to the particular case, being guided by the situation of the patient, availability of surgical skill, type of the rupture, manner of production, whether child has escaped into the peritoneal cavity, hemorrhage, condition of the uterus as regards sepsis.

By surgical measures was meant not alone laparotomy with or without suture or removal of the uterus, but also drainage with or without antiseptic irrigation. Under palliative measures were included supporting methods, relief of pain, local antisepsis and natural drainage. It thus became obvious that in many cases operative and palliative measures were properly combined. Having related some cases and analyzed Merz's statistics, the author arrived at the following conclusions:

(1) Complete or incomplete tears of the lateral or posterior walls of the lower segment, with adequate provision for vaginal drainage, with hemorrhage absent or easy of control, no intestinal hernia. Such cases will often do well under simple palliative measures. (2) Complete tears of the lower segment, or moderate tears of the uterine body, with easy control of hemorrhage, child partially escaped. Peritoneal irrigation, with weak antisepsis or sterilized salt solution, drainage with iodoform wicking or gauze, with general palliative measures, would seem the most appropriate treatment. (3) Cases in which extraction of the child through the pelvis is impossible or inexpedient, in which there is hemorrhage uncontrollable by the vagina, in which the rent in the uterus is extensive, irregular, or transverse. In such cases abdominal section is indicated, the propriety of suturing the uterus to be decided according to the condition of this organ and the edges of the tear. Hysterectomy promises better results than suture where the edges are ragged, the uterus soft and septic.

PALLIATIVE TREATMENT OF RUPTURE OF THE UTERUS.

Dr. Malcolm McLean, of New York, read this paper. He thought there was too much tendency on the part of some to resort to operative interference whenever there was the least excuse for it; often when palliative treatment would be more in the interests of the patient. This tendency applied to some extent, it would seem, in cases of rupture of the uterus. Dr. McLean related a case managed successfully without opening the abdomen, and thought it would serve as a type of the class of cases in which palliative treatment was highly appropriate. When he was called the pains had ceased entirely; he found the child had nearly escaped into the peritoneal cavity, pushing the membranes before it; and it was this fact, the presence of the membranes in advance of the child, which shut off all infection of the peritoneum. He extracted the child, pulling it back through the wound in the uterus; the membranes were removed; and the patient made a good recovery. A year and a half later she bore another child, which weighed nine pounds and a half. The scar of the previous rupture was felt.

There was a distinct field, Dr. McLean said, for operative treatment as well as for palliative treatment, and it was a mistake to wed one's self to either.

Dr. Lusk had heard Porro's operation mentioned in connection with these cases; but the nature of the tear, he said, excluded it. He would think seriously in another case of tying the uterine arteries and doing hysterectomy.

Dr. Reynolds, of Boston, had seen four cases of rupture of the uterus, the first two patients dying. In the last two, seen in private practice, profiting by his experience with the others, the women were saved by palliative treatment. The future experience of these women was against the statement of Dr. Lusk, that rupture of the uterus without hysterectomy generally left the patient a permanent invalid. His patients recovered entirely.

Further remarks were made by Drs. Davis, Polk, R. A. Murray, and Cushing. They seemed to have less confidence in hysterectomy than had been expressed by the President.

Dr. W. Gill Wylie, of New York, read a paper on

THE INFLUENCE OF LACERATION OF THE PERINEUM ON THE UTERUS, AND THE OPERATION FOR ITS REPAIR.

He had found that medical students knew very little at examination with regard to the influence of perineal tears upon the position of the uterus and the mechanism of intra-abdominal pressure. The abdominal muscles and diaphragm, maintained by their contraction, press in the abdominal contents. When the uterus was in its natural position, pressure was exerted upon it through its long axis, and tended much less toward displacement and prolapsus than when it was retroversed and presented a broad surface to the organs above. The rectum joined the anus at about a right angle, which shut off expulsion of the feces through pressure above until the sphincter relaxed. In injuries to the perineum the anterior support to the rectal wall was weakened or destroyed. Straining at stool tended to force the rectum into the vagina, forming a rectocele. To repair the perineum successfully it was necessary to reunite the tissues in front of the rectum, tilting the rectocele backward, bringing the depressed sulci or angles on either side up over the rectocele. If the area which Dr. Wylie denuded in his operation were divided into an upper and lower segment by a horizontal line, the lower (extending below the original line of the hymen) would represent nearly half a circle, the upper a triangle. The centre was not left undenuded, as in Emmett's operation, he said; for to do so would leave a weak point just where it was desired to give reinforcement against the rectocele. Not more than four sutures were passed through the lower segment, and about the same number through the upper, preferably silver wire. It was necessary also to treat the rectum.

The paper was discussed by Drs. Noble and Skene.

THE ULTIMATE RESULTS OF THE TREATMENT OF RETRO-DISPLACEMENTS BY PESSARIES.

Dr. Francis H. Davenport, of Boston, read a paper on this subject. The conclusions reached were: (1) In cases of uncomplicated retroversion or retroflexion, the choice of treatment lies between pessaries and shortening the round ligaments; (2) a cure or symptomatic cure may be expected in about twenty-five per cent. of the cases treated by pessaries; (3) where cure is effected, it is usually within a year or a year and a half after beginning treatment; (4) a large proportion of patients not cured can wear a pessary without discomfort, and do not wish an operation; (5) the Alexander operation should be limited to those cases where a pessary cannot be worn, to patients preferring it to wearing a support, and to cases in which the operation is supplementary to other precedures.

Dr. Cushing, of Boston, thought statistics upon results of treatment of backward displacements of the uterus by pessaries about as valueless as those upon dropsy. The Alexander operation, he said, had been practised much more in Boston about a year ago than at present; and it was his opinion that the field for its use was more limited than some had seemed to suppose.

Dr. Clement Cleveland, of New York, had been able to cure fully seventy-five per cent. of cases of retroversion where the pessary had failed.

Dr. Edebohls, of the same city, preferred in all cases to do the Alexander operation where the choice lay between it and the use of pessaries, but gave his patients choice between almost positive cure by this method and likelihood of failure by pessary in the hands of some brother practitioner.

Dr. Gehrung thought failures by pessary were sometimes apparent only, the cure having really been complete, but relapse taking place simply because of allowing the original cause to continue.

Dr. Dickinson, of Brooklyn, spoke in the same line, emphasizing the necessity, if one would effect a permanent cure by pessary, of correcting faulty dress, faulty position at sewing and other occupations, and of encouraging muscular and general bodily tone.

Dr. M. D. Mann, of Buffalo, read a paper, treating of

INFLAMMATION OF THE URETERS FROM A MEDICAL STANDPOINT.

His knowledge of the subject dated from 1888, when Howard Kelly taught him to palpate the ureters. Ureteritis was common and of great importance, yet is was scarcely mentioned in recent text-books. The causes were injuries during childbirth, extension upward of disease in the bladder, extension downward of disease in the kidneys, pressure by tumors, tuberculosis, abnormal conditions of the urine. The most common cause was abnormal condition of the urine, which, too, was often present when other causes might be acting, as gonorrheal inflammation, etc. The urine was apt to be scant, containing numerous crystals, but frequently of low specific gravity, commonly of high acidity. It should always be carefully examined chemically and microscopically. The renal insufficiency seemed often of reflex origin, not infrequently accompanying gastric disturbance and the so-called lithemic state. Some foods seemed to cause the urine to take on irritating qualities.

The pathological changes had been less studied by Dr. Mann; but thickening of the ureters was not infrequent, and one of the sources of irritation and vesical tenesmus lay in granulation about the mouths of the ureters. Both ureters were usually involved, but the left more seriously as a rule than the right. One of the most prominent symptoms was frequent micturition, especially during the day. The treatment varied with the cause, but where the urine was irritating it was very important to give attention in this direction.

Render acid urine alkaline, increase the quantity, start with diaphoresis. Some of the balsams might prove useful taken internally. Catheterization of the ureters was easy by Kelly's method, but he had not seen much benefit from surgical measures. Granulations at the mouths of the ureters could be treated locally.

SYMPHYSEOTOMY VERSUS THE INDUCTION OF PREMATURE LABOR.

DR. CHARLES P. NOBLE, of Philadelphia, read this paper in reply to the question which he propounded. Is embryotomy upon the living child, deliberately selected, a justifiable operation? He said, No. In contracted pelvis in which delivery by forceps or version would prove so dangerous as to threaten mother and child, symphyseotomy ought to be selected. Further — and it was to this question the author directed special attention — in contractions of moderate degree it was better not to induce premature labor, but to let pregnancy go to term and do symphyseotomy. It was true that statistics gave a morality of five per cent. for the mother in premature labor, ten per cent. in symphyseotomy; but the author believed both of these were entirely too high in the hands of an expert at the present day. We had not alone to look to the interests of the mother; and since at present symphyseotomy as a selected procedure should be attended with very little danger, it should be resorted to instead of premature labor in the interests of the child, which by the latter method stood very little chance of being born alive or of surviving long afterward.

After some discussion upon the last two papers, the Society adjourned, to meet in executive session. Dr. M. D. Mann, of Buffalo, was elected President, Dr. Coe, Secretary.

Recent Literature.

Clinical Manual for the Study of Diseases of the Throat. By JAMES WALKER DOWNIE, M.B., Dispensary Surgeon for Diseases of the Throat and Nose, Western Infirmary, Glasgow. New York: MacMillan & Co. 1894.

This is a small manual of two hundred and sixty pages. A book of this size is often useful both to the student and to the practitioner. The arrangement is good, and the descriptions in most cases clear and concise. The nose is not taken up at all, and there is very little on anatomy; for which reasons the book cannot be considered as a self-sufficient text-book for a course in laryngology; but for a brief description of the diseases of the fauces, pharynx and larynx and their treatment, it will be found useful and convenient.

Where to Send Patients Abroad for Water Cures and Climatic Treatment. By DR. THOMAS LINN, Physician at Aix-les-Bains, at Nice, etc. London: Henry Kimpton and Hirschfeld Brothers. Detroit: George S. Davis. 1894.

This treatise, of seventy-five pages, will be found of great assistance to physicians, who are sometimes consulted by patients whom they wish to send to Europe for health or rest. The first third of the book is devoted to general remarks on climatic treatment, and treatment at different resorts. The last two-thirds consists of an alphabetical list of maladies, with the resorts recommended for each.

THE BOSTON
Medical and Surgical Journal.

THURSDAY, SEPTEMBER 20, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 WASHINGTON STREET, BOSTON, MASS.

THE ANTITOXIN TREATMENT OF DIPHTHERIA.

IT has been shown by the report of Dr. Thorne Thorne, the Medical Officer of the Local Government Board of London, that the mortality from diphtheria has increased gradually in England and Wales during the past twenty years, and that the increase has been more marked in the large towns. This increase has been much greater in London than in any of the other cities. For instance, during 1871 the death-rate per 1,000 of the living was .10, while in 1890 it was .33, or about three times as great. There has been relatively as great an increase in the mortality in this city.

As insanitary conditions have a very slight, if any, influence on the prevalence of diphtheria, this increase in its frequency can be explained by infection from unrecognized cases of the disease, and also by insufficient methods of isolation. The length of time that a patient should be isolated can only be determined by a bacteriological examination. Since diphtheria is manifestly on the increase, anything that can diminish its frequency or decrease the mortality demands the careful consideration of the medical profession. From the accounts in the Continental medical journals it would seem that the use of antitoxin, while it may not accomplish all that is claimed for it, yet the employment of this agent seems likely to do much not only in the way of decreasing the mortality but also in diminishing the frequency of the disease.

In the *British Medical Journal* of August 25, 1894, is a report by Thomas Eastes, M.D., F.R.C.S., of Folkestone, of seven cases treated by antitoxin. These cases all recovered.

The report of Dr. O. Katz regarding the employment of antitoxin in the Emperor and Empress Frederick's Children's Hospital at Berlin, is a valuable contribution. For the three years in this hospital, from 1891 to 1893 inclusive, there were 1,081 cases treated, with a mortality of 38.9 per cent. From the commencement of the present year to March 14th, there were 86 cases treated, with a mortality of 41.8 per cent. Since the middle of March 128 cases have been treated by antitoxin in this hospital, and the mortality has fallen to 13.2 per cent. In his report Dr. Katz says that in no instance could any deleterious effect be attributed to this agent. Regarding the prophylactic properties of antitoxin, Dr. Katz says that he inoculated 72 children exposed to the disease, and only 8 contracted it, and they had extremely mild attacks.

In the Moabit Hospital in Berlin, from December 1, 1893, to the 22d of March, 1894, 44 cases of diphtheria were treated by the injection of antitoxin. Of these, 11 died, and 33 recovered, or 75 per cent. Tracheotomy was performed 13 times, with 9 recoveries. Among the number of those who died there were four children who were moribund when admitted, and who died in less than twelve hours after entrance. One child died of septicemia a short time after admission. Streptococci were found in the blood. Five of the children died, not from diphtheria, but from some of the sequelæ; one from inflammation of the internal ear, and four, either from inflammation of some of the internal organs or from heart failure. In only five of the seven children who died was there any prospect of a beneficial result from any course of treatment. The urine of the children was tested for albumin before and after the injection. This investigation showed that the injections did not cause albuminuria. On the other hand, from July 1, to December 1, 1893, when antitoxin was not used, 66 cases of diphtheria were treated by the usual methods, and 20 died, and 46 (or 70 per cent.) recovered. Tracheotomy was performed 35 times.

Another point of interest is the fact that out of 44 cases treated with antitoxin, tracheotomy was required in 13 instances; while of 66 cases treated by the usual methods, tracheotomy was performed 35 times. The severity of diphtheria varies so much in different epidemics of the disease that it is impossible to decide positively for or against any special mode of treatment until a large number of cases has been observed extending through a series of epidemics. This much, however, can be said regarding the cases at the Moabit Hospital; that the number of cases of tracheotomy was diminished in a marked degree, and also that the death-rate was diminished to a considerable extent when antitoxin was used.

At the Medical Congress at Budapest, M. Roux read a very exhaustive paper upon the use of antitoxin in the treatment of diphtheria, an abstract of which will be given in our next issue. After describing the preparation of antitoxin and the immunization of animals, he gives a very full account of its use in children ill with diphtheria. He says that in the children's hospital, in Paris, during the years 1890, 1891, 1892 and 1893 there were 3,971 children treated for diphtheria, and there were 2,029 deaths. The percentage of deaths was as follows: in 1890, 55.88; in 1891, 52.45; 1892, 47.64; in 1893, 48.47, with an average of 51.71. From the 1st of February to the 24th of July, 1894, when the treatment by serum was used, there were 448 cases treated and 109 deaths, or a percentage of 24.5. As the conditions were practically the same, the difference between a death-rate of 51.71 per cent. as compared with 24.5 per cent. would seem to indicate that antitoxin is an efficient remedial agent. It should be said, however, that the epidemic during which this agent was used was not by any means a mild one. M. Roux states that the general condition of the children treated by antitoxin was very much improved unless they were very far advanced in the disease when treatment was commenced. The complications which attend diphtheria were also comparatively rare when the serum was used. The effect of antitoxin upon the local lesions of diphtheria was very marked. The false membrane did not extend in the twenty-four hours which followed the first injection. It became detached generally after thirty-six to forty-eight hours, although in some instances it remained until the third day. In only seven cases did it remain for any very great length of time. The action of antitoxine caused a rapid fall in the temperature; and if the defervescence was marked after the first injection, the prognosis was favorable.

MM. Martin and Challon have found that of 120 children treated by antitoxin 54 did not have albuminuria; 12 had this symptom only one day, and 54 had albuminuria during the whole course of the disease.

It therefore seems evident that the use of serum diminished the action of the diphtheritic poison on the kidneys, and therefore diminished considerably the frequency of albuminuria.

M. Roux also states that the number of cases requiring tracheotomy was very considerably diminished.

The report of the cases of diphtheria treated at the Emperor and Empress Frederick's Hospital at Berlin, is much more conclusive in favor of the beneficial effects of antitoxin. It has already been said that the death-rate under the use of this agent fell to 13 per cent., as compared with 48 per cent. when it was not used. The cases reported by Dr. Eastes are of interest, but they are so few that no deductions can be drawn from them. In spite of what medical sceptics may say, there seems to be abundant proof that antitoxin, while it may not accomplish all that has been claimed for it, is an extremely valuable agent in the treatment of diphtheria, and is well worth a conscientious trial by the profession.

The action of the New York Board of Health in making a satisfactory trial of this agent possible is to be commended.

A few words should be said regarding the manner of using antitoxin. In order to arrive at any satisfactory conclusions, it is all important that in every instance where antitoxin is used there should be a bacteriological examination of the throat. It is also important that the urine of the patient should be examined for albumin before and after the injection. The dose for procuring immunity, according to some observers, is one cubic centimetre for any age over three years, and half that for younger children. For a cure of the disease during the first two or three days under two years of age, two to three cubic centimetres; from two to ten years, five cubic centimetres; over ten years of age ten cubic centimetres. After the third day in a severe case, twice as much may be used with positive advantage. If the disease does not seem to be ameliorated by the first dose a second should be given in twelve hours. In the account of the cases treated there is no evidence of any distressing or annoying symptoms caused by the injection. One advantage of this treatment is, that after the injection into the back or abdomen, there is no interference with the patient; no swabbing of the throat; no tearing of the mucous membrane. It is stated that even in the worst cases that proceed to a fatal end, there is a marked amelioration in the suffering; that the dyspnea is relieved to a certain extent. If the patient dies, his death is comparatively painless. Other observers advise relatively larger doses than have just been indicated. The question of dosage is one that can only be decided by a more extended use of this agent. In regard to the kind of syringe that should be used, it must be said that the common subcutaneous syringe is not adapted for the purpose, because it cannot be properly sterilized by heat. Koch's syringe, which consists of a detachable rubber bulb, a glass barrel and a needle is the most satisfactory instrument for this purpose. The barrel and steel needle can be put in a test-tube in the bottom of which a little cotton is placed, the tube plugged with cotton, and then put in the oven of a cooking-stove and kept at a temperature of 150° C. for half an hour or more, or until the cotton is slightly singed. A syringe prepared in this way will remain sterile for four or five days.

It is earnestly to be hoped that antitoxin, in view of the published reports of cases abroad, may receive a fair and impartial trial in this locality. Until it has received such a trial the whole subject must remain *sub judice*.

◆

BARON MUNDY AND THE VIENNA AMBULANCE SOCIETY.

Visitors to Vienna within recent years have noticed the importance of the *Freiwillige Rettungs-Gesellschaft* and the estimation in which it is held by the people. This society was established on the day following the burning of the Vienna Ring Theatre, in which several hundred people lost their lives; and it has filled such an important position that societies of the same kind have since been established in most of the Continental cities and large towns. The founder of this society and its patron for more than ten years was Baron Jaromir Mundy, whose recent suicide on the banks of the Danube canal has attracted an unusual amount of attention and sorrow in Vienna.

He was born in Moravia in the year 1822, and until thirty-three years of age served in an infantry regiment. He then studied medicine, and after graduation spent a few years in the study of insanity. In the war with Italy he served as a volunteer on the medical staff through the whole campaign; again, in the Austrian-Prussian war of 1866, he joined the medical department and distinguished himself by the practical organization of aid for the wounded; he rendered valuable service in the Franco-German war and during the Commune; he also organized an ambulance service in the war between Servia and Turkey and in the Russian-Turkish war of 1877.

The history of the Volunteer Ambulance Society in Vienna is a practical proof of his energy and ability. Previously the care of emergencies in the city was as poor as it could possibly be. Baron Mundy established a large number of ambulances in convenient parts of the city, and a system by which medical help and careful attention in removing the wounded could be summoned in a very short time to any locality. The ambulances were mostly propelled by man power, and will be remembered by all who have lived in Vienna since their introduction. By the efforts of the society different apparatus for use in case of emergency was established along the canals and in the theatres, and instructions for public guidance were posted and circulated. Street accidents, cases of sudden sickness and other emergencies were promptly and ably looked after.

Baron Mundy was the author of several well-known medico-military and other writings, in all of which he invariably condemned the act of suicide, which among Austrians is of remarkably frequent occurrence. It is therefore a source of more than usual surprise that he should now take his own life. The regret felt in Vienna at his death is general and sincere.

◆

MEDICAL NOTES.

The Plague. — The devastation of the plague in China has come to an end, and the port of Hong Kong has been declared officially free from the disease.

Leprosy in Prussia. — A number of lepers have been discovered in Eastern Prussia, especially at Konigsberg and at Memel, about seventy miles from Konigsberg. In this latter district alone ten genuine cases of leprosy have been found and the disease has been officially declared to exist in these districts.

Sad Death of a Physician. — The body of Dr. William B. Seymour, of Tiffin, Ohio, who disappeared from New Market, Va., last June, has been found in the mountains four miles from New Market with both arms broken. The indications are that the old man, who was in his eighty-fifth year, had fallen over a ledge and afterward starved to death.

Animal Extracts Ridiculed. — An apt humorous letter appeared recently in the *American Practitioner and News*, ridiculing the animal extracts so widely advertised in the daily press. The writer of the letter details his experimental attempts to grow new parts upon mutilated dogs, using for the purpose extracts from the ears, tails, legs, noses, etc., of other dogs, under the names "earine," "tailine," "legine," "nosine," and the like. By an unfortunate mixing up of the extracts he grew legs and tails of entirely different breeds from the rest of the dog with most confounding and embarrassing results, and he warns future experimenters in this line to beware of his mistakes, or they may find some day that they have caused the flat nose of a full-blooded negro to grow upon some blonde young lady, who might cause them to be mulcted in enormous damages in consequence of so disastrous a blunder.

Immoral Massage. — Concerning the extent of this evil in the city of Chicago, the *Journal of the American Medical Association* says that, possibly moved thereto by the unwelcome notoriety given to its "massage parlors," the city has begun what the newspapers call "a crusade" against these dens of vice. An investigation has been commenced by the police, and the licenses of nine of the most notorious have already been recommended for revocation. They are characterized in the report of the investigation as "little if any better than the lowest 'dives' in the city." The term "massage" had come to be so closely identified with the practices of these "parlors" that physicians were growing shy of recommending the treatment.

Massage Limited. — The *London Financial News* has found a prospectus from which it quotes extracts and which it proceeds to show up as a warning to incautious speculators. The company is called the American and Parisian Massage Company. The public is asked to subscribe fifty thousand dollars to provide suitable premises at various important centres for the proper and scientific carrying out of the science and art of massage and medical electricity. The company intends to open first-class establishments at fashionable resorts, fitted throughout in the best style, and promises enormous dividends to its stockholders. The prospectus goes on to say that the art of massage was known and practised in Egypt at least forty centuries ago, and is the action of pressing with the hands all the muscular parts of the body, pulling upon and exercising the joints in order to give them suppleness, and an excited vitality in the skin and adjacent tissues. Exactly why it should be called the American and Parisian Company is not very evident, considering that abnormal forms of massage flourish more luxuriantly in London than anywhere else. The *News*, nevertheless, takes occasion to say some very uncomplimentary things about American ways of doing things, and even goes so far as to call this "ultra-American."

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, September 19, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 56, scarlet fever 30, measles 9, typhoid fever 46.

An Epidemic of Typhoid Fever at Marlboro', Mass. — An epidemic of typhoid fever exists in Marlboro', Mass., due, it is believed, to an infected milk supply. There have been forty-six cases of the disease since September 1st.

NEW YORK.

Tenement-House Population. — According to the report just made by Dr. Roger Tracy to the Board of Health, the tenement-house population of New York now amounts to 1,332,772. This, however, includes the population of all the cheaper grade of apartment-houses.

Constitutional Convention and the Office of Coroner. — On September 11th, the Constitutional Convention which has been in session all summer at the Capitol in Albany, reached final passage of propositions previously discussed, and the first to be passed was the one abolishing the office of coroner as a constitutional office. The vote of the delegates was 97 to 43, and this question, with the other proposed amendments to the Constitution, will be submitted to the people of the State.

Health of New York. — The record of the past summer has been an unusually favorable one as regards the general health of the city. Even in the hot weeks of June and July the mortality was not excessive, and the cool weather of August has materially reduced the average of deaths. During the week ending September 1st, the number of deaths reported was 726 as against 759 for the corresponding week last year, when the estimated population was 60,000 less than now. It was also 40 less than the mortality of the preceding week, and 69 below the average of the corresponding week for the past five years. The annual death-rate per thousand of the city's population represented by the week is 19.24; which is 1.37 less than that of the preceding week, and 1.83 less than that of the average of the corresponding weeks of the past five years. The number of births reported during the week was 1,104.

Unveiling of the Sims Statue. — On November 13th, the anniversary of the death of the great surgeon, it is proposed to unveil the statue of the late Dr. J. Marion Sims. It will be placed on the north side of Bryant Square, where the dark granite pedestal has already been completed. Soon after Dr. Sims's death, in 1883, the movement for the erection of a bronze statue was set on foot, and the necessary funds were principally subscribed by members of the medical profession. The long delay that has elapsed has been principally due to litigation on the part of certain artists. American sculptors were at first asked to compete in a design for the work, and when all the designs submitted were rejected by the committee having the matter in charge, a number of them necessarily brought suit for the time and labor expended.

All the suits were finally dismissed, and the commission for the statue was given to Müller, of Munich. A number of months ago it arrived in this country, and it is said to be a very satisfactory work of art.

ASSAULT ON AMBULANCE SURGEON.—Dr. Thomas Garvey, of the Harlem Hospital, had a very uncomfortable experience the other day while taking a patient to the hospital in an ambulance. The patient was a half-intoxicated man who had fallen from the platform to the track at one of the elevated railroad stations and dislocated his shoulder. Shortly before the ambulance reached the hospital he suddenly drew a revolver and fired at the surgeon, wounding him in the shoulder. He was on the point of firing again when Dr. Garvey threw himself forward upon him and disarmed him, at the same time shouting for assistance. A number of men at once gathered about the ambulance, and the desperate fellow was tied to a stretcher. At the hospital his dislocation was reduced, and he was then removed to a station-house. Fortunately, Dr. Garvey's wound proved to be slight.

◆

Miscellany.

CARLYLE AND THE MEDICAL PRIESTHOOD.

ONE of the most interesting features of the excursion to Tintern Abbey at the annual meeting of the British Medical Association at Bristol was the reading by Dr. Yeats of a letter from Thomas Carlyle, which he said had never before been published.[1] It was addressed to the author of a book entitled "The Healing Art the Right Hand of the Church," by "Therapeutes" (Sutherland and Knox, Edinburgh, 1859). Dr. Yeats stated that "Therapeutes" is still living. The following is the text of the letter:

CHELSEA, February 25, 1859.

DEAR SIR, — I have received your book which you were kind enough to send me, and I beg to return you thanks for the same. It is a book (unlike many that come to me here) of a serious nature, the fruit of long study, meditation, inquiry, and evidently of perfect conviction on your part.

I believe, and have long believed, the essential idea it sets forth to be not only true, but of the very highest importance to mankind, namely, that the Physician must first of all be a Priest (that is to say, a man of pious nobleness, devoted to the service of the Highest, and prepared to endure and endeavour for that same, taking no counsel of flesh and blood, as the theory of Priests is) — first of all, a real Priest, and then that the whole world should take supreme counsel of him, as it does of its real or imaginary priests or pontiffs this long while back, and follow said counsel as the actual will of God, which it would be were the physician what I say.

It is curious to remark that *Heilig* in our old Teutonic speech is both holy and also healthy; that the words holy and healthy, as our antique fathers understood them, are one and the same. A thousand times has that etymology risen sorrowfully upon me in looking at the present distracted position of affairs, which is horrible to think of, if we look earnestly into it, and which cannot well be spoken of at all. We, sure enough, have completely contrived to divorce holiness (as we call it) from health, and have been reaping the fruits very plentifully during these fifteen hundred years.

The notion of bringing our present distracted anomaly of a Physician into union with our ditto ditto of a Priest, and making them identical is, of course, extremely chimerical; nor can one easily say what ought to be the first step towards bringing each of them back from his anomalous, imaginary condition, and nearer to veracity and the possibility of coalescing. But I am very glad to see the idea started, in any form, under any vesture, and heartily wish you success in bringing it home to men's minds. — I remain,

Yours truly, T. CARLYLE.

To "Therapeutes," Messrs. Sutherland and Knox,
Booksellers, Edinburgh.

◆

THERAPEUTIC NOTE.

THE TREATMENT OF TAPE-WORM. — Dr. Leslie Ogilvie[1] attributes the frequent failures in the attempt to remove a tape-worm to a lack of attention to details in the administration of the drug used. When the purgative is given soon after the anthelmintic the worm is carried away all but the head. In such cases it is useless to repeat the drug, as is frequently done, in a short time, as the worm offers but scanty absorbing surface and the chief effect of the drug is to poison the patient. Neither does he consider castor oil a suitable purgative to give before the administration of the anthelmintic as there is in all probability a considerable coating of mucous about the worm which the oil does not remove. Sulphate of magnesia with tincture of jalap he considers the most efficacious preliminary purgative. He conducts his case as follows and reports thirteen consecutive cases successfully treated, ten of which had been previously treated without result. The patient should eat less than usual for a few days before treatment, and the day before should be restricted to a milk diet with a little stimulant. At bedtime a purgative draught of sulphate of magnesia and tincture of jalap is given, and repeated at seven the next morning if the first dose has not operated. At eight A. M. a drachm of fluid extract of male fern is given, and at nine o'clock a second dose. At eleven o'clock a dose of castor oil is administered; even if the worm has been passed previously, it is well to give the oil to remove any of the poison which may be left. The physician should pay a visit soon after the second dose of male fern has been given, not only to observe the patient, but to inspect all the motions, each one of which should be passed into a separate utensil. In searching for the head it is convenient and less unpleasant to use a dilute solution of permanganate of potash as a disinfectant with which to separate the worm from the feces.

◆

Correspondence.

LETTER FROM BERLIN.

BERLIN, August 25, 1894.

MR. EDITOR: — To those of your readers who formerly were students at the Berlin gynecological clinics it may be of interest to hear from one now there.

At this season Berlin is deserted by the regular university student, and the scarred face and small cap are only occasionally seen at the *Charité* or *Café-Restaurants.* Many Americans, however, are seen presenting their cards at the semi-private clinics for the purpose of witnessing a few operations by the better known men here. I understand a considerable quota of freshly graduated men, chiefly from the Western States, spend considerable time in Berlin, whereas, formerly, this city was favored by medical men with only a brief stay on their way to the Medical Mecca at Vienna. The opportunities for study here have certainly increased to a large extent in the last decade, but the student from the Eastern States has learned that a complete medical education can also be obtained at home.

---

[1] British Medical Journal, September 8, 1894.

[1] Lancet, August 4, 1894.

Most of the university men have just gone on their vacation to England or the German Springs; but one coming here in July and early August had a good opportunity to see Olshausen, Martin, Bergmann, Gusserow, Winter, Landau and others. For beautiful work, a superb technique, and in general a good illustration of modern surgery applied according to well-defined laws, the general surgical clinic of Professor Bergmann, in Liegel Strasse, and the gynecological clinics of Professors Olshausen and Winter, in Artillerie Strasse, stand preëminently in the foreground of anything one sees here.

You would be reminded very strongly of the days of Shroeder, whose bust stands in the beautiful University Department for *Frauenkrankheiten*, by the set of rules for asepsis with which you must comply before being granted admission to the clinic. Professor Winter, who is still a young man and very popular, requires a personal introduction, after which, a generous *trinkgeld* to the porter brings to your lodging, the evening previous, information of the operation on the following morning. On the whole, one is quite welcome, especially in vacation days, to the various clinics.

Of the prominent men one sees in Berlin at present, Professor Gusserow is the slowest but most conservative, one who accomplishes much with few mistakes in a very deliberate fashion; Olshausen, Winter and Bergmann are the neatest, most particular and most enjoyable men to see and hear; while Martin towers head and shoulders over everybody in the rapidity of his work.

Any disciple of Æsculapius, who is likely to be over-indulgent in festivities the night before, would do well to celebrate in the neighborhood of the clinics, since most of the men operate at an early hour in the morning — Bergmann at 9, Winter at 7 or 7.30, and Martin at 6.30 and 7 A. M.

To one who has not seen Tait, it is really astonishing to witness the celerity with which Professor Martin does a complete hysterectomy. In the three weeks I spent with him I never saw an operation of this magnitude last more than forty-three minutes, while a double, but rather simple case of pyosalpinx was completed from first incision to the last suture in the abdominal wound in six minutes. Frau Horn still acts as his first assistant, and has charge of instruments, sponges, needles and sutures, and a general oversight of detail work; while the so-called first assistant, sitting, holds back the intestines by means of a sponge and the palm of his extended hand. Everything moves with precision and speed. With a bold, generous incision the peritoneum is reached and at once incised between the finger-tips. No hemostatic measure is applied to the abdominal wound. The tumor or diseased organ is quickly freed from its bed and adhesions, and a pedicle rapidly sewed off with curved needle, without clamps, by means of stout catgut. The stumps, bruised peritoneum and pelvis generally are dried by means of ordinary aseptic sea-sponges and lubricated with aseptic olive oil. A large flat sponge wet with oil is then laid over the replaced bowels and omentum, and the abdominal wound closed with deep silk sutures passing through all structures; the superfluous oil is squeezed out of the abdominal cavity. While the sutures are being taken, the assistant is tying, and a second case is being anesthetized in an adjoining room. Drainage is seldom used. He sits between the knees of his patient and sews with great deftness.

In his enucleation of the uterus, he first sews off the ovarian and uterine arteries near the fibromatous or cancerous uterus; then he dissects from the posterior surface, cutting and sewing as he goes, till at last the tumor hangs by a small narrow piece of the arterior part of the cervix. The catgut sutures are turned into the vagina, and the thin reflected peritoneum sewed over them to shut off the peritoneal cavity.

His plastic operations of the vagina are beautiful. For cases of severe endometritis, besides curetting and the injection of carbolized iodine or iron, the cervix is slit laterally and packed with a thin piece of cotton wet with oil.

Professor Martin is justly noted for his work; but one would hardly visit his large private hospital for neatness' sake. While everything is aseptic to the last degree, yet one must be a good swimmer or carry a life-preserver if he would come away in safety. His cardinal principles seem to be asepsis, celerity, thorough sewing off of all sources of leakage, neglect of abdominal wound and lubrication of the parts handled. His success seems to be in keeping with his brilliant work.

Of the following cases operated on during my first day here, all were ready to leave the hospital by the twenty-first day, and most of them on the fourteenth day:

Double pyosalpinx, tubes size of wrist	13 min.
Cystoma, ovarian, multilocular	19 min.
Cyst of meso-colon	17 min.
Three months' extra-uterine fetation	14 min.
Simple pyosalpingitis, both tubes	6 min.
Hysterectomy, fibroma	43 min.
Hysterectomy, carcinoma	30 min.
Salpingo-oöphoritis — resection of tube, puncture of cysts, and formation of new distal end of tube . . .	23 min.

This day's work commenced at 7, and was finished about 10.15. Yours truly, G. Ryder, M.D.

◆

HYDROPHOBIA STATISTICS DESIRED.

4101 Walnut St., Philadelphia.

Mr. Editor: Will you, through your columns, ask that my professional brethren will communicate to me the occurrence of so-called hydrophobia in their practice for the year 1894, from January 1st, and so on until the end of this year?

I would like in all cases to learn: (1) the sex and age of patient; (2*a*) the kind of animal that is credited with the inoculation; (2*b*) its state of health; (2*c*) the provocation to bite (if any existed); (2*d*) the reasons why the animal was (if it was) deemed rabid; (3) the seat of the bite (or other mode of inoculation); (4) the fact and method of cauterization (if any); (5) the time between the inoculation and the outbreak; (6) the symptoms of the outbreak (the occurrence of mania or imitation of dog actions); (7) the remedies used and doses, with their seeming effect; (8) the issue of the case and when death occurred; (9) the investigations made to exclude the presence of disease other than so-called hydrophobia; (10) the findings on autopsy (if one was held).

I shall, of course, acknowledge in future publications, aid received in continuing my studies in regard to this subject.

Yours respectfully, Charles W. Dulles, M.D.

METEOROLOGICAL RECORD,

For the week ending September 8th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S.. 2	30.06	72	81	63	51	64	57	S.W.	N.	12	[illegible]	C.	S.	
M.. 3	30.33	60	62	58	51	65	58	N.E.	N.E.	13	[illegible]	O.	O.	
T.. 4	30.19	66	78	55	72	86	79	S.W.	S.W.	9	15	O.	O.	
W.. 5	30.04	75	84	66	82	76	79	S.W.	S.W.	12	11	O.	O.	
T.. 6	30.10	72	78	66	75	46	61	N.W.	S.W.	7	6	O.	C.	.09
F.. 7	30.09	72	83	60	68	77	72	W.	N.E.	9	8	S.	O.	
S.. 8	30.10	64	68	60	83	94	88	N.E.	S.	7	3	O.	O.	[illegible]
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, September 8, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,956,000	710	335	24.50	10.78	14.56	2.80	4.62
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,139,457	396	162	22.00	12.75	12.25	1.75	6.50
Brooklyn	1,043,000	404	188	27.50	12.50	16.75	.20	6.50
St. Louis	540,800	—	—	—	—	—	—	—
Boston	501,107	216	101	22.54	15.18	10.68	.92	6.44
Baltimore	500,000	—	—	—	—	—	—	—
Washington	285,000	—	—	—	—	—	—	—
Cincinnati	325,000	—	—	—	—	—	—	—
Cleveland	325,000	—	—	—	—	—	—	—
Pittsburg	272,000	98	42	32.64	13.26	28.56	3.06	—
Milwaukee	265,000	39	14	7.68	12.80	5.12	2.56	—
Nashville	87,754	—	—	—	—	—	—	—
Charleston	65,165	—	—	—	—	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	100,410	49	30	28.56	4.08	22.44	2.04	—
Fall River	92,233	37	19	21.60	2.70	21.60	—	—
Lowell	90,613	27	16	40.70	—	11.10	—	3.70
Cambridge	79,607	—	—	—	—	—	—	—
Lynn	65,123	—	—	—	—	—	—	—
Springfield	50,284	19	6	15.78	5.26	10.52	5.26	—
Lawrence	49,900	—	—	—	—	—	—	—
New Bedford	47,741	18	10	—	11.11	—	—	—
Holyoke	43,348	—	—	—	—	—	—	—
Brockton	33,939	—	—	—	—	—	—	—
Salem	33,155	—	—	—	—	—	—	—
Haverhill	32,925	9	3	22.22	11.11	22.22	—	—
Malden	30,209	6	3	16.66	16.66	—	16.66	—
Chelsea	29,806	—	—	—	—	—	—	—
Fitchburg	29,383	—	—	—	—	—	—	—
Newton	28,837	—	—	—	—	—	—	—
Gloucester	27,293	—	—	—	—	—	—	—
Taunton	26,955	12	2	8.33	8.33	—	—	8.33
Waltham	22,058	4	2	25.00	—	25.00	—	—
Quincy	19,642	—	—	—	—	—	—	—
Pittsfield	18,802	—	—	—	—	—	—	—
Everett	16,585	3	1	—	—	—	—	—
Northampton	16,331	—	—	—	—	—	—	—
Newburyport	14,073	—	—	—	—	—	—	—
Amesbury	10,920	3	2	33.33	—	33.33	—	—

Deaths reported 2,067: under five years of age 945; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 502, consumption 238, acute lung diseases 148, diarrheal diseases 306, diphtheria and croup 101, typhoid fever 45, whooping-cough 25, scarlet fever 11, measles 7, malarial fever 2, small-pox 1.

From whooping-cough Philadelphia and Brooklyn 6 each, Boston 5, New York and Pittsburgh 3 each, Fall River 2. From scarlet fever New York and Boston 4 each, Cambridge 3. From measles New York 4, Brooklyn 3. From malarial fever New York 2. From small-pox New York 1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 8, 1894, TO SEPTEMBER 14, 1894.

Major Peter J. A. Cleary, surgeon, is relieved from duty at Fort McPherson, Ga., to take effect upon the expiration of his present leave of absence and ordered to Fort Brown, Texas, for duty, relieving **Captain Wm. B. Davis**, assistant surgeon.

Captain Davis, upon being relieved by **Major Cleary**, will report for duty at Fort Brady, Michigan, relieving **Captain Paul Clendenin**, assistant surgeon.

Captain Clendenin, upon being relieved by **Captain Davis**, will report for duty at Fort Warren, Mass.

So much of the ordinary leave granted **First-Lieut. William F. Lippitt**, assistant surgeon, as is embraced in the period from August 10 to September 25, 1894, is changed to leave of absence on surgeon's certificate of disability.

Major Charles Smart, surgeon, and **Captain Harry O. Perley**, assistant surgeon, are detailed as delegates to represent the Medical Department of the Army at the twenty-second meeting of the American Public Health Association, to be held at Montreal, Can., September 25 to 28, 1894.

Leave of absence for one month, to take effect after termination of present field duty at Raton, N. M., is granted **Major James P. Kimball**, surgeon, U. S. A.

SOCIETY NOTICES.

Boston Society for Medical Observation. — A regular meeting of the Society will be held at 19 Boylston Place on Monday evening, October 8th, at 8 P. M.

Dr. F. L. Jack will read a paper entitled "Remarks on Stapedectomy."

Dr. W. C. Holyoke on "Some Cases of Scarlet Fever with Especial Reference to Contagion and Prophylaxis."

James G. Mumford, M.D., *Secretary.*

Tri-State Medical Society of Alabama, Georgia and Tennessee.— The sixth annual meeting will be held in Atlanta, Ga., October 9th, 10th and 11th. Members of the profession are all invited.

J. B. S. Holmes, M.D., *President*, Atlanta, Ga.
Frank Trester Smith, M.D., *Sec'y*, Chattanooga, Tenn.

New York State Association of Railway Surgeons. — The fourth annual meeting of the New York State Association of Railway Surgeons, will be held at the Academy of Medicine in New York City, November 15, 1894, under the presidency of Dr. M. Cavana, of Oneida, N. Y. A feature of this meeting will be the election to honorary membership of a large number of railway surgeons from New England. It is therefore desired that as many surgeons as possible from this section attend the meeting.

Geo. Chaffee, *Chairman Committee on Membership.*

RECENT DEATHS.

A. B. Miles, M.D., Professor of Surgery in Tulane University, New Orleans, died August 5th, aged forty-one years.

Professor Rollett, Professor of Hygiene at Lyons, and a well-known syphilographer, died August 2d, aged sixty-nine years.

The death is announced of **Dr. Joaquin Maldonado**, Dean of the Medical Faculty of Bogotá and professor of gynecology for forty years in that University.

William Cecil Dabney, M.D., Professor of Obstetrics and the Practice of Medicine in the University of Virginia, died at Charlottesville, Va., August 20th, aged forty-five years.

Levi W. Clapp, M.D., of Pawtucket, R. I., died in that city September 18th, aged forty-five years. He graduated from Brown University in 1870, and from the Harvard Medical School in 1873.

Noah Sanborn, M.D., died in Bayonne on September 6th, aged fifty-seven years. He served throughout the Civil War as a surgeon in the Northern Army, and at the time of his death was one of the attending staff of the Bayonne City Hospital.

Dr. Leon Warnots, Professor of Operative Surgery in the University of Brussels, died recently of septicemia following a dissection wound. Dr. Warnots was only thirty-eight years of age but was well known among his countrymen as an able and accomplished surgeon.

Beaven Neaie Rake, M.D., Lond., L.R.C.P., M.R.C.S., the well-known leprologist, died at Port of Spain, Trinidad, on August 24th, aged thirty-six years. He was appointed by the Royal College of Physicians of London as their representative on the Leprosy Commission, in recognition of his work as superintendent of the Trinidad Leper Asylum.

BOOKS AND PAMPHLETS RECEIVED.

Ueber Hitze Sterilisation des Katgut. Von Prof. Dr. Max Schüller in Berlin. Reprint. 1894.

Sixteenth Annual Announcement of the St. Louis College of Physicians and Surgeons, Session 1894–95.

Announcement of the Gross Medical College, Denver, Colo., Annual Session, 1894–95. Reprint. 1894.

Eleventh Annual Announcement of the Medical and Dental Departments of the National University, 1894–95.

The Annual Report of the Department for the Insane of the Pennsylvania Hospital for the Year ending fourth month 25th, 1894.

Précis de Clinique Thérapeutique. Par le Dr. A. F. Pliaque, Médecin adjoint à la Compagnié du Nord, etc. Paris: G. Steinheil. 1894.

Transactions of the Association of American Physicians, Ninth Session, held at Washington, D. C., May 29, 30, 31 and June 1, 1894, Vol. IX.

Vade-Mecum du Praticien Diagnostic et Traitement des Maladies Internes. Par le Dr. Fernand Roux, Lauréat de la Société Médico-Pratique et de la Société de Médecine. Paris: G. Steinheil. 1894.

Bibliographie der Klinischen Helminthologie, Heft 7–8. Dracunculus Persarum Kämpfer Filaria Sanguinis Hominis Lewis und Trematoden. Von Medicinalrat, Dr. J. Ch. Huber. München: J. F. Lehmann. 1894.

Circumcision. Traumatic Periostitis. The Surgical Use of Cocaine. Obliteration of Congenital Pigmentations. Report of a Case of Carcinoma of Ileum; Intestinal Obstruction Relieved by Anastomosis with a Murphy Button. By B. Merrill Ricketts, Ph.B., M.D., of Cincinnati, O. Reprints. 1894.

Original Articles.

THREE CASES OF CHRONIC BRIGHT'S DISEASE OF DIFFERENT TYPES.[1]

BY J. BERGEN OGDEN, M.D.,
Assistant in Chemistry, Harvard Medical School.

Case I. J. G., who was forty-three years of age, a Nova Scotian by birth, was admitted to the service of Dr. A. L. Mason at the Boston City Hospital. He had followed the occupation of house-painting for the past twenty years. Two brothers who had also been associated with him in house-painting died of what was considered to be Bright's disease. The family history was otherwise negative. The only illness he could remember, aside from the usual diseases of childhood, was that of lead colic nine years ago.

The present illness dates back only three months before entrance to the hospital, at which time he noticed slight swelling of the feet and abdomen, followed in a few days by tinnitus aurium, which was constant and persistent. After the lapse of a day or two he had a convulsion. He remained in bed for about ten days and was fairly comfortable, but on getting around again, was troubled greatly by the severe headache and marked swelling of the feet. It was at this time that he first noticed an increase in the amount of urine passed.

About one week later, while walking on the street, he became dizzy, followed by a loss of consciousness. On regaining consciousness one-half hour later, he found himself at home, having been picked up and carried there by a friend.

Four days before entrance he had another convulsion; and it was about this time a slight puffiness of the face was noticed.

On entrance to the hospital he was found to be a well-developed and poorly nourished man, having a decidedly pasty appearance. The eyesight, he said, had been gradually failing in the past four months. No ophthalmoscopic examination was made. A distinct "blue line" was found on the gums. The odor of the breath was very offensive. The heart's area was found to be enlarged, and a very faint systolic murmur was heard over the mitral area and at the apex, transmitted only a short distance toward the axilla. The aortic second sound was slightly accentuated. There was considerable œdema of the extremities. The physical examination was otherwise negative.

The urine was normal, acid, specific gravity 1.014; indoxyl increased; urophæin, urea, chlorides, earthy and alkaline phosphates all relatively diminished; albumin $\frac{1}{8}\%$ +; sugar absent. In the sediment were a few leucocytes and round cells like neck of bladder, numerous hyaline and finely granular casts, few of large diameter, numerous granular renal cells, and an occasional abnormal blood globule. After close observation for one week, the amount of urine was found to be much increased (urine chart). Its examination showed the following: very pale, acid, 1.007, coloring matters and solids much diminished, a trace of albumin, sugar absent. The sediment contained numerous hyaline and finely granular casts and granular renal epithelial cells, and an occasional leucocyte. No fat or blood seen.

The patient complained of general weakness, constant headache and pain in the loins and abdomen. His condition remained much the same to the twenty-seventh day of observation, when the amount of urine suddenly fell from 120 oz. to 68 oz. At this time he had a convulsion, preceded only by intense headache and a "pin-hole" contraction of both pupils. This latter condition was noticed also during, and for several hours after, the convulsion. An effort to produce diaphoresis was successful and that by a hot-air bath.

The urine following this convulsion was very pale, acid, specific gravity 1.008, coloring matters and solids relatively diminished, albumin $\frac{1}{8}\%$, sugar absent. In the sediment there were many renal casts, mostly hyaline, and an occasional one finely granular, also numerous granular renal cells. No blood seen.

He was fairly comfortable for the following week, excepting for an almost constant headache. On the thirty-fifth day of observation, however, he began to show uræmic symptoms, by vomiting and, in the words of the patient, "a splitting headache."

The amount of urine was found to be considerably less than the average (chart, thirty-fifth day). A hot-air bath was given and sweating was profuse. Following this, there was an increase in the daily amount of urine from 80 oz. to 120 oz. In a week's time he was given his clothes. The headache continued more or less constant, and œdema of the feet and legs was quite troublesome. As will be seen from the chart, the daily amount of urine averaged from 110 oz. to 140 oz. until the forty-eighth and forty-ninth days of his stay in the hospital, when it was evident that "trouble was brewing," for the amount of urine had fallen to 48 oz. On the evening of the fiftieth day he said he had "pain all over the body," numbness of the fingers, and chilly sensations. There was vomiting, severe headache and the very marked contraction of both pupils. Covering him with extra blankets and placing heaters about him produced marked diaphoresis with an abatement of the above symptoms.

From this time the daily amount of urine gradually rose to 85 oz., and again declined, but attended on the fifty-second, fifty-third and fifth-fourth days by a rather profuse diarrhœa.

Another convulsion was undoubtedly prevented on the fifty-sixth day by promptly sweating the patient.

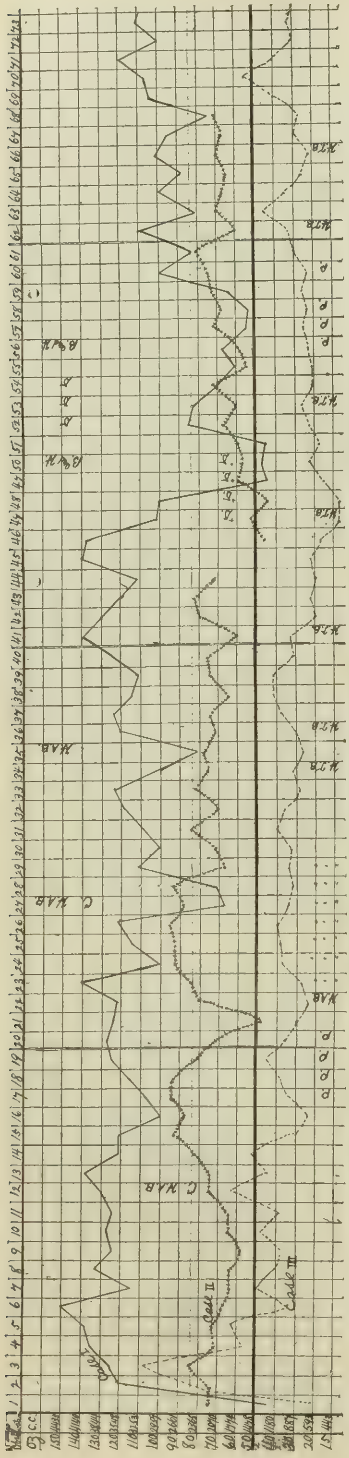
His condition gradually improved, and he was able to be about the ward, but the general weakness was very evident. There was still a complaint of pain in the loins, some headache and œdema of legs and feet.

He was discharged on the seventy-eighth day of his stay in the hospital. At this time the urine was pale, acid, specific gravity 1.011, coloring matters and all solids relatively diminished, a large trace of albumin, sugar absent. In the sediment were a few hyaline and finely granular casts, a few granular renal cells and leucocytes, and an occasional squamous bladder epithelial cell.

Just three months from this time he was again brought into the hospital, and admitted to the service of Dr. C. F. Folsom; but, at this time, in an unconscious condition, having been found on the street by the police. After regaining consciousness, however, he said that, since his discharge, he had had a convulsion every two to three weeks, and with a gradual loss of strength.

---

[1] Read before the Clinical Section of the Suffolk District Medical Society, May 16, 1894.



C., Convulsion. H. A. B., Hot-Air Bath. B. and H., Blankets and Heaters. D., Diarrhœa. H. T. B., Hot Tub-Baths. P., Pilocarpine.

The break in the curves of Case II represents the second discharge and third admission to the hospital.

Examination showed œdema of the lungs and general anasarca. The mitral systolic murmur was very loud and transmitted into the axilla and back. The urine had a pale color, acid, specific gravity 1.010, coloring matters and solids relatively much diminished, albumin $\frac{1}{4}$%, sugar absent. In the sediment there were numerous hyaline, granular and an occasional waxy cast, a few with renal epithelial cells adherent; also numerous free granular renal cells and an occasional abnormal blood globule.

Death occurred two days after entrance. No autopsy was obtained. The twenty-four-hour amount of urine for the first day in the hospital was 10 oz. and for the second only 3 oz.

CASE II. C. M., forty-five years old, a slater by occupation, was admitted to the service of Dr. A. L. Mason, at the Boston City Hospital, in 1892.

He had been in the hospital twice before, the first time in 1890, for excessive drinking, together with general anasarca. The urine at this time was reported to be negative. He had improved to such an extent that, in two weeks' time he was able to go home.

He returned a second time in 1891, with all the evidences of a nephritis. The urine showed a pale color, specific gravity 1.018, albumin $\frac{1}{4}$% +. In the sediment there was found an excess of renal epithelial cells (mostly fatty), numerous hyaline and finely granular and fatty casts, a few compound granule cells, and an occasional abnormal blood globule. The face and extremities were swollen, also some fluid in the abdominal cavity. A systolic mitral murmur was heard at this time, not noted on the first admission.

He had one uræmic attack on the twelfth day of his stay in the hospital. A hot-air bath was given, with good results. From this time he seemed to improve considerably, the œdema of the face and extremities entirely disappearing, and after six weeks of observation and treatment, was discharged.

The character of the urine the day before discharge was pale, specific gravity 1.014, albumin $\frac{1}{8}$ to $\frac{1}{4}$%. In the sediment were numerous hyaline, granular and fatty casts; numerous free renal cells; a few fatty and an occasional compound granule cell and abnormal blood globule; a few leucocytes and cells like neck of bladder. The daily amount of urine, as may be seen by the chart, was increased above the normal during this whole period, excepting on the day when it was found necessary to give a hot-air bath.

On entering the hospital a third time, it was found that he could not remember of having been ill previous to 1890. His work exposed him somewhat to inclemencies of the weather; but, as far as known, he never suffered from it. He began to notice swelling of his feet, legs and abdomen, one month before entrance, at which time he had been on a protracted "spree." Since then he had had periodic attacks of vomiting, diarrhœa and headache.

The urine was found to be pale, acid, specific gravity 1.013, albumin $\frac{1}{4}$%. In the sediment were found an excess of hyaline, granular and epithelial casts (an occasional one fatty); many renal epithelial cells (most of them fatty); a little free fat and an occasional blood globule; also a few compound granule cells.

On physical examination the face was found to be puffy, and there was general anasarca. A slight enlargement of the heart's area was noted, and a distinct mitral systolic murmur transmitted into the axilla. The aortic second sound was somewhat accentuated. There was œdema of the lungs and evidence of considerable fluid in the abdominal cavity.

The day following admission he began to have rather a profuse diarrhœa, which continued for four days, and at this time the œdema began to diminish.

After two weeks in bed he was allowed to sit up in a chair with blankets, and four days later was given his clothes. His improvement was uninterrupted; and on the twenty-seventh day of his stay in the hospital, he was discharged, his general condition being very good, except for his kidneys. The urine on the day before discharge was pale, acid, specific gravity 1.010, albumin ⅛% +. In the sediment were found numerous hyaline and granular casts, some with renal epithelium and fat adherent, numerous free renal epithelial cells, some fatty, a little free fat, a few compound granule cells, also an occasional blood globule.

Case III. R. F., seventeen years old, a confectioner, was admitted to the Boston City Hospital on the service of Dr. V. Y. Bowditch. The family history was good. He had measles when about eight years old; since then he has been well and strong. His habits have been exceptionally good.

The first evidence of his present trouble was noticed six weeks before entrance to the hospital, when he found that both thighs were considerably swollen after going in bathing, and two days later the feet began to swell. There had been some cough. No trouble was noticed with the eyesight.

The physical examination showed a well-developed boy of good color. The heart's area was enlarged, but all the sounds seemed to be normal. There was fluid in both plural cavities and a slight œdema of the lungs. The line of fluid in the abdominal cavity reached the umbilicus, and there was marked œdema of the prepuce, scrotum, and of both extremities.

The urine was normal in color, acid, specific gravity 1.016. The urophæin and indoxyl were both normal; urea and chlorides were diminished; phosphates normal; uric acid increased. The albumin was quantitated by means of Esbach's albuminometer, with a solution of picric and citric acids, and found to be ½%. Sugar was absent. In the sediment were found an excess of hyaline and finely granular casts, many with fat and renal epithelial cells adherent; a few fatty casts; numerous free renal cells, a few fatty; a few compound granule cells; and an occasional blood globule.

Four days after entrance the eyes were examined by Dr. E. E. Jack, who found both normal.

There was little change in the patient's condition, excepting for rather severe attacks of epistaxis from time to time, until the seventeenth day of observation, when an effort to produce diaphoresis by the use of pilocarpine was thought best, because of the increase rather than a diminution in the amount of œdema. This treatment was fairly satisfactory for two or three days, when it ceased to act; and then daily hot-air baths were resorted to. He responded well to each one of these to the twenty-ninth day, when the skin failed to respond to this stimulus. There was still no apparent decrease in the amount of œdema.

An examination of the urine on the thirty-third day showed the twenty-four-hour amount to be 28 oz.; color normal, acid, specific gravity 1.026. Urophæin was diminished, indoxyl much increased, and urea relatively increased, but by quantitating, was found to be 2%, or 16 grammes, in twenty-four hours. The chlorides were slightly diminished relatively. Albumin quantitated showed 1%. Sugar absent. In the sediment were many renal casts, mostly hyaline, granular, fatty, and an occasional very highly refracting cast, like waxy; a few casts with renal epithelial, fatty renal epithelial, and compound granule cells adherent; numerous free renal epithelial cells, nearly all fatty; and also numerous free compound granule cells. No blood seen.

There was free action of the bowels after the use of magnesium sulphate when it was retained by the stomach, but unfortunately it was frequently vomited. On the thirty-fourth day in the hospital hot tub-baths were substituted for the hot-air baths. They were used from time to time, together with pilocarpine, during the remainder of his stay in the hospital. The use of eleterium was unsuccessful, as it had very little action on the bowels, and frequently caused vomiting.

The patient was discharged from the hospital, not relieved, on the one-hundred-sixth day of observation. At this time there was marked pallor, and no apparent diminution in the amount of œdema. The pleural and abdominal cavities still contained fluid, and his general condition on the whole was not as good as at the time of entrance. The amount of urine for a week past had been ranging between 30 oz. and 45 oz., and on the day previous to discharge was normal in color, acid, specific gravity 1.021. The urophæin and all the solids were relatively diminished; indoxyl much increased; urea quantitated showed about 20 grammes eliminated in twenty-four hours; albumin quantitated showed $\frac{4}{10}$%. In the sediment were numerous hyaline casts of medium and large diameter; an occasional finely granular and very highly refracting cast, like waxy; a few casts with renal epithelial, fatty renal epithelial and fat adherent; numerous free renal cells, an occasional one fatty; and only an occasional compound granule cell.

I have reviewed these three cases with especial reference to their comparison. We have in Case I a fair clinical type of *chronic nephritis* (*chronic interstitial nephritis*) having *lead* as its probable cause. The insidious onset of the disease is quite evident, as it is fair to presume that it had been in progress for a number of years, although the patient seemed perfectly well to within nine months of his death.

Two of the most important elements in making a diagnosis in this case are:

(1) The amount of urine which, as may be seen by the curves on the chart, was almost invariably above the average normal (50 oz., or 1,478 c. c.), reaching only once 150 oz., or 4,435 c. c. On the day preceding a uræmic attack or a convulsion, there was always a fall in the daily amount, on only one occasion going below 50 oz.

(2) The character of the urinary sediment, which was found to consist on every examination, of renal casts, together with granular renal epithelium, and the virtual absence of blood and fat.

A point of especial interest, in this case, was the contracted pupil, which was invariably seen before, during and for several hours after, every uræmic attack or convulsion.

Case II represents one of *chronic diffuse nephritis*, but in which an attributable cause for the disease is less evident than in Case I. Yet I think it fair to suppose that since the patient was habitually addicted to excesses of alcohol, he had had, at some time, a catarrhal or acute nephritis, possibly as a result of exposure, and the disease had finally resulted in a chronic condition. The daily amount of urine was, with only three exceptions, constantly above the normal, ranging between 60 oz. and 90 oz. the greater part of the time.

The quantity of albumin we found was larger than in Case I where it was most of the time a trace, going exceptionally as high as ½%. In this case, however, it varied between ⅛ and [illegible]%.

As to the urinary sediment we found that it contained a considerable amount of fat, yet not excessive, with now and then an occasional blood globule.

Case III gives us an example of *subacute nephritis* (*chronic parenchymatous nephritis*), probably having its origin in measles nine years before, the health of the patient being apparently good until, following the use of a cold bath, the kidneys failed, in a measure, to perform the work required. The daily average of the urine fluctuated between 20 oz. and 40 oz.

The amount of albumin was always large, going, on one occasion, as high as 1%.

The sediment contained always an excess of fat and very little or no blood.

An important feature of this case was the resistance to all forms of treatment and especially the effort to relieve the kidneys by diaphoresis, also the comparative freedom from uræmia with the presence of an extensive œdema.

◆

RECURRENT OCULO-MOTOR PARALYSIS.[1]

REPORT OF A CASE WITH RECURRENT ANÆSTHESIA IN THE DISTRIBUTION OF THE FIFTH NERVE.

BY PHILIP COOMBS KNAPP, A.M., M.D.,
Clinical Instructor in Diseases of the Nervous System, Harvard Medical School; Physician for Diseases of the Nervous System, Boston City Hospital.

THE following case, although differing in some of its symptoms from many of the cases of recurrent paralysis of the third nerve, may nevertheless be classed with such cases; and, on account of the rarity of such affections, it seems worthy to be reported, even though the history is incomplete.

J. F., forty-one, single, a clerk, was referred to me on the 9th of February, 1893, by Dr. B. Joy Jeffries. His mother died after a severe and painful illness, the precise nature of which was uncertain, during which her mind was considerably affected. His sister suffers much from neuralgia. Beyond this nothing could be learned as to the family history. The patient himself was a delicate child, and in early life had sores on his head. Years ago he had a mild attack of gonorrhœa, but he denied syphilis. He used alcoholic drinks in moderation, and smoked a good deal. He has had some pain in the knees every spring, and he is subject to attacks of tonsillitis. Otherwise his health of late years has been good.

About a year before he came to see me, he was attacked with a severe neuralgic pain in the left side of the head, accompanied with nausea, vomiting, numbness in the left side of the face, and ptosis of the left eyelid. When he lifted the lid with the finger he saw double, and found that the eye was turned outwards. A touch upon the face was felt as if the face were covered with leather and the touch were felt through it. This trouble lasted seven weeks, and then the pain stopped suddenly and completely, and he could open the eye and move it as usual. There was after that no diplopia or paralysis of accommodation, but he did not pay especial attention to the condition of the pupil.

In the middle of December, 1892, he began to have soreness and a grumbling pain in the left side of the head. By Christmas time this had increased to a very severe neuralgic pain, with nausea and vomiting. This pain was so bad as to prevent him from sleeping and make him almost insane. The pain was usually worse about five in the afternoon. With the onset of the severe pain the left eye closed, and just before that he had diplopia, and found that the eye was turned outwards. After two or three weeks the nausea and vomiting disappeared, and the pain began to subside. At the time he consulted me he had comparatively little pain, but the face near the eye, and especially below the eye and on the nose, was extremely sensitive to the slightest pressure, and it had a numb, burned, singed feeling. A slight jar or a draught of cool air would bring back the severe pain. Since the cessation of the nausea and vomiting, his appetite and digestion had been, as usual, tolerably good. About once a fortnight he has had a sudden stoppage of the urine for a few seconds, followed by a sudden rush of urine and a slight pain in the penis. The paralysis of the eye was unchanged. He complained much of soreness inside the left nostril, as if there were sores there, and of a discharge of thick lumps of bloody mucus, which were very hard to get out. After clearing the nostril in the morning, the pain and tenderness diminished. He dreaded the light somewhat, and, especially when out of doors, kept the eye covered with a thick handkerchief. Notwithstanding the pain and paralysis, he attended to his business as usual. He had no other symptoms.

The man was rather small, fairly nourished, and only moderately developed. There was complete ptosis of the left eye; the left pupil was dilated and immobile, and the eye was turned outwards beyond the median line. The eye could be turned outwards to the external canthus, rotated slightly downwards and outwards, and, when turned outwards it could be brought back toward the median line, but not to it. The right eye could be moved normally. Vision with either eye was $\frac{6}{8}$ metres (Burchardt's tests), but the effort to look at the chart caused pain. The accommodation was paralyzed in the left eye. Owing to the ptosis, photophobia and pain it was not possible to make an accurate test of the visual field, but it seemed normal with a rough test.

The sensibility was diminished over the upper part of the left side of the face; there was distinct anæsthesia of the upper lip, nose and cheek, extending outwards to the beginning of the beard, upwards to the lower edge of the orbit, and inwards to the median line; there was diminished sensibility of the lids and skin covering the orbit; above the upper eyebrow a light touch could be felt at once, but it did not feel natural, it felt as though the skin were covered with leather. This area of perverted sensibility extended outwards to a line an inch outside of the external angular process, and backwards to the coronal suture, (see diagram on page 309). Pressure over the whole region was painful, but the tenderest part was over the most anæsthetic region, especially over a spot on the side of the nose. Sensibility elsewhere was normal.

Motion elsewhere was unimpaired. The face felt stiff as he moved it, but the tongue and facial and masticatory muscles moved naturally. The grasp by the dynamometer was 37 kg. with the right hand and 42 kg. with the left. The pulse was 88. Examination of the chest, abdomen, reflexes and urine showed nothing remarkable. The pharynx showed slight catarrhal inflammation; the mucous membrane of the nose showed redness, swelling and some mucous discharge, but no ulcerations, crusts or hæmorrhages.

---

[1] Read before the American Neurological Association at Washington, May 31, 1894.

He was given thirty grains of potassium iodide, and a sixteenth of a grain of biniodide of mercury, three times a day, with a mild antiseptic spray for the nose. This speedily caused symptoms of iodism, with an increase in the pain and no change in the paralysis. On the 16th the iodide was increased to a drachm, and a two-hundredth of a grain of aconitine was given. On the 22d he could open the eye a little, move it inwards a little beyond the median line, and move it somewhat up and down, but the up-and-down movement was accompanied by some rotation of the ball. The pupil reacted slightly to light. The pain was diminished, but there was much itching of the face. There was less soreness of the nose, and the discharge was thinner and contained fewer lumps.

On the 1st of March he could open the eye fairly well, but he preferred to keep it closed; he could turn the eye inwards to a point half-way between the internal canthus and the median line, and turn it much better upwards and downwards. There was still much pain and great tenderness on touching the nose. The anæsthesia was less pronounced. The nasal discharge was less. The aconitine and mercury were omitted; ten grains of phenacetine were given three times a day, and the stable application of the anode was made over the painful region, with a current of $\frac{3}{25}$ milliampères. On the 5th he complained of soreness of the nose and mouth, and an increase of the nasal discharge. There was some conjunctivitis, and considerable acne, a large pustule having formed just within the nostril. The nose was swollen. There was also photophobia. The iodide was omitted and the phenacetine increased to fifteen grains. On the 8th the pain, tenderness and swelling were much diminished. The eye could be moved much better, but there was diplopia except on looking to the extreme left. The phenacetine was reduced to ten grains.

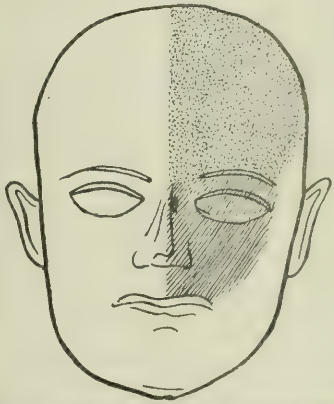
On the 12th of March he could very nearly unite the two images of an object directly in front of him, but after a few seconds the left image went out about six inches, and it stood a trifle below the other. With the right eye covered the left eye could be used fairly well, but the effort to open it widely caused pain. There was less pain and numbness, and the scalp was not so tender. The phenacetine was reduced to five grains.

March 15th. For a day or two the pain has been somewhat worse; the nose is somewhat tender and feels to him when touched, as if it were covered over with leather, through which the touch is felt. The eyes feel tired and there is much photophobia in the left eye. The eye can be moved fairly well, but there is diplopia, except when he looks to the left. The pupils are equal, and both react normally to light. The phenacetine was omitted and a thirtieth of a grain of strychnine given three times a day, with a two-per-cent. cocaine solution to use in the eye. The galvanism was continued.

March 20th. The pain had ceased, but the eye-ball was still somewhat sore. He now keeps the eye open most of the time. There is no diplopia on looking straight ahead at a distant object, but there is slight diplopia when it is brought within six inches of the eyes, and distinct diplopia when he looks at an object to the right.

March 25th. He still has some pain, and a prickling sensation about the nose and cheek. One corner of the eye feels dry, and the nose feels leathery, but he can perceive the slightest touch. He has a little diplopia on looking to the right, but he keeps the left eye open, and in ordinary use he has no diplopia. Things look a little yellower and darker with the right eye, but vision with the test-types shows no difference in visual power in the two eyes, and the fundus oculi is alike in the two eyes.

April 16th. After the last visit he discontinued treatment, but on the 29th of March the pain returned, accompanied by a cold feeling in the face and scalp and same sharp pains. These soon subsided, but he has the numb feeling about the nose and the soreness. The nose feels dry and stuffed, and the scalp a trifle cold. He can feel the slightest touch on the face, but over the whole area that was anæsthetic the sensation is not quite like that on the other side. Pressure over the left side of the nose is still painful. The left lid droops a trifle, but it can be opened fully. The sight blurs a trifle when he tries to read with both eyes, and he has a little diplopia on looking upwards, or to either side and upwards. The images seem nearer together at the bottom than at the top when looking upwards to the left. He played billiards the night before, but it was "rather queer." He was given the faradic wire-brush and the aconitine was resumed.



Dots, paræsthesia. Broken lines, partial anæsthesia.
Lines, anæsthesia. Black dot, greatest tenderness.

April 23d. There is now very little pain, but a constant prickling in the face, and a sensation of burning after the wire-brush has been used. The nose feels as if there were a foreign body in it, but there is no discharge. The eye is slightly sensitive to a bright light, and, when there is a bright light, a black spot, like a spider, is seen floating below the line of vision. Motion is now normal and the diplopia has practically disappeared. A week later he reported that the pain and soreness were nearly gone, and since that date (April 30th) I have seen nothing of him, nor have I been able to hear anything from him in answer to my letters.

To sum up the case, we have a recurrent paralysis of all the branches of the left third nerve, ushered in by pain, nausea, and vomiting, and attended with anæsthesia in the upper two divisions of the fifth nerve. The first attack lasted seven weeks with probably complete recovery; the second attack was more severe and lasted nearly five months; and at the end of that time the recovery was not complete. The intolerance to and inefficacy of iodide, and the absence of any specific history, have led me to think that there was not satisfactory evidence that the trouble was syphilitic.

Recurrent paralyses of the oculo-motor nerve have now been reported in sufficient numbers for us to draw some conclusions from the cases. The recurrent paralyses, moreover, are not confined solely to the third nerve. Bernhardt, Möbius and others have reported cases of recurrent facial paralysis; Paterson, a case of recurrent abducens paralysis, and several writers cases of recurrent paralysis affecting several cranial nerves.

From the thirty-nine cases which I have collected and tabulated we can construct a fairly clear picture of the affection. The disease affects the two sexes about equally, twenty cases occurring in women and eighteen in men. The same nerve is always affected, the left nerve being involved in twenty cases, and the right in fourteen. In the great majority of cases the trouble has begun in early life; in seventeen cases it began in the first decade; in eleven cases it began in the second decade, but five of these cases suffered from recurrent headaches before the age of ten; in four cases it began in the third decade, all of which had headaches in earlier life; and in three cases only did it begin after the age of thirty, one of which had headaches in early life.

The attack in the great majority of cases begins rather suddenly, with nausea and vomiting, and severe unilateral pain in the head. In three cases (Pel, Joachim I, Manz-Nevermann) there was no nausea or vomiting; in two (Steenhuisen, Hinde-Moyer) the nausea and vomiting did not occur in the earlier attacks, and in one (Parinaud-Marie) the nausea and vomiting did not recur with every attack. Pain, too, has not been universal. In the earlier attacks in Steenhuisen's and Hinde's cases, and in every attack in Pel's case, it has been absent, and in Ormerod's case it was slight and "not like megrim." In most cases the pain has been severe, like that of migraine or supra-orbital neuralgia.

Soon after the onset of the pain paralysis of the third nerve has ensued. In some cases the pain and vomiting have ceased as soon as the paralysis has appeared; the vomiting has usually been a symptom of comparatively short duration confined to the earlier stages of an attack. In a good many cases the pain has persisted after the onset of the paralysis. In most cases all the muscles supplied by the nerve have been paralyzed, but in the case of Parinaud-Marie there was no ptosis, in Bernhardt's first case the internal rectus was most involved, and in Fürst's case the paralysis was incomplete. After a varying period, one or two days to six months, the paralysis has disappeared, either wholly or in part. In fifteen cases the attack lasted less than a week, in six cases from a week to a month, in seven cases from one to three months, and in two cases over three months.

After a varying interval, from a week to four years, the attack has recurred. In eight cases the interval was less than a month, in eleven from one to six months, in eleven from six to twelve months, and in five over a year. Only in a few cases, notably in Hasner's, where the attack always came on at the menstrual period, have the attacks recurred at any definite interval. Hence the name of "periodical" paralysis so often used seems less fitting.

Among the complications I may mention photophobia (Joachim I, II, Remak, my own) urticaria (Borthen), Argyll-Robertson pupils (Clark), prostration and slow pulse (Nason), purulent discharge from the eye (Anderson), swelling of the lids and nerve deafness (Vissering), contracted visual field (Thomsen-Richter), amblyopia with sensory-sensitive hemianæsthesia and hemiparesis (Hinde), abducens paralysis (Charcot), and finally, anæsthesia in the distribution of the fifth nerve. This symptom, which occurred in the present case, deserves a word.

In Fürst's case there was paræsthesia of the forehead on the affected side; in Darkschewitsch's case there was diminished sensibility in the area of distribution of the upper branch of the fifth nerve; in my own case there was anæsthesia in the middle area, and perverted sensibility in the upper area; and in Vissering's case, in one attack the upper and middle areas showed diminution of sensibility, and later there was diminished sensibility in the whole distribution of the fifth nerve on that side. In no case was there any paralysis of the muscles supplied by the fifth nerve. The urticaria in Borthen's case may have some relation to a disturbance in the fifth nerve. The increased secretion from the nose on the affected side in my own case and in Nason's may be due to some disturbance in the functions of the fifth nerve.

In regard to the prognosis, it must be regarded as grave. Three cases have resulted fatally (Gubler, Weiss, Thomsen-Richter); thirteen cases show an increase in the severity of the symptoms in successive attacks, and in eight there was also an increase in the frequency of the attacks. It must be borne in mind that in a part of the cases the paralysis has gradually increased, and has continued during the interval. Two other cases have shown an increase in the frequency of the attacks. In three cases the severity has been unchanged, and in two of these and two others the frequency was unchanged. On the other hand, in nine cases the attacks have become less severe, and in six of these they have also become less frequent. In two of the cases where the attacks have become less frequent, the severity has increased.

The ætiology of the affection is still obscure. The neuropathic taint has been observed in most of the cases, and local injury and exposure to cold have been noticed in a few instances.

The treatment is, unfortunately, rather unsatisfactory. The severity of the individual attack can often be relieved; in most cases the pain will yield to phenacetine or other antineuralgic remedies, and the paralysis, although temporarily annoying, soon disappears; but unless there be distinct evidence of syphilis, we can do little to avert the recurrence of an attack; and in but few cases does syphilis seem to be an important factor. There are, of course, cases of syphilitic paralysis which show marked exacerbations, and which improve under treatment, so that they present a somewhat similar picture (Adams, Hutchinson), but they are not typical cases of recurrent paralysis.

The nature of the affection has been much discussed. Is recurrent oculo-motor paralysis, as the English and Charcot claim, merely a variety of migraine, or is it due to some gross lesion? If it be due to structural change, where is the lesion? is it in the nerve, the nucleus, the cortex, or the cortico-nuclear conducting tract?

Even before Saundby's reported case, the first where

RECURRENT OCULO-MOTOR PARALYSIS.

Reporter.	Sex.	Age at onset.	Side.	Headache.	Vomiting.	Duration of attack.	Period of recurrence.	Severity.	Frequency.	Condition of eye in interval.	Other symptoms.
1 Anderson	M	14 (c)*	?	Pres.	?	3 days	3 weeks	0 †	0	?	Purulent dis. from eye
2 Beevor	..	..	..	..	..	....	....	..	..	....	No data
3 Bernhardt, I	M	Youth	L	Pres.	?	?	1 week	—	—	Normal. Palsy later	Chiefly internal rectus
4 Bernhardt, II	M	10	L	Pres.	Pres.	?	1 year	?	?	?	....
5 Borthen	M	38 (16)	R	Pres.	Pres.	3-4 days	6-12 months	+	0	Norm. Pupil +	Urticaria
6 Buzzard	F	28	R	Pres.	?	Few days	2 weeks	?	?	?	Supra-orbital neuralgia
7 Charcot	F	30 (15-23)	R	Pres.	Pres.	1½-2 months	1-2 years	0	0	Paresis	Sixth also paralyzed
8 Clark	F	?	L	Pres.	Pres.	?	6 weeks	?	?	?	Argyll-Robertson pupil
9 Darkschewitsch	M	13	R	Pres.	Pres.	2-3 days	11 days	?	?	Normal Paresis later	Anæsthesia fifth
10 Findeisen	M	20	L	Pres.	Pres.	2½ months	6-9 months	?	?	Pupil +	....
11 Fürst	M	10	L	Pres.	Pres.	?	2½ years	—	?	Normal	Palsy incomplete Paræsthesia forehead
12 Gubler	M	? (c)	R	?	?	Weeks	Years	+	+	?	....
13 Hasner	F	17	L	Pres.	Pres.	3 days	4 weeks	—	0	Paralysis	Always at menses
14 Hinde-Moyer	F	7	L	Pres. (abs.) ‡	Pres. (abs.)	3-4 days	3 m. to 1½ y.	+	—	Normal. Palsy later	Amblyopia, amaurosis, hemianæsthesia, hemiparesis, etc.
15 Jack	F	16	L	Pres.	Pres.	2-3 weeks	2-9 months	—	—	Normal. Palsy later	
16 Joachim, I	F	8	L	Pres.	Abs.	Some days	Some weeks	—	—	Palsy. Later normal	Photophobia. Convulsion
17 Joachim, II	F	25 (11)	R	Pres.	Pres.	1-2 days	2 wks., 4 m.	+	+	Palsy	Photophobia
18 Joachim, III	F	?	?	Pres.	Pres.	?	?	?	?	?	Migraine with palsy. Not included by J. in his table
19 Knapp	M	40	L	Pres.	Pres.	7 w. to 5 m.	1 year	+	?	Normal	Anæsthesia fifth
20 Manz	M	14 (3)	R	Pres.	?	1 d. to sev. w.	4-6 weeks	+	?	Paralysis	....
21 Manz-Nevermann	M	14	L	Pres.	Abs.	2 days	4-6 weeks	—	—	Paralysis	....
22 Mauthner-Graefe	F	3	R	Pres.	Pres.	6 months	Sev. months	+	—	....	....
23 Möbius	F	11 m.	R	Pres.	Pres.	2-3 months	1 year	+	+	Pupil +	....
24 Nason	M	7½	L	Pres.	Pres.	Few days	3-4 weeks	?	?	Normal. Later paralysis	Prostration. Slow pulse
25 Ormerod	F	Elderly	?	Slight	?	2-3 months	....	..	..	....	"Not like migraine"
26 Parinaud-Marie	F	6-7	L	Pres.	Occas.	2-3 months	7-9 months	—	?	Normal	No ptosis
27 Pel	M	30 (16)	L	Abs.	Abs.	1-6 days	7 attacks in 2 years	?	?	Normal	Tabes
28 Remak	M	12	L	Pres.	Pres.	2-3 weeks	3-6 months	?	+	Paresis	Photophobia
29 Roosa	M	8	L	Pres.	Pres.	36 hours	3-6 weeks	..	..	Normal Later total par.	....
30 Saundby	F	12	L	Pres.	Pres.	1 week	6-9 months	+	+	Paralysis	....
31 Senator	F	8	R	Pres.	Pres.	1-3 days	4 years	0	—	Pupil +	
32 Snell, I	F	1½	L	Pres.	Pres.	3 months	6-9 months	+	+	Paralysis	....
33 Snell, II	M	20 (10)	?	Pres.	Pres.	3-4 days	2-3 weeks	?	+	Paralysis	....
34 Snell, III	F	18 (9)	R	Pres.	Pres.	?	4 years	?	?	Normal	2 attacks only
35 Steenhuisen	F	2	L	Pres.	Pres.	9-10 weeks	6 months	+	+	Pupil +	....
36 Thomsen-Richter	M	5	R	Pres.	Pres.	3-4 weeks	6 months	+	+	Paralysis	Convulsions. Dementia
37 Vissering	M	9	R	Pres.	Pres.	1 week	1 w. to 5 m.	—	—	Normal	Anæsthesia fifth, deafness, swollen lids
38 Wadsworth	F	8	R	Pres.	Pres.	?	1 month	—	—	Normal. Palsy later	Otorrhœa
39 Weiss	F	Childh'd	L	?	?	12-16 days	1 month	+	+	Paralysis	....

CASES OF ALTERNATING RECURRENT OCULO-MOTOR PARALYSIS.

1 Cantalamessa	F	16	..	Pres.	Pres.	2 weeks	1 month	+	+	....	Both third nerves and lower seventh
2 Darquier	F	63 (c)	..	Pres.	Pres.	2 w. to 3 m.	2 years	?	?	Normal	Both third nerves and right seventh
3 Pflüger	F	18	..	Pres.	?	?	3 in 2 years	?	?	?	Both third nerves, sixth and seventh

CASES OF RECURRENT EXTERNAL OPHTHALMOPLEGIA.

1 Camuset	M	20	..	?	?	1 m. to 1 yr.	5-9 years	?	?	?	Both eyes, no internal paralysis
2 Ziehen	M	39	..	?	?	?	?	?	?	?	Right then left, no internal paralysis. Acute hallucinatory paranoia

---

* The number in parenthesis signifies the age at which headache first began (c. congenital), the first number the age at the onset of paralysis.

† 0 signifies that the severity or frequency of the attacks has not changed.

‡ Headache and vomiting were absent in the earlier attacks.

n
pe
ter
of

the affection was differentiated, and before the critical study by Möbius had directed attention to the disorder, Anstie had spoken of the comparative frequency of eye-paralysis as a result of trigeminal neuralgia, and Buzzard had given a brief account of a case. Certainly, when an attack recurs at comparatively frequent intervals, begins with intense headache, nausea and vomiting, and is followed by a paralysis of one oculo-motor nerve, all the symptoms disappearing in a few days, the resemblance to an attack of migraine is striking. When, however, the attack lasts for weeks, when there is a steady increase in the severity of the recurrent attacks, and when there is a permanent paresis of the eye in the interval, the resemblance ceases.

Recognizing this distinction in the cases, Senator has endeavored to divide them into two classes, the periodical paralyses and the periodically exacerbating paralyses. In the former class of cases there is complete recovery during the interval, in the latter some paresis persists. Senator regards his own case as of the first class, and thinks that as inequality of the pupils may occur under normal conditions, the persistence of an enlarged pupil in the interval in his own and other cases was of no consequence. Although we may grant that unequal pupils exist under normal conditions, nevertheless, it is hardly fair to say that an enlarged pupil has no significance in a case where there has been previously a third nerve palsy, with paralytic dilatation of the pupil. The enlargement and the sluggish reaction in such a case might fairly be regarded as evidence that there has not been a complete recovery. Even granting Senator's position, however, these cases are very distinctly in the minority. In six cases only (Fürst, Vissering, Pel, Snell III, Parinaud-Marie, and my own [?]) was the recovery complete in the interval. In four more (Borthen, Findeisen, Senator, Möbius) recovery was complete, but the pupil remained dilated, and in Borthen's case it was also sluggish in its reaction to light. In twelve cases (Charcot, Joachim II, Hasner, Thomsen-Richter, Weiss, Manz, Manz-Nevermann, Saundby, Remak, Snell I and II, Steenhuisen) there was paresis in the interval. Senator's classification, moreover, takes no account of a considerable number of cases (Nason, Jack, Bernhardt I, Hinde-Moyer, Darkschewitsch, Wadsworth, Roosa) where there was complete recovery in the interval between the earlier attacks, but gradually increasing paresis, amounting in Roosa's case to complete paralysis, in the interval between the later attacks, nor of the yet more striking case of Joachim, where at first there was paresis in the interval, but later complete recovery.

Furthermore, not all the cases that can be classed under Senator's "periodic" type can fulfil Pel's requirement of being of short duration like migraine. In the case reported by Parinaud and Marie and in my own, the attacks lasted several months, and in Snell's third case and Fürst's the duration is not stated: this leaves only the cases of Pel (which may have been a complication of tabes) and Vissering, and in the latter there was anæsthesia in the distribution of the fifth nerve. If we add the cases where the pupil was dilated in the interval, we find that the attack in Steenhuisen, Findeisen's and Möbius's cases lasted two or three months, leaving only Senator's own case and Borthen's of short duration. Turning now to the cases where there was at first complete recovery in the interval followed later by a persisting paresis, we find at least four cases (Nason, Hinde-Moyer, Darkschewitsch, Roosa) where the attacks were of short duration; and in the "genuine periodically-exacerbating" cases, we find at least six (Joachim II, von Hasner. Manz, Manz-Nevermann, Saundby, Snell II) where the duration was equally brief, two to seven days. In view of these facts, therefore, Senator's distinction seems hardly warrantable. The hypothesis of a structural change, gradually increasing, or, perhaps, diminishing in severity, seems much more applicable than any hypothesis of a "nerve-storm," such as many fancy migraine to be.

Senator has furthermore held that in cases of "periodic" paralysis, the paralysis was a reflex effect of the pain. The whole notion of reflex paralysis is growing rather obsolete, and such a hypothesis is not altogether satisfactory. In the first place, we see every day cases where the pain in this region is fully as severe as in recurrent oculo-motor paralysis, and yet there is no sign of palsy; and, in the second place, in several of the cases of recurrent oculo-motor paralysis (Hinde-Moyer, Ormerod, Pel) the pain has, at least in the earlier attacks, been slight or wholly absent. Vissering has suggested that the attacks were due to auto-intoxication, and Manz thinks that there may be some anomaly in the blood-supply to the pons or the nerve itself. Further study is necessary to confirm these hypotheses.

Accepting the hypothesis of a structural change, the question as to the location of the lesion has also been much discussed. We may assume that the central neuron is intact; no one holds that the trouble is due to any lesion in the cortex or in the cortico-nuclear tract. The peripheral neuron is at fault, and the only question is whether the lesion is in the nucleus or in the nerve itself.

Möbius, Pel and others hold to the nuclear origin of the palsy, and Möbius ascribes the pain to an involvement of the fibres of the fifth nerve as they pass near the third nucleus.

Mauthner considers that the limitation of the paralysis to the nerve of one side and its constant recurrence on the same side, the involvement of all the muscles supplied by the nerve, external and internal, and the existence of headache which seldom occurs in nuclear lesions, are in favor of a peripheral rather than a nuclear palsy. He did not at that time know that other nerves were sometimes involved, and he held that the absence of affections of other nerves favored this theory.

Beside the cases tabulated there are two other series of cases which have not been given sufficient attention. First, we have the cases reported by Camuset and Ziehen, where there was a recurrent paralysis affecting first one and then the other third nerve, but sparing the internal muscles of the eye. Such cases are more suggestive of a recurrent nuclear palsy.

The other series of cases are those reported by Cantalamessa, Darquier and Pflüger. In these cases there were attacks of recurrent paralysis affecting several cranial nerves. In Cantalamessa's case both third nerves and the lower branch of the seventh were involved; in Darquier's both third nerves and the right facial; and in Pflüger's case the left third, the right third, the right seventh, the right third, the right third excluding the internal muscles, and the left sixth and seventh were affected in different attacks. It must be remembered that in the cases already cited, the sixth nerve was also involved in Charcot's case, and the fifth in Fürst's, Vissering's, Darkschewitsch's and my own.

Such a curious selection of nerves to be affected seems rather at variance with any progressive lesion involving the nuclei. Although paralysis of part of the muscles supplied by the third nerve is commoner in nuclear than in root lesions, partial anæsthesia in the distribution of the fifth nerve, selecting the area supplied by one of its branches, seems inconsistent with a nuclear lesion. The most tenable hypothesis is that recurrent oculo-motor paralysis is due to some vascular change, inflammatory or œdematous, in a focal lesion involving the root of the third nerve. As the œdema or exudation subsides the conducting power of the nerve is wholly or partly restored, and the paralysis disappears. In some cases the lesion may involve several nerves, and the exudation may affect only a part of the lesion, involving different nerves at different times. As the lesion progresses, it may finally affect the nerve so far as wholly to destroy its conducting power, leading, as in Roosa's case, to permanent and total paralysis.

The few reported autopsies confirm this hypothesis. In the three cases thus far reported there were lesions involving the nerve at its exit from the pons. In Gubler's case there was an inflammatory thickening and adhesion of the membranes involving the nerve; in Weiss's case there was a tubercular mass pressing on the nerve; and in the case of Thomsen and Richter there was a fibro-chondroma, which had separated the fibres of the nerve without destroying them.[2]

BIBLIOGRAPHY.

1. Adams. Paralysis of the left third nerve, with remarkable intermission, relapse and recovery. Ophthalmic Hospital Reports, December, 1877.
2. Anderson. Migraine, with paralysis of third nerve. Transactions Ophthalmic Society, United Kingdom, xii, 170, 1892.
3. Anstie. Neuralgia and the diseases that resemble it, p. 135.
4. Beevor. Discussion of Snell's paper. Lancet, 23 May, 1885.
5. Bernhardt. Zur Lehre von der nuclearen Augenmuskellähmungen und den recidivirenden Oculomotorius-und Facialislähmungen. Berlin. klin. Woch., 25 November, 1889.
6. Borthen. Beitrag zur Casuistik der recidivirenden Oculomotoriuslähmung. Klin. Monatsblätter f. Augenheilk., September, 1893, and Norsk Magazin f. Laegevidensk., 4 r. viii, 899, September, 1894.
7. Buzzard. Clinical lectures on diseases of the nervous system, p. 164.
8. Camuset. Parésie musculaire des yeux, symptomatique d'une affection nerveuse centrale mal définie. L'Union Médicale, No. 67, 1876.
9. Cantalamessa. Sopra un caso di emicrania con ophthalmoplegia bilaterale. Bulletino delle scienze mediche, February, 1891.
10. Charcot. Sur un cas de migraine ophthalmoplégique (Paralysie oculo-motrice periodique). Clinique des maladies de systéme nerveux, iii, 70, and Gac. med. de Granada (Trans. Gonzalez), ix, 560.
11. Clark. Discussion of Snell's paper. Lancet, 23 May, 1885.
12. Darkschewitsch. Ueber recidivirende Oculomotoriuslähmung. Deutsches Archiv f. klin. Medicin, xlix, 457, 1892, and Sborn. Statei po neuropat. i psichiat., p. 193, 1890.
13. Darquier. De certaines paralysies recidivantes de la troisième paire. Annales d'Oculistiques, October, 1893.
14. Findeisen. Ein Fall von periodisch-exacerbierender Oculomotoriuslähmung. Inaug. Diss., Jena, 1889.
15. Fürst. Beitrag zur Casuistik der recidivirenden Oculomotoriuslähmung. Centralblatt f. prakt. Augenheilk., July, 1888.
16. Gubler. Paralysie de la troisième paire droite, recidivant pour la troisième fois. Gazette des hôpitaux, 9 February, 1860.
17. Von Hasner. Ueber einen Fall von periodisch wiederkehrender Oculomotoriuslähmung. Prag. med. Woch., viii, 89, 1883.
18. Hinde and Moyer. Periodically recurring oculo-motor paralysis. Medical Record, 24 September, 1887.
19. Hinde. Periodically recurring oculo-motor paralysis. A description of a paroxysm, with an attempt at localization and with suggestions as to the pathology of the disease. (Same case as 18) Medical Record, 22 October, 1887.
20. Hutchinson. Paralysis of ocular nerves at different times and of the sensory part of one fifth nerve. Archives of Surgery, ii, 59, 1891.
21. Jack. A case of recurrent paralysis of the oculo-motor nerve. Boston Medical and Surgical Journal, 21 December, 1893.
22. Jacobi. On masturbation and "hysteria" in young children. American Journal of Obstetrics, June, 1876.
23. Joachim. Ein Fall von periodischer Oculomotoriuslähmung. Jahrb. f. Kinderheilk., N. F., xxviii, 101, 1888.
24. Joachim. Ueber periodische Oculomotoriuslähmung. Deutsches Archiv f. klin. Medicin, xliv, 185, 1889.
25. Knapp. Discussion of Pflüger's paper. Schmidt's Jahrb., ccvii, 244, 1885.
26. Manz. Ein Fall von periodischer Oculomotoriuslähmung. Berlin. klin. Woch., 5 October, 1885.
27. Manz. Ueber die recidivirende Oculomotoriuslähmung. Berlin. klin. Woch., 26 August, 1889.
28. Mauthner. Gehirn und Auge, p. 443.
29. Mauthner. Die Lehre von den Augenmuskellähmung, p. 397.
30. Möbius. Weber Periodische wiederkehrende Oculomotoriuslähmung. Berlin. klin. Woch., 22 September, 1884.
31. Möbius. Ueber periodische Oculomotoriuslähmung. Schmidt's Jahrb., ccvii, 244, 1885.
32. Nason. Case of megrim, accompanied with paralysis of the third nerve, at first transient, but subsequently becoming permanent. Lancet, 28 February, 1891.
33. Nevermann. Ein Fall von periodischer Oculomotoriuslähmung. (Same case as Manz, 26.) Inaug. Diss., Freiburg, 1888.
34. Ormerod. Discussion of Snell's paper. Lancet, 23 May, 1885.
35 Parinaud et Marie. Néuralgie et paralysie oculaire à retour périodique, constituant un syndrome-clinique spécial. Archives de Neurologie, January, 1886.
36. Paterson. Recurring ocular palsy. Lancet, 13 September, 1850.
37. Pel. Ein Fall von recidivirender nucleärer Oculomotoriuslähmung. Berlin. klin. Woch., 6 January, 1890.
38. Pflüger. Ref. Schmidt's Jahrb., ccvii, 244, 1885.
39. Remak. Discussion of Thomsen's paper. Neurolog. Centralblatt, 1 December, 1884.
40. Richter. Ein Fall von typisch recidivirender Oculomotoriuslähmung mit Sectionsbefund. Archiv f. Psychiatrie, xviii, 259, 1887.
41. Roosa. Discussion of Wadsworth's paper. Transactions of the American Ophthalmic Society, iv, 466, 1887.
42. Saundby. A case of megrim with paralysis of the third nerve. Lancet, 2 September, 1882.
43. Senator. Ueber periodische Oculomotoriuslähmung. Zeitschr. f. klin. Medicin, xiii, 252, 1888.
44. Snell. Recurrent paralysis of the third nerve associated with attacks of migraine. Lancet, 23 May, 1885.
45. Snell. Two cases of recurrent third nerve palsy associated with migraine. Transactions Ophthalmic Society, United Kingdom, xiii, 110, 1893.
46. Steenhuisen. Recidivirende oculo-motorius verlamming. Leyden, 1893.
47. Thomsen. Ein Fall von typisch recidivirender Oculomotoriuslähmung mit psychisch-nervösen Störungen und concentrischer Gesichtsfeldeinengung. Charité-Annalen., x, 567, 1885.
48. Vissering. Ueber einen Fall von recidivirender Oculomotoriuslähmung. Münch. med. Woch., 8 October, 1889.
49. Wadsworth. A case of recurrent paralysis of the motor oculi. Transactions American Ophthalmic Society, iv, 460, 1887.
50. Weiss. Ein Fall von periodisch auftretender totaler linksseitiger Oculomotoriuslähmung. Wiener med. Woch., 25 April, 1885.
51. Ziehen. Ueber einer Fall alternierender ophthalmoplegia externa compliziert mit Geisteskrankheit. Corr. blatt. d. allg. ärzth. Vereins von Thüringen, No. 4, 1889.

PRACTISING MEDICINE UNDER MILITARY PROTECTION. — It is said that Miss Hamilton of India, who has recently been appointed physician of the harem of of the Ameer of Afghanistan, will be accompanied wherever she goes by a personal guard of six native soldiers. Possibly the fair patients, if not the doctor herself, may find the presence of an escort a trifle embarassing at times.

---

[2] Manz and Richter speak of an autopsy in a case of Graefe's, but I am unable to find any such case in Graefe's Handbuch, and Mauthner, who certainly ought to know, mentions only the case where Graefe made a diagnosis of pachymeningitis following fracture, but there is no statement that this diagnosis was confirmed by an autopsy.

NOTES ON ANESTHESIA: VOMITING AFTER ETHER.

BY J. B. BLAKE, M.D.

It may be accepted as a rule, that vomiting will follow complete anesthesia whenever the stomach contains solids. Exceptions to this are rare and may be disregarded. Even if the stomach be free from solids, most surgeons expect vomiting after ether. An analysis of cases shows, however, that under these circumstances, vomiting is absent in a considerable percentage of them.

By the discovery of anesthetics, an enormous advance was made in preventing pain; and so great was this gain, that the lesser discomforts connected with anesthesia were at first considered either as its unavoidable accompaniments, or were overlooked entirely. The headache and the nausea and vomiting were gladly accepted by the grateful patient in exchange for the agony consequent on cutting. The surgeon quickly learned that the unconscious patient might inhale solid vomitus, and be asphyxiated. Therefore, he was careful that no solids should be permitted to enter the stomach for some hours before operation. The vomiting itself, robbed of its danger to life, was not considered of much importance.

But the progress of surgery was rapid; and with the increase of delicate and extensive operations, an attention to details was demanded that was before unnecessary. Particularly in operations upon the brain and abdomen, it was noticed that the vomiting was not only a discomfort to the patient, but a menace to the progress of the case. In some instances the fatal result was attributed largely to the vomiting, which closely followed the anesthetic. And this was a condition that certainly demanded investigation. Some operators advocated a change of anesthetic and even went so far as to substitute chloroform for ether. Exciting and predisposing causes of vomiting were studied, and attempts to modify or remove them were inaugurated. Surgeons and hospital internes endeavored in various ways — among others, with drugs — to prevent these unpleasant after-effects. Unfortunately few of the results of these investigations have been published in detail; and we are ignorant of the extent of their success or their failure.

These drugs have been recommended to prevent ether-vomiting: morphia, atropia and the bromides. Morphia is open to the objection that it excites vomiting itself in many individuals. To obtain results with the bromides, large doses are necessary, and these are also irritating. While the writer was interne at the Boston City Hospital, the administration of atropia before ether was suggested by Dr. H. L. Burrell, the visiting surgeon. It was given in some fifteen cases, in thirteen of which there was no subsequent vomiting. Unfortunately, further observations were neglected on account of the press of other work.

Several writers have recommended atropia for diminishing vomiting; and it is given before ether by several operators, and in at least one hospital in this city. I have been unable to find any report of the results other than general statements; and these were, as a rule, in its favor. With the intention of obtaining more reliable data, the writer noted its effect in one hundred cases, chosen at random from the various wards.

Through the kindness of the visiting surgeons of the Boston City Hospital the operative cases on the surgical side were available as material.

Atropia stimulates the circulation and respiration; it diminishes the secretions, particularly of the mouth, throat and bronchi; it diminishes the sensibility of the skin and mucous membrane. For many years it has been combined with morphia, chiefly because it is "a useful corrigent to the disturbing and irritating action of the latter upon the pneumogastric." All these effects are desirable as a preparation to ether anesthesia. It is indeed to be regretted that they are not better marked.

In all adult cases one-sixtieth of a grain of atropia was given shortly before the patient was taken from the ward to be etherized. It was administered by the mouth, in the hope to gain a little by its direct action upon the stomach. In the children's cases — who stand atropia particularly well — the amount given was a hundred-and-twentieth of a grain. No change was made in the usual preparations for ether, nor in the method of its administration. Cases were chosen from children's wards and adult male and female wards at random. The operations varied from the amputation of a finger to celiotomy; among them were several emergency cases, in which solid food had been taken shortly before the operation; and in at least one of these no vomiting followed. The intention was to make the test as thorough as possible, and to discover what effect, if any, the drug produced.

About twenty of the hundred cases were private operations outside the hospital. In these the percentage of vomiting was very high — from two to three times greater than the hospital cases. The outside operations were almost exclusively uterine or genito-urinary.

Of the hundred cases, seventy-one did not vomit at all, and of the remaining twenty-nine, at least one-third vomited but once and very slightly. About one-half of the laparotomies progressed without vomiting.

No attempt was made to tabulate carefully the percentages in the different operations, nor the relation of the time of etherization to the vomiting. It was the intention to note these details in a second series of cases, if the result of the first series justified further investigation of the matter.

In order to make a closer comparison, atropia was omitted in certain cases. The final results showed that, with atropia, vomiting was absent in 71 per cent. of all cases, and, without atropia, in 43 per cent. It is obvious from these figures that the administration of atropia does not prevent vomiting after ether in all cases; and it seems probable that this ideal can never be completely realized. But the causes which excite, or predispose to vomiting are worth considering, with a view towards their removal. They are numerous and varying.

The vomiting which follows ether is almost entirely central in character, and due to the engorgement and irritation of the vomiting centre in the brain. Whatever tends either to increase this irritation or to reduce the power of the system to resist it, necessarily favors the vomiting. The irritation is increased by an increased amount of ether inhaled, and by an increased time of inhalation, which, of course, may be two very distinct things. And the physiological resistance to this irritation is diminished by a lowering of the general condition and by a continued shock of a severe operation; also by that individual peculiarity which characterizes those who possess what is called a "weak stomach." The manner in which the ether is administered may have a very decided influence on the vomiting. As a rule, it has a distinctly undesirable effect. Direct irritation of the stomach, either from blood which is swallowed or by manipulation upon the stomach itself, is a disturbing element. The position of the patient may react undesirably; the Trendelenberg position, if long continued, by pressing stomach against diaphragm, and this in turn against heart and lung, not only interferes with respiration and circulation, but also favors subsequent vomiting.

In an ideal surgical operation, the objectionable features above enumerated must be eliminated as completely as possible, without infringing upon other proper details. Every preparation which can be completed before the administration of the ether should be attended to, that the total time under ether may be as short as possible. The etherizer should be carefully trained, and should give his entire attention to the administration of the anesthetic. This is of the first importance, and if carried out conscientiously and carefully, the etherizer will have no time to watch the operation. It is by no means an easy thing to keep a patient just under the power of the anesthetic, and no more — an impossible thing if the etherizer is thinking of other matters. This suggests the fact that a well-known surgeon once said that a screen should be placed between the etherizer and the field of operation; to which it has been answered that the man who needed a screen to keep his thoughts on his work might fall asleep behind it.

In regard to the Trendelenberg position, the operator should remember that it favors vomiting and increases shock, and should not unnecessarily prolong its use.

The individual peculiarity of a "weak stomach," or direct irritation of the stomach itself, we cannot combat unless it be by atropia.

The administration of atropia does not seem to carry with it any unpleasant effect. One surgeon thought he noticed a blueness of the face and head in those cases in which it was used; but none of the others observed this. However insufficient the effects of atropia are, they are, at all events, in the right direction. If combined with a minimum amount of ether properly given, a minimum time of operation, and a maximum of care and preparation of the patient before operation, it is probable that ether-vomiting can be greatly diminished, both to the comfort of the patient and to the satisfaction of the surgeon.

◆

Clinical Department.

FATAL VOMITING WITHOUT DISCOVERABLE CAUSE.[1]

BY HERMAN F. VICKERY, M.D.,

Physician to Out-Patients, Massachusetts General Hospital; Instructor in Clinical Medicine, Harvard University.

16. Mr. F. A. B. was a married man, thirty-eight years 1860. ellent family history, except that one of his had been somewhat dyspeptic for ten n health was unbroken till, at the age went to California, where he was engaged in making doors and mouldings. There he became afflicted with "catarrh," ascribed to the wood-dust; but upon going to Southern California and changing his occupation to that of locomotive fireman, he recovered completely. For five years before his last illness he was occupied as chief engineer in a large factory in Foxboro, Mass. He was a man of good habits, very ambitious and industrious. Some three months before I saw him he felt rather listless and tired; and he gradually lost about ten pounds weight, when he began to take the compound known as "Hood's Sarsaparilla." While using this he regained his weight, but his mother and brother noticed a certain puffiness about his neck and face; so that after swallowing some three bottles, he left off the remedy two or three weeks before the attack began which I am about to describe.

He was feeling as well as usual when he first vomited. A steam-pipe had burst; and he was employed, with several assistants, in repairing it, one night in April, 1892, about three weeks before I saw him, when he became nauseated, and evacuated the contents of his stomach. A plate of baked beans had formed a part of his last meal. He attached no importance to the vomiting, and resumed and completed his work. For some days thereafter he did not feel badly in any way except that his stomach was unable to retain food. He was seen, once only, by Dr. Crane, of Foxboro, who treated him for acute indigestion.

April 17th, Dr. W. C. Crocker, of Foxboro, was sent for. He kindly furnished me with the following statement: "I was called to Mr. F. B., April 17, 1892. Found patient retching and vomiting, but temperature normal. The face appeared to be somewhat bloated, flushed, and conjunctivæ injected. Vomiting was relieved. Called April 18th, and found patient had taken and retained some gruel and was feeling better. Vomiting was renewed, however, soon afterwards. April 21st, Mr. B. called at my office and complained of the same symptoms as before, which I attributed to indigestion."

On April 24th, at the end of the first week of these acute symptoms, Mr. B. called at the office of Dr. Lemuel Dickerman, who has obligingly written me the result of his observations as follows: "He told me he had been sick just one week, from vomiting and headache. His eyes were much injected, conjunctivæ deep pink. He was constantly winking and sensitive to light. The right pupil was very much dilated. He said his eyes had been very red the past two months, and that his head had been feeling badly, but that he could not describe the feeling. He had been vomiting pretty constantly for one week, whenever he took anything into the stomach, and was tormented by a burning thirst. Pulse 90; temperature 99°; tongue coated in the centre and red around the edges. The bowels were easily moved by a cathartic."

On the afternoon of the 26th, he was again in the doctor's office. "The right pupil was now normal, and the left dilated. The headache was relieved, but the vomiting continued unchanged."

On the 27th, the patient took to his bed. The pupils were now natural, and so remained. The redness and photophobia persisted. The urine was of light color, acid reaction, specific gravity 1.020, amount about thirty ounces, and with no albumin at any time. The pulse rose to 112, and on the last two days to 140 or more. The temperature did not exceed 100°.

---

[2] Manz and Richte
am unable to find any
ner, who certainly ough
Graefe made a diagnosis o
there is no statement tha
topsy.

[1] cal Section of the Suffolk District Medical

Whatever he swallowed was immediately rejected; besides this, the vomitus consisted of mucus, till the last day but one, when it was clear bile. In spite of rectal alimentation he died of exhaustion on May 7th.

I saw the patient in consultation on the day before he died. He was extremely emaciated, feeble, and only semi-conscious. Physical examination was practically negative. There did not seem any chance for recovery. It was recommended to continue the exclusively rectal feeding, and to give opiates as demanded.

On May 9th, an autopsy was made by Dr. F. Coggeshall, of Boston, and myself, in the presence of Drs. Dickerman, Crocker and Crane. The brain and medulla oblongata were subsequently examined also by Dr. James J. Putnam, and the stomach by Dr. W. F. Whitney. The only abnormality detected was in regard to the stomach. Dr. Whitney said that it was slightly dilated and that its walls were somewhat thinned; but he did not regard the changes as important.

If we turn for a time to a consideration of the symptom of vomiting in general, we know that the act is a complex one depending upon or influenced by the following structures:[2] a respiratory centre in the medulla oblongata, the vagus, the solar plexus, the muscles of the diaphragm, abdomen and stomach; and further requiring the relaxation or dilatation of the cardia. It may be occasioned by emotional, hysterical or organic disturbances of the brain; by locomotor ataxia; by pleurisy, pneumonia or phthisis,[3] incipient or chronic;[4] by thoracic aneurism, pressing upon the vagus;[5] by diseases of the stomach, intestines, pancreas and liver; by peritonitis, Addison's disease, pernicious anemia, and pylephlebitis; by nephritis and by poisons — as well as by other abnormal conditions which are omitted as not having even a remote bearing upon the case under consideration, such as migraine, small-pox, cholera and yellow fever.

The history of the case and the ante- and post-mortem examinations warrant the immediate rejection of almost all the diseases enumerated. Taking up the less improbable causes, we can say of poisons that the temporary bloating of the face noticed by Dr. Crocker and also reported to me when I visited the patient might suggest arsenic, but that against the supposition are the absence of purging, nervous symptoms and post-mortem lesions. There was no apparent temptation to homicide or suicide. The knee-jerk was normal; there had been no lightning-pains nor ataxia, and, moreover, a fatal gastric crisis in tabes must be extremely rare.

It will be remembered that the stomach was somewhat thin and somewhat dilated. This is precisely the condition described by Dr. Tom Robinson in the *Lancet* of June 10, 1893. A lady with no evidence of organic disease suffered more or less from hysterical vomiting from the end of 1891 to the 25th of May, 1893. During the latter part of the time she had been more cheerful, and had sometimes retained her food. She was found one morning dead in bed. The post-mortem disclosed merely a small heart and a dilated stomach with walls abnormally thin. So also in Garland's case, mentioned by Osler,[6] of a young woman who from the age of two till she died at twenty had attacks of vomiting, and finally died in one, there was "slight atrophy of the mucous membrane of the stomach." Cases of this sort are not so very infrequent, but they are usually seen in hysterical females; and this man was not hysterical.

We cannot put the case into the category of the primary periodic vomiting of Leyden; for it was not periodic.

Meningitis, abscess or tumor of the brain we can exclude absolutely. The possibility of some microscopic lesion of the vomiting centre cannot be brusquely rejected. The region is a very limited one, as was well shown by Professor Thumas.[7] By making a deep cut in the exact central line of a dog's medulla, beginning two millimetres in front of the calamus scriptorius and ending three millimetres behind it, he produced such a condition that while apomorphia still stimulated respiration it caused no vomiting nor even nausea.

Still it seems improbable that a diseased condition capable of exerting so fatal an influence upon the vomiting centre should neither (*a*) disturb the neighboring respiratory centre nor (*b*) be detected by a practised eye on section.

Is it possible that a gastric catarrh could be so unfortunately treated as to terminate fatally? In general such a calamity is conceivable, but not to be thought of in this particular instance by any one who is aware of the experience and discretion of the attending physician — although I might say incidentally that I have been surprised in some cases to which I have been called in consultation, to find how much needed was the suggestion to abandon all attempts at the ingestion of anything whatever into the stomach and to rely wholly upon enemata.

Finally, there is one purely theoretical explanation of this strange fatality in support of which some points may be urged. It will be remembered that Mr. B. had taken three bottles of a compound which is well known to contain iodide of potash. This drug exerts a powerful influence upon the central nervous system.[8] The marked conjunctivitis and the edema which our patient presented are both symptoms which iodide of potash is capable of producing. The changes in the pupils noted by Dr. Dickerman also suggest some disturbance of the nervous centres. It is true that he had not taken the drug for two or three weeks before his illness began, and that it is usually rapidly and completely eliminated from the system. Yet I cannot help asking myself whether it may not in this particular patient have exerted a unique, fatal effect.

Medical Progress.

RECENT PROGRESS IN DERMATOLOGY.

BY JOHN T. BOWEN, M.D.

TREATMENT OF PSORIASIS BY LARGE DOSES OF POTASSIC IODIDE.

Greves was the first to suggest this method of treating psoriasis, claiming that the good effects of the drug did not begin to show themselves until four grammes daily were taken, while it required a daily dose of ten grammes, to produce a rapid result. Haslund in

---

[2] Mayer in Hermann's Handbuch der Physiol., v, ii, s. 434, et seq. Leipzig, 1881.

[3] Fagge. [4] Osler.

[5] Flint's Practice, 1881, p. 372.

[6] Practice of Medicine, 1892, p 362.

[7] Virchow's Archiv., cxxiii, p. 44, 1891.

[8] Laborde: Bull. de l' Acad. de Med., 1890, p. 299.

1887, reported 50 cases of psoriasis treated by this method, of which 40 were completely cured, 4 greatly improved, while 6 remained uninfluenced. The duration of the treatment averaged seven weeks. Haslund concludes that we possess in the iodide of potash a drug which, given in large doses, can heal an attack of psoriasis, and that we know of no other internal remedy which works so rapidly as this. No data as to recurrences were at hand. Other observers have testified to the good results sometimes obtained from this treatment, but it has not, upon the whole, claimed very much recognition or favor.

Seifert,[1] of Würzburg, publishes the results of his trial of this method, which was begun in 1888. Thirteen cases of psoriasis were thus treated and the result accurately described. In two cases a favorable influence was noted, but the medicine had to be stopped on account of gastric pain in one case; and in the other case the patient left the hospital. In the first case the effect of chrysarobin seemed to be increased by the preceding treatment with the iodide. This was also true in seven other cases. In four cases, affecting three women and one man, a complete cure was produced. The amount of iodide given varied from 344 to 850 grammes. An improvement was first noticed in from four to five weeks. As has been reported by other observers, these enormous doses are astonishingly well borne. The mild forms of iodine intoxication, such as increased secretion from the mucous membranes, were observed in almost all the cases. The writer comes to the conclusion that in these cases, when the iodide is given for a long time in increasing doses, there is almost always a noticeable effect on the circulation. In one case the pulse increased to 170, without corresponding increase in the temperature; and here the pulse always rose when the dose of iodide was augmented. In six cases there was a rise in temperature, which was to be directly attributed to the drug. These fever attacks may occur after small as well as after large doses.

AN EPIDEMIC OF RINGWORM IN A FRENCH ASYLUM.

Wickham[2] reports an epidemic of tinea tricophytina in the Lambrechts asylum, to which he was called in consultation in March, 1893. He found that an epidemic of ringworm was in progress, which had already existed for several years, and had affected 48 out of 70 children. He found the asylum in an especially clean and hygienic condition; and the inmates well cared for. It was found that the starting-point of the epidemic dated back six or seven years. For a long time the affected children had been isolated from the others, the heads washed daily with soap, and once a week with a solution of corrosive sublimate. But instead of diminishing, the epidemic had been spreading, and an increasing number of children were affected. Of the 48 cases, 6 consisted of scattered spots of tinea which could be plainly seen, while in all the others no diseased appearance could be seen at the first glance; only a careful examination revealed the presence of minute areas in the midst of healthy hairs.

The asylum was closed for a month, and during this time carefully washed and cleaned. The children were then admitted gradually, and only after they had passed a careful inspection. No fresh cases developed. The most characteristic feature of the epidemic was the large number of areas that only comprised three or four hairs, often only a single hair. The average number of patches upon a single head was 10 to 15, but some children presented very numerous small, distinct areas of disease. The smallest areas could only be discovered by a prolonged and careful examination. The diseased hairs were for the most part broken off at from one to four millimetres from the surface of the skin, but a small number were broken in their passage through the epidermis. There was no desquamation nor hyperemia at the periphery, and the surface of the skin was perfectly smooth in the bald areas. About 12 of the children had, near the scalp, upon the neck, face or hands, small erythematous scaling spots of irregular form. Microscopically, mycelium and spores were found in the hair shaft at the level of the fracture.

The characteristics of this epidemic are, then, spots of small dimension, smooth, without desquamation; hairs broken off short, without sheath, and of large size; numerous foci of secondary inoculation; hair shaft filled with mycelium made up of large square spores, with very few free spores; coexistence of spots of trichophyton of the erythematous and scaling type upon the non-hairy parts. Wickham has for some time noticed the great difference that exists between different cases of tinea tricophytina; and of late the arguments of M. Sabouraud in favor of the existence of different varieties of tinea tricophytina have seemed to him well grounded. He declares that when one has once grasped the differential characteristics, it is as easy to differentiate the varieties of tinea tricophytina, as it is to distinguish them from favus. In the epidemic in question, the cause was plainly the tricophyton megalosporon endothrix with resistant mycelium; and this was verified by cultures made by M. Sabouraud.

It is impossible to tell the exact duration of treatment that was required, as 40 per cent. of the children were still under treatment at the time of writing. Approximately it was estimated that from eight to ten months were necessary for a cure; and this form of tinea tricophytina is therefore regarded as especially rebellious. The writer considers that there is a period of *apparent* cure of considerable duration, when the lesions seem to have disappeared, but a few diseased hairs still remain, which are found only after a close search. For the treatment of this terminal period, as he calls it, he has employed electrolysis, electro-cautery, and croton oil. Electrolysis is used by placing the negative pole in the hair-sack, and removing the hair, as in the operation for hypertrichosis. This procedure, however, is a long one, and the results are uncertain. In using the electro-cautery the finest point is selected and quickly inserted in the direction of the hair shaft. The disadvantage of this method is that the scar is more apparent than with electrolysis. Croton oil is a remedy that has been often wrongly used. In certain schools and institutions it has been the cause of indelible scars. The writer has often observed enormous ulcerations due to the immoderate use of this remedy. Its use ought to be limited to patches of small diameter, never of large. It is also useless when there are only three or four diseased hairs, as it is much less sure than electrolysis or the electro-cautery. It is best employed pure. Idiosyncrasy plays a prominent part in its use, as certain lymphatic temperaments do not bear it well, while others resist it admirably. A drop of the oil is put upon the scalp, which is then vigorously rubbed with absorbent cotton. Afterward the drop may be allowed to remain a longer time. In this way a mild folliculitis is produced, and the operation is repeated after the inflammation has disappeared.

---

[1] Archiv. f. Derm. u. Syph., xxvii Bd., 3 Heft.

[2] Annales de Derm. et de Syph., June, 1894.

This epidemic is regarded as corroborating a great many of the facts laid down by M. Sabouraud. From a clinical and histological point of view its characteristics correspond accurately with his descriptions.

THE RELATIONSHIP OF THE DERMATOSES TO INTERNAL DISEASES.

Kaposi[5] again discusses this question in a communication to the medical club in Vienna, published in the *Wien. Medizin Presse*, 1894. It has been repeatedly asserted that for Hebra and his school, skin affections have been always purely external affections, in the vulgar sense of the word, and the reproach has been made that it was only in this sense that the Vienna school occupied itself even scientifically with the study of dermatology. This assertion Kaposi endeavors to combat, with the remark that Hebra always regarded certain skin troubles as dependent upon internal causes, and insisted upon the importance of internal or general treatment. The relationship of internal diseases and skin disorders is a very variable one, different factors playing their part: the spinal nervous system, the vaso-motor system, and the chemical and morphological changes in the blood. Oftentimes it is the skin that is primarily affected, the internal organs secondarily by metastasis. Leaving out the acute exanthemata, syphilis, and those affections that are dependent on a general pathological process, acne is first considered, as an affection that is essentially a perifollicular inflammation. It is generally believed that acne is caused by various intestinal conditions, by certain articles of food, as cheese, highly-seasoned dishes, etc. It has lately been claimed that the appearance and disappearance of this disorder are in relation with certain intestinal processes (G. Singer). Possibly this may be true; but for Kaposi, remote causes of which the proof is doubtful, are unsatisfactory in the presence of positive demonstrable causes. Acne is known to affect by preference the age of puberty; in mature age it is rare, and dependent upon exceptional conditions. It is certainly known that an active process of growth occurs around the follicles at the age of puberty. It is also known that in these cases, a purely mechanical cause may produce suppuration. Here we have a direct cause, without the need of invoking indirect and uncertain causes. Other conditions, however, may produce acne, as seborrhea, tuberculosis or impaired nutrition. The follicles possess normally a certain elasticity, which may be impaired by a poor general nutrition.

Hyperidrosis of the palms and soles, uncomplicated with seborrhea, begins in certain individuals in infancy, and may persist during life. In all such cases there is an impairment of nutrition; the heart's action is feeble, the elasticity of the vessels impaired. Similar symptoms are to be ascribed sometimes to a functional affection of the whole sympathetic system; and such cases have been described under the title of "erythromelalgia." Acne rosacea is connected with alterations in the vessels, and proceeds from various causes, as alcoholism, exposure to the weather, etc. It may also arise from the condition of the stomach and intestines, and by reflex action from the uterus and its appendages. Acne rosacea is common at the menopause, and especially in women who have no children.

Urticaria is prominent during the disorders which arise from an impairment of the vascular tonicity. It may be excited by digestive disturbances, but this is not the only cause. When produced by a particular article of food, he thinks that it may possibly be the effect of a substance that irritates the nerves of the skin by its elimination. In the case of the drug eruptions, the skin affection is partly the result of the direct action of the drug upon the nerve endings. Erythema multiforme, erythema nodosum and purpura belong in another group, and are certainly infectious diseases. The fact that eczema so often tends to recur has given rise to the theory of the obscure causation of this trouble. But urticaria has the same tendency, and they are both often produced in a reflex manner. Glycosuria has a distinct action upon the skin; there is a group of affections which he calls diabetic dermatitis, which are caused by the deposit of sugar in the skin, and which are manifested by gangrene or by papillomatous and ulcerated lesions. He considers that pemphigus gestationis enters into this category, also impetigo herpetiformis. Lupus erythematosus is a disease that has a distinct relationship to the general health. Pruritus is often produced by glycosuria and different internal maladies. Singer has seen patients with this trouble benefited by the internal use of menthol, and regards it as due to intestinal putrefaction. It is also frequently associated with uterine troubles.

(To be continued.)

Reports of Societies.

CLINICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

HENRY JACKSON, M.D., SECRETARY.

Regular meeting, Wednesday, May 16, 1894, Dr. F. C. Shattuck in the chair.

Dr. H. F. Vickery read a paper on

FATAL VOMITING WITHOUT DISCOVERABLE CAUSE.[1]

Dr. Shattuck: I should like to ask whether there was any change in the man's surroundings. Dr. Vickery spoke of arsenic. Is it possible that arsenic might have entered the system through an avenue other than the stomach? in which case I suppose it may not have produced the gastro-intestinal lesions. That simply occurs to me as a possibility.

Dr. Vickery: There had been no change in his mode of life; and it is usually the fact, I believe, that fatal doses of arsenic, however introduced, cause gastro-intestinal lesions.

Dr. Wood: If taken in large doses they do, but I think you may have small medicinal doses taken, enough to produce vomiting, without producing any perceptible lesion in the stomach or intestine.

Dr. Shattuck: Merely as a supposition, if this man had got a lot of arsenic from wall-paper or some such source as that, would he necessarily have presented gastro-intestinal lesion?

Dr. Wood: It occurred to me that possibly the sarsaparilla may have a little iodide of arsenic in it.

---

[5] Ref. Annales de Derm. et de Syph., May, 1894.

[1] See page 314 of the Journal.

Dr. Vickery: There was no diarrhea, not one of the ordinary nervous symptoms of arsenic-poisoning, merely this vomiting; and for days he said if he could only stop vomiting he would be all right, that he did not feel ill. He had no other annoyance except this.

Dr. Shattuck: Would it not seem as if there must have been some pretty profound influence at work, because the man did not apparently die of inanition in that time? We have all fed patients exclusively by the rectum for three weeks with comparatively little loss of flesh.

Dr. Vickery: I do not think the doctor tried very hard with rectal alimentation, for he did not think it worked very well in this patient. The opinion was that he died of starvation. The duration of the illness was three weeks. The stomach did not look particularly bad, and there was just about as much constipation as a person has with a good many forms of indigestion. That is all there was. The urine was free from albumin throughout. I do not know why the doctor did not succeed better with rectal alimentation. I know efforts were made; and when I got there that was one of the things I inquired about carefully.

Dr. Wood: I have seen fatal cases of poisoning by arsenic and oxalic acid without the slightest lesion of the stomach.

Dr. J. Bergen Ogden described

THREE CASES OF CHRONIC BRIGHT'S DISEASE OF DIFFERENT TYPES.[2]

Dr. Wood: I can add very little, indeed, to what Dr. Ogden has said in regard to these cases. They illustrate remarkably well the value from a diagnostic point of view of the daily measurement of the quantity of urine. The pure interstitial type of nephritis has that marked increase up to, on the average, 100 ounces more or less. The chronic diffuse, which is a combination of the interstitial and the subacute, or chronic parenchymatous of English authorities, is smaller in quantity, but yet above the normal on the average, the average running up to 80, 90, or 100 ounces; in that disease the quantity of urine depends upon the relative proportion of the interstitial element of the disease and of the parenchymatous. If the former predominates, the quantity of urine is correspondingly increased; if the latter, the quantity of urine is correspondingly diminished; and the proportion of albumin is the reverse. In chronic parenchymatous or subacute nephritis we find the average quantity of urine far below the normal, with a relative increase, but an absolute diminution of solids.

These cases are also interesting as showing the difference in the proportion of albumin with the difference in the quantity of urine, those cases attended with a large amount of urine having a proportionately small quantity of albumin. The interstitial type varied in the neighborhood of one-eighth per cent., the chronic diffuse from one-eighth to one-fourth, whereas the subacute was over one-fourth and between that and one per cent., running about one-half; and that has been my experience with these different types of Bright's disease when uncomplicated, that is, I mean not complicated with acute. The complication of acute nephritis with the other forms of Bright's disease is shown by the presence of blood; but in all of these cases blood was practically absent, showing that they were cases of uncomplicated Bright's disease.

The features of the greatest importance in the differential diagnosis between the different forms of Bright's disease are the average quantity of urine, the average percentage of albumin, and the relative proportion of fat and of blood elements in the sediment. The daily quantity of urea is also exceedingly important in the diagnosis and prognosis of the different forms of chronic Bright, in my opinion.

Dr. Vickery: Was the pilocarpine given in the first place without any warmth at all?

Dr. Ogden: Yes, so far as I know, without any warmth. As you will see represented on the chart by the character P, it was given for four days consecutively without warmth; then it was followed a little later by hot-air baths, and then by hot tub-baths, which were given after the thirty-first day at various intervals. Pilocarpine was not given on the same days, though I know of no reason why they were not used together.

Dr. Vickery: My experience is that pilocarpine will often fail to work unless the patient has artificial warmth, and then it may work very well. I should like to ask how much water there was in the two sides of the chest. It occurred to me whether possibly the heart would not have acted better if that were withdrawn.

Dr. Ogden: The hospital records, as I remember, did not state exactly, but I inferred to about the angle of the scapula. My impression was, from reading the records, that there was not enough fluid at any time to interfere with the action of the heart.

Dr. Wood: Dr. Ogden mentioned in the first case, in almost every report of the sediment, numerous renal and epithelial cells; I should like to ask if they were not very granular.

Dr. Ogden: Yes.

Dr. Wood: You find the granular epithelial cell, not the normal epithelial cell, in interstitial Bright.

◆

AMERICAN NEUROLOGICAL ASSOCIATION.

TWENTIETH ANNUAL MEETING, WASHINGTON, D. C., MAY 30, 31 AND JUNE 1, 1894.

FIRST DAY.— WEDNESDAY.

PRESIDENT'S ADDRESS.

Dr. B. Sachs, of New York, the President, after speaking of the work done by the Association, said that from the scientific point of view clinical medicine and neurology are one and inseparable. The diseases which the neurologist is called upon to recognize and to treat are such that he must necessarily maintain a deep interest in the affections of the heart, of the liver, of the stomach, and surely of the kidneys. He cannot afford to neglect the lungs or even the bladder. He is asked, perhaps, a little too frequently to consider the condition of the generative organs, and he must be even better versed than the surgeon in the anatomy of nerves and muscles. The eye, the ear, and that poorest of all special organs, the nose, have claims upon him. The entire organism is his daily concern, although he may claim to be more intimately acquainted with the structure and functions of the nervous system than with any other part. He thought it a fortunate matter that we practise a speciality which cannot and should not be divorced from general medicine. And, likewise, not every medical man is a neurologist, but every neurologist should be a student of general medicine in the broadest sense of the term. American clinicians, with a very few exceptions, have not studied neurology, at least not seriously; and neurological knowledge, we all well know, does not come by intuition. The rule which excludes neurologists from general hospital service does harm to the cause of American medical science; the vast neurological material of our hospitals is not properly utilized for the purposes of investigation or of instruction. In conclusion, he referred to the conception of the "neuron" which has been evolved from the recent microscopical studies as a far-reaching one, and one which will be certain to exert the greatest possible influence over the study of nervous diseases within the next decade.

---

[2] See page 305 of the Journal.

MYXEDEMA TREATED WITH SHEEP'S THYROID.

Dr. Samuel Ayres, of Pittsburgh, read a paper upon this subject.

Owing to the favorable results from thyroid in some skin diseases, obesity and in the case of melancholia, the paper was chiefly devoted to suggestions as to the possibilities of the preparation in certain diseases non-myxedematous; and it was recommended careful trial in selected cases of acute dementia, mania, melancholia, epilepsy, chorea, tetanus, anesthesia and erysipelas. But its indiscriminate employment was strongly discouraged.

Dr. Starr, of New York, presented five photographs of patients with myxedema, in three of whom unmistakable improvement was shown. He had used various preparations of the gland, but there were serious objections to many of them. He had of late made satisfactory use of the cheapest preparation on the market, which is put up in the form of tabloids, each containing five grains of the extract. He was often consulted on account of the mental symptoms, which were in many instances prominent in this disease. He had frequently observed melancholia with suicidal tendencies. In eight there were symptoms of dementia. He had found it of use in neurosis of the menopause. In a number of cases of acromegaly only two seemed to be benefited. The headache was relieved, and it produced a feeling of *bien être*. His experience with it in paralysis agitans, epilepsy, and progressive muscular atrophy was negative.

Dr. E. D. Fisher, of New York, thought that the use of thyroid extract should be confined to the treatment of myxedema. There was no rational indication for its administration in other diseases.

The **President** dissented from this view, and believed it was but fair to try this medicine empirically, as we were not as yet familiar with the true function of the thyroid gland.

THE THYROID THEORY IN GRAVES'S DISEASE: TWO CASES TREATED BY THYROIDECTOMY.

Dr. J. Arthur Booth, of New York, treated of the above subject.

After referring to the recent investigations as to the functions of the thyroid gland and the internal administration of the thyroid extract in the treatment of myxedema, he spoke of the various theories that had been advanced in regard to the origin of Graves's disease. Two cases that had been treated by thyroidectomy were reported, with the following conclusions: (1) It is by no means decided that a mere excess of the thyroid secretion is the sole and essential factor in Graves's disease; but as microscopical examination has demonstrated an enormous hyperplasia of the secreting structure, it is certainly reasonable to suppose that these changes must have some profound effect both on the quantity and quality of secretion. (2) If altered structure and not size is the test of the disease, then thyroidectomy should be considered even in those cases where there is little or no enlargement of the thyroid. (3) Cases of Graves's disease may be entirely cured by thyroidectomy. How this is brought about is not clear as yet. It may possibly be one of three ways, namely, a diminution of the functional activity of the gland substance; a relief of the stretching and irritation of the sympathetic nerve-fibres; or, finally, in the removal of pressure.

Dr. J. J. Putman, of Boston, said that in one English case reported, the patient seemed to be cured after the use of thyroid extract. He spoke of two patients treated by operation. One was improved and the other died. In both the pulse was excessively rapid. He thought it better to operate early, and not wait until the heart's action became seriously impaired.

Dr. J. Madison Taylor, of Philadelphia, had used thyroid extract in Graves's disease without any perceptible improvement. He spoke of a case occurring in a child two years of age.

Dr. W. J. Morton, of New York, believed that patients had been cured by the use of electricity. He had often seen recovery after three of four months' treatment. He preferred this to any other method.

Dr. Dercum thought it difficult to explain the favorable result occurring after operative measures, and mentioned an instance where the gland was exceedingly small.

Dr. W. A. Hammond, of Washington, asked if Dr. Morton had used any other remedy in conjunction with electricity. He (Hammond) had been accustomed to diminish the amount of fluids taken and to give digitalis or hyoscyamine, with satisfactory results.

Dr. Morton replied that he used electricity only.

The **President** thought that many cases were curable, and referred to a case of a young woman in whom the disease developed rapidly after a sudden fright. She improved after a prolonged rest in bed, subsequently married, and gave birth to a healthy child, and completely recovered from her symptoms of Graves's disease.

Dr. Booth, in closing the discussion, said that the alleged danger from operation is not borne out by statistics. In his case the patient did well. Galvanism had been faithfully used for seven months without satisfactory results.

EXOPHTHALMIC GOITRE CURED BY THYROIDECTOMY.

Dr. Frederick Peterson desired to put on record a case of exophthalmic goitre that had been cured by thyroidectomy. The chief points in the case were as follows:

T. R., female, native of Sweden, age thirty-four years, consulted him in 1888 for certain symptoms that have been developing for seven years. There was marked tachycardia and the pulse-rate was 120 during the several months she was under treatment. There was considerable proptosis. The von Graefe symptom was absent. Tremor of the hands and fingers was exceedingly marked. Hyperidrosis and flushing of the cutaneous capillaries was noticeable.

The thyroid gland was enlarged, especially in the left side, where the growth measured three inches in diameter and was very prominent. The thyroid tumor on the left side occasioned pressure and a good deal of subjective distress, so that he advised the removal of that lobe. At this time the patient was very miserable, and her work (upon which she was dependent) was interfered with, so that she concluded to accept his advice. She would not go into a hospital here for the purpose, but she was going to Sweden for the summer, and she waited until then; the whole of the left lobe was removed by Dr. Hallen, of Linkoping, one year after Dr. Peterson had first seen her. During that year the treatment had been galvanism, digitalis, and the other usual remedies tried *seriatim*, but without amelioration of the symptoms.

Improvement began immediately after the operation, in 1889. He saw her very shortly after the operation, and there was diminution of the tremor. The exophthalmos was lessened. The subjective symptoms had disappeared. The tachycardia grew less and less. About a month ago, five years after the thyroidectomy, he examined her again. There was no proptosis whatever, no tremor, no tachycardia, no thyroid swelling, and, in fact, the patient was well, and had been able to carry on hard work steadily ever since. The only remains of the trouble is a somewhat rapid pulse, which varies from 90 to 100.

EXPERIMENTAL INVESTIGATIONS ON THE PHYSICAL AND CHEMICAL ACTION OF THE GALVANIC CURRENT UPON THE LIVING ORGANISM,

by **Dr. G. W. Jacobi** and **Dr. F. Schwyzer**, of New York.

The authors, recognizing that our scientific comprehension of the electrodynamic curative action of electricity has been obstructed by the direction as well as the manner in which the electro-physiological work has thus far been carried out, think that this obstruction can be met by the study of the chemical and physical actions of the galvanic current upon the simplest form of the organism, the living cell. With a view to answering the question, "Does the galvanic current produce any discoverable changes, physical or micro-chemical, in the single cells of the body?" the authors undertook a series of experiments upon animals (frogs, rabbits and guinea-pigs) and man, the report of which is here presented in the form of a preliminary communication.

The certain and positive results thus far obtained were: (1) that by passage of the galvanic current the red blood-corpuscles under the influence of the positive pole swell up and become increased in size, while under the influence of the negative pole they become crenated and shrunken; (2) that two animals being fixed back to back and a current passed through both from chest to chest, the entire blood in the animal acted upon by the positive pole will contain more than twenty per cent. less alkali than that of the animal that has been exposed to the influence of the negative pole.

While the authors believe that the majority of cells in the living body are influenced by the cataphoric action of the galvanic current, they are not willing to express an opinion whether and to what extent the physiology of the cells is thereby altered; on the other hand, the decrease of the alkalinity of the blood by means of the current must have a very great influence on cell-life; this is shown by other experiments which the authors have made upon spermatozoa. This influence consists in the production of a marked functional activity in the neighborhood of the cathode on account of slightly increased alkalinity, and reduced functional activity at the anode in consequence of decreased alkalinity. The results of further experiments, as well as therapeutic deductions, are promised in the near future.

Dr. William C. Krauss, of Buffalo, N. Y., described a

NEUROLOGICAL PERCUSSION HAMMER.

In appearance the hammer resembles the ordinary percussion hammer, such as is employed more especially on the Continent, and particularly in France and Germany. It is therefore primarily a hammer, and for the neurologist may be used for testing the tendon and muscular reflexes, and for percussing the spine and head. The handle being made of hard rubber, it becomes warm on friction; while the head, being made of metal, remains always cold. Thus we have the means for examining for thermoanesthesia. The cap on the small end of the hammer head is removable, and exposes a triangular-shaped spear about one-sixth of an inch long. The other end of the head has the rounded rubber point, thus furnishing a sharp and dull point for examining for anesthesia. The spear is divisible, one-half remaining fixed in the hammerhead, the other half sliding upon a scale graduated in millimetres and inches, forming part of the handle of the hammer, making an excellent esthesiometer; on replacing the cap and removing the cap at the large end of the hammer, a camel's hair brush is exposed, giving a soft, and the metal end a hard, surface for examining the sensation. Thus we have in one instrument nearly all the apparatus necessary for making an examination of a nervous case.

SECOND DAY. — THURSDAY.

A NEW NEUROGLIA STAIN.

Dr. W. J. Morton, of New York, presented some microscopic slides showing the new neuroglia stain of Weigert, presented to him by Dr. Weigert on a recent visit to Frankfort. The neuroglia fibres are stained blue, while the nerve elements are either not stained at all or at least very faintly. The medullary sheaths do not accept the stain, and thus the field is left clear for the differentiation of the neuroglia fibres. Dr. Weigert is not yet quite ready to publish this new stain, although he has been at work upon it for five years; no specimens have hitherto been exhibited on this side of the Atlantic.

CROSSED KNEE-JERK.

This was the title of a paper read conjointly by **Dr. Guy Hinsdale** and **Dr. J. Madison Taylor**, of Philadelphia.

It was based on studies of over one thousand cases of nervous diseases observed at the Infirmary for Nervous Diseases, Philadelphia, and the Institution for Feeble-Minded at Elwin, Pa., and Vineland, N. J. In using the term "crossed knee-jerk," it is meant that the patellar tendon being struck the opposite leg is instantly made to approach its fellow, hence the phrase "in knee-jerk" or "contra-lateral knee-jerk" may be used to describe this action. The movement observed in the limb opposite to that in which the patella tendon is struck is not an extension of the leg so much as an adduction of the thigh (vastus internus and crureus). The best attitude for eliciting the movement is not that which permits the freest knee-jerk, but demands rather more ease of lateral motion of the thigh. This is accomplished very well by seating the subject at ease in a chair with the body erect and the knees ten or twelve inches apart with the knee-joint at rather an obtuse angle, the feet being advanced a few inches. The phenomenon is observed in a small proportion of normal persons and in from twenty to thirty per cent. of the cases coming to a clinic for nervous diseases. It is distinctly proved not to be due to a communicated shock or jar to the pelvis, by reason of its absence in all cases of locomotor ataxia and its production in favorable cases on suspending the subject from the floor and observing the adduction of the thigh on tapping the patellar tendon, or, as in one case observed, tapping the tendo-Achillis.

Crossed knee-jerk is also found to be reinforceable. Tracings were shown which recorded in a normal subject an adduction in crossed knee-jerk of a sixteenth of an inch in a spastic quarter-inch, and in the latter case, under reinforcement, half an inch. Reinforcement produces the movement in some cases where it is not otherwise evident. A case was related in which a very slight tap on the patellar tendon caused violent contractions of both legs, causing the knees to smite together or cross over; a larger tap will cause, in addition, crossing of both arms in a sort of lock spasm, requiring aid afterward in stretching out the limbs. The reflex arc involved in movements of this kind is held to embrace the cerebrum.

Dr. P. C. Knapp, of Boston, read a paper on

RECURRENT OCULO-MOTOR PARALYSIS.[1]

Dr. Mills had observed several cases of recurrent ocular palsy with involvement of the fifth nerve. He had also seen cases of recurrent facial paralysis. The only probable explanation in most cases is that of organic lesion. He thought Dr. Knapp's cases were probably due to lesion of root fibres.

Dr. Morton Prince agreed with Dr. Knapp in believing that these cases were caused by organic lesion. He believed that pain as a localizing symptom possessed very little value. He would rather depend upon motor and sensory paralysis.

Dr. Walton thought all cases could not be classed together. While many were of nuclear or basal origin, possibly some of the less grave cases were due to recurring edema or possibly vascular disturbance at the cortex, which would probably explain the coincidence of motor and sensory disturbance. Possibly some cases were allied to the severer form of hysteria.

Dr. Knapp, in closing the discussion, said that there was no case of complete recovery on record where there had been both motor and sensory involvement. In cases of syphilitic origin, where only one or two branches were involved, it was more likely to affect the nerve after it had left the pons.

(To be continued.)

A Chinese proverb says that a druggist who buys and sells drugs should have two eyes, a physician who gives drugs to patients should have one eye, and a patient who takes drugs should be blind.

Recent Literature.

The Dispensatory of the United States of America. By Drs. Geo. B. Wood and Franklin Bache. Seventeenth edition, thoroughly revised and largely rewritten, with Illustrations. By H. C. Wood, M.D., LL.D., Joseph P. Remington, Ph.M., F.C.S., and Samuel P. Sadtler, Ph.D., F.C.S., 8vo; pp. xliv, 1930; Patent Index. Philadelphia: J. B. Lippincott Co. 1894.

This Dispensatory, which now for sixty years has been the work upon *materia medica* most familiar to all American physicians and pharmacists, has now again appeared in a new and seventeenth edition. In this it has closely followed the last revision of the United States Pharmacopœia, of which work it was for nearly fifty years the chief commentary. As in the last edition, the work is divided into three parts. Space for the new matter in this edition has been gained by increase in the size of the page; and this, that the volume might still fit into the ordinary bookshelf have been almost entirely in the width of the page. In Section 2 of Part II, where about one thousand not official drugs are treated of (or nearly twenty-five per cent. more than in the last edition), as smaller-sized type is used, the page has been broken up into a double column, to prevent the lines becoming too long for the eye to easily follow.

A new Index of Diseases has been introduced, and it has been placed immediately before the main text of the work, that it might not in hurried consultation be confounded with the general index. The titles of articles are printed in bolder type; but otherwise the general style and make-up of the book is of the accustomary excellence of previous editions.

This work, as one of the best recognized treasure-houses of pharmacological lore, is one of which no physician or pharmacist desiring to keep abreast with the times can afford to be without a copy. B. F. D.

A Text-Book of the Diseases of Women. By Henry J. Garrigues, A.M., M.D. Containing three hundred and ten Engravings and Colored Plates. Philadelphia: W. B. Saunders. 1894.

Dr. Garrigues's large experience in the treatment of the diseases of women warrants us in expecting a practical and interesting book from him on the subject, nor are we disappointed. He aims to present a concise but full exposition of the nature and treatment of the diseases peculiar to women, especially adapted to the wants, first, of the physicians who have not had the advantage of hospital training, and who go to a post-graduate school; second, to those who cannot leave their practice but need information about the present state of gynecology; and, third, to undergraduates studying in medical colleges. All these claims for recognition are substantiated by a somewhat careful examination. Especially does it seem admirably adapted for a text-book. While written in a concise way, it is exceedingly full, and covers the whole ground of gynecology.

The section on the development and anatomy of the female genital organs, both as regards the text and the illustrations, is the best exposition we know; and the fulness of detail in comparison with other parts of the book is excused when we consider how incomplete the descriptions of these organs are, even in books of anatomy.

---

[1] See page 308 of the Journal.

The rest of the work is clear and practical, and while avoiding all theories and unnecessary details, is full enough to give the busy practitioner what he needs for a working basis.

Aëro-Therapeutics; or, the Treatment of Lung Diseases by Climate. By CHARLES THEODORE WILLIAMS, M.A., M.D. (Oxon.), F.R.C.P. London and New York: MacMillan & Co. 1894.

This is a reprint of the Lumleian Lectures for 1893, and an address on the high altitudes of Colorado delivered before the Royal Meteorological Society. In it Dr. Williams discusses the general factors and elements of climate, and then takes up its healing influences on mankind. The advantages and disadvantages of the various health-resorts which have gained reputations for their beneficial effects in pulmonary diseases are carefully considered, and the class of cases which have been shown in the author's wide experience as likely to be benefited or harmed by each is pointed out.

Not the least valuable portion of the book is the comparison of the results of different climates, as shown by his own patients. In general results the home climates yield the smallest percentage of improvement (63.7), and the largest of worse (28.0); next comes the Riviera, not much better, 65.2 and 24.80 respectively; then, with a rise of 12 per cent. improved, are sea voyages, the percentage of worse being still large (21.56). High altitudes win easily in all categories, with their 83 per cent. improved and only 14½ per cent. worse. In local results the high altitudes again come first, the favorable results being nearly double those of the Riviera and home climate. In comparing the various high altitude sanitaria Dr. Williams says that Colorado has not yet produced as favorable statistics as Switzerland, but has compensatory advantages in the variety of occupations which it offers both for pleasure and profit.

The book contains much valuable information in a comparatively small space, and is an important contribution to the study of climate as a therapeutic agent.

Materia Medica, Pharmacology and Therapeutics: Inorganic Substances. By CHARLES D. F. PHILLIPS, M.D., LL.D., F.R.S. (EDIN). Second edition. London: J. & A. Churchill. 1894.

The present work is a new edition of one which was published in 1882, but is practically a new book, as the first issue has been long out of print, and the emendations and additions are nearly equal to the original work. The volume deals only with the inorganic substances, and Dr. Phillips has attempted no natural or artificial classification. The simple alphabetical order of elements has been followed with but few exceptions. In this we think he was wise, as any system must be somewhere incomplete, and it is not in that manner that the practitioner consults his reference books on therapeutics or materia medica.

The arrangement of material under each element is simple and lends itself to ready reference in such a manner as to make the book useful to the physician and to the student alike.

The discussion of the physiological action of the various substances is full, and amply accompanied by references, while the fact of the author being a physician in active practice is reflected in the practical character of the sections on therapeutic effects. Unlike many works on the same subject, the sense of just and useful proportion is well maintained.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, SEPTEMBER 27, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 WASHINGTON STREET, BOSTON, MASS.

AINHUM.

THIS rare disease, of which new cases are occasionally reported, was first described by Silva Lima of Bahia, in 1867. Cases were afterward reported by Hornaday and Pittman (1881), by Shephard and Morrison, by Corre and Guimaraès, and by Duhring (1884). The disease is characterized by a thickening of the derm and a constricture of the skin at the base of one or more toes, generally the fifth toe, which undergo a slow spontaneous amputation. The progress of the disease is slow; it is not due primarily to vascular obliteration. It is especially noted on the western coast of Africa, and in various parts of South America, but has been met with in Asia and the United States. The cause has not yet been definitely ascertained, though it is believed to be of neurotic origin. Shoemaker classes it, doubtless wrongly, among the cutaneous hyperplasias.[1]

Dr. Gordon Messum reports a case to the *Lancet*,[2] and says that this complaint is commonly met with among the Kaffirs of South Africa, and is usually limited to the little toe. The toe at its junction with the foot has the appearance of being gradually cut off by means of the continuous pressure of a ligature. His patient suffered spontaneous amputation of one of her toes after more than a year from the onset. Dr. Messum also thinks ainhum of nerve origin.

In the *Lancet* for December 12, 1891, is a report by Mr. Von Winckler, of the British Guiana Medical Service, of twenty cases of the disease occurring among the out-patients at the Georgetown hospital; "nineteen of the cases were blacks," the twentieth was from East Africa. They were all males. The average age was between thirty and thirty-five years. There was no evidence of heredity to be found. In all cases the fifth toe was involved; in one case, both fifth and fourth toes of the right foot. In the majority of cases the seat of the disease was in the skin-fold which corresponds to the interphalangeal joint, and in a few cases it was in the fold over the metatarso-phalangeal joint. The appearance "was like that due to a ligature applied tightly around the toe and eating its way through." There was a marked absence of any sign of syphilis or leprosy in the cases, and no definite account of any injury was obtained. Nine of the cases gave an early history of pain; there were no subjective symptoms till an advanced stage of the disease was reached, when ulceration commenced and acute pains with burning were complained of. The duration varied considerably, the shortest time being nine months and the longest five years. Microscopically, there was hyperplasia of the fibrous tissues of the skin, together with fatty change. The artery was much thickened, the intima being more especially involved — a condition of endarteritis. In the bone, the condition resembled that of rarefying osteitis. It seemed like a deep trophic disturbance. As to treatment, this seemed to resolve itself into removal. Von Winckler does not think the disease can be due (as has been affirmed) to wearing rings on the toes; further, in none of the twenty cases had rings been worn on the fifth toe.

---

[1] Diseases of the Skin, p. 491.

[2] See page 519 of the Journal of May 21, 1891.

In the *Lancet* for June 30, 1892, is a letter from Dr. Thomas Murray of Trinidad, W. I., in which he refers to a case of his own. He treated the patient successfully by dividing the skin and all the tissues down to the periosteum on the side opposite to the seat of the disease. No very satisfactory reason for this treatment is given.

Professor Le Brun, in the *Semaine Médicale*, September 5, 1894, gives the details of a very interesting case of this disease occurring in the French hospital of Beirout, Palestine. The patient was a little girl aged eight years, an inhabitant of Mount Lebanon, of Semitic origin, not a negro. Previously to entering the hospital she had lost the little toe of the right foot by ainhum; "the member," (to quote Dr. Le Brun's description) "became detached little by little, without pain, without hemorrhage, without wound, by reason of a spontaneous constriction which began at the digito-plantar fold, and which slowly strangulated the toe at its base as if a gradually tightened string had been tied around the part." This process of spontaneous amputation took nearly four years from the time of the commencement. The toe at last fell off — "not sphacelated like a gangrenous member, but manifestly *living*, like a tumor removed by the *écraseur*." This patient was subsequently threatened with a similar spontaneous amputation of all the remaining toes of that foot, and in this state entered the Beirout hospital. No perceptible change had thus far occurred; certainly no arrest of the disease under treatment. Le Brun, in reviewing the various theories which have been framed to account for this singular malady, rejects the view of Corre and Guimaraès, who from isolated observations pronounced ainhum "an annular scleroderm." It does not belong to the category of "congenital amputations." On the other hand, it presents certain marked resemblances to Raynaud's disease. In both diseases there is considerable fall in the temperature, a numbness, a violaceous coloration of the affected member, and a more or less intermittent or paroxysmal course. Dr. Le Brun concludes by the observation that "the alteration and disappearance of the osseous tissue in the region of the strangulation, the trophic sensory and motor disturbances observed in the member, warrant us in affirming that the constriction, leading to the amputation, is not the primary phenomenon on which the entire disease depends. The fissure is but one of the symptoms, though doubtless pathognomonic, of the affection for which some higher cause must be sought, which we can only vaguely suppose to be a tropho-neurotic lesion."

It will be seen that ainhum still remains a pathological puzzle.

THE THYROID TREATMENT OF SKIN DISEASES.

In an address delivered before the Inaugural Congress of the Dermatological Society of Great Britain and Ireland, Dr. Byrom Bramwell gave the results of his observation on the use of thyroids in dermatology.[1] Dr. Bramwell modestly disclaims, at the onset, any greater knowledge of diseases of the skin than is possessed by any well-informed hospital physician. Considering first the remarkable effect of thyroid feeding upon the skin in myxedema, he remarks that this may be due both to a direct action on the skin tissues, and an indirect action through the nervous system. The latter point he recommends to the experimental pathologist for study. If this indirect action through the nervous system really exists, it perhaps affords a clue to the effect of thyroid feeding on some skin diseases, especially those that appear to be due to perverted innervation, as Morvan's disease, sclero-dactylia, syringomyelia and anesthetic leprosy.

Psoriasis is the skin disease in which the thyroid treatment is most successful. He summarizes the results obtained from the treatment of twenty cases, as follows: (1) In a very considerable proportion of cases, the thyroid treatment produces a temporary cure, the eruption entirely disappearing and the skin being left in an absolutely healthy condition. (2) In exceptional cases small doses produce a rapid improvement. (3) In others improvement is only produced after distinct symptoms of thyroidism. (4) Some obstinate cases ultimately yield to very large doses, continued for a long time. (5) That no case should be regarded as hopeless, unless thyroidism has been produced; and the largest dose which the patient can take, has been continued for at least two months. It is to be noted that in several cases the first effect of the remedy was to produce an extension of the eruption, and this was most marked in some of the cases where the treatment was most successful. (6) In some cases the treatment produces no effect. (7) Relapses are not prevented by this treatment. (8) From his present experience he is inclined to think that long-standing, chronic cases are more readily cured by this treatment, than the more recent ones. On the whole, the writer is rather enthusiastic in his attitude toward thyroids in psoriasis, declaring that when given in the manner he has indicated, it is the most valuable internal remedy yet discovered.

---

[1] British Journal of Dermatology, July, 1894.

Five cases of lupus were treated by this method, and they all seemed to show that it is capable of producing considerable improvement in the disease. In all the hyperemia diminished and a certain amount of healing and cicatrization was produced. Nothing like a cure was obtained, however. He considers his experience as yet too small to warrant any decided opinion as to the value of this treatment in lupus; but his results are thus far encouraging, and up to a certain point, favorable. He recommends small doses, continued for many months.

Ichthyosis was regarded as an affection which might be impressed by the administration of thyroid, as in myxedema the skin is often coarse and ichthyotic. He has had an opportunity to try it in but one case, where it resulted in gradually clearing off the ichthyotic growth. There was a decided improvement in the course of two weeks; but the result, unfortunately, was only temporary, a new formation of scales appearing after the old ones had been detached. He thinks it possible a persistent use of the remedy may keep the disease in check, and in any event that the way in which the whole surface of the body became cleared of an ichthyotic growth that had existed for twenty-four years, was very striking.

In a case of exfoliative dermatitis no effect could be claimed for the thyroid treatment. In acute eczema his experience is too limited to allow him to make any definite statements, but he is inclined to think that it is more likely to do harm than good. Large doses in some people produce suppurative lesions of the skin. The writer has been successful in one case of infantile eczema, and in another there was distinct improvement at first, but the treatment had to be suspended. In chronic eczema he had had experience with but two cases. In one, a generalized chronic eczema in an old man, there was the most marked improvement, after many other remedies had failed.

But one case of pemphigus was treated, and in that no result was produced. In a case of alopecia it gave rise to a considerable growth of hair; and from the luxuriant growth that accompanies some cases of myxedema, it would seem possible that the thyroid may prove of value in this condition. He adds, however, that the cases that can be cured by this method are probably those that can be cured by other means.

In conclusion, a word is added as to the effects of a long-continued exhibition of the drug. The writer has not yet observed in healthy persons, or in those suffering from skin diseases, the susceptibility to the drug that is sometimes shown by patients with myxedema. Some of the patients with psoriasis seemed to be very *insusceptible* to the action of the drug. In several of the cases of psoriasis there was a distinct gain in weight during the treatment by thyroids. In other cases there was a loss of weight. In some cases suppurative lesions of the skin are developed as the result of an overdose. In many cases a degree of tolerance was established after a while. The writer counsels beginning always with small doses. In psoriasis, beginning with a small dose, he increases until distinct symptoms of thyroidism are produced. He uses the dry extract in the form of tabloids or palatinoids, and always gives the remedy by the mouth.

MEDICAL NOTES.

YELLOW FEVER. — The British steamer *Cambria*, from Havana, arrived at Galveston, Tex., on September 18th, with a case of yellow fever on board. The man died on the following day, and the vessel was ordered to quarantine fifteen miles out from the city.

A NEW HOSPITAL IN DAKOTA. — The new Scandinavian Hospital in Sioux Falls, Dakota, accommodating forty patients, was formally opened on September 10th.

THE EYESIGHT OF THE ITALIAN PREMIER. — The effect of statesmanship on the eyes is apparently not a good one, as it now is necessary for Signor Crispi to have a cataract removed.

A MEDICAL SCHOOL FOR WOMEN IN RUSSIA. — A correspondent of the *Lancet* writes that it is proposed to found a Female Medical Institute in St. Petersburg, where women will be able to pass through a full curriculum and receive a diploma to practise, under the title of "Zhenshtchina-Vratch," or "woman doctor." The scheme of the Institute will come before the Imperial Council this autumn, and, if approved of, the Institute should not be long in getting under way. The St. Petersburg Town Council has promised to provide it with premises free of charge, and with clinical accommodation in the city hospitals. It is desired that the Institute should be endowed to such extent as to yield an annual income of 63,000 roubles (about £6,500); two-thirds of such a sum are already promised, and it is hoped that the remainder may be made up by donations and the fees of students. The scheme proposes a curriculum of four years, followed by two years of practical work in obstetric hospitals and in special cliniques for diseases of women and children.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, September 26, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 97, scarlet fever 39, measles 7, typhoid fever 66.

GIFT TO THE MARY HITCHCOCK MEMORIAL HOSPITAL. — Miss Elizabeth Billings, her brother Frederick and her two sisters, all children of the late Hon. Frederick Billings of Woodstock, Vt., have established a free bed in perpetuity in the Mary Hitchcock Memorial Hospital at Hanover, N. H., by the gift of $5,000, to be called the Billings Bed.

Miscellany.

SERUM THERAPY IN DIPHTHERIA.

The most interesting and important contribution to the recent Congress at Budapest was the report of M. Roux upon the serum therapy of diphtheria. The investigations cover a period of over three years and were carried on at the Pasteur Institute and the Hôpital des Enfants-Malades, with the assistance of MM. Martin and Chaillou.

BACTERIOLOGICAL AND EXPERIMENTAL WORK ON ANIMALS.

The process of obtaining an antitoxic serum is briefly this: by prolonged cultivation of virulent diphtheria bacilli in a specially prepared bouillon at a temperature of 37° C., with exposure to sterile air, a concentrated toxine is obtained in about three weeks, of such a strength that one-tenth of a cubic centimetre will kill a 500 gm. guinea-pig in forty-eight hours. After filtration this toxine is kept in tightly closed flasks away from the light. For the purposes of immunization this toxine is diluted with one-third of its volume of Gram's solution. While immunization was obtained in several species of animals, the horse was chosen as furnishing a larger amount of serum with greater ease, and one which of itself causes the least disturbance when injected into other animals. By injecting repeated and gradually increased doses of the toxine, a horse is rendered immune, that is, able to receive 250 c. c. of pure toxine without disturbance, in two months and twenty days.

The serum from such an animal when added to the diphtheria toxine makes it inoffensive, and the mixture injected into animals causes no disturbance even of a local nature. The mixture may be made equally well in the animal's system. The serum, whether given before, with, or after the injection of the toxine, enables an animal to endure an otherwise absolutely fatal dose of toxine. It appears from experiments which we cannot here detail that the protective influence of the serum is not exercised by destroying the toxine but by stimulating or in some way affecting the tissue-cells so that they do not respond to the poison. If the tissues have been vitiated, as by the toxine of the streptococcus, they are not responsive to the serum, and the action of the diphtheria toxine is only delayed. The dose of the serum varies with the weight of the animal, the doses of the toxine and the relative time of administration.

Most of the experiments with serum were made under the skin, but a considerable series were made upon the mucous membranes, which were of especial interest for the clinician as they gave an opportunity to study the action of the serum on the diphtheria of an external surface. Diphtheria was caused in female guinea-pigs by excoriating the mucous surfaces of the vulvæ and thereafter rubbing them with the pure culture of diphtheria bacilli. The character of the inflammation and the structure of the membrane thus caused is in every way similar to that in children. The guinea-pigs, who otherwise invariably died, recovered without exception if the serum was injected in a sufficient dose before the inoculation of the mucous membrane. In all these cases a false membrane is formed, but the redness is less extensive, the tissues less swollen and the fever less intense. After the second day the local lesions diminish, the false membranes become detached and repair sets in. Guinea-pigs of equal weight infected with the same virus, but not treated with the serum, died in six days. The protected animals received one-ten-thousandth of their weight of serum. The result was in every case the same if the serum was injected at the same time with the inoculation of toxine.

In a second series of cases the serum was injected after inoculation; the false membrane had already been developed for about twelve hours; the redness and swelling were very marked. If at this time the serum is injected in a dose of from one to ten thousandths of the weight of the animal, it recovers without exception. In a few hours the edema ceases, and on the second day the false membrane becomes detached. After the repair of the mucous membrane no diphtheria bacilli were found. The rapidity with which the false membranes were cast off was remarkable. Unprotected animals died on the fifth or sixth day.

The third series of cases was undertaken upon guinea-pigs and rabbits inoculated in the trachea. The guinea-pigs thus treated died, usually in three days, if not protected. The pathological appearances were in every way similar to those in children. When inoculated in the trachea after having received the serum treatment, they did not take diphtheria. If the quantity of serum was not sufficient the disease, however, made its disappearance after a short delay. The animals injected with toxine after serum treatment gave no evidence at all of the disease.

In cases of diphtheria associated with streptococci infection the serum only rarely brought about a cure: not that there was a larger amount of diphtheria toxine or that the antitoxic power of the serum was annulled, but because the cells depressed by the poison of the streptococci no longer responded to the stimulation of the serum. No better results were obtained in treating animals previously vaccinated against the streptococci; possibly the serum of the rabbits was not sufficiently effective against the variety of streptococci which was used.

CLINICAL OBSERVATION AND RESULTS IN CHILDREN.

After this long and careful experimentation the authors were prepared to apply their results to the treatment of diphtheria in children, which was done in the diphtheria ward of the Hôpital des Enfants-Malades. Treatment was begun on the first of February, 1894, and continued until July 24th, thus covering the winter months in which diphtheria is the most prevalent and severe, and the summer period when the disease is notably rare. The wards were visited each day, and all children found there were treated, whatever their condition. No discrimination was made, so that the results of several months' treatment could be fairly compared with previous times. No change was made in the other care of the sick. The local treatment remained the same (cleansing with solutions of boric acid); the serum was the only new element introduced.

During the years 1890, 1891, 1892 and 1893, when no serum was used, the hospital treated 3,971 children, with a mortality of from 47.64 per cent. to 58.8 per cent.; an average of 51.71 per cent. From February 1st to July 24th this year, there were 448 admissions and 109 deaths, a mortality of only 24.5 per cent. That this improvement was not due to a mild form of the disease this year is shown by the statistics of the diphtheria ward of the Trousseau Hospital, which admitted during the months of February, March, April, May and June this year 520 children. None of these patients received serum treatment, and the mortality was 60 per cent.

Operative cases have previously given an average mortality of 73.19 per cent. From February to July this year the mortality was only 49 per cent. under serum therapy. During the same period at the Trousseau Hospital, without the use of serum, the mortality of operated cases was 86 per cent.

Of the 448 cases treated, 128 were found on bacteriological examination not to have diphtheria, and 20 died immediately on entrance, without receiving serum treatment. Of the other 300 cases of true diphtheria, 78 died, a mortality of 26 per cent.

In 65 cases guinea-pigs were inoculated with bacilli from the membranes; 60 of them died within thirty hours, and three within a week; two only recovering.

Every child at entrance was given 20 c. c. of the serum in a single injection, under the skin of the flank. If bacteriological examination showed that the patient did not have diphtheria, the injection was not repeated. The injections made into the subcutaneous tissues were not painful, and in a few moments the serum was absorbed. In the great majority of cases there was no local reaction, and only where strict antiseptic precautions were neglected. In only three cases did an abscess occur, which healed rapidly after incision. In cases of true diphtheria, twenty-four hours after the first injection a second was given of from 10 to 20 c. c., which was usually sufficient to bring the case to a cure. The pulse and temperature were taken as a guide. If these remained elevated, a third injection was given. The average weight of the children treated was 14 kilos, so that at the first injection they received a little more than a thousandth of their weight in serum. The minimum quantity of serum employed in any case was 20 c. c., the maximum 125 c. c. During the convalescence, some days after the injection of serum, an eruption resembling urticaria was occasionally noticed.

The general condition of the children treated by serum rapidly improved, provided the disease was not too far advanced. The appearance of most of the children was entirely altered from previous years. They are not pale and livid, but their color is bright and they appear gay and interested. The appetite quickly returns, and there is but slight loss of flesh. Their stay in the hospital is notably shortened.

The effect of the serum on the local lesion is most marked; within twenty-four hours the false membranes cease to extend, and within forty-eight hours they become detached, always by the third day; in seven cases only did they last longer. Bacilli disappeared from the throat at the same time with the false membranes, cultures ceasing to give colonies of the Klebs-Löffler bacillus by the third or fifth day.

The temperature rapidly falls under the action of the serum; in the less severe cases the decline often occurs the day after the first injection, and is scarcely noticeable after the second day. The fall is often so sudden as to be represented by a vertical line upon the temperature chart, as if the disease had been arrested at one blow. In the severe cases the defervescence does not begin until after the second or third dose, but then falls by a rapid lysis.

The pulse varied from 120 in the benign to 140 in the severe cases, and was more slowly affected by the serum than was the temperature, frequently remaining high after the fever had ceased, and never reaching a normal rate before the temperature. After treatment by serum the pulse was never observed to have the irregularity during convalescence which was so frequent in former times.

Persistent and abundant albumin in the urine was noted only in certain of the most severe cases, and there is little doubt that the serum prevents the action of the toxine upon the kidneys and lessens to a large extent the number of cases.

The accidents consecutive to diphtheria are much rarer among those treated by serum. There were a few cases of paralysis of the palate of short duration, one case of paralysis of an inferior limb, and one of general paralysis in a child nine years old, who entered on the sixth day of the disease. The paralysis appeared three weeks after recovery, and the child died of asphyxia while eating a biscuit. Three children died of syncope — two within twenty-six hours of entrance, and one, who had had measles, on the third day.

From these experiences there seems little doubt but that every case of pure anginal diphtheria will recover if treated in season with immunized serum.

The results in mixed cases were similar to those in animals. Cases of diphtheria associated with the staphylococcus pyogenes are more severe, but all the five cases observed recovered after a longer period. The amount of serum used varied from 30 to 50 c. c. The association with the streptococcus gave rise to the gravest cases, of which there were 35 with 12 deaths (34.2 per cent.). Omitting four who died within twenty-four hours of entrance there was a mortality of but 25.8 per cent. The duration of these cases was the longest, the children who recovered being at least fifteen days in the hospital. Under the use of serum the general symptoms were notably less severe, the pallor of the face less, the false membranes became detached more easily, and the swollen glands ceased to increase after a sufficient injection. In these cases the serum did not bring the rapid fall of temperature noticed in true diphtheria. In case the disease is to terminate favorably, the pulse falls within the first two days to 120, and remains at that rate for a considerable time.

The statistics of the operated cases, the details of which we cannot give here, point strongly to the conclusion that in cases of laryngeal obstruction operation should be delayed as long as possible after giving the serum. During the period of serum treatment only 40 per cent. of the cases came to operation, as compared with 50 per cent. or over in previous years; but of these 121 cases, 102 were operated before the injection of serum, or within twelve hours of the first dose; 14 between the twelfth and thirty-sixth hour after the beginning of treatment; and but five more than thirty-six hours after receiving the antitoxine. It is impossible to say how many of these children would have escaped tracheotomy if the serum had been administered sooner, but there is no doubt that with the serum treatment, tracheotomy should in a large majority of cases be replaced by intubation. If the imminent danger of suffocation can be thus relieved for one or two days, there is little doubt that sufficient time will be gained to obtain a cure by the means of the serum.

The local treatment in connection with the serum therapy should be of the simplest nature. No swabbings or paintings with caustics or carbolic acid or corrosive sublimate. A douche of boric-acid solution or mixture of fifty grammes of Labarraque's solution to the litre of boiled water, two or three times a day is quite sufficient.

In concluding, Mr. Roux said that they were convinced that with better means of isolation than existed at the Paris hospital the mortality could be still further reduced.

◆

THE FREQUENCY OF MIDDLE-EAR DISEASE IN CHILDREN.

The most recent reports on Middle-Ear Disease in Children present the following facts:

Rasch[1] states that in the Communal Hospital in Copenhagen, in the space of thirteen months, 82 autopsies were made upon children under two years of age, and in 61, the middle-ear was examined. It was found normal in but 5. In 32, there was suppuration present on both sides. In 7, pus was found on one side. a discolored mucous secretion in the other. In 7, pus was found on one side alone, the other ear being healthy. In 8, there was a discolored mucous exudation in both ears. In 1 case, there was found on both sides a tubercular inflammation associated with caries of the temporal bone. In but 8 per cent. of the cases was the middle-ear found in an absolutely normal condition. In about 14½ per cent. there was a catarrhal inflammation, and in 70 or 75½ per cent. there was suppuration on one or both sides.

Tröltsch in 1862 reported upon the examination of the temporal bones in 25 children. In but 9 were the ears normal. In 1 there was caries on both sides. In the other 15 cases, either catarrh or suppuration was present. Of these 15, the youngest was three days, the oldest one year old.

Among 80 autopsies made by Wreden, the ears showed pathological changes in 83 per cent. In 14 they were normal; 8 of these, however, showed venous hyperemia.

Parrot reported in 1869 having examined the ears of many children at autopsy, and found almost always a discolored mucous or purulent exudation present in those dying with broncho-pneumonia.

Kutschianz, of Moscow, made a post-mortem examination of the ears of 300 children. In 70, the ears were normal; in 50 there was catarrhal inflammation present. Many had bronchitis or broncho-pneumonia. In 150, aged from two to twenty weeks, suppurative otitis was present. Three of Rasch's cases were under one month of age, 9 were between one and three months; 13 between three and six months; 19 between six and twelve months; 15 between one and two years, and 2 were two years old. Of the 3 who were less than one month, 2 were fourteen days, and 1 one day old. Twenty-one were rachitic, 8 had congenital syphilis, 10 were athreptic, and 15 tuberculous. Eleven were convalescing from pertussis. In 14 there was diarrhea. In 43, broncho-pneumonia in some form was discovered. Microscopical examination of the purulent exudation in the ear revealed the presence of the pneumococcus in 33 out of 43. This agrees with Letters's observation, who found the pneumococcus in 29 out of 31 cases examined. The membrane was perforated in but 4 out of 56 cases, and in none of these was the pneumococcus found. Letters found the pneumococcus in 31 autopsies, in otitis in 29, in broncho-pneumonia in 12, in meningitis in 2, in pleurisy, pericarditis and peritonitis each in 1. Out of 43 who had pneumonia, 42 showed inflammatory changes in the ear. In but one of those afflicted with pneumonia were the ears normal.

Kassel gives additional post-mortem studies. Out of 108 autopsies on children under one year of age, in 85 there was disease of the middle-ear. The antrum in the majority of cases was first attacked, and contained much purulent material. The disease, Kassel thinks, is caused by the development and ascent of bacteria in the Eustachian tube, which is favored by lack of cleanliness in the infant's mouth. Bacteriological studies of this pus showed in one-half the cases the Pfeiffer's bacillus of influenza; in 10 the capsule diplococcus was found, in 4 the streptococcus, the staphylococcus in 2, and in 1 the bacillus pyocyaneus; the Fraenkel-Weichselbaum diplococcus caused the trouble in 6, the bacillus pyocyaneus in 3, Friedländer's pneumonia bacillus in one. In one case only the tubercle bacillus was found.

◆

Correspondence.

MARRIAGE OF SYPHILITICS: STATISTICS DESIRED.

St. Paul, Minn., September 20, 1894.

Mr. Editor: — For the purpose of securing reliable statistics on the subject of the marriage of syphilitics, I desire to enlist the assistance of those of your readers who have had experience which will be of value in determining the period when this disease ceases to be communicable and inheritable. I shall, therefore, esteem it a great favor on the part of any physician who will send me answers to the following questions; and due credit will be given in a future publication to those who desire to aid me in this work.

(1) What is the latest period from the date of the initial lesion that you have known the disease to be communicated by a patient who has been from the first under your observation?

(2) What is the latest period from the date of the initial lesion that you have known (*a*) a syphilitic man or (*b*) a syphilitic woman to become the parent of a syphilitic child?

(3) Have you ever known syphilis to be either communicated or handed down, at a later period than four years from the date of the initial lesion, by an individual who has been constantly under observation during that time?

In answering these questions I should like a brief but complete history of each case and an account of the treatment that has been pursued.

I hope by this means to obtain the experience of a large number of observers and to reach a fairly reliable conclusion as to the time when we may safely permit our syphilitic patients to marry. Yours very truly,

Burnside Foster, M.D.

---

[1] Jahrbuch für Kinderheilkunde, B. xxxvii, H. iii-iv.

METEOROLOGICAL RECORD,

For the week ending September 15th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S .. 9	29.94	76	88	64	84	75	80	W.	S.	10	5	C.	C.	
M..10	29.74	76	87	64	80	82	81	S.W.	S.W.	7	23	O.	O.	
T ..11	30.05	68	74	63	43	44	44	N.W.	W.	16	8	F.	C.	
W..12	30.42	61	71	51	51	79	65	W.	S.E.	8	6	C.	C.	
T ..13	30.56	58	66	51	57	65	61	N.W.	S.W.	3	8	F.	C.	
F ..14	30.43	62	68	57	80	79	80	S.W.	S.W.	7	9	O.	C.	
S...15	30.16	66	72	59	94	100	97	S.W.	E.	8	6	O.	G.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 15, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,956,000	733	357	23.80	12.46	12.46	2.82	2.90
Chicago . . .	1,438,000	—	—	—	—	—	—	—
Philadelphia .	1,139.457	—	—	—	—	—	—	—
Brooklyn . .	1,043,000	404	216	23.28	8.88	13.20	1.20	6.72
St. Louis . . .	540,800	—	—	—	—	—	—	—
Boston . . .	501,107	246	109	22.96	11.07	11.89	2.87	5.86
Baltimore . .	500,000	—	—	—	—	—		—
Washington .	285,000	90	28	24.42	6.66	13.32	7.77	—
Cincinnati . .	325,000	92	32	16.20	12.96	3.24	1.08	6.48
Cleveland . .	325,000	117	—	34.00	6.80	17.00	1.70	4.25
Pittsburg . .	272,000	—	—	—	—	—	—	—
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	26	6	7.70	26.95	—	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	100,410	21	7	33.32	19.04	28.56	4.76	—
Fall River . .	92,233	37	19	18.90	2.70	10.80	5.40	—
Lowell . . .	90,613	43	24	37.28	9.32	34.95	—	—
Cambridge . .	79,607	32	16	28.17	9.39	15.65	9.39	—
Lynn	65,123	28	11	21.42	7.14	14.28	—	—
Springfield . .	50,284	13	7	45.14	7.69	30.76	—	7.69
Lawrence . .	49,900	—	—	—	—	—	—	—
New Bedford .	47,741	28	17	28.56	3.57	17.85	3.57	—
Holyoke . . .	43,348	—	—	—	—	—	—	—
Brockton . .	33,939	10	1	40.00	—	10.00	20.00	—
Salem	33,155	12	6	25.00	—	8.33	—	8.33
Haverhill . .	32,925	13	8	15.38	23.07	7.69	7.69	—
Malden . . .	30,209	3	1	—	—	—	—	—
Chelsea . . .	29,806	12	7	16.66	25.00	—	—	8.33
Fitchburg . .	29,383	5	1	40.00	20.00	40.00	—	—
Newton . . .	28,837	10	3	10.00	—	10.00	—	—
Gloucester . .	27,293	—	—	—	—	—	—	—
Taunton . . .	26,955	6	1	16.66	16.66	—	—	16.66
Waltham . .	22,058	12	4	8.33	—	—	—	—
Quincy . . .	19,642	—	—	—	—	—	—	—
Pittsfield . .	18,802	5	3	20.00	20.00	—	—	20.00
Everett . . .	18,586	5	3	20.00	—	—	—	20.00
Northampton .	16,331	—	—	—	—	—	—	—
Newburyport .	14,073	6	1	—	16.66	—	—	—
Amesbury . .	10,920	6	2	—	16.66	—	—	—

Deaths reported 2,051: under five years of age 904; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 472, consumption 217, acute lung diseases 144, diarrheal diseases 259, diphtheria and croup 95, typhoid fever 50, whooping-cough and scarlet fever 18 each, cerebro-spinal meningitis 14, malarial fever 7, measles 4, erysipelas 3, small-pox 2.

From whooping-cough New York 6, Brooklyn 3, Boston and Washington 2 each, Fall River, Lowell, Cambridge, Springfield and New Bedford 1 each. From scarlet fever Cleveland 12, Boston 3, New York 2, New Bedford 1. From cerebro-spinal meningitis Cincinnati 5, New York 4, Lynn 2, Washington, Chelsea and Waltham 1 each. From measles New York 3, Cleveland 1. From malarial fever Brooklyn 5, Nashville 2. From small-pox New York 2. From erysipelas New York 2, Brooklyn 1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 15, 1894, TO SEPTEMBER 21, 1894.

CAPTAIN EDWARD C. CARTER, assistant surgeon, is relieved from duty at Vancouver Barracks, Washington, and ordered to Fort Buford, South Dakota, for duty, relieving CAPTAIN AARON H. APPEL, assistant surgeon.

CAPTAIN APPEL, upon being relieved by CAPTAIN CARTER, will proceed without delay to Fort Ethan Allen, Vermont, and report for duty at that post.

The leave of absence for seven days granted CAPTAIN C. N. B. MACAULEY, assistant surgeon, is extended twenty-three days.

Leave of absence for twenty-one days to take effect about September 20, 1894, is granted CAPTAIN WILLIAM P. KENDALL, assistant surgeon.

The leave of absence for seven days granted CAPTAIN LOUIS BRECHEMIN, assistant surgeon, is extended twenty-three days.

Leave of absence for one month is granted MAJOR HENRY M. CRONKHITE, surgeon.

Leave of absence for twenty days, to take effect upon the arrival at Fort Schuyler of a medical officer to relieve him, is granted CAPTAIN W. W. GRAY, assistant surgeon.

RECENT DEATHS.

W. A. M. WAINWRIGHT, M.D., died in Hartford, Conn., on September 24th.

B. F. HELPER, M.D., died at Fort Scott, Kansas, on September 22d. He was at one time President of the Kansas State Medical Society and editor of the *Kansas Medical Journal.* He was prominent in the railroad and real estate history of the State.

JOHN J. MORAN, M.D., died of typhoid fever in Dorchester, September 22, 1894, aged twenty-nine years. He was a graduate of the Harvard Medical School and visiting physician, at the time of his death, to the Free Home for Consumptives and to St. Mary's Infant Asylum in Dorchester.

BOOKS AND PAMPHLETS RECEIVED.

A Practical Manual of Mental Medicine. By Dr. E. Régis. Second edition. 1894.

A Manual of Hygiene. By Mary Taylor Bissell, M.D. Published by Baker Taylor Co. New York. 1894.

Diagnostic Palpation of the Appendix Vermiform. Cases of Appendicitis. By George M. Edebohls, A.M., M.D. Reprint. 1894.

Pregnancy after Ventral Fixation of the Uterus. Report of Four Cases. By George M. Edebohls, A.M., M.D. Reprint. 1894.

How to Cure the Profound Deafness of Chronic Aural Catarrh. By Robert Barclay, A.M., M.D., St. Louis. Reprint. 1894.

Concurrent Infections and the Formation of Cavities in Acute Pulmonary Tuberculosis: an Experimental Study. By J. Mitchell Prudden, M.D. Reprint. 1894.

Some account of Baron Larrey, surgeon to the Armies of France under Napoleon First. By Walter B. Platt, F.R.C.S. Reprint from Johns Hopkins Hospital Bulletin. 1894.

The Insanity of Over-Exertion of the Brain. The Momson Lectures before the Royal College of Physicians of Edinburgh, 1894. By J. Batty Luke, M.D., F.R.C.P.E., F.R.C.S.E.

The Principles and Practice of Medicine. By Austin Flint, M.D., LL.D. Seventh edition. Thoroughly revised by Frederick P. Henry, A.M., M.D. Philadelphia: Lea Brothers & Co. 1894.

Baron von Lagenbeck, Surgeon-General of the German Army, Professor of Surgery in the University of Berlin. By Walter B. Platt, F.R.C.S. Reprint from Johns Hopkins Hospital Bulletin. 1894.

Closure of the Ear by Growths of Bone; Purulent Inflammation of the Middle Ear; Pain, Deafness, etc.; a Fourth Case of the Writer's Successfully Treated by Osteotomy; with Cure; Description of Operation, Instruments, etc. By Robert Barclay, A.M., M.D., St. Louis. Reprint. 1894.

Attfield's Chemistry. Fourteenth edition. Chemisty, General, Medical and Pharmaceutical; Including the Chemistry of the U. S. Pharmacopœia. A Manual of the General Principles of the Science, and their Application to Medicine and Pharmacy. By John Attfield, M.A., Ph.D., F.I.C., F.C.S., F.R.S., etc., Professor of Practical Chemistry to the Pharmaceutical Society of Great Britain, etc. Specially revised by the Author for America to accord with the new U. S. Pharmacopœia. Philadelphia. Lea Brothers & Co. 1894.

Original Articles.

STUDIES IN THE PATHOLOGY OF DIPHTHERIA.

BY J. H. WRIGHT, M.D.,
Assistant in Pathology, Harvard Medical School.

The bacteriological studies of diphtheria and the Klebs-Löffler bacillus, the results of which are here reported, have been carried on under the direction of Professor Councilman in the Sears Pathological Laboratory of the Harvard Medical School and to some extent, also, in the Pathological Laboratory of the Boston City Hospital.

Practically all of the material for these studies has been derived from the contagious wards of the Boston City Hospital, for the most part during the terms of service of Dr. F. H. Williams and Dr. E. M. Buckingham, or in the period extending from October, 1893, to April, 1894. The work has comprised five main sections, as follows:

I. A study of the virulence of the bacillus diphtheriæ in infections of the pharynx and air-passages of varying degrees of severity and duration.

II. The results of autopsies on diphtheria cases.

III. The pathological anatomy and bacteriology of experimental diphtheria.

IV. Cases of infection of various ulcerated surfaces and other inflammatory processes with the Klebs-Löffler bacillus, as well as some other instances in which it has been isolated.

V. On the morphology and biology of the Klebs-Löffler bacillus.

I.

A study of the virulence of the bacillus diphtheriæ in infections of the pharynx and air-passages of varying degrees of severity and duration.

The question as to whether the bacilli obtained from mild cases of diphtheria are as virulent for guinea-pigs as those derived from severe cases has received special attention at the hands of but a few investigators. The most important work on this question is that of Roux and Yersin.[1] These investigators inoculated guinea-pigs with cultures obtained from 40 fatal and 39 non-fatal cases, and compared the results. They concluded that, in general, there is a striking difference to be observed as to virulence toward guinea-pigs, between the bacilli from cases ending in death and those terminating in recovery, although the latter often furnish organisms of full virulence.

Escherich [2] in his recent work confirmed these results, finding that in general mild cases yield weakly virulent cultures, but that the exceptions to this rule are numerous. In an earlier publication,[8] however, he had stated that he had noted no difference in the virulence of the bacilli from cases of different degrees of severity. The writers just quoted seem to be the only ones who have studied this point especially. On the other hand, the work of other investigators (Löffler,[4] v. Hofman,[5] Zarniko,[6] Beck,[7] Spronk,[8] Welch and Abbott,[9] and others) who have inoculated guinea-pigs with the Klebs-Löffler bacillus from numbers of diphtheria cases, seems to point to no such relationship between the clinical character of the case and the effect of the bacillus derived from it upon the animal.

Another aspect of the question of the virulence of the bacillus diphtheriæ, which has received more attention, is as to whether the organism loses its virulence by long-continued residence in the air-passages of diphtheria patients.

It has been well shown by the work of Janson,[10] Heubner,[11] Tobiesen [12] and Morse [13] that the bacillus may persist in the throat long after convalescence has been established. The virulence of the organism in these cases of recovery has been found by Löffler,[14] Heubner,[11] Tobiesen [12] and Escherich [2] to be undiminished, while, on the other hand, Roux and Yersin [1] have stated that a progressive diminution of virulence may be observed the longer the organism remains in the throat. The last named have recorded five cases in which virulent bacilli gradually gave place to non-virulent forms in the course of days and weeks.

A more extensive piece of work on this point is that of Tobiesen,[12] in which the bacilli from 19 convalescent diphtheria cases, after their discharge from the hospital, were inoculated into guinea-pigs. Of the 19 cases, 16 were found to still furnish bacilli which killed the guinea-pigs, with the characteristic lesions at the autopsy; while on the animals inoculated from the 3 remaining cases, 2 eventually died and 1 developed paralysis.

From all the foregoing statements it would appear that in general no constant relationship can be made out between the virulence of the bacillus towards animals, and the symptoms presented by the cases from which they were derived. Having at our disposal a large number of cases of diphtheria in the contagious wards of the Boston City Hospital, it was determined to again test this question of the virulence of the bacillus in the different types of cases above referred to. With this end in view two series of cases have been studied. The first and larger series comprises 59 cases of various degrees of severity from which the cultures have been taken at an early period of the disease when the organism could have been considered as not having been present a long time in the throat. These cultures have been inoculated into 114 guinea-pigs to determine their virulence. The second series comprises 23 cases in which the bacilli had been present in the throat or nose for a longer or shorter period of time when inoculated into guinea-pigs. In this series, 35 animals were used.

The methods used in the investigation have been as follows: The material for cultures has been obtained, in most of the cases, by touching the mucous membrane of the nose or throat with sterilized cotton "swabs." The "swab" consists of a piece of stiff wire, about five inches long, upon one end of which a small pledget of absorbent cotton has been wound. The swab thus made is placed in a test-tube, which is stoppered with cotton and the whole sterilized by heat before using. A large number of swabs prepared in this way are kept at hand in the hospital laboratory ready for use, and may be carried to and from the wards without danger of contamination.

The culture medium used for growing discrete colonies of the organism from which to prepare pure cultures has been coagulated beef-blood serum, containing one part in four of one-per-cent. sugar bouillon (Löffler's mixture). The mixture of blood-serum and bouillon is coagulated in test-tubes by dry heat so as to form "slants," and then sterilized by steam in three successive days, as is done with ordinary media. On this culture medium the diphtheria bacilli grow vigorously and with characteristic morphology.

To obtain colonies of the bacillus from which to prepare pure cultures, some of the material secured on the swab in the manner above described, is applied over the surface of two or more tubes, and these are then placed in the incubator for development. After about eighteen to forty-eight hours, from the discrete colonies which have appeared, pure cultures may be made for inoculation. The cultures used and the methods employed in the inoculations have varied. With a few exceptions, which will be found duly noted in the detailed reports of the work, bouillon and agar cultures have been inoculated which have been about twenty-four hours in the incubator. In the majority of cases cultures in one-per-cent. grape-sugar bouillon of neutral to slightly alkaline reaction and colored with litmus, have been injected into the tissues of the abdominal wall in quantities less than one cubic centimetre by means of a hypodermatic syringe.

In the same manner other fluid cultures and suspensions in sterilized water of the twenty-four hours' growth of agar cultures have been injected. The method of direct inoculation from agar cultures by the platinum loop or wire through a wound on the abdominal wall has also been used in some instances. In order to avoid as much as possible any attenuation of the organism by cultivation, the cultures used for inoculation in the first mentioned series of 59 cases, have all, with few exceptions, been of the second generation from the patient.

The limitation of the cultures used in these cases for testing the virulence to those of the second generation, has greatly increased the necessary labor of the investigation, on account of the numerous failures to obtain pure cultures within so few generations. In the second series of 23 cases, however, the cultures used have not been so limited as to the number of generations. The usual number has been three; and, unless otherwise specified in the tables of results, the cultures used have been that number of generations from the patient. In both series of cases two animals, as a rule, have been inoculated from the same case, and in many cases with the same culture. Proceeding in the manner above described, the study of two series of cases before mentioned has been carried out.

In the subjoined tables are given some of the details and the results of the work. In them are to be found the name and the age of the patient, the size and weight of the animals when known, the manner of inoculation, its results, and any remarks thought necessary. In addition to these, in the table of the second series, comprising those cases in which the bacillus has been present for a longer or shorter time, the number of days which have passed since it was first demonstrated to be present, up to the date of the taking of the cultures for inoculation, is given for each case in a separate column.

The first series of 59 cases has been divided into four groups comprising the fatal, severe, medium severe, and mild cases. In comparing and discussing the results obtained from the study of both series of cases, we shall consider as indicating the virulence of the organism derived from the case, only the shortest time in which an animal died in those cases where more than one was inoculated. The sooner that death followed the inoculation, the more virulent will be considered the culture which was inoculated.

In general it may be said that a full virulent culture is one which causes the death of a guinea-pig within three days or less, a culture of medium virulence one which causes the death of the animal in from three to five days. Cultures which only produce local necrosis and ulceration or death after a greater number of days may be considered as of slight virulence. The death of the animal within forty-eight hours or less after the inoculation, indicates a very high degree of virulence in the culture inoculated.

This is based upon the assumption which nearly all writers on experimental diphtheria seem to have adopted, namely, that the susceptibility of the guinea-pig to infection with the bacillus diphtheriæ is a nearly constant quantity. If this be true, and if the rapidity of the death of the animal be a measure of the degree of virulence of the organism, we should find that the two or more animals inoculated simultaneously in the abdominal wall with the bacilli from a given case would die very nearly at the same time. In many cases this has been observed, but a glance at the tabulated results will show in this and other instances considerable variation in the times of the survival of animals inoculated from the same case as well as from similar cases; so that we are inclined to doubt the entire correctness of the assumption of a constant susceptibility.

These variations are apparently more frequent in those cases in which different modes of inoculation have been used than in those in which both animals have been inoculated from the same culture and in the same manner, but this circumstance does not suffice to explain all the differences in results observed.

To account for these differences, it does not seem unreasonable to suppose that guinea-pigs vary in their degree of susceptibility to this infection, and this variation in susceptibility may be considered as playing a considerable part in the production of the irregularities in the effects of the inoculation.

It would appear, however, that in general, inoculation with bouillon cultures is more rapidly fatal than the inoculation of the growth from agar cultures. The observations on this point are not altogether satisfactory, for it is very probable that in some few cases confusion has arisen as to which animal was inoculated with the bouillon culture and which from the agar, but the evidence is on the whole sufficiently trustworthy to warrant the general statement. The difference between the forms of culture is especially apparent in those cases in which the animal, after recovery from an inoculation with an agar culture, has rapidly succumbed to a bouillon culture of the same origin as the first, notwithstanding the fact that the organism had been in cultivation for a considerable time and so subject to the chances of attenuation.

It is not probable that this greater virulence of the bouillon culture is due to an intoxication with the poisonous products of the bacillus preformed in the culture and in solution. That in cultures so young as those here employed and injected in the quantities noted, no effective amount of the poison of diphtheria exists is clearly shown by the results of those who have studied the toxalbumin of the bacillus diphtheriæ.

To determine for ourselves, however, whether the fluid of twenty-four-hour bouillon cultures contains any toxic substance, we have in several instances injected the sterile filtrates of such cultures in the same manner as for bouillon cultures and in greater quantities, but never with any noticable effect on the animal. Two of these experiments were essentially as follows: Two-tenths of a cubic centimetre of a twenty-four-hour sugar

INOCULATIONS WITH THE BACILLUS DIPHTHERIÆ.

Fatal Cases.

Name.	Age.	Weight (grms.) or size of guin. pigs.	Mode of Inoculation.	Result of Inoculation.	Remarks.
T. M.	6 years	285 250	.3 c. c. Sugar bouillon (litmus) .2 " " "	Death, 4½ days " 36 hours	
C. C.	10 years	200 290	.2 c. c. Sugar bouillon (litmus) .4 " " "	Death, 7½ days Paralysis. Killed after 3 wks.	
J. M.	3 years	200 370	.2 c. c. Sugar bouillon (litmus) .5 " " "	Death, 3½ days " 48 hours	
H. W.	2 years	300 220	.5 c. c. Sugar bouillon (litmus) .2 " " "	Death, 48 hours Recovered	
L. C.	13 years	330 220	.5 c. c. Sugar bouillon (litmus) .2 " " "	Death, 48 hours " 48 hours	
C. K.	11 years	290 290	.3 c. c. Sugar bouillon (litmus) .3 " " "	Death, 36 hours " 36 hours	
R. T.	2½ years	270 275	.2 c. c. Sugar bouillon (litmus) .4 " " "	Death, 36 hours " 36 hours	
E. K.	2½ years	340 275	.5 c. c. Sugar bouillon (litmus) .3 " " "	Death, 48 hours " 48 hours	Measles coincident.
K. B.	3 years	270 230	.3 c. c. Sugar bouillon (litmus) .2 " " "	Death, 36 hours " 36 hours	
J. T.	8 years	240 240	.2 c. c. Sugar bouillon (litmus) 1.8 " " "	Recovered. Ulceration Death, 36 hours	Bacillus under cultivation more than 4 weeks when inoculated into second guinea-pig
M. L.	4 years	240	.2 c. c. Sugar bouillon (litmus)	Death, 36 hours	
B. L.	5 yrs. 3 mos.	215 360	.2 c. c. Sugar bouillon (litmus) .5 " " "	Recovered "	Scarlet fever coincident.
R. R.	5 years	Small Very large	1. c. c. Sugar bouillon (litmus) 1. " " "	Death, 72 hours " 72 hours	Scarlet fever coincident.
M. D.	2 years	Small Large	.5 c. c. Sugar bouillon (litmus) 1. " " "	Death, 4 days " 4½ days	Scarlet fever coincident.
P. D.	4 years	Small Large	.5 c. c. Sugar bouillon (litmus) 1. " " "	Death, 36 hours " 72 hours	
G. B.	9 years	Medium size Medium size	1. c. c. Glycerine bouillon 1. " "	Death, 36 hours " 36 hours	
A. G.	2 years	Medium size Medium size	1. c. c. Glycerine bouillon 1. " "	Death, 48 hours " 4½ days	
L. G.	7 years	280	.25 c. c. Sugar bouillon (litmus)	Death, 72 hours	Culture from membrane cast of trachea and bronchi.
M. C.	4 years	Well grown	1. c. c. Glycerine bouillon	Death, 36 hours	Culture from tracheal pseudo-membrane.
B. H.	8½ years	Large Small	Agar culture loop 1. c. c. Sugar bouillon (litmus)	Death, 36 hours " 36 hours	
F. K.	4 years	Large Small	Agar culture loop 1. c. c. Sugar bouillon (litmus)	Death, 3½ days " 36 hours	
E. B.	1 yr. 10 mos.	Small Medium size	1. c. c. Sugar bouillon (litmus) Agar culture loop	Death, 24 hours " 36 hours	
A. R.	2½ years	....	.5 c. c. Water susp. agar cult. Agar culture loop .5 c. c. Water susp. agar cult. 1. " " " "	Death, 48 hours " 3½ days " 36 hours " 36 hours	Two agar cultures used.
E. H.	3 yrs. 5 mos.	.	.5 c. c. Water susp. agar cult. .5 " " " "	Death, 3½ days " 6 days	
E. F.	7 years	... Reinoculation	.5 c. c. Water susp. agar cult .5 " " " " 1. c. c. (?) Glycerine bouillon	Death, 13-14 days Recovered and reinoculated Survived. Reinoculation	
J. R.	3 years	....	.5 c. c. Water susp. agar cult. 5 " " " "	Death, 4 days Killed after 10 days	
E. R.	13 months	.... Large Reinoculation	.5 c. c. Water susp. agar cult. .5 " " " " 1. c. c. Glycerine bouillon	Death, 8½ days Recovered. Reinoculated Death, 48 hours	The bacillus had been in cultures about 6 weeks when reinoculated.
R. M.	4 years	275 290	.2 c. c. Sugar bouillon (litmus) .4 " " "	Death, 36 hours " 72 hours	Pneumonia.

Severe Cases.

Name.	Age.	Weight (grms.) or size of guin. pigs.	Mode of Inoculation.	Result of Inoculation	Remarks.
M. M.	4 years	225	.2 c. c. Sugar bouillon (litmus)	Death, 36 hours	
Dr. T.	26 years	250	.2 c. c. Sugar bouillon (litmus)	Death, 37 days	No marked lesions at autopsy Culture third gen.
Dr. B.	41 years	230 200	.3 c. c. Sugar bouillon (litmus) .2 " " "	Death, 36 hours " 36 hours	
C. M.	13 years	230 230	.2 c. c. Sugar bouillon (litmus) 2 " " "	Death, 3½ days " 4½ days	
Dr. S.	28 years	200 240	.2 c. c. Sugar bouillon (litmus) 4 " " "	Death, 72 hours " 72 hours	
A. McD.	20 years	350 250	.5 c. c. Sugar bouillon (litmus) .3 " " "	Death, 36 hours " 36 hours	
L.	8 years	Well grown Large	1. c. c. Glycerine bouillon 1 " "	Death, 36 hours " 36 hours	
A. C.	9 years	Medium size 350 Reinoculation	1. c. c. Sugar bouillon (litmus) Agar culture, loop .5 c. c. Sugar bouillon (litmus)	Death, 36 hours Ulceration. Recov. Reinoc. Survived reinoculation.	[brane of trachea Culture from pseudo-mem Dr. Crowell's case

Cases of Medium Severity.

F. G.	4 years	350 260	.3 c. c. Sugar bouillon (litmus) .2 " " "	Death, 3 days " 4½ days	Scarlet fever coincident
C. G.	5 years	210 330	.2 c. c. Sugar bouillon (litmus) .3 " " "	Death, 72 hours " 72 hours	
F. B.	4 years	350 190	.5 c. c. Sugar bouillon (litmus) .2 " " "	Death, 18 hours " 72 hours	
W. McI.	6 years	435 240	.5 c. c. Sugar bouillon (litmus) .3 " " "	Death, 6½ days " 72 hours	
P. W.	11 months	280 310	.2 c. c. Sugar bouillon (litmus) .5 " " "	Death, 3 days " 72 hours	Scarlet fever coincident K.-L. bacilli in throat 10 days when this culture was taken.
E. M.	25 years	290 250	.5 c. c. Sugar bouillon (litmus) .5 " " "	Recovered Death, 8½ days	
E. G.	10 years	Medium size Medium size	1. c. c. Water susp. agar cult. 1. c. c. Glycerine bouillon	Death, 18 hours " 36 hours	
D. G.	14 years	Medium size Medium size Reinoculation	Agar culture loop 1. c. c. Glycerine bouillon 4 c. c. Sugar bouillon (litmus)	Recovered. Reinoculated Death, 18 hours Ulceration. Survived	Scarlet fever coincident. Guin. pig that recovered was reinoculated after about 5 wks.
M. K.	17 years	Medium size Medium size Reinoculation Reinoculation	Agar culture loop " " " 1. c. c. Glycerine bouillon 1. " "	Recovered. Reinoculated " " Death, 72 hours " 72 hours	Both animals reinoculated with 72 hours glycerine bouillon culture after 2 weeks.
E. D.	3½ years	Large Small	Agar culture loop 1. c. c. Sugar bouillon (litmus)	Death, 36 hours " 24 hours	
F. M.	6½ years	Small Large	1. c. c. Sugar bouillon (litmus) Agar culture loop	Death, 18 hours " 18 hours	Scarlet fever coincident.
M. S.	6 years	Large .	1. c. c. Bouillon 5 " Agar culture loop	Death, 36 hours " 36 hours " 48 hours	Scarlet fever coincident.

Mild Cases.

W. N.	32 years	360	.3 c. c. Sugar bouillon (litmus)	Death, 17 days	Culture in 3d gen.
B.	30 years	Large Small Reinoculation	Agar culture loop 1. c. c. Sugar bouillon (litmus) 1. c. c. Glycerine bouillon	Ulceration. Recovered Death, 36 hours Death, 72 hours	The animal which recovered was reinoculated after 2 weeks.
S. M.	50 years	. . Reinoculation	.5 c. c. Water susp. agar cult .5 c. c. " " " 1. c. c. Bouillon	Death, 6½ days Recovered. Reinoculated Death, 24 hours	Culture 72 hrs. old. Reinoculated about 6 weeks after first time
S. R.	27 years		.5 c. c. Water susp. agar cult. .5 c. c. " " "	Death, 48 hours Death, 18 hours	
V. P.	3 years	. Medium size Reinoculation	.5 c. c. Water susp. agar cult. Agar culture loop .5 c. c. Water susp. agar cult. 1 c. c. Bouillon	Death, 7½ days Death, 36 hours Recovered. Reinoculated Death, 72 hours	Second inoculation 27 days after the first.
J. C.	2 years	240 200	Blood serum culture loop .2 c. c. Sugar bouillon (litmus)	Death, 72 hours Death, 36 hours	Convalescent from scarlet [fever.
W. M.	2 years	190 210	Blood serum culture loop .2 c. c. Sugar bouillon (litmus)	Death, 72 hours Death, 48 hours	Scarlet fever convalescent. No membrane. Coryza main symptom.
N. D.	5 years	... Well grown Reinoculation Reinoculation	Agar culture loop Agar culture loop 1. c. c. Glycerine bouillon 1. c. c. " "	Recovered. Reinoculated Recovered. Reinoculated Death, 12-18 hours Death, 72 hours	2d inoculation after 14 days " " " " Bouillon cult. 72 hours old " " " "
W. P.	7 years	180	.2 c. c. Sugar bouillon (litmus)	Death, 7½ days	Convalescent from scarlet fever. Coryza the main symptom. Cult. 3d gen.
W. M.	2½ years	270	.2 c. c. Sugar bouillon (litmus)	Recovered. Ulceration	Scarlet fever convalescent No membrane. Cult. 3d gen.
J. L.	6 years	225 285	.2 c. c. Sugar bouillon (litmus) .3 c. c. " " "	Death, 23 days Recovered	days K.-L. bacilli already present 6 Cult. 3d gen

Remarks.

ed lesions at autopsy
ird gen.

brane of trachea
from pseudo mem
ell's case

ever concident.

ever concident.
illi in throat 10 days
culture was taken.

ever concident.
that recovered was
d after about 5 wks

nimals reinoculated
rs glycerine bouillon
er 2 weeks.

ever concident.

ever concident.

in 3d gen

nal which recovered
ulated after 2 weeks.

72 hrs. old Reinocu
t 6 weeks after first
time.

inoculation 27 days
irst
scent from scarlet
fever.

fever convalescent
rane Coryza main

lation after 10 days
" " "
cult. 72 hours old.
" "

scent from scarlet
ryza the main symp
t 3d gen.

fever convalescent
rane Cult 3d gen.
days
illi already present 6
gen

Cases in which the Bacillus had been Present for a Longer or Shorter Period of Time

Name.	Age	Days K.-L. pres.	Weight (grms.) or size of guinea pig	Mode of Inoculation	Result of Inoculation.	Remarks.
I. T.	1 year	42	210	.2 c.c. Sugar bouillon (litmus)	Death, 72 hours	K.-L. bacilli in nose, never in throat. Cult. 2d gen. Medium severity, but eventually fatal.
F. H.	3 years	51	200	.2 c.c. Sugar bouillon (litmus)	Death, 48 hours	Main symptom coryza. Cult 48 hours.
P. W.	13 mos.	49	200	.2 c.c. Sugar bouillon (litmus)	Death, 6 days	No lesions in animal at autopsy. Medium severity.
G. C.	6 years	30	Well grown	1. c.c. Glycerine bouillon	Death, 36 hours	
F. B.	4 years	39	290	.3 c.c. Sugar bouillon (litmus)	Death, 36 hours	Culture 2d gen.
F. K.	5 years	29	330	3 c.c. Sugar bouillon (litmus)	Ulceration, killed	Killed after 25 days. Medium severity.
M. C.	4 years	25	310 170	.3 c.c. Sugar bouillon (litmus) 15 " " "	Death, 38 days " 8½ days	No lesions at autopsy.
T. H.	23 years	18 27	225 265	.5 c.c. Sugar bouillon (litmus) .2 " " "	Death, 36 hours " 36 hours	
B. R.	27 years	33	 Medium size Small Large	.5 c.c. Water susp. agar cult. 1. " " " 1. c.c. Sugar bouillon (litmus) 1. " " "	Recovered Death, 4½ days " 72 hours " 48 hours	Survived a second inoculation.
M. McD.	19 years	21	240	3 c.c. Sugar bouillon (litmus)	Death, 4 days	
H. U.	5 years	26	210	.2 c.c. Sugar bouillon (litmus)	Death, 6 days	
Dr. P.	23 years	21 26	235 220 310	.25 c.c. Sugar bouillon (litmus) .2 " " " .25 " " "	Death, 36 hours " 36 hours " 36 hours	
Dr. T.	26 years	12	260	.3 c.c. Sugar bouillon (litmus)	Death, 33 days	Severe case.
W. T.	21 years	11	290	.3 c.c. Sugar bouillon (litmus)	Death, 6½ days	
W. M.	2½ years	14	180	2 c.c. Sugar bouillon (litmus)	Death, 9½ days	No marked lesions at autopsy.
Dr. S.	26 years	19	280 240	.2 c.c. Sugar bouillon (litmus) .2 " " "	Death, 72 hours " 29 days	Med. severity. 1st animal, 48 hrs., cult. 4th gen; 2d animal, 24 hrs., cult. 5th gen.
D. T.	5 years	15	280	1 c.c. Sugar bouillon (litmus)	Death, 72 hours	
M. S.	7 years	14	240 210	Blood serum cult. loop .2 c.c. Sugar bouillon (litmus)	Recovered Death, 4½ days	Cult. of 2d gen. No lesions at autopsy. Culture of 3d gen.
G. P.	7 years	16	270 310	.2 c.c. Sugar bouillon (litmus) .3 " " "	Death, 29½ days " 19 days	No lesions at autopsy.
H. C.	1½ years	8	280 200	.3 c.c. Sugar bouillon (litmus) .2 " " "	Death, 72 hours " 72 hours	
M. R.	6 years	9	210	2 c.c. Sugar bouillon (litmus)	Death, 4½ days	
I. McL.	5 years	35	210	2 c.c. Sugar bouillon (litmus)	Death, 8 weeks	Severe case.
J. S.	5 years	[illegible]	 Large	1. c.c. Water susp. agar cult. 1. " " "	Death, 36 hours " 36 hours	Med. severity. K.-L. bacilli present for some weeks when the culture was taken.

bouillon culture two generations removed from the case of diphtheria, was injected in the usual manner into a guinea-pig to test the virulence. At the same time a portion of the culture was filtered through unglazed porcelain, and nine-tenths of a cubic centimetre of the sterile filtrate injected into another guinea-pig in the same way as the bouillon culture. Likewise the culture from another case of diphtheria was tested and the filtrate injected, but in this second case the quantity of filtrate injected into the abdominal wall was one cubic centimetre, and an additional cubic centimetre was thrown into the peritoneal cavity. Both of the animals inoculated with the bouillon cultures died within thirty-six hours, while those in which the filtrate had been injected in comparatively large quantities showed no ill effects.

It is clearly evident, therefore, that the toxic effects of the bouillon cultures here used have little to do with their apparently greater activity. Furthermore, as to whether a more rapid death follows the injection of a larger than a smaller quantity of the same culture, we do not care to express a positive opinion from the data at hand, for it is uncertain in some cases which animal received the larger quantity. It may be said, however, considering the results of inoculation of bouillon cultures as a whole, that two-tenths of a cubic centimetre seems to be quite as effective as one cubic centimetre.

The results of the study of the 59 cases of the first series may be briefly summarized as follows, if we apply the criteria of virulence above alluded to:

Of this number 28 were fatal and 31 ended in recovery.

Of the 28 fatal cases, cultures from22, or 79 per cent., caused the death of at least one animal within three days, while of the 31 non-fatal cases, those of 23, or 74 per cent., had this effect. What may be considered as full virulent cultures were therefore only a little less frequently found among the non-fatal cases than among the fatal cases.

Of the 40 fatal cases of Roux and Yersin all, or 100 per cent., killed the animal within four days. Comparing our 28 fatal cases with these, we find that 25, or 89 per cent., of the cases gave cultures of this degree of virulence. The difference, therefore, between the fatal cases of Roux and Yersin and the similar cases of our series is represented by 100 per cent. in the former and 89 per cent. in the latter, of fairly virulent organisms. Of the 39 non-fatal cases of the above-named writers, 17, or 44 per cent., killed the animal in less than three days, while in our 31 cases, 23, or 74 per cent., had that result.

It cannot be said, therefore, that our results are completely in harmony with the classic studies of Roux and Yersin on diphtheria.

We may also combine the different groups of our first series in other ways, and institute comparisons. Comparing the fatal and severe cases together, on the one hand, with the mild and medium severe cases combined, on the other hand, we find that of the 36 fatal and severe cases, 28, or 78 per cent., killed a guinea-pig within three days, while of the 23 cases of mild and medium severity, 17, or 74 per cent., did so. The relation of the two combinations as to the frequency with which full virulent bacilli are found among them may therefore be expressed by the numbers 78 and 74, apparently indicating that full virulent cultures are not more frequently obtained from fatal and severe cases than from the others. Again, considering the mild cases by themselves, it is found that 7 of the 11, or 64 per cent., as compared with 79 per cent. of the fatal cases, or 78 per cent. of the fatal and severe cases combined, gave cultures which caused the death of the animal within three days, and were therefore full virulent.

In making these comparisons between the different classes of cases, we have of course based them upon the percentage among them of what may be considered as quite virulent organisms and have not considered the cases which have yielded cultures of medium or slight virulence. It has been thought best to limit the comparisons to this point in order to avoid confusion.

The study of the second series of 23 cases, in which the bacilli have been present for from 8 to 51 days in the throat or nose, has been rendered possible by the rule of the Boston City Hospital, that no diphtheria case can be discharged until cultures from the throat and nose show the absence of Klebs-Löffler bacilli, although the case be otherwise fully recovered. By consulting the records of the routine bacteriological work on diphtheria carried on in the pathological laboratory in the same institution, we have been enabled to give in all of the cases, except one, the number of days which have passed from the date of the first demonstration of the organism by cultures in the throat or nose to the date of the taking of the culture for inoculation.

In the table of the results of our study of this series, the culture used is to be considered as of the third generation from the case, unless otherwise stated. These cases, moreover, unless otherwise specified, have been of mild character originally. The result of the work of this series may be briefly summarized as follows: Of the 23 cases, cultures from 11 have caused the death of the guinea-pig in less than three days, or 48 per cent. gave full virulent bacilli. It is interesting to note that in 7 of the 11 virulent cases the presence of the bacilli in the throat or nose had first been shown by cultures 26 to 51 days before the time that the culture inoculated was taken.

It will be seen, however, that this series, considered as a whole, shows fewer virulent cultures than the other series of 59 cases, the percentage in these persistent cases being 48 per cent. as compared with the 78 per cent. of the fatal and severe cases or the 74 per cent. of the mild and medium cases.

Whether these differences are due to any attenuation of the organism in this second series of cases, owing to the slightly greater number of generations through which it has been cultivated, we do not know. It seems, however, to be a generally accepted fact that the bacillus diphtheriæ is not easily attenuated by cultivation; and the general tendency of our own experience is in this direction, as will be seen from the results in some of the instances before alluded to, in which reinoculations of an animal have been made with a fresh culture of the same bacillus as the first inoculation. In some of these instances the organism has proven virulent although it had been under cultivation for some time. It may be mentioned that among the series of persistent cases are four cases, the bacilli from which had previously been inoculated and the results included in the first series. In two of these four cases the culture had been taken for inoculation respectively 33 and 39 days before the taking of the culture of the present series. Both the earlier and later cultures in these two cases killed at least one animal in forty-eight hours, one of them with the later culture causing the death of the guinea-pig in thirty-six hours. Of the other two cases of the four above mentioned, one seemed to show some diminution in the virulence of the bacillus, while the fourth case on both occasions seemed to yield organisms of little virulence.

If the results of this study of the cases of the second series be compared with those of Roux and Yersin and of Tobiesen on the same class of cases, they will be found to be totally at variance with those of the former, but to agree fairly well with those of the last mentioned. Tobiesen[12] obtained from 16 out of 19 convalescent cases cultures which caused the death of guinea-pigs with characteristic lesions, while Roux and Yersin[1] found that in similar cases the occurrence of virulent bacilli was the exception, and believed that a progressive attenuation of virulence took place.

Considering now the whole number of 82 cases in both series, we find that but one case seemed to furnish organisms of complete innocuousness toward guinea-pigs. This case was a fatal one, and in neither of the two animals inoculated was any effect noted. There are, however, 12 cases which deserve special attention, as the bacilli from them showed little virulence. In 2 of these cases the animal developed a characteristic induration and ulceration at the seat of inoculation. One was purposely killed, the other survived. In 6 others of these cases the animals died from 4½ to about 54 days after inoculation, with very slight lesions (or none at all) observed at the autopsy. Cultures from the seat of inoculation were made at 5 of the autopsies, but in only one of them was the Klebs-Löffler bacillus recovered. This animal had been inoculated about 38 days before. In the remaining 4 cases the animals died in from 14 to 31½ days with lesions of experimental diphtheria, and the bacilli were removed from the seat of inoculation. Of one of these 4 cases it should be explained that lesions were present in one of the animals inoculated, but not in the other or only in slight degree, and that the bacilli were found at the seat of inoculation in the latter, but not in the former. The case has, therefore, been considered as one in which lesions were produced, and in which the bacilli were recovered from the seat of inoculation.

It may be seen from this description that of these 12 cases with bacilli of little virulence, 6 yielded bacilli which called forth more or less of a characteristic reaction in the animals, either locally or in the organs.

Finally, we may state that, with the exception of these 12 cases, from all of the remaining cases bacilli were obtained which killed at least one guinea-pig within ten days.

From our study of these 82 cases the following general statements may be made:

(1) That there is practically no difference in virulence to be observed between the bacilli derived from severe and mild cases of diphtheria.

(2) That cases in which the Klebs-Löffler bacilli have been present for a longer or shorter period of time, furnish fewer virulent cultures than cases of recent beginning.

(3) That the Klebs-Löffler bacillus does not, as a rule, lose its virulence by long-continued residence in the pharynx and air-passages.

(4) That the Klebs-Löffler bacillus exists with all degress of virulence down to innocuousness, as far as is shown by the results of its inoculation into guinea-pigs, and that the intensity of the reaction in the animal bears no constant relation to the symptoms presented by the case from which it was derived.

(5) That there is no relation to be observed between the age or sex of the patient and the virulence of the bacillus.

In conclusion, the writer desires to express his acknowledgments to Dr. Francis H. Williams for valuable clinical data on some of the cases. The thanks of the writer are also due to Dr. W. H. Prescott for kind assistance in this and other portions of the work.

II.

The results of fourteen autopsies on diphtheria cases.

The autopsies on cases of diphtheria which are here reported have been performed, unless otherwise specified, at the Boston City Hospital during the period extending from November, 1893, to May, 1894. The chief interest in this work attaches to the results of the bacteriological examination of the organs.

Up to the time of the well-known work of Frosch[15] it was generally believed that the bacillus diphtheriæ never invaded the internal viscera, but was only to be found in the local inflammatory lesions. In 10 or 15 autopsies on this disease, this investigator, by using large amounts of material for each culture, could demonstrate the presence of the bacillus either in the blood or in some of the organs. One of the most frequent places in which it was found was in the pneumonic areas of the lungs. Previous to the work of Frosch but a very few instances are on record in which the Klebs-Löffler bacillus has been met with in these situations. One of these is its occurrence in the spleen in a case reported by Kolisko and Paltauf.[16] In the cervical lymph-glands the bacillus has been observed by Schmorl[17] in 7 out of 10 cases. Recently, Booker[36] obtained it in cultures from the spleen, submaxillary gland, lung, and blood of heart in a case of diphtheria.

In the broncho-pneumonia of diphtheria it seems to have escaped observation entirely in spite of the great amount of work which has been done on the bacteriology of this frequent complication of the disease, until Johnston[18] found in it a single case, and Strelitz[19] in one case among eight autopsies on diphtheria. In addition to these cases and those reported by Frosch, it has also been observed by Flexner[20] in one of the two cases examined by him.

It is apparent, therefore, that the principal points to be considered in these autopsies are the occurrence of the organism in the viscera in general and in the broncho-pneumonias in particular.

METHODS.

The medium generally employed for cultures at the autopsy has been the coagulated blood serum described in the first section of this report. The cultures were, in general, made by spreading over the surface of this coagulated serum in test-tubes as large an amount of the tissue or fluid as would adhere to the end of a piece of coarse, flattened platinum wire, previously sterilized in the flame of a Bunsen burner. The Klebs-Löffler bacilli are usually present in very small numbers in the organs, and we are inclined to attribute the comparative frequency with which we have met them both to the use of the culture medium above mentioned, upon which they grow much more vigorously than upon the ordinary glycerine agar or similar material, and to the large amount of the fluid or tissue spread over the culture media. In the detailed reports of the results of the study of these cases which will be found below, it has been thought sufficient to only indicate the lesions presented at each autopsy by giving the anatomical diagnosis and any necessary remarks. In the bacteriological diagnosis of the cases the presence of the four organisms, the Klebs-Löffler bacillus, the streptococcus pyogenes, the pneumococcus (diplococcus lanceolatus) and the staphylococcus pyogenes aureus are in general the only organisms which have been considered. Other bacteria, including the bacillus coli communis, have developed in the cultures more or less frequently; but we have devoted little attention to these.

Autopsy I. By Dr. Wright. Fred W., aged eight years. Clinical diagnosis, scarlet fever. No bacteriological examination of throat during life, as there was no evidence of diphtheria.

Anatomical diagnosis: Inflammation of pharynx, larynx and trachea with muco-purulent exudation; slight ulceration of epiglottis; broncho-pneumonia; congestion and edema of lungs; acute splenic tumor; acute parenchymatous degeneration of liver and kidneys; acute lymphadenitis.

Bacteriological diagnosis by cultures: Klebs-Löffler bacilli in exudation of pharynx and ulcer of epiglottis; a culture from one lung contained a few Klebs-Löffler bacilli, also streptococci; pneumococci (diplococcus lanceolatus), staphylococci (aureus), and other organisms; cultures from spleen, kidney, liver, mesenteric gland and blood of heart were negative.

Two guinea-pigs were inoculated with .2 c. c. each of a twenty-four-hour bouillon culture of the third generation of the Klebs-Löffler bacilli from the pharynx. Both died in thirty-six hours, with the characteristic lesions at the autopsy. The bacilli were recovered by culture from the seat of inoculation in each animal, but from none of the organs.

A culture of the Klebs-Löffler bacilli found in the lung (sixth generation) was similarly inoculated into another guinea-pig in the quantity of .2 c. c. Death in seventy-two hours, with the characteristic lesions. Klebs-Löffler bacilli recovered by culture from seat of inoculation. Organs sterile.

This case is of interest as affording an instance of a fatal diphtheria without the presence of pseudomembrane.

Autopsy II. By Dr. Councilman. Isabella N., aged nineteen. Clinical diagnosis, typhoid fever and diphtheria. This case has been more fully reported by Dr. Morse in the reports of the Boston City Hospital.

Anatomical diagnosis: Diphtheritic inflammation of pharynx; diphtheritic ulceration of tonsil and larynx; tracheitis; typhoid ulceration of ilium and colon; heart thrombus; renal infarction; broncho-pneumonia, congestion, edema and bronchitis of lung; acute splenic tumor; acute lymphadenitis.

Bacteriological diagnosis by cultures: Klebs-Löffler bacilli and streptococci in tonsil and trachea. Typhoid bacilli and streptococci in heart thrombus, kidney infarction, liver and kidney. Typhoid bacilli in spleen and in gall-bladder. Streptococci in pleura and lung. Bacillus coli communis in mesenteric gland. Cultures from blood of heart and tracheal lymph-gland negative.

The Klebs-Löffler bacilli from the trachea were inoculated into two guinea-pigs. One of the animals died in forty-eight hours, and exhibited the characteristic lesions of experimental diphtheria at the autopsy; .5 to .7 c. c. of a twenty-four-hour bouillon culture was used for the inoculation of this animal. The other animal recovered, having been inoculated from a culture on agar.

This case is an example of poly-infection with the Klebs-Löffler bacilli, the streptococcus pyogenes and the typhoid bacillus. The last-named organism was distinguished from the bacillus coli communis by not producing gas bubbles in solid media, by having no effect on litmus milk and by not growing visibly on potato; also by the fact that it was actively motile and grew characteristically on gelatine.

It should be stated, however, that in the case of the kidney infarction the typhoid bacilli did not satisfy the requirements as to the culture on litmus milk.

Autopsy III. By Dr. Stokes. Sylvester P., aged ten months.

Anatomical diagnosis: fibrinous exudation on epiglottis; acute laryngitis; broncho-pneumonia of both lungs; acute lymphadenitis of cervical, bronchial and mesenteric glands; acute parenchymatous degeneration of liver and kidneys; acute splenic tumor.

Bacteriological diagnosis: Klebs-Löffler bacilli and streptococci in larynx, cervical lymph-gland and lung. Streptococci in heart blood, spleen and bronchial lymph-gland. Streptococci and bacillus coli communis in kidney. Cultures from the liver and mesenteric lymph-gland negative.

With an agar culture of the Klebs-Löffler bacilli from the cervical lymph-gland two guinea-pigs were inoculated. One of the animals died in forty-eight hours with the characteristic lesions. At the autopsy of the animal, cultures were made as usual from the seat of inoculation and the organs. In the culture from the kidney one colony of Klebs-Löffler bacilli developed, and in the culture from the seat of inoculation the colonies of the organisms were numerous.

This case is an example of the frequent association which has been observed of a streptococcus septicemia along with the infection with the Klebs-Löffler bacillus.

Autopsy IV. By Dr. Wright. Edith T., aged four years, three months.

Anatomical diagnosis: diphtheritic inflammation of pharynx and larynx, acute lymphadenitis, acute splenic tumor, ecchymoses in right lung and in mucous membrane of stomach.

Bacteriological diagnosis by cultures: Klebs-Löffler bacilli in pharynx, tonsil and epiglottis. Klebs Löffler bacilli and streptococci in right lung and in mucous membrane of stomach. Kidney, spleen, liver, right ventricle of heart, tracheal and mesenteric lymph-glands all sterile.

A guinea-pig, weight 210 gms. received .2 c. c. subcutaneously of a twenty-four-hour bouillon culture of the Klebs-Löffler bacilli from the lung. Death in forty-eight hours with the characteristic lesions, and the bacillus was recovered from the seat of inoculation, but found nowhere else.

The finding of Klebs-Löffler bacilli in the stomach has been reported by Löffler[21] in a single case. In his case a diphtheritic inflammation of the stomach was observed, which was not apparent in the one here reported.

AUTOPSY V. By Dr. Councilman. Fred B., aged four years.

Anatomical diagnosis: Diphtheria and septicemia; erythema of skin; diphtheritic inflammation of pendulous palate and tonsils; acute lymphadenitis, with necrotic foci in cervical lymph-glands; edema of posterior tracheal tissues; acute nephritis.

Bacteriological diagnosis by cultures: Klebs-Löffler bacilli and streptococci in spleen, liver and cervical lymph-glands. Streptococci in kidney and blood of heart.

A guinea-pig weighing 210 gms. received subcutaneously .2 c. c. of a twenty-four-hour bouillon culture of the Klebs-Löffler bacillus found in the lung. Death in thirty-six hours with the usual lesions. In addition to being recovered from the seat of inoculation, the bacilli were also found in the cultures made from the blood, liver and spleen of the animal. The kidney was negative.

AUTOPSY VI. By Dr. Wright. Beatrice B., aged nine years.

Anatomical diagnosis: Diphtheritic inflammation of pharynx, tonsils, epiglottis and larynx; tracheitis; broncho-pneumonia of both lungs; acute lymphadenitis; acute splenic tumor; arterio-sclerosis of beginning of ascending aorta.

Bacteriological diagnosis: Klebs-Löffler bacilli in larynx, tonsil and lung; spleen, liver, kidney, heart-blood and mesenteric lymph-gland negative for either Klebs-Löffler bacilli or streptococci.

A twenty-four-hour bouillon culture of the bacillus from the tonsil and also from the lung killed two guinea-pigs in thirty-six hours, with the usual lesions. The quantity injected in each case was .2 c. c.

AUTOPSY VII. By Dr. Councilman. Charles Van G., aged three years.

Anatomical diagnosis: Diphtheritic inflammation of mucous membrane of nose and pharynx; slight broncho-pneumonia in both lungs; excoriations on face and nose.

Bacteriological diagnosis by cultures: Klebs-Löffler bacilli and streptococci in pharynx, nasal cavity and lung. Streptococci in blood of heart, in liver and in spleen. Kidney and cervical lymph-gland sterile. In mesenteric gland Klebs-Löffler bacilli. The culture from the excoriation on face showed the presence of Klebs-Löffler bacilli, and that from the nose Klebs-Löffler bacilli and streptococci.

AUTOPSY VIII. By Dr. Councilman. Child. Female.

Anatomical diagnosis: Operation wound of hip; abscess about hip-joint, involving ilium and retroperitoneal tissues; metastatic abscesses in kidney, lungs and left shoulder; diphtheritic inflammation of larynx, with necrosis and erosion of epiglottis; broncho-pneumonia and bronchitis.

Bacteriological diagnosis by cultures: Staphylococcus aureus in primary abscess, kidney, spleen and liver. Klebs-Löffler bacilli and staphylococcus pyogenes aureus in cultures from tonsil, epiglottis and lung (areas of broncho-pneumonia).

AUTOPSY IX. By Dr. Wright. Irene T., colored, aged one year. In contagious wards more than two months. Klebs-Löffler bacilli in cultures made from nose during seven or eight weeks. Never found in throat during life. *Vide* first case in the second series of preceding section.

Anatomical diagnosis: Extensive diphtheritic ulceration of epiglottis and larynx; diphtheritic inflammation of inferior turbinate bones and nasal cavities with fibrinous exudation; infarction of lung; acute degeneration of liver and kidneys; acute lymphadenitis; acute splenic tumor; slight pericardial effusion; otitis media and abscess of both mastoid bones.

Bacteriological diagnosis by cultures: Klebs-Löffler bacilli in ulcer of larynx and epiglottis and in bronchial lymph-gland. In lung infarction fairly numerous Klebs-Löffler bacilli and other bacteria. Streptococci in liver and spleen. Pneumococci in kidney (diplococcus lanceolatus). In blood of heart a few bacilli (coli communis ?). Klebs-Löffler bacilli and streptococci in pus of mastoid abscess.

This case will again be referred to in a following section.

AUTOPSY X. By Dr. Councilman. Charles R., aged four years.

Anatomical diagnosis: Diphtheritic ulceration of pharynx and larynx; edema of pharynx; tracheitis; bronchitis; extensive broncho-pneumonia of right lung; erythema of skin; purulent conjunctivitis and keratitis.

Bacteriological diagnosis by cultures: Epiglottis, Klebs-Löffler bacilli and streptococci. Conjunctival pus, Klebs-Löffler bacilli and other bacteria. Lung, Klebs-Löffler bacilli, streptococci, pneumococci and other organisms. Edematous tissue with necrotic foci, behind left tonsil, streptococci. Kidney, streptococci, one colony; two to three colonies of staphylococcus aureus and other organisms. Spleen, very numerous colonies of various organisms, among them pneumococci.

AUTOPSY XI. By Dr. Councilman. Thomas M., aged six years. *Vide* list of fatal cases, Section 1. The bacilli taken from the throat during life were found virulent. This case will be referred to in another section.

Anatomical diagnosis: Diphtheritic inflammation of tonsils; diphtheritic inflammation and ulceration of trachea; broncho-pneumonia and edema of both lungs; acute parenchymatous degeneration; acute lymphadenitis; paronychia of toe.

Bacteriological diagnosis by cultures: In tonsil, trachea and bronchial lymph-gland, Klebs-Löffler bacilli, streptococci and staphylococcus pyogenes aureus. In lungs, Klebs-Löffler bacilli, streptococci, pneumococci, and in one lung also staphylococci pyogenes aureus.

In liver, Klebs-Löffler bacilli and streptococci. Streptococci in blood of heart and liver. Klebs-Löffler bacilli and staphylococcus pyogenes aureus in pus from paronychia. Right kidney, spleen and tracheal lymph-gland sterile; left kidney a very few colonies of the bacillus coli communis.

A guinea-pig weighing 200 gms. was inoculated with .2 c. c. of a twenty-four-hour bouillon culture of the Klebs-Löffler bacilli from the bronchial lymph-gland. No reaction was noted in the animal.

This case is noteworthy as being a fatal diphtheria in which a non-virulent organism was found at the autopsy while the Klebs-Löffler bacilli found during life were virulent.

AUTOPSY XII. By Dr. Wright. Annie O'T., aged one year.

Anatomical diagnosis: Diphtheritic inflammation of pharynx, larynx and trachea; broncho-pneumonia; ulceration of base of tongue; necrosis and ulceration of epiglottis; acute lymphadenitis; acute splenic tumor.

Bacteriological diagnosis by cultures: Klebs-Löffler bacilli in larynx, pharynx, bronchi of both lungs and in small superficial ulcer on left hand. Streptococci and Klebs-Löffler bacilli in cervical lymph-gland and in one lung. Streptococci in the other lung. Kidney, spleen, liver and blood of heart, sterile.

A guinea-pig weighing 280 gms. was inoculated with .3 c. c. of a twenty-four-hour bouillon culture of the bacilli from a bronchus. Death after six days. The organism was found by culture in the blood and spleen of the animal, in addition to being found at the seat of inoculation.

Another guinea-pig weighing 245 gms. received .2 c. c. of a twenty-four-hour bouillon culture of the bacilli found in the lung. The animal survived for thirty-six days, with an ulceration at the seat of inoculation. The bacilli were recovered by cultures from the ulcerated tissue, but from none of the organs.

Autopsy XIII. By Dr. Councilman. Edward B. Clinical diagnosis, scarlet fever. The case had been recently operated upon for congenital hernia before entry into hospital.

Anatomical diagnosis: Erythema of skin; operation wound in abdominal wall with abscess formation; diphtheritic ulceration of pharynx and larynx; bronchitis; broncho-pneumonia of both lungs; acute degeneration of parenchymatous organs.

Bacteriological diagnosis by cultures: Larynx and pharynx, Klebs-Löffler bacilli. In one of these cultures also streptococci. Kidney, numerous streptococci. Spleen, numerous Klebs-Löffler bacilli and a few streptococci. Other organisms present. Liver, a few streptococci.

Autopsy XIV. By Dr. Wright. Sarah F., aged two and a half years.

Anatomical diagnosis: Diphtheritic inflammation of epiglottis, trachea and bronchi; pseudomembrane present in trachea about bifurcation and extending into bronchi; bronchitis; congestion of lungs; ecchymoses in mucous membrane of stomach; acute lymphadenitis; acute splenic tumor; acute parenchymatous degeneration; excoriations on leg and about anus and vulva.

Bacteriological diagnosis by cultures: Klebs-Löffler bacilli and staphylococcus pyogenes aureus in trachea, lung, liver, kidney, heart blood, and in excoriations on leg. In addition to these the lung culture contained a few streptococci and pneumococci (?); that of the liver, streptococci; and the kidney culture, pneumococci. The spleen was sterile. In culture from tracheal lymph-gland a few streptococci and one colony of Klebs-Löffler bacilli. In the culture from mesenteric lymph-gland a very few Klebs-Löffler bacilli and other organisms.

The important points in the foregoing may be briefly summed up as follows:

Of the 14 autopsies the Klebs-Löffler bacillus has been found in the lung in 13 cases, in the liver in 3, in the spleen 2, in the cervical or bronchial lymph-glands in 5, in the kidney in 1, in the blood of heart in 1, and in the mesenteric lymph-glands in 2. It has been cultivated from the mucous membrane of the stomach in two instances and once from the edematous tissue behind the esophagus. In 7 of the 12 cases, or nearly 60 per cent., there has been a streptococcus septicemia in addition to the diphtheritic infection.

This seems to be another confirmation of the view of Barbier [38] and others that there are two distinct kinds of diphtheria: one, the toxic form or a monoinfection with the Klebs-Löffler bacillus; the other a poly-infection with that organism and the streptococcus. In two other cases there has also been a similar poly-infection in which the staphylococcus pyogenes aureus has taken the place of the streptococcus in the septicemia. One of these septicemias, however, might be considered as having an infection-atrium in an abscess about the hip-joint, and one of the streptococcus septicemias an infection-atrium in an operation wound for congenital hernia.

In addition to these there is one other case of poly-infection (Autopsy X), in which there seems to have been a general infection with several organisms; but, owing to the lack of cultures from the liver and heart blood, nothing very definite can be said about it.

Broncho-pneumonia was present in 10 of the 14 autopsies. The occurrence of the Klebs-Löffler bacillus in the lung seems to be independent of the coincidence of this lesion, for it has been absent in one broncho-pneumonia and yet present where no pneumonic condition was made out.

In fact, we are inclined to explain the frequent occurrence of the bacillus in the cultures from the lung in the cases to its being present in the smaller bronchi — an explanation which Strelitz has made use of in the case reported by him. The organism most frequently found associated with the Klebs-Löffler bacillus in the lungs has been the streptococcus. These two have been present together in 9 cases, in 7 of which there was a pneumonic condition. The streptococcus has also been noted in pure culture in one pneumonia.

The pneumococcus (diplococcus lanceolatus) has been found much less frequently, appearing in but 3 or probably 4 of the 10 cases of pneumonia, and then always along with the streptococcus and Klebs-Löffler bacillus.

The staphylococcus pyogenes aureus has been observed in four of the pneumonias, once with the Klebs-Löffler bacillus alone, and three times in company with all three of the above mentioned organisms.

(To be continued.)

"MENS SANA IN CORPORE SANO."[1]

BY GEORGE F. KEENE, M.D.,
Physician to State Institutions, Cranston, R. I.

"Brain is the organ of the mind." So said Hippocrates over two thousand years ago. So said Galen over six centuries after him. And as the Greek philosophers elaborated theories of mind and systems of philosophy, mental and moral, that have come down to us like their architecture, in ruins, yet simple, beautiful, grand, so did the great father of medicine determine and define the characteristics of a mind diseased. The soundness of the teachings of Hippocrates remain unshaken to-day, and bespeak an insight into the forms and phases of insanity centuries in advance of his times. Our earliest records show the history of lunacy to be coëval with the history of man. To the barbarian the temples of Saturn, and to the Greek the Asclepia, were the only asylums open to the deranged; there were received and there were treated, in a humane and salutary manner, those whom the gods made mad. The "mighty moon-struck hero Ajax," and Orestes, whom the Furies demanded, have been sung by the poets as examples of the mad men of mythology. It was David's harp that charmed away the evil spirits that pervaded Saul. It was David himself that played the mad man before Achish (1 Samuel, xxi, 13) and "scrabbled upon the doors of the gate, and let his spittle fall down upon his beard," showing a familiarity with one of the marked forms of insanity that could have come only from accurate observation. Mark how well the King of Babylon portrays the salient points of a mind destroyed when he "was driven from men, and did eat grass as oxen, and his body was wet with the dew of heaven, till his hairs were grown like eagle's feathers and his nails like bird's claws." The ignorance and superstition of the Middle Ages shrouded the progress of the past; and from 1400 to 1700 A. D. the lunatic had transmigrated into the witch, the devil-possessed, so that exorcism, torture and the gibbet became the most approved methods of treatment for this fell disease. Then Salem in the New World became as famous as has "Bedlam" in the Old, for its treatment of those poor unfortunates to whom the heathen nations of old had opened the temples of their gods for shelter and for care. But ignorance has been dispelled, superstition has vanished, insanity has been divorced from the devil and has gained the attention of science and humanity.

---

[1] Read before the Providence Medical Association, June 4, 1894.

To know what insanity is, it is necessary to know what insanity does, to see the lunatic at all times, to hear him as well as to learn his history. In short, to observe accurately and know intimately any person or thing is the foundation of a thorough comprehension of either. Insanity means unsoundness, and is applied usually to the mind. We must know then what soundness of mind is, symptomatically, to know what are the symptoms of mental unsoundness.

Mind is a congeries of phenomena which we call intellectual faculties. It is a composite whole; perceptions, conceptions, judgment, memory, emotions which move the will, and the will itself, the mover of the man, are but phenomena or functions of mind. Let any one of these become impaired, and the mind is unhealthy, reason is impaired. Destroy them all, reason is dethroned, man is indeed demented, and death comes not too quickly to disintegrate the whole. Insanity is a term applied to certain conditions of mind as manifested by certain trains of thought and significant actions, and has been accurately described by many, defined by none. In fact, a true definition of an indeterminate state is well-nigh impossible. We are familiar with those disturbed mental states that accompany bodily disease — the delirium of fever, the stupor of typhoid, the depression and pessimism of the dyspeptic and the exhilaration and excitement of the intoxicated. We know that certain substances are followed after their ingestion into the body by disturbance of the mind both immediate and remote; strictly speaking, such mental states, though transitory, are the same in kind as those more fixed disturbances which we call insanity. All diseases of the nervous system, whether primary or secondary, congenital or acquired, should, in the words of Griesinger, be regarded as one inseparable whole, of which the so-called mental diseases comprise only a moderate portion. But society compels us to draw an arbitrary line in the treatment, at least, of those more refined and functional states of the nervous organization which we are pleased to call hysteria, neurasthenia, nervous prostration, hypochondriasis, delirium and the like. Because insanity is not a simple condition, or disease if you will, but made manifest by a series of most varied symptoms, often combined in the same case or individual, often alternating or rotating, yet never exactly the same in two different individuals; because of this complexity of phenomena, there have been almost as many so-called definitions of insanity as there have been writers. As each new obstetrician, when he begins to feel that he is or must become an authority on labor, immediately sets about inventing forceps, so does every writer upon insanity invent his definition, until it has now become a significant fact that the most recent writers upon this subject do not attempt to give a definition of insanity. The reason that a short, sharp definition has been so vainly sought is because of man's responsibility to man; and the law has therefore stepped in and forced the physician to define that state, recognized as a pathological one, where the individual's responsibility to society has been repealed. All definitions have therefore two aspects, the analytic or the medical, and the descriptive or the legal; and yet perhaps some definitions have been evolved as much to conceal ignorance as to impart knowledge.

Shepard, an English author on lunacy, openly avowed his object to be to puzzle the lawyers, when he defined insanity as "a disease of the neurine batteries of the brain." On the other hand, mark the elaborateness of Spitzka, who says: "Insanity is either the inability of the individual to correctly register and reproduce impressions (and conceptions based on these) in sufficient number and intensity to serve as guides to actions in harmony with the individual's age, circumstances and surroundings, and to limit himself to the registration as subjective realities of impressions transmitted by the peripheral organs of sensation; or the failure to properly co-ordinate such impressions, and to thereon frame logical conclusions and actions, these inabilities and failures being in every instance considered as excluding the ordinary influences of sleep, trance, somnambulism, the common manifestations of the general neuroses, such as epilepsy, hysteria and chorea, of febrile delirium, coma, acute intoxications, intense mental preoccupation, and the ordinary immediate effects of nervous shock and injury." And the author prefaces this thus, "the following appears to the writer to comply with the chief requirements of a practical definition." Definition! why, it is a whole treatise on insanity, and is truly analytic. No one but a Whitney, however, would ever think of telling that to a jury. Yet it has its value to the student. The character of each definition depends upon the writer's standpoint, whether he considers insanity as a state or condition, a disease or symptom.

The lawyer's main purpose is to learn why A does not commit a crime *de facto* when he does identically the same thing as the criminal B. Sir James Stephen has therefore said: "No act is a crime if the person who does it is, at the time when it is done, prevented (*a*) from knowing the nature or quality of his act, (*b*) from knowing that the act is wrong, or (*c*) from controlling his own conduct, unless the absence of the power of control has been produced by his own default." This is a fair sample of a lawyer's definition. But although definitions are numberless and cumbersome, most writers agree on one point as the basis of their theses, namely, that disease of the brain is the vital characteristic of all insanity. That this is a fact is not beyond question, for it is well known that there are certain somatic elements capable of producing mental disturbances by their action upon the brain, independent of disease of that organ. A fair statement of insanity would be that it was a disturbance, somewhere in the body, interfering with clear perception, calm judgment, retentive memory, consistent feeling and normal volition.

The nervous system is primarily and essentially concerned in all insanity, either by being over-active, as in some of the sthenic forms, or dormant and exhausted, as in some of the asthenic forms. Again, the nervous system may have been congenitally defective, giving rise to a mental state known as amentia. The terminal stage of all insanities that are incurable is a degenerative one known as dementia. From the earliest times insanity has been divided into three forms, mania, melancholia and dementia. But at the present time these have been divided and subdivided and divided again until the student is bewildered on simply reading the classifications of different authors; for there is no universally accepted classification of mental diseases, and the same terms even are used by different writers to convey entirely different meanings. Some, as Morel, would classify according to causes; others, like Maudsley and Buknill, classify according to the functions interfered with; Voisin, according to the different morbid conditions of the brain; Clouston, according to the clinical history; Kraft-Ebing combines clinical history with morbid anatomy in his excellent classification. But upon a point where such authorities disagree the common mind could hardly help being confused till the conclusion forces itself upon us that as yet there can be no accurate scientific basis for the classification of insanity. Perhaps the first thing that leads the common mind to suspect that the mind of his fellow is unbalanced is peculiar beliefs or theories expressed either by words or actions, or in other words, delusions. These are so common in many forms of insanity that a determination of their character determines the form of insanity.

But what is the cause of this condition of mind? Is it organic disease of the brain, or organic disease of the body, or both? Or is it the result of a certain morbific entity acting within and upon the tissues, changing first their function, then their structure, and characterized by certain specific phenomena? We know that an unhealthy body often accompanies an unhealthy mind, either as an effect or a cause. We also know that certain crises in the development of the individual are accompanied or ushered in by mental disease, for example, puberty and the climacteric. Again, certain physiological processes, when accompanied by pathological changes, are frequently terminated by insanity, as, for example, the pregnant and puerperal state. Again, we know that certain drugs have a distinct and a determinate effect upon the mental faculties, for example, alcohol, which makes a man assume nearly all the forms of insanity from mania to stupor. Hasheesh produces dementia. Bromide of potash will do the same. Then syphilis produces or is accompanied by a marked form of insanity. Malarial diseases are frequently followed by insanity. Clouston speaks of tuberculosis as a cause of insanity. Others classify some mental disturbances under the head of phthisical insanity, rheumatic insanity, gouty insanity, anemic insanity, and the like. But when the illustrious Virchow, by his writings and researches in pathology, hinted at the possible relation between mental phenomena and the retrograde metamorphosis of brain tissue, there was a revolution among alienists, and all insanity was believed to be due to brain disease, denying that the mind had any power to injure itself. That there are organic diseases of the brain in many cases of mental disease is beyond dispute; but is there not a cause for this organic disease in the body many times outside of the brain itself? We know that alcohol perverts first the function of the nervous system; and, if long continued, we know, as surely, nervous tissue becomes disorganized.

The tendency nowadays, however, is not only to define insanity as a disease of the brain, but to locate the diseased portion of the brain. In short, an able writer on this disease starts off with this question, "What is that morbid condition which forms the basis of insanity, and what part of the brain does it affect?" He has evidently been a student of Ferrier and Gall. He has never associated the edemic limbs, the hectic flush, the sallow leaden skin, the wheezing lungs, with his insane patient's frenzied mind as a cause, but rather as the effect or concomitant of a spot somewhere in the frontal lobes or about the Rolandic fissure, the præ- and post-central gyri, or Broca's convolutions, which is the seat of disease. But to what convolution or fissure does alcohol repair, and hold its orgies? Where does syphilis find an asylum? And yet these agents are well-recognized causes of insanity. Or if organic disease of the brain is the cause of insanity, why does Spitzka give the percentage of recoveries as 80 per cent. for mania, 60 per cent. for melancholia, 90 per cent. for stuporous insanities? Surely, organic disease of the brain is very tractable, more so than that of the liver, heart, lungs or kidneys. Birdsall, in speaking of cerebral localization in insanity, says: "In no single part of the brain can you localize any of the complex functions by which a complete conception is formed, and yet the proposition is a true one that every cell and fibre in the brain has its distinct function. To produce insanity, then, you must have general derangement." And the most constant pathological symptom, when any is found, is merely atrophy of, not a part, but the whole cerebral cortex.

Ancient writers named one of our recognized forms of insanity melancholia or black bile. A clergyman once said, "You will see some men with long faces, measured steps, always self-abasing, never worthy to breathe, who call themselves pious; but this is not piety, it is biliousness." There is a condition of body which is represented by this indefinite, unscientific term. Are we so sure that there may not be a condition of mind arising from the same or similar causes? Indeed, Spitzka says, "There is no clinical difference between the condition of many dyspeptics, who never become maniacal, and some maniacs in the prodermal stage of their disorder." True, the ancients knew less about the liver than they did about insanity, when they named one of its forms black bile. But can we, in the fulness of our knowledge, say the liver has nothing to do with it? We think we have solved somewhat that ancient riddle, "What is the function of the liver?" We think that its functions are metabolic, that it is not only a blood-forming but a blood-destroying organ, that nitrogenous waste and the blood corpuscles (red) are destroyed there, and out of their ruins is built up urea, urine pigments, bile salts. In a word, it is a leucomaine factory; why may it not then be the brain's Borgia? Do we not know that a failure to excrete these waste products has a marked toxic effect upon the brain and nervous system, producing convulsions, coma and insanity? Why cannot the leucomaines act as destructively as alcohol? Would the dead brain cells identify their destroyer? Would a paretic dementia caused by alcohol be different from one produced by Bright's disease? Can we not look behind the diseased brain and see the poison at work in the one case as well as in the other? Had the scientific physician been satisfied with the germ theory, the history of the ptomaines would have been lost to us. Let us watch then the effect of other organs on the mind as well as the brain; let us not soar into imaginary realms, upborne by the pinions of seductive theory, whilst the tangible soma with its intricate recesses and complicated processes remains yet unexplored.

We are but on the threshold of a greater knowledge and greater benefits to be derived, both in mental as well as clinical medicine.

Each vitalized cell in the animal body, as a result of its own vitality, disintegrates and regenerates itself. This disintegration is death, this regeneration is life; and hence when we begin to live, we begin to die. Health is dependent upon the incessant formation, transformation and elimination of organic materials. "We constantly bear about within us the effete *débris* of our living selves." We are constantly burning; the fire must be fed, the gases carried off, the heat utilized, the ashes withdrawn. The liver and kidneys are our stokers; the lungs and skin our chimney; the intestines our ash-pit, the blood our forced draft. Comparatively recent research has discovered that there are present in the body, both as the result of normal physiological action in health and of pathological (or bacteriological action, if you will) in disease, certain chemical compounds called alkaloids, which have been classified (according as they originate from germ action on dead albumins or cell activity in vital tissues) as ptomaines and leucomaines. Both are crystallizable and capable of forming salts, and both are more or less active poisons. The deadly bite of the cobra has been known for ages, and the scorpion and tarantula are shunned because of their poison; but the ptomaines of our own bodies have enjoyed the innocuous desuetude of blissful ignorance. How recently the Erlich test of typhoid has been presented to us, showing the formation in the intestines and excretion in the urine of a chemical substance recognized by certain reactions. Certain non-crystallizable nitrogenous substances which are elaborated in the animal economy and are more toxic than either ptomaines or leucomaines have been recently isolated, and for want of a better name have been called extractives, toxines, chemical X-Y-Z's. These substances are eliminated largely by the urine, and manfactured constantly in the intestinal canal. The urine has been most carefully investigated with regard to the character of its leucomaines and extractives, and experiment performed on lower animals show it to be highly poisonous.

Bouchard has determined a unit of poison, which he calls a toxic unit and defines as the amount of poison required to kill one kilogram of living matter. "The urotoxic is the quantity of urinary alkaloids capable of killing a rabbit weighing one kilogram." The urotoxic co-efficient in man is .465. In other words, for each kilogram of body weight enough poison is excreted in twenty-four hours to kill 465 grammes of living matter; or in two days and four hours a man excretes enough poison to kill himself. These facts are of the most vital importance to the alienist. He may find, perhaps, in auto-intoxication a potent cause for many of the vagaries of a mind diseased; and perhaps, in time, heredity will be as much divorced from insanity, by the toxine, as it has been separated from phthisis by the bacillus of Koch.

So important has this toxic influence in disease become that "auto-intoxication in mental diseases" was one of the chief topics for discussion at the annual congress of French alienists held at La Rochelle last August. At that time Drs. E. Regis and A. Chevalier-Lavaure made a most masterly report. They distinguish three orders of clinical facts, and consider separately the mental disorders that develop as a result (1) of acute infectious diseases, (2) those due to visceral disturbances, (3) those of the diathetic maladies. We all know that typhoid and eruptive fevers, "grip," erysipelas, puerperal fever, etc., are oftentimes followed by the most marked insanities. Whence comes this, if not from toxines peculiar to the diseases? How much more rational this than the theory of nervous shocks, whose influence must be transitory! The delirium of fever is surely the result of deficient excretion; once make this free, and delirium ceases, temperature falls. Drs. Regis and Chevalier-Lavaure ask in this connection, if infectious disorders are not sometimes the cause of general paralysis. And in this connection Dr. Alder Blumer, of Utica State Hospital, answers, "for my own part, I believe this opinion is not susceptible of any very great generalization, but that it nevertheless is based upon actual facts"; and he further states, "I have seen cases in my practice when, in making the diagnosis of general paralysis, I have based it mainly on the denutrition here referred to." With regard to visceral disturbances producing insanities, Blumer says: "Visceral disorders often also produce insanity. This is well known, and the earlier authors localized insanity in the liver and the bile. But the view according to which the insanity thus produced is the result of an auto-intoxication is altogther a recent one." The third group of Regis and Lavaure is auto-intoxication from diathetic maladies. With regard to this, Blumer says editorially: "From the evidence we are constrained to admit, the attacks of insanity concomitant with the diathetic aggravations seem to correspond with variations in the composition of the liquids of the organism, notably of the urine, in which the proportion of uric acid is markedly augmented." Again he says: "A powerful argument in favor of the origin of insanity by auto-intoxication is deduced from the fact that anti-infectious, antiseptic treatment, either general or local, has often given excellent results."

If this theory is true, then the treatment of insanity must be revolutionized; and the infection, the auto-intoxicant, must be combated and eliminated if we wish to eliminate the disease. How we can best do this is a problem yet to be solved. In this connection it may be of interest to mention the experiments of Dr. Carlo Sanquirico, of Sienna, performed on dogs and guinea-pigs in 1887, and published in detail in the *Archivio per le Scienze Mediche*, Vol. IX, No. 3. Two sets of animals were poisoned with the same doses of strychnine, chloral, alcohol, aconitine, paraldehyde, caffeine and urethan. Into one set was injected a saline solution, in quantity amounting to 8 per cent.

of each animal's weight. The other set were untreated. The results were truly wonderful. The animals into which the saline solution was injected all survived, the others all died. From these facts we are forced to the irresistible conclusion that if vegetable alkaloids can be diluted and washed out of the system before their toxic effect is complete, why cannot animal alkaloids be treated in this way as well? The use of saline solutions was first established as a substitute for intravenous transfusion of defibrinated blood, and was found to answer as well, and even better, for this purpose. Their use subcutaneously was the next step; and it was found that this method of introduction was fully as efficacious as the intravenous; in fact, it has many advantages over the former method, in at least having a less complicated technique and being a much safer procedure. Professor Sahli, of Berne, was one of the first to strongly advocate and accurately describe the subcutaneous injections of water in large quantities.

In the *Medical Record* for November 29th, is the following account: "The method consists in the subcutaneous injection of a sterilized, blood-warm, physiological saline solution (0.73% sol. NaCl) by means of a large Erlenmeyer's flask with an elastic tube, and a hollow needle as thick as a knitting-needle. As much as one quart of the solution can be easily injected in from five to fifteen minutes. If necessary, the procedure may be safely repeated four or five times per day. The best situation for the injection is the anterior abdominal wall. On each occasion the skin should previously be thoroughly washed with soap and corrosive sublimate, and the puncture subsequently sealed with aseptic cotton wool and collodion. Under such precautions not the slightest signs of any local reaction are ever observed.

We believe the first adaptation of this procedure to the treatment of cases of insanity was at the Rhode Island State Insane Asylum a short time ago. Ilberg and Lehman in Germany within the last year report several cases in which good results followed the hypodermic injection of 600 c. c. of saline solution in the fasting insane. But this procedure was adopted for the sole purpose of nutrition, and not for the treatment of the disease *per se;* and it was recommended instead of forced feeding. In Dr. Rohe's last report of the Maryland Hospital for the Insane, are six cases in which it is believed for the first time a nutritive salt solution has been used subcutaneously as a substitute for forced feeding. In these cases was used twelve to fourteen ounces of sterilized water to which, after partially cooling, were added the whites of two eggs and thirty grains of common salt.

The new departure to which I would call your attention, and in which we believed ourselves to be among the first in the field, if not the pioneer, is the use of the salt solution subcutaneously in large quantities (not less than two quarts daily) for the systematic treatment of those forms of insanity believed to be of somatic origin, or, in other words, due to auto-infection or intoxication. As yet we are treating but one case; but the improvement has been so marked that there is great ground for encouragement for the continuance of the treatment.

The patient is a single woman, thirty-three years of age, with but poor education and family history uncertain. Two years ago she began to be exceedingly religious, then taciturn and apathetic, lying in bed sometimes a week continuously. She refused to eat much, and was much depressed for two years. Of late she has taken to wandering about and entertaining ideas of self-destruction. She first began to cause her friends anxiety about one year ago, by having grave delusions of depression, saying that she was totally lost, and moaning. She also had hypochondriacal delusions, thinking her blood was dried up. She was reticent, would not speak above a whisper, and appeared to be fast growing demented. Physical examination showed no marked signs of disease in any of the important organs. The reflexes were only sluggishly responsive; the pulse was slow and weak; the skin dry, and had a dehydrated, leathery appearance; while the whole body seemed in a state of complete atony. One quart of sterilized solution was introduced subcutaneously, morning and night, until fifteen quarts had been used. The improvement was marked and immediate; the depression has been markedly relieved. The urine was greatly increased; the skin became moist and supple; and the patient will now talk quite a little; while the delusions have become latent, and the recovery is at least promising, if not assured. The treatment has been temporarily suspended on account of slight edema of the pudenda being produced, but it will be resumed shortly.

One case, or part of a case, is of no significance in proving the efficacy of any form of treatment; and this case is only offered as a suggestion of what seems to be a promising and as yet unexplored field in the treatment of mental disease, and in harmony with the present and but newly evolved theory of auto-intoxication as a cause of insanity.

Clinical Department.

A BRIEF CONTRIBUTION TO THE IDENTIFICATION OF STREPTOCOCCUS PYOGENES WITH STREPTOCOCCUS ERYSIPELATOS.

BY WALTER REED, M.D.,
Surgeon, United States Army.

The following case appears to be of sufficient interest to justify publication. I am indebted to Dr. D. S. Lamb, of the Army Medical Museum, for a few brief notes of the clinical history and autopsy:

J. Mc——, male, negro, aged fifty-four, was admitted to the Freedman's Hospital, Washington, D. C., February 2, 1894. Patient was able to be up and about the ward until April 7, 1894, at which time he was confined to his bed, having a slight cough and some fever; no temperature record was kept in his case. Patient, who had been under treatment for chronic disease of the liver, died April 12, 1894.

Autopsy, 10 A. M., April 13th. Abdomen very large and protuberant; syphilitic rupia on chest, abdomen and thighs; right inguinal hernia. Chest: Heart hypertrophied, weight 20 ounces; valves normal; right lung partly collapsed from pressure; left lung, upper lobe solidified, lower lobe normal. Abdomen: Liver greatly enlarged; upper and lower surfaces studded with many large, firm, whitish, in some instances umbilicated, nodules; firm adhesion to diaphragm and anterior abdominal wall; weight 29¼ pounds. Spleen firm, enlarged; weight 20 ounces. Stomach and intestines normal. Kidneys firm, enlarged.

The liver, heart, left lung and left kidney were brought at once to the Army Medical Museum, which afforded the writer the opportunity of examining them and of taking bacteriological cultures.

The liver presented a most remarkable specimen of carcinoma of that organ, and was turned over to the anatomist of the museum for the purpose of making a plaster cast.

The pleura over upper lobe of left lung was dull, its surface being covered with a delicate layer of fibrin. Upon section the cut surface was uniformly grayish in color, and studded with numerous slightly projecting granulations. Cover-slips from this part of the lung showed abundant diplococci, many having distinct capsules.

The kidney and spleen were good specimens of chronic passive congestion.

Cultures were taken on agar plates from the hepatized lobe of left lung, and from the spleen and kidney. A white mouse was inoculated with two loops of the exudation taken with all precautions from the upper lobe of the left lung. The mouse died at the end of forty hours. Cover-slips made from its blood, liver, spleen and kidney gave many diplococci with capsular staining; cultures from blood and organs, grown on agar plates, gave pure cultures of the diplococcus lanceolatus.

I did not have an opportunity of studying the agar plates made on April 13th, until the morning of the 16th of April. At this time all plates were found to contain numerous colonies. Plate No. 3, of each series, contained colonies sufficiently separated to enable cover-slips to be made and cultures to be taken. The result of this examination is as follows: The plates made from the hepatized lung gave two sets of colonies, namely, diplococcus lanceolatus and streptococcus pyogenes; while the plates from spleen and kidney gave only colonies of streptococcus pyogenes. On agar the organism was composed mostly of short chains, while grown in flesh-peptone bouillon there were both long and short chains.

I should here state that Dr. Lamb, who made the autopsy, had, while removing the very large liver, sustained an abrasion of the skin over the left second metacarpo-phalangeal joint, and had taken no precautions towards avoiding any septic infection of the wound during the further progress of the autopsy.

During the forenoon of the 14th (twenty-four hours after the autopsy) Dr. Lamb began to experience a sense of languor, with chilliness, together with some tenderness in left axilla. During the afternoon a distinct chill occurred, followed by fever and headache, and increased tenderness in axilla. The site of inoculation was reddened, a little swollen, and there was a slight escape of pus.

15th, A. M. Condition better; a feeling of weakness, so that patient was disinclined to any exertion, although he was not confined to his bed. Distinct chill, P. M., followed by fever; temperature not recorded.

16th. Fever continuous. Temperature, A. M., 102°, pulse 95. I saw the patient for the first time; the wound was dry and glazed over; very little swelling of the part; glands of left axilla slightly swollen, and tender on pressure, or on movement of the arm. Temperature, P. M., 103°, pulse 105.

17th. During the afternoon patient noticed that there was some swelling of the face on the right side, near the nose; 6 P. M., increase of fever and face more swollen.

18th, A. M. Well marked erysipelas, involving right side of face, the nose, and extending slightly on to the forehead. Temperature 104°, pulse 105.

The disease ran the usual course, spreading to the left side of the face as far as, and involving the ear; was of moderate severity, and lasted until the 22d, when it began to rapidly subside.

The important features of this case to which I would like to draw attention, are the following: The patient died of croupous pneumonia; bacteriological examination discovered that, in addition to a local infection of the lung with diplococcus lanceolatus, there was a general infection of the organs with streptococcus pyogenes. While the patient did not exhibit any symptom whatever of erysipelas during the course of the fatal pneumonia, the physician who performed the autopsy, accidentally infecting a fresh wound of his hand with the fluids of the cadaver, experienced a local infection, which was rapidly followed by a general infection of the system, the latter expressing itself in the form of well-marked facial erysipelas.

Dr. Lamb had never had a prior attack of erysipelas. The time that elapsed between the local infection and the development of the erysipelas was four days.

Bumm,[1] in discussing the probable identity of streptococcus Fehleisen and streptococcus pyogenes, has expressed the opinion that a definite decision in this matter can only be arrived at by the opportune observation of cases occurring in human beings. It is with the object of placing on record such an opportune observation in man that I have desired to report the preceding case.

◆

THE SUBCUTANEOUS INJECTION OF SALINE FLUID IN COLLAPSE FROM CHOLERA MORBUS.

BY HAROLD WILLIAMS, M.D.

I was called on the 31st of July by Dr. J. S. Grouard, of Nantucket, to see a patient in collapse from cholera morbus.

The history of the case was briefly as follows: Patient, fifty-six years old, male, after spending some months in the Adirondacks, where he was sent for threatening pulmonary tuberculosis, passed a week in New York City, and then came to Nantucket. He left New York in the intense heat, sat on the deck of the boat, became chilled, and had slight diarrhea. He arrived in Nantucket July 30th. That night the diarrhea became worse; he had cramp in the legs and abdomen, vomiting, and large watery dejections, and Dr. Grouard was called. When Dr. Grouard saw him, the cramp had become convulsive and the vomiting and purging very severe. In spite of the treatment, consisting of the subcutaneous injection of morphia sulphate, strychnia nitrate and brandy, the patient became rapidly worse; Dr. Grouard asked for a consultation, and I was called.

When I saw the patient at 12 M., four hours after the beginning of collapse, he was rapidly becoming moribund. The surface of the body was bathed in sweat, and cold; the nose was pointed; the face pinched and drawn; the legs mottled. Respiration was hardly perceptible, and no pulse could be detected in the radial brachial or femoral arteries. It was decided to give a large subcutaneous injection of the saline solution employed in collapse from hemorrhage.

---

[1] Bumm: Die puerperale Wundinfection. Centralblatt für Bacteriologie und Parasitenkunde, Band ii, 1887.

For this purpose a reversed aspirator was used and a quart of the solution, containing fifteen grains sodii bicarbonatis and half a drachm of sodii chloridi at 105°, was slowly injected beneath the skin of the abdomen. The injection of this fluid was followed by immediate improvement. The radial pulse became distinctly evident; the respirations became more rapid and full; the surface of the body warmer. From this time there was progressive improvement; and at the present writing (six days afterwards) the patient is nearly well.

The collapse in this instance was more profound than I have ever seen followed by recovery, and I have no hesitation in recommending this method of treatment for similar cases.

Medical Progress.

RECENT PROGRESS IN DERMATOLOGY.

BY JOHN T. BOWEN, M.D.

(Concluded from No. 13, p. 317.)

THE MANAGEMENT OF ECZEMA.[4]

In a paper read before the Dermatological Section of the British Medical Association, Malcolm Morris endeavors to present, in as summary a manner as possible, the results of his own experience in the treatment of eczema. With regard to internal medication his view is that, as a general rule, the less the better. If there be any constitutional affection or a pronounced neurotic element, appropriate remedies for these conditions are to be employed; but unless there are definite indications of this kind, internal medicines are not only useless, but positively injurious by disordering the digestion. In an ordinary chronic eczema, when the health does not appear to be affected, he relies entirely on local treatment. When the lesions are acutely inflammatory, he considers antimony of great value, beginning with 10 to 13 minims of the wine of antimony, repeating the dose in an hour, and if need be two hours later. The dose is then gradually reduced until six minims three times in twenty-four hours is reached. He considers that arterial tension is the indication for antimony, while depression is a positive contraindication. If there is a neurotic element in the case, sedatives and nerve tonics should be combined with local treatment, and opium is the sheet anchor. He often begins with a full dose of calomel, and afterward a saline aperient every morning. If opium disagrees, sulphonal may be tried. Great nervous excitement and sleeplessness are the indications for the use of sedatives. If there is much nervous depression, quinine is valuable, which may be advantageously combined with opium. Phosphorus and strychnia are also valuable for this condition. Arsenic is not a specific in eczema, and its indications are a deficiency of nerve force, combined with the absence of acute inflammatory lesions. If the eruption is acutely inflammatory, arsenic is positively contraindicated. Ergotin may be useful where there are frequent exacerbations, by its control of the vaso-motor system.

In debility and anemia, tonics are useful, but iron should be used with caution in inflammatory conditions.

Diet is regarded as having only an indirect influence, as, for example, if gout or diabetes exist, the diet appropriate to these disorders should be strictly followed. In acute cases the diet should be limited and not stimulating. In a general way such food should be taken as is best digested by the patient, and a low diet is not to be recommended. Strict moderation with regard to alcohol is necessary, but beer is allowable except in the acute forms. Contrary to most authorities, the writer does not restrict the use of tea and coffee unless they are contraindicated in some other way.

With regard to local treatment, he treats every case as if it were of parasitic origin. He thinks that parasites, even if not the primary cause, are usually secondary factors. He endeavors then, first, to destroy the micro-organisms; second, to protect the inflamed part from the air and from further contact with the parasites; third, to soothe irritation. General rules are — first, to grade the strength of the remedy according to the patient's toleration; second, to keep it continuously in contact with the part affected. The best remedy in dry, chronic eczema, particularly in that of seborrheic origin is sulphur, and next to that resorcin. Their advantage lies in the fact that they not only kill the micro-organisms, but cause an exfoliation of the horny layer. He begins with 10 grains of precipitated sulphur or of resorcin in an ounce of zinc ointment or some bland application, gradually increasing the amount of the parasiticide. When the inflammation is acute, ichthyol is especially useful, as it is a vascular sedative as well as a parasiticide. Unna's plaster mulls of carbolic acid and mercury, and oxide of zinc are extolled where a continuous local application to chronic areas is wished for. When there is much discharge he washes the part with a weak solution of boracic acid, and afterward dries it with muslin bags containing starch and powdered boracic acid, or with flour mixed with boracic acid. Chrysarobin has been successful in very persistent chronic eczema of the flexures. With regard to warding off a recurrence of attacks of eczema, the writer considers that a change of climate with complete mental and bodily rest is often of benefit. No special stress is laid upon the particular climate; it is the change that is beneficial. Sea-bathing often produces a recurrence, but sometimes checks the tendency to relapse. As to mineral springs, he believes they are chiefly useful in chronic cases. Sulphur springs are best for external use, not, however, when the inflammation is acute. If there is gout or rheumatism underlying the skin affection, sulphur internally is indicated. Of the arsenical waters, La Bourboule and Levico are the best. He concludes, with regard to springs, that none have a specific action on eczema; that the virtue of sulphur waters is due chiefly to their parasiticidal action, and partly to the temperatures at which they are used; and that the good effect of sulphur, iron, and arsenical waters internally is due to quickening the processes of metabolism, increasing the number of red corpuscles, and giving tone to the nervous system.

NEW REMEDIES IN LEPROSY.[5]

Danielssen, of Bergen, whose name is so closely associated with the study of leprosy, gives the results of his experience with several of the methods that have been lately advocated in the treatment of this disease.

---

[4] British Journal of Dermatology, September, 1894.

[5] Ergänzungshefte zum Archiv für Derm. und Syph., 1893.

Unna, some time since, claimed to have cured a case of tubercular leprosy from Brazil, by means of salicylic acid, chrysarobin and creosote, partly in the form of ointment and partly as pills, together with the internal use of ichthyol. Danielssen's scepticism as to the permanency of the cure was justified by the patient's death from leprosy about a year after his return to Brazil. He also tried the method in several cases without result, but was stimulated to further use of it by Unna's assertion that he himself had cured four patients and Dreckmann one by this same treatment.

In the first case reported, one of tubercular leprosy, Unna's method appeared for a time to be effective as almost all the nodules disappeared, although there was at the same time increased emaciation and loss of strength. Intercurrently there appeared outbreaks of elevated, sensitive nodules, which soon, however, disappeared; a pemphigus bulla on the sole of the foot raised the suspicion of a transition to the anesthetic type. The improvement had lasted scarcely a month when an attack of pleurisy supervened, followed by a fresh eruption of nodules, which were quickly changed into ulcers. Later both lungs became affected, the symptoms pointing to tuberculosis, and there was a progressive emaciation; both ulnar nerves became swollen, diarrhea set in, and the patient rapidly sank. At the autopsy, lesions corresponding to those of tuberculosis were found, together with the bacilli of tuberculosis, so far as it is possible to differentiate the tubercle from the leprosy bacillus. In many of the other organs lesions typical of leprosy were found, together with leprosy bacilli in large numbers. The author then raises the question whether there can be a transformation of the leprosy bacillus in the altered medium in which it finds itself. Whether the lung, being a tissue rich in air and blood supply, may so alter the bacillus in its struggle for existence, that it may be better suited to its changed environment. As to Arning's belief that the affection of the lungs in leprosy must be regarded as a leprous condition, repeated inoculations speak positively against this theory. It is also urged that the myeloplaques found in tuberculosis and in the lungs of leprous subjects have never been satisfactorily demonstrated in purely leprous tissues.

Besides the case that has been cited, twelve other cases of leprosy, four of the anesthetic, four of the tubercular and four of the mixed type, were treated by the Unna-Dreckmann method. In none of these was there any question of a cure. The anesthetic type was wholly uninfluenced; in several of the cases of the tubercular type there was a transient disappearance or decrease in size of the nodules. These results are of importance in connection with the fact that in Unna's journal the assertion was flatly made that leprosy is curable. This assertion was provoked by the fact that under the treatment in question, leprosy nodules were seen to diminish in size and disappear, and the general condition to become much better. Danielssen's experience of fifty years has taught him, however, that there are many forms of treatment by which the nodules can be made to disappear, without a permanent improvement in the disease. Among these methods may be cited the use of strong solutions of carbolic acid, strong potash soaps, stimulating oils, etc. Intercurrent acute affections, as erysipelas, typhoid fever, measles, scarlatina and small-pox may cause a complete disappearance of the skin lesions — temporarily. Experience in an epidemic of small-pox proved that many lepers who were attacked enjoyed only a temporary respite from their leprous lesions, the nodules showing themselves again in six months' time, and with increased rapidity of growth.

Hydroxylamin, which has been claimed to have a more energetic action than pyrogallic acid and chrysarobin, was tried in several cases, mixed with glycerine and alcohol. Applied to the patches in four cases of the anesthetic type, it caused in two an intense erythematous eczema, while the two remaining cases were unaffected. In four cases of the tubercular type a slight improvement was noted, but there was no lasting effect.

Europhen, which is an iodine compound, allied to iodoform but without odor, was tried on account of the claims of its efficacy in the treatment of syphilis. It was employed dissolved in olive oil, injected subcutaneously. No pain was caused. Five patients were thus treated, one suffering from the tubercular, one from the anesthetic, and three from the mixed form. The treatment was suspended after a trial of about four months, without any improvement in the leprous condition being noted, while in all unpleasant symptoms from the toxic effect of the iodine were met with.

Lastly, aristol was tried in three cases, partly internally, dissolved in ether, partly externally, in the form of an ointment. The action was exactly the same as that of the iodide of potash, and the treatment was suspended after a three weeks' trial.

New Instruments.

THE WALTHAM HOSPITAL STERILIZER.

BY A. WORCESTER, M.D., WALTHAM, MASS.

The sterilizing apparatus has become the most important apparatus in every hospital. Many kinds have been devised and many disadvantages have been met in their operation.

The Waltham Hospital has been so fortunate as to have the services of a mechanical engineer in designing its sterilizer, and the result is so entirely satisfactory that it seems only fair to describe it for the benefit of others who are interested in the sterilization problem.

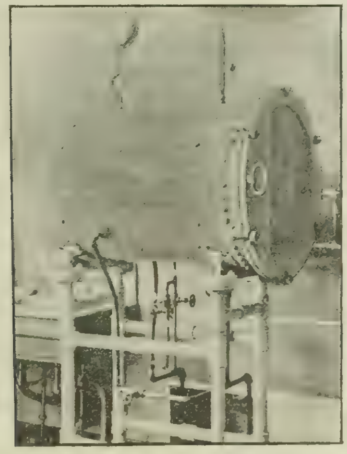
The accompanying illustrations are from photographs taken before the cylinder was jacketed with asbestos to minimize the loss of heat. As is readily seen, its construction is extremely simple. The shell is quarter-inch steel, fitted with vacuum-valve, steam-gauge and thermometer. It is placed on a wrought-iron-pipe stand, which allows easy access to the steam-supply pipes underneath. Inside the shell are four coils of steam-pipe, above and below and on each side of the main chamber, which gives 9,720 cubic inches of working space.

The mode of operation is as follows: After filling the trays with the material to be sterilized, and tightly bolting the door with the screw bolts, steam is admitted first into the circulating coils. After the chamber is thus heated above the condensation point, live steam is admitted direct from the boiler, at any pressure from fifteen to ninety pounds, thus furnishing a steam-bath at any desired temperature from 245° F. to 320° F.

This may be continued as long as is desired. The supply of live steam is then shut off, and the drip-pipe from the main chamber opened. Very little moisture will remain in the chamber, and this can be entirely removed by continuing the supply of steam for a few minutes longer in the coils. The door of the sterilizer can then be opened and the contents removed at pleasure.

As proof of the efficiency of the process, I am permitted to quote the following results obtained by Dr. A. K. Stone in experiments made at the Massachusetts General Hospital to determine the sterilizing power of this apparatus:

> In order that the tests should be as severe as possible, foul dressings were taken directly from patients in the wards. These dressings were folded and done up in towels exactly like newly-prepared dressings, and were then placed in the sterilizer under conditions which are given below. Also a pile of a dozen or more towels, taken just as they had come from the laundry, was enclosed in another towel and subjected to the steam. At the laboratory of the Harvard Medical School one of the towels was removed from the middle of the pile, and the central part was cut out and placed in test-tubes filled with gelatine or agar-agar. The central portions of the dressings were also cut out, these portions being filled with the discharges from the wounds, and also put in the test-tubes with nutrient material. The tubes were then allowed to remain at the temperature of the body for several days and the following observations were made:



EXPERIMENT I.

Dressings in the sterilizer for fifteen minutes. In five minutes the steam was 250° F., and then varied during the fifteen minutes from 245° to 250° F. Pressure removed, and the dressings were dried in the dry hot air for eight minutes.

	Tube No. 1.	Tube No. 2.	Tube No. 3.	Tube No. 4.
Empyema dressing,	Gelatine (*a*) growth.	Gelatine (*b*) growth.	Gelatine (*c*) growth.	
Absc's-of-the-lung dressing . . .	Agar (*a*) sl't growth.	Agar (*b*) sl't growth.	Gelatine (*a*) sterile.	Gelatine (*b*) sl't growth.
Abscess-of-the-hip dressing . . .	Agar (*a*) growth.	Agar (*b*) sterile.	Gelatine sterile.	
Hospital towels .	Agar (*a*) growth.	Agar (*b*) sterile.	Gelatine (*a*) growth.	Gelatine (*b*) sterile.

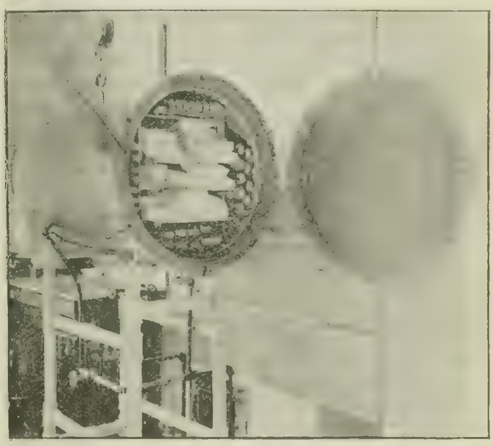
Each separate experiment showed presence of some form of bacteria, and therefore fifteen minutes is not sufficient for the steam to penetrate the centre of a closed dressing.

EXPERIMENT II.

Dressings were allowed to remain in the sterilizer for twenty minutes at a pressure of twenty-five to twenty-six pounds and at a temperature varying from 248° to 258° F.

	Tube No. 1.	Tube No. 2.	Tube No. 3.
Empyema dressing,	Growth with liquefaction.	No growth.	No growth.
Abdominal sinus dressing	No growth.	No growth.	No growth.
Osteo myelitis dressing	No growth.	No growth.	No growth.
Skin-graft dressing,	No growth.	No growth.	No growth.

Tube No. 1 of the empyema dressing alone showed the presence of bacteria growth. There is, of course, possibility that the micro-organism was introduced from outside during the transference of the gauze to the tube. But it would seem as though twenty-five to thirty minutes was needed to make absolutely sure that the steam will penetrate a thick dressing sufficiently to cause destruction of all bacterial life.



The advantages of this sterilizer are:

(1) The ease with which it can be operated. By simply turning the different steam-valves there is obtained an exposure to live steam under high pressure, and afterwards exposure to dry heat, without moving or handling the material to be sterilized and dried.

(2) By first heating the chamber and its contents to a temperature above the boiling point of water, there is prevented all unnecessary wetting of the material to be sterilized by condensation when the live steam is admitted to the chamber.

(3) The strength and simplicity of construction, which allows the employment of any pressure of steam up to 150 pounds and ensures the durability of the apparatus.

The sterilizers in use at the Waltham Hospital and at the Massachusetts General Hospital were made by the Thomas Phillips Company, of Providence, R. I.

PRINCE BISMARCK, it is said, has the peculiar habit of drinking champagne from the bottle, not from the glass. He declares that only in that way can he get its good effects.

Reports of Societies.

AMERICAN NEUROLOGICAL ASSOCIATION.

TWENTIETH ANNUAL MEETING, WASHINGTON, D. C., MAY 30, 31 AND JUNE 1, 1894.

(Concluded from No. 13, p. 321.)

CIRCUMSCRIBED SOFTENING OF THE PONS; AND IN THE SAME CASE OF THE INTERNAL CAPSULE, CAUDATUM, AND LENTICULA.

This was a joint paper by **DR. CHARLES K. MILLS** and **DR. JOHN ZIMMER**, of Philadelphia.

The case presented two limited lesions of unusual interest — one in the pons, and a second involving the internal capsule and a small segment of the caudatum and lenticula. The patient, a woman forty-two years old, had a previous history of alcoholism and of acute articular rheumatism. Examination showed slight impairment of mental action, marked somnolency, and imperfect articulation. At rest, the right eye turned strongly to the right, while the left was not deviated. Both eyes could not be turned together to the left. The lateral movement of the left eye to the right was also impaired, and slight nystagmus of both eyes was present. The lids of the left eye could not be brought fully together. Right facial paresis was present, but the tongue was not deflected. Tendon and muscle phenomena were much exaggerated in the paretic limbs. Anesthesia could not be discovered in any portion of the body. About eleven days after admission, she had a second apoplectiform attack. She was now totally unable to articulate, but understood what was said. She was also unable to expectorate, and there was interference with swallowing. A thorough and careful autopsy made by Dr. Guiteras revealed a circumscribed softening of the pons. The lesion, at its cephalic extremity reached to within 1.5 mm. of the ventral surface of the pons; laterally extending to the raphé, and about the middle of the pons slightly across the mesal line. The area of softening became smaller and more deeply situated as it approached the post oblongata, which it almost, but not quite reached. The second region was revealed by a vertical transection of the right basal ganglia and capsule. The widest portion of lesion corresponded to the plane of the cephalic extremity of the thalamus. It was about 17 mm. in its antero-posterior extent. The pontal lesion probably involved the root fibres of the abducens, and the fibres connecting it with the facial fibres or nucleus. The position of the lesion was such as not by any possibility to involve the cell nests of these nerves. The lesion involved the crustal portion of the pons, including a portion of the pyramidal tracts, and the deep transverse fibres. The lesion of the internal capsule was beautifully localized near the genu, probably involving the geniculate and speech tracts.

LESION OF THALAMUS: DEATH FROM INTESTINAL HEMORRHAGE.

This paper was read by **DR. WHARTON SINKLER**, of Philadelphia. He referred to the observations of Lussana, Brown-Séquard, Ebstein and Schiff many years ago, in which they produced ecchymoses and hemorrhages into the mucous membranes of the stomach and colon of some of the lower animals, by wounding the corpora quadrigemina and optic thalamus.

The patient was a man of sixty-seven years, who had worked for many years in a stone quarry, and had received frequent slight injuries to the scalp in consequence of being struck by fragments of stone.

In July, 1892, after having been exposed to the sun, he was suddenly taken ill, and had to be removed to his home in an unconscious condition, where he was seized with convulsions, which lasted for the greater part of two days. After a month he was able to resume his work; but two weeks later he began to have epileptiform convulsions, which recurred at irregular intervals of from one to two a week. The seizures were always preceded by an olfactory aura, the patient observing the smell of burning sulphur. After a few months, the patient had maniacal attacks after his fits, and was removed to the Philadelphia Hospital in December, 1893.

There was nothing notable about his condition, except that the attacks of epilepsy were of the precursive form. He would run violently, and imagined that he was pursued by devils. Towards the end of February, he had an attack in which there was a rise of temperature, without any physical reason being discoverable.

His intellectual powers failed; and he gradually fell into a somnolent condition, which lasted for nearly three weeks, at the end of which time he was suddenly, without premonitory signs, seized with intestinal hemorrhage of a profuse character, from which he died in about twelve hours.

At the autopsy the mucous membrane of the colon was found to be softened and deeply injected, but no lesion was found in the way of an ulceration, or rupture of a vessel which would account for the hemorrhage.

The brain showed very marked evidence of an old lepto-meningitis over the left hemisphere, and there was atheroma of the vessels of the base. In the posterior right thalamus there was found a small area of softening. It was about one-third of an inch in length by one-fourth of an inch in its transverse diameter. No other coarse lesion could be found in the brain.

CEREBRAL HEMORRHAGE: ITS CAUSE AND PREMONITORY SYMPTOMS.

DR. C. L. DANA, of New York, presented this paper and a report of 100 consecutive cases of apoplexy with hemiplegia observed at his clinic at the Post-Graduate Hospital, and 79 cases of apoplexy with autopsy observed in Bellevue Hospital. Thirty of the latter came under his personal care and observation.

Of 100 non-fatal cases, 36 were due to syphilis. The special characteristics due to syphilis are, that they occur in early life, that they are often multiple in character, and that the pathological condition underlying them is usually a thrombosis and softening.

So far as his experience and records went, cerebral hemorrhages are rarely repeated; and it seemed as if in many cases the rupture of an artery changed the vital conditions, as it certainly does the personal habits, so that the attack exercises a conservative influence upon the individual and actually tended to prolong life.

DR. E. D. FISHER, of New York, read a report of 77 cases. Fifty-one had one attack; 16, two attacks; 9 had three; and 1 had six attacks. All are still living. These cases were observed in his service at the City Almshouse. The average age at which the first attack occurred was $44\frac{6}{11}$ years. His observations, he thought, confirmed what had been said by the reader of the paper. The longest duration since the attack was twenty-two years.

LUMBAR PUNCTURE FOR THE REMOVAL OF CEREBRO-SPINAL FLUID.

This was the title of the paper by **Dr. William Browning**, of Brooklyn, N. Y.

He reviewed the main points in this recently devised operation. Brief notes of a few cases were given, as well as directions for its performance. The following conclusions were reached:

(1) The method is simple, easily practised and rather attractive.

(2) In itself it is usually without danger.

(3) By it we certainly can draw off cerebro-spinal fluid.

(4) The quantity removed at short sittings has been from one to one and a half ounces in adults.

(5) This, without doubt, represents the amount of free fluid usually present in the lower vertebral canal even when occluded above.

(6) In internal hydrocephalus the relief, if any, is but very temporary. In the common form due to tubercular meningitis the result is not worth the trouble, while in the closed or sacculated forms it must rather do harm than good.

(7) As a diagnostic means, for example, in suspected meningeal hemorrhage, it is valuable. As an index of pressure it may also be worth noting.

(8) It is worth further trial: (*a*) as a passing relief in brain tumors not complicated by hydrocephalus; (*b*) as a substitute for trephining in progressive dementia; (*c*) in certain spinal troubles; (*d*) and possibly as a means of applying medication directly to the spinal meninges.

(9) In conclusion, it may be said that, while admissible in all cases of brain-pressure, there is as yet no established indication for this precedure except for diagnostic purposes.

THIRD DAY. — FRIDAY.

THE TREATMENT OF CONVALESCENCE AND THE AFTER-CARE OF THE INSANE.

Dr. Henry R. Stedman, of Boston, considered the dangers attending convalescence in insanity and the precautions necessary to prevent relapse or prolong remissions.

General rules and advice regarding the prevention of insanity are not regarded even by predisposed subjects, and are practically of but little use. The case is different when once an attack of insanity has been experienced. Although in certain cases the proper conduct of convalescence is vital to mental health, the study of this period is confined to a few scattered suggestions in the works on insanity. Instances of abrupt recovery with almost no convalescent stage, are rare. Although it may happen in chronic cases, it occurs, as a rule, in those of short duration — notably confusional insanity and the toxic and neurotic insanities.

Lucid intervals, or spurious convalescences, differ often in no respect from genuine recovery, with the single and essential exception that the sleep does not improve, or is worse. This is a valuable indication in the prognosis of permanent return to reason.

To the cardinal signs of convalescence should often be added the disappearance of decided fear of a return of the attack, and dread of the stigma to follow. It is important to be informed regarding normal and usual physical troubles of the patient, as their reappearance is another and valuable indication of recovery; so, also, a knowledge of the sequence of immediate prodromata of an attack. They are often repeated in reverse order while the patient is getting well.

Complete mental rest during menstrual epochs, so highly important at this time, is often disregarded, and application of the mind, even to a slight degree, in study or other work, is equally to be deprecated.

Early discharge from the asylum, or from special care away from home, is to be advised against, as a rule, especially in cases of melancholia with a history of suicidal attempts, and after acute mania, the most exhausting form of insanity, and one which leaves the patient particularly susceptible to slight influences for a long time.

On the other hand, we should frequently advise early removal in other cases convalescing from melancholia, particularly when homesickness is a marked feature and occasionally when there is refusal of food. Certain cases of mild mania, also paranoiacs who are independent in the asylum and actively oppose treatment are steadied by outside life. A change also works well until its novelty has worn off.

The first year or so after recovery is a very critical time. The reader gave a number of indications in special cases and suggestions for prevention of relapse.

The above remarks applied chiefly to well-to-do patients. An important branch of this subject is the means for the after-care of the pauper insane. There is practically no provision outside of asylums for this class, and practically little advice or other help is given these unfortunates on leaving asylums; while for the physically sick, on the other hand, there is abundant provision for their care during convalescence, and the discharged convict is greatly helped and encouraged by charitable societies for the purpose. Asylum physicians often hesitate to set certain patients at liberty whose mental condition seems to have so far improved as to make it useless to keep this class longer under care (and even some who have fully recovered) for fear that thus suddenly thrown on their own resources, without oversight, or perhaps means of support, they will fall back into their old habits of life which gave rise to their insanity. This fact, and their delicate mental condition, often render them easy victims to designing people.

These and other reasons, have led to the formation in France, of protective societies, called "Societies of Patronage," under official auspices. Their duties are to aid convalescent or recovered pauper patients by gifts of money, clothing and tools; redemption of articles in pawn; payment of rent; admission to convalescent homes in cottages intermediate between confinement and complete freedom, or in hospitals or houses of refuge; securing situations for them; and finally, their supervision wherever employed. This work continues during the first month or two after the patient's discharge. Similar societies, or means of relief, have been adopted in England and Scotland. They were described in detail. There is no better work on the score of both humanity and public economy than the adoption in this country of similar means for the prevention of insanity.

Dr. E. D. Fisher was of the opinion that patients left the asylum too early. In cases where they are oversensitive regarding their previous incarceration, something must be done to care for them and obviate a relapse. He was in favor of establishing convalescent homes for such patients, and spoke at length in confirmation of the views of the author of the paper.

Dr. **Dercum** thought this matter a very important phase in the care of the insane. It is, however, quite difficult to deal with individual cases. Where the element of exhaustion was a prominent causative factor, the patient required detention and care for a much longer time.

Dr. **Starr** was glad to know that Dr. Stedman favored the earlier removal from asylums of melancholics. One of the chief difficulties was in controlling the family, who did not know how to manage the patient after his return.

Dr. **Jones**, of Minnesota, said that in Minnesota, since the word asylum has been changed to that of hospital, it has tended to remove any of the supposed stigma that has been usually attached to people who have been in institutions for the insane.

Dr. **Knapp** and the **President** concurred in the views expressed by the reader of the paper.

Dr. **Dana** said that the subject was of great economic as well as medical importance. He would suggest that a committee be appointed to investigate the matter.

This suggestion was then presented in the form of a motion, which was carried.

The **President** then appointed as a committee, Drs. Stedman, Dana and Dercum.

CASE OF INFANTILE HEMIPLEGIA, IMBECILITY AND EPILEPSY. CRANIOTOMY: MARKED IMPROVEMENT.

Dr. **Edw. B. Angell**, of Rochester, reported a case, and read a paper with the above title.

The salient features of the case were forceps delivery, succeeded by double ptosis, occasional tonic spasm of right arm, contracture and hemipalsy of right hand. Physical and mental development was slow; and epilepsy, with three to five seizures daily, supervened three months prior to the operation. At time of examination, the child was partly imbecile. Skull measurement gave a cranial index of .77; palate was high arched; teeth jagged; and right wrist and hand, much smaller than left, were helpless.

A diagnosis was made of pressure in neighborhood of the hand-centre of left motor area, due either to a hemorrhagic plaque or cyst.

Craniotomy was decided upon, as a tentative measure, with a view of relieving pressure and consequent symptoms, while avoiding the greater risk of opening the dura necessary to removal of the cyst wall. The operation was performed March 13th, last, and upon removal of the trephine button, a sub-dural hemorrhagic cyst was found. The cranium overlying the cyst had become very much thinned, and was freely cut away beyond the limits of the cyst. By an aspirating needle a half-drachm of fluid was removed, otherwise the dura was not injured. The scalp incision healed readily, but through an overtight bandage edema developed, and by the eighth day caused sufficient pressure to develop a hard convulsion and high temperature. With the remedying of this, marked improvement in all the symptoms ensued.

At the present time (three months after the operation) there has been no recurrence of the epileptic attacks, while there has been a commensurate improvement in the mental and moral condition.

Dr. **Mills** considered it presumable that the cyst, which was not opened, was a porencephalic cavity, and that opening and draining it would have been useless.

Dr. **Putnam** agreed with Dr. Mills. He said it was rarely possible to remove a cyst satisfactorily. In a case seen by him the cyst was tapped and the drain left in. Improvement followed.

Dr. **W. A. Hammond** spoke of two cases on whom craniotomy was performed. One was eighteen years of age, and became an imbecile as a result of an injury to the head. He remained in this condition four years. After operation there was improvement at the end of two months. At the end of a year the improvement was marked. In the other case of a similar character, the operation was followed by improvement.

The **President** said that cysts differed in character. The superficial cysts were due to meningeal hemorrhage during labor, and could be satisfactorily treated by operation.

Dr. **Angell**, in closing the discussion, said this was not a case of porencephalus, but an arachnoid cyst from a meningeal hemorrhage.

INFANTILE AMYOTROPHIC LATERAL SCLEROSIS OF THE FAMILY TYPE.

This was the title of a paper by Dr. **Charles Henry Brown**, of New York. He gave the history and report of a case. The disease occurred in a boy fifteen years of age. There was marked emaciation, particularly in the upper part of the body, and paralysis and atrophy of all the facial muscles, excepting those of mastication. Fibrillary twitchings were present all over the body. The superficial and deep reflexes were active. Ankle clonus was demonstrable. There was double lateral curvature of the spine. Mentally the boy was fairly bright. He cries readily and is amused at trifles; is microcephalic, and acts and appears like a child of ten. There are evidences of a general arrest of development. Dr. Brown considers his case as belonging to one of the family types of infantile progressive bulbar paralysis, plus the same implication that is found engrafted upon the progressive poliomyelitis of adults, and which gives us amyotrophic lateral sclerosis. In muscular myopathies, the respiration is not involved. The upper facial muscles are usually unaffected, and the "taper mouth" is not observed. The atrophy is more irregular, more bilateral: that is, it is worse on one side. Electric reactions are not of especial importance in diagnosis. In some reported cases of infantile progressive bulbar paralysis they are normal, in others degenerative.

To place this case among the scapulo-humeral, or facio-scapulo humeral types of muscular atrophy is out of the question. Though the neck is much thinned, the scapulo-humeral group and the back muscles are generally the best the patient has. What muscles he does possess are active; and the exaggeration of reflexes, the fibrillary twitchings, and the retractions of tendons that are present, though slight, preclude a peripheral origin of the disease. As far as is known, no case of the kind has ever been reported and diagnosticated as infantile amyotrophic lateral sclerosis of the family type. Hoffman's case, a boy eleven years old, closely resembles it. Here, too, there was marked labio-glosso laryngeal paralysis, great emaciation of upper extremities of the trunk, extending down below the hips, together with exaggerated reflexes in the lower extremities and diminished reflexes in the upper.

In Hoffman's case the atrophy was probably too extreme in the upper extremities to admit of much response. In all the cases reported of these bulbar diseases belonging to groups of family types, there has been marked difficulty of respiration and special implication of the upper branch of the trifacial nerve.

TWO CASES OF INGRAVESCENT CEREBRAL HEMORRHAGE TREATED BY LIGATION OF THE COMMON CAROTID ARTERY.

This was a joint paper by **Dr. F. X. Dercum** and **Dr. W. W. Keen**, of Philadelphia.

In the first case reported the symptoms pointed to a slowly progressive capsular hemorrhage extending over three days before ligation of the common carotid was resorted to. The symptoms were steadily progressive and threatened a fatal termination. Ligation of the carotid, as proposed by Mr. Horsely, promptly arrested the symptoms, and the man made an excellent recovery. Months afterward merely symptoms of a spastic hemiplegia persisted, but they were not very marked.

The second case was one in which the symptoms pointed to a progressive hemorrhage occupying eight hours. The patient's condition was so grave at the time of the operation that little was hoped from it, and indeed it proved useless, patient dying several hours afterward.

Dr. Dercum pointed out that the class of cases in which benefit is to be hoped for from ligation of the common carotid are those in which the hemorrhage is decidedly ingravescent in type. He also dwelt upon the difficulties of a differential diagnosis between hemorrhage and thrombosis in such cases, and pointed out that even in case of an error in diagnosis it could not be said that the operation involved additional risk to the brain.

Finally, he suggested that instead of ligation of the vessel the expedient of compression of the common carotid should be tried in every case of apoplexy as soon as the physician arrived. A surgeon is not always at hand, and besides compression of the carotid is so simple a procedure that a bystander can easily be instructed to apply it.

Dr. Frank Fry, of St. Louis, knew of several instances in which the operation had been done. All proved fatal. He believed that none of them were indicated or justifiable.

Dr. Knapp believed that the neurologist does not see the case until it is too late to make a satisfactory diagnosis.

The **President** thought the chief difficulty was in diagnosis, and that the hemorrhage was usually a self-limited one.

MERYCISM.

This was the subject of a paper by **Dr. W. A. Hammond**, of Washington.

He defined this condition as the functions of rumination and remastication in the human subject. Only about fifty cases had been reported.

Several cases were referred to, among them that of the distinguished physiologist, Dr. Brown-Séquard, who had acquired it as the result of experiments performed upon himself.

The case reported was that of a young man whose mental condition was impaired and who was also the subject of merycism. No special treatment was undertaken against the merycism in this case, but the patient was trephined with the purpose of improving his mental condition. There were no unusual features connected with the operation, but it was noticed that the regurgitation did not occur with the meals he subsequently ate, till the fifth day there was a slight return. Eight days later a similar button was removed from the corresponding part of the left side of the skull. From that time (about ten months ago), to the present, there has been no regurgitation. Whether the cure of merycism in this case was directly due to the operations on the cranium, or the result of the mental improvement, is a queston which it would be difficult to answer.

Dr. Knapp was unaware that so few cases had been reported in this country. Two cases had come under his notice. Both were physicians in good mental condition. He thought a distinction should be made between congenital and acquired merycism.

Dr. Lloyd believed that some cases should be considered as a neurosis allied to hysterical vomiting, such as regurgitation from the esophagus.

The **President** had seen a man who had conquered the habit by the exercise of his own will. His views were in accord with those expressed by Dr. Lloyd.

Dr. Hammond said that acquired merycism was always due to overloading the esophagus, and to the bad habit of rapid eating. He thought it extremely doubtful as to its being a neurosis.

ELECTION OF NEW MEMBERS.

The following-named gentlemen were elected to active membership: Ira Van Gieson, M.D., of New York; E. B. Lane, M.D., of Dorchester, Mass.; and E. D. Bondurant, M.D., of Tuscaloosa, Ala.

ELECTION OF OFFICERS.

The following officers were elected for the ensuing year: *President*, Philip Coombs Knapp, M.D., of Boston; *Vice-Presidents*, F. X. Dercum, M.D., of Philadelphia, and W. A. Jones, M.D., of Minneapolis; *Secretary and Treasurer*, G. M. Hammond, M.D., of New York.

Recent Literature.

A System of Genito-Urinary Diseases, Syphilology and Dermatology. Edited by **Prince A. Morrow**, M.D. Vol II, Syphilology. New York: D. Appleton & Co.

The second volume of the "System of Genito-Urinary Diseases, Syphilology and Dermatology," published by Appleton, and edited by Dr. Morrow, deals exclusively with the subject of syphilis and chancroid, and in its general plan and make-up follows very closely its predecessor on the subject of genito-urinary diseases. It forms a pretty complete treatise on the manifestations of this disease on the various tissues and organs of the body, and aims at embracing the most recent advances in our knowledge of these processes. The work has been divided up among twenty-three contributors, who have in the main presented the subjects allotted to them in a careful and conscientious manner. Naturally such a book, constructed by so many different hands, loses the individuality that marks the value of the treatise from a single pen, and there is necessarily much repetition, and not a little contradiction in statement. Many of the articles bear the stamp of real merit, notably the first chapter, on history, evolution and general pathological anatomy, which is a masterpiece in its way, and deserves to be widely read. The writer points out clearly that the old division of syphilis into a primary, secondary and tertiary period, following one another in chronological order, has served its day, and remains now the source of much confusion. It would have added to the value of the book, if this position had been squarely maintained by the other contributors. His classification of the advance of syphilis in four different directions will appeal strongly to all who have taken the interest to compare their practical experience with the teachings and dogmatic statements of the books. This classification is as follows: (1) benignant syphilis, with mild and transitory symptoms; (2) benignant syphilis, with relapsing or persistent superficial symptoms; (3) malignant syphilis, with relapsing or persistent profound symptoms; (4) malignant syphilis, with relapsing or persistent and profound lesions, that are ultimately destructive. In the second category are included a majority of all cases of the disease, while those that belong in the third and fourth are a very small minority.

Upon this masterly opening of the subject there follow chapters on etiology, modes of infection, primary and constitutional syphilis, and syphilis of the skin. The author of the latter chapter (the editor of the system) is to be congratulated on the excellent photographs and photo-lithographs that illustrate his text in such profusion — representations far ahead in point of accuracy, of the usual text-book illustrations. The drawings of microscopic sections, and their accompanying text, are not so satisfactory of their kind as are the illustrations of clinical varieties. Syphilis of the bones and of the upper air-passages is described in chapters that have been carefully compiled and well illustrated. A special chapter is devoted to visceral syphilis, and an exhaustive *résumé* of all of our present knowledge on this subject is given. The nervous system, the eye and the ear are successively treated by specialists in these departments.

Much space is given to the subject of treatment in this work, both in connection with the special tissues affected, and in a long chapter on the subject generally. In the latter a conservative position is maintained with regard to the several points in treatment that have been the cause of controversy. It is in accordance with the best modern knowledge and the practice of a majority of the best observers that the counsel is given not to begin constitutional treatment before the advent of general symptoms, unless there be some peculiar conditions present that call for immediate action. Excision of the initial lesion is regarded as of doubtful utility, to be practised only when the lesion is seen at the outset. In seven instances the writer has convinced himself that the disease was in this way aborted.

A special chapter is devoted to syphilis in relation to public health, which is a valuable addition to the book and to our knowledge of this subject. The book closes with a full discussion of "chancroid" in all its aspects.

Congenital Affections of the Heart. By George Carpenter, M.D., London. London: John Bale & Sons. 1894.

Dr. Carpenter disclaims any desire to rival the classic works of Rokitansky, Kussmaul or Peacock in the preparation of this monograph. He has written it with the idea only of supplementing the ordinary text-books, about which complaint is so often made that they are not sufficiently precise or explanatory, and has succeeded in producing a book which will be useful to students and practitioners alike. That he has thrown but little new light upon the diagnosis of congenital heart affections is to be attributed rather to the nature of the subject than to the fault of the author. The etiology, however, and character of the various malformations, together with the signs and symptoms of each, so far as they can be differentiated, are fully described, and the prognosis and treatment carefully considered. A number of illustrative cases, some completed by an autopsy, are included in the text, which shows the difficulties of coming to a conclusion as to the nature of the malformation.

Inebriety, or Narcomania: Its Etiology, Pathology, Treatment and Jurisprudence. By Norman Kerr, M.D, F.L.S. Third edition; 8vo; pp. xxxix, 780. London: H. K. Lewis. 1894.

The third edition of this well-known work may be regarded almost as a new work, for 317 pages have been added. The new matter is of much interest. The author devotes a chapter to the comparatively new subject of ether intoxication, which has attained alarming proportions in some parts of Ireland. Ether drinkers have been known to take half a pint a day; the period of intoxication is one-third the length of the alcoholic period, and a man can get drunk three times a day for sixpence. A second new chapter deals, rather unsatisfactorily, with the question of the medical administration of alcohol. The question of the relations of inebriety and insurance is discussed in detail, and the medical legal relations of inebriety both with reference to the civil law and to the criminal responsibility of inebriates are fully discussed. These additions add much to the value of the work, which is probably the most complete treatise in English upon the subject.

The Etiology of Osseous Deformities of the Head, Face, Jaw and Teeth. By Eugene S. Talbot, M.D., D.D.S., Professor of Dental Surgery, Woman's Medical College; Lecturer in Dental Surgery and Pathology, Rush Medical College, Chicago. Third edition, revised and enlarged, with 461 illustrations. Chicago: The W. T. Keener Co.

In this volume the author has collected a vast amount of data with regard to irregular developments of the bony parts of the head. These data have been obtained from measurements, taken from collections of skulls representing race and class peculiarities. To this work has been added a large number of measurements taken from the living subject. These investigations have been undertaken to establish not alone what is abnormal in the development of the bony structure of the head, but also to determine certain normal conditions as the height of the palatine arch and the distance between the first molars of the upper jaw. In the degenerate criminal and neurotic classes the author finds a much larger proportion of irregularities in the development of the jaw, palate and teeth than obtains amongst moral and healthy individuals.

This book is of especial interest as showing how a thoughtful and well-educated dental practitioner is inevitably led beyond the field of his regular work into the broad field of investigation usually given up to the practitioner of general medicine. For the dentist much interest will be aroused in the discussion of the causes producing V-shaped or saddle-shaped arches. To the physician the discussion on naso-pharyngeal growths and their relation to high palates cannot fail to be of interest.

Essentials of Practice of Pharmacy. Arranged in the Form of Questions and Answers. Prepared especially for Pharmaceutical Students. Second edition, revised. By Lucius E. Sayre, Ph.G., Professor of Pharmacy and Materia Medica, School of Pharmacy, University of Kansas. 200 pp., 8vo. Philadelphia: W. B. Saunders. 1894.

This number (18) of Saunders's Question Compends, revised to correspond with the United States Pharmacopœia of 1870, has for its object both to assist the student to fix in his memory the classic instruction upon that work, and to open up and lay out the subject in a manner that he can easily follow out by himself. This edition has been enlarged by the addition of an outline of drug and plant analysis, by the structural formulæ of the organic carbon compounds used in medicine, and by the chemical tests used in the pharmacopœia, as well as by problems in allegation and specific gravity. The work seems well fitted to fulfil its purpose.

Manual of Physical Diagnosis. By JAMES TYSON, M.D. Second edition. Philadelphia: P. Blakiston, Son & Co. 1893.

The popularity of Dr. Tyson's manual is shown by its appearance in a second edition. It has been enlarged by the addition of short chapters on the use of sphygmograph and cardeograph in diagnosis, and an appendix which treats of the examination of the blood, that for the more important bacilli associated with the infectious diseases, the various chemical examinations required in diagnosis of diseases of the stomach, and directions for making an autopsy. This new edition retains the conciseness combined with practical sufficiency which made the first so valuable as a text-book.

Die Bedeutung der hypnotischen Suggestion als Heilmittel. Herausgegeben von Dr. med. J. GROSSMANN. 8vo; pp. xviii, 160. Berlin: Bong & Co. 1894.

The editor of the *Zeitschrift für Hypnotismus* has reprinted in this volume various letters sent to him by men in different parts of the world in answer to his inquiries as to the value of hypnotism as a therapeutic remedy, and published in the *Zeitschrift.* The immediate occasion of his inquiry was the restrictions against the use of hypnotism by the French military authorities and by the Russian government. The answers, therefore, deal with two distinct questions. All agree that there should be no strict regulations against the use of hypnotism as a therapeutic agent; but some of the writers, as Danilewsky, are not in active practice, and so make no use of hypnotism, and other writers, as Janet, are guarded in their endorsement. As a rule, however, the twenty-nine authorities whose answers are here collected, are unanimous in their belief in the value of hypnotism as a therapeutic agent. We cannot help thinking, however, of the ancient sceptic's inquiry in the temple about the offerings of those who made their vows and never came back from the sea. The volume would be a much more valuable contribution to the subject, if, in addition to the endorsements of Bernheim and Forel and Liébeault and Tuckey, we had the views of those who have tried hypnotism and given it up. Strümpell is quoted in the preface as saying that numberless apparently wonderful cures have been obtained by it, but the rest of his very wise remarks on the subject are omitted. Tuckey's testimony as to the value of hypnotism in London could be better appreciated if we also had the testimony of Ferrier, Buzzard and Gowers. Jolly, Mendel, Oppenheim and Siemerling might well have been called on to supplement the testimony from Berlin, and the confessions of failure and dissatisfaction from New York would not be out of place. The book is, after all, but the presentation of one side of the question; but, as after over fifty years of trial, the value of hypnotism as a therapeutic agent is still a vexed question, it must be acknowledged that even this one-sided presentation of the question fails to be convincing.

A Manual of Instruction on the Principle of Prompt Aid to the Injured, including a Chapter on Hygiene and the Drill Regulation for the Hospital Corps, U. S. A. Designed for Military and Civil Use. By ALVAH H. DOTY, M.D. Major and Surgeon, Ninth Regiment N. G. S., N. Y., late attending surgeon to Bellevue Hospital Dispensary, New York. Second edition, revised and enlarged. New York: D. Appleton & Co. 1894.

In Surgeon Doty's manual, the second edition of which has just appeared, there is little to criticise. It gives just such an epitome of anatomy and physiology as the intelligent layman desires to know, without going so far as to encourage him to usurp the duties which belong to the physician or surgeon: such knowledge as will cause his first aid to be better rendered because he has an idea why he should act.

The writer is not always clear in the use of the words aseptic and antiseptic, confounding one with the other.

The statement that the symptoms of poisoning from mushrooms "usually occur within the hour" is only true of the irritant, but not fatally poisonous varieties, as in the more serious cases due to the presence of the alkaloid amanatine which is found in certain members of the amanito family, where the symptoms are delayed from six to twelve or more hours. In the treatment no mention is made of atropia, which should be our sheet-anchor in such cases.

A valuable addition to this edition is the chapter on hygiene, which is so well done that one regrets that the space devoted to the drill regulations of the hospital corps had not been better utilized by the contemplated chapter on nursing. The drill regulations can be obtained in a more convenient form by those to whom a knowledge of them is necessary.

Diseases of the Nose and Throat. By F. DE HAVILLAND HALL, M.D., F.B.C.P., Physician in charge of the Throat Department at the Westminster Hospital. Philadelphia: P. Blakiston, Son & Co. 1894.

This book of 500 pages describes concisely and systematically the diseases of the nose, pharynx and larynx, giving all essential information, and judiciously omitting controversies and other uninteresting details. The division of subjects is excellent, each subject being taken up by itself in a way which makes reference to it easy and clear. No attempt is made to cover the anatomy of the parts, which omission for a book of this character is to be commended. The book is a good one, well and carefully written.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, OCTOBER 4, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

STATISTICS OF RENAL SURGERY.

In a recent number of the *Arch. für klin. Chir.*,[1] is an important contribution by James Israel, giving the results of 81 capital operations on the kidney performed by him during the past eleven years, with a mortality of 13.7 per cent. Of these operations 37 were nephrectomies, of which six were fatal. This result is exceptionally favorable, as compared with the results obtained by other surgeons. Thus, of the 100 cases collected by Barth in 1892, 62 either died from the operation or from metastases or intercurrent troubles.[2]

In 19 of Israel's cases, the kidney was extirpated for hydronephrosis, for pyonephrosis, and abscess of the kidney; four of these patients (21 per cent.) died. The nine patients suffering from hydronephrosis all got well.

In 12 cases, the extirpation was performed for malignant growths. Only two of these patients died. Israel attributes this small mortality less to the skill of the operator than to improvement in the means of diagnosis, which enables the surgeon to distinguish renal tumors from divers other abdominal growths, and thus perform ablation of the kidney without opening the peritoneum. Moreover, the greater precision in diagnosis obtained by the surgeon enables him to operate earlier, when the tumor is still small, and has not acquired attachment to surrounding parts. Thus, in two cases, the tumor which had not exceeded the size of a cherry, had been recognized by palpation while the patient, lying on the sound side, was taking a deep breath.

Tumors of the liver coming down in front of the kidney may be a cause of mistaken diagnosis. Thus, in one case, the author found at the operation, instead of the supposed renal tumor, a tumor the size of the two fists descending from the lower surface of the liver. He promptly closed up the wound. In another case, a young girl of fifteen, he found instead of a renal tumor, an angio-sarcoma of the liver, which was removed with success.

Apart from the data afforded by palpation and the detection of particles of the neoplasm in the urine — even when the bladder is found intact by the cystoscope — there exists no certain sign of malignant tumor of the kidney. It cannot even be said that the type of the hematuria is characteristic. Israel suggests as of some value, a diagnostic method which consists in plunging the needle of a Pravaz syringe into the substance of the tumor and obtaining by suction a little of the contents of the tumor. In three cases he has succeeded in thus removing enough of the tissue elements to enable him to make a diagnosis of the neoplasm.

A second cause of lessened mortality in nephrectomy operations is the exclusive employment of the extraperitoneal method. It is in this way that Israel has removed all the tumors of the kidney — even the most voluminous — on which he has been called to operate. There need be no fear in making a large incision, transverse or oblique, curved or angular. The kidney should first be separated from the fat in which it is embedded, then lifted up, tied off and removed; then by the aid of long retractors, with large blade and polished so as to reflect the light, the retro-peritoneal space is brought well into view, so that all bleeding can be stopped and any accidental perforations of the peritoneum sutured. Lastly, the wound is drained — not packed — and closed with silk sutures.

In one of Israel's fatal cases, symptoms of iodoform poisoning set in, to which he attributes the death. Since then he has abandoned the use of antiseptics in dressings of the abdominal wound. In another case where cancer of the right kidney was extirpated the patient, a feeble and cachectic woman, was kept under chloroform two hours; she died at the end of forty hours, and at the autopsy there was found recent cloudy swelling of the parenchyma of the left kidney, which the author considered as the cause of death. This alteration, he says, can only be explained by the toxic action of chloroform on a person already greatly enfeebled. He has since investigated the action of chloroform on the kidneys.

In 17 cases of extirpation of one kidney, he found in 14 signs of a slight affection of the other kidney after the operation. This affection is generally of short duration. In a patient who underwent an operation for cysto-sarcoma, he observed a transient albuminuria. Six months later, this same patient underwent another surgical operation, and again for several days albumin and casts were found in the urine. These facts seem to demonstrate the noxious action of chloroform on the renal epithelium.

A very interesting case of *ureteritis* was observed by Israel in an adult man affected for eight years with severe attacks of renal colic on the left side. The diagnosis of renal calculus was made. February 10,

---

[1] Deutsche Med. Woch., June 8, 1892.

[2] See also Semaine Médicale, September 8, 1894.

1893; an incision was made over the kidney, which was exposed from the convexity to the hilum, but no calculus was found. As the sufferings of the patient were aggravated instead of benefited by the operation, two months afterward a long incision was made in the same region, and the ureter was laid bare in its whole length. It was found indurated and very much thickened; had at least three times the normal diameter. By an incision in the pelvis, a No. 10 bougie was easily passed down to the bladder. This opening was not closed, in hope that the free flow of urine by the wound would put an end to the sufferings of the patient. This was not the case, and a few days later it was decided to perform ablation of the kidney, which presented to a notable degree the alterations of hydronephrosis by retention. The patient made a speedy recovery, and has been entirely relieved of his pains. Israel explains the obstinate and continuous renal colics in this case by the fact that the ureter was converted into a rigid tube by the chronic inflammation and could no longer expel the urine by its periodical and forcible contractions. There was, hence, stasis of urine and elevation of pressure, sufficient to cause colics.

Nephrectomy was practised in four cases of renal tuberculosis. One of the patients died soon after of tuberculous meningitis; the others survived the operation and have kept well to the present time.

In two cases of renal syphilis nephrectomy was performed with success.

In three cases of urinary calculus attended with anuria, the operation of nephrolithotomy was performed. Two of these patients died, the operation having been too long delayed; in fact, to be successful, the lithotomy ought to be practised early, at least within forty-eight hours of the onset of the anuria. In the patient that survived, the secretion of the right kidney was resumed immediately after the removal of the left kidney. This fact seems to indicate the possibility of a reflex anuria by arrest of the secretion of a kidney by reason of occlusion by a calculus of the ureter of the other kidney. The author has also seen the irritation of the pedicle of an extirpated kidney produce an arrest of the secretion of the other kidney. A drainage-tube had caused this irritation; when this was removed, the quantity of urine increased from 500 to 2,000 c. c. with cessation of the pain which before had existed at the site of the operation.

In cases of floating kidney, Israel is on general principles opposed to operative interference. He does not believe that the symptoms observed are, in general, the consequence of the abnormal mobility of the kidney. Often the physician has to do with women that are nervous or present some affection of the genital organs. Others have enteroptosis, and it is the relaxation, the fall of the viscera, which is the cause of the functional troubles, rather than the floating kidney. Moreover, we often observe hysterical nephralgias when the kidney is normally situated, also many women present no symptom although one of the kidneys is mobile. Lastly, by an appropriate treatment, we may sometimes cause disappearance of the symptoms wrongly attributed to renal ectopia; and on the whole it may be affirmed that the medical treatment of this affection is much more important than any local treatment.

Nevertheless, nephropexy has its indications, as when the surgeon finds himself in presence of a case of floating kidney accompanied by those paroxysms of renal pain which are the prodrome of intermittent hydronephrosis. Likewise he will have recourse to nephropexy when the patient complains of continuous pains which seem certainly due to displacement of the kidney, and which resist all medical treatment.

◆

SUICIDE IN NEW YORK.

The subject of suicide has attracted a large amount of attention in New York during the past two weeks, owing partly to the unusually large number of cases which have been recorded there, and partly to a reported interview of Ingersoll, in which he is quoted as approving and in some cases even advising this method of getting rid of trouble. Whether the publicity of this subject has produced any appreciable increase in the number of persons who have taken their own life is perhaps doubtful, although the daily papers are responsible for the statement that a very large proportion of bodies, recently, have had in their pockets copies of his arguments. Of much better authority is a recently published communication giving a large number of statistics by the Registrar of Records to the Board of Health.

It is very difficult, he says, in the majority of cases of self-destruction, to determine whether there was an insane impulse or delusion prompting the act. In a majority of cases, however, the cause of the suicide can be traced to abnormal physical conditions or mental disappointments of various kinds, intemperance, business reverses, and family differences. It is reasonable to believe, that some of the causes assigned have more influence upon the natives of one country than of another, and that this may be due to national habits and customs. There is no apparent reason why the Germans, who as a class are wealthier and more prosperous than the Irish, should so largely exceed the latter in suicides, unless it be the Teutonic temperament. The Irish show a lesser number of suicides, in proportion to their population, than any of the other foreign-born inhabitants of the city of New York. The disproportion between suicides of males and of females is very marked. The statistics of eleven years show that suicide was much more prevalent among males than among females; the proportion during this period of suicides of males being 3.64 to every one among females, and this notwithstanding the fact that the female population is larger than the male, which would imply a better endurance of the evils of life on the part of women than of men.

MEDICAL NOTES.

THE CHOLERA. — The cholera is slowly but steadily decreasing in St. Petersburg and in most of the provinces of Russia, the largest number being still reported from Nijni-Novgorod where there are about forty new cases each day and some twenty deaths. In St. Petersburg there are only about fifteen new cases a day. In Galicia and Bukowina the epidemic shows no diminution in the number of cases, and is constantly reported from new towns. In Germany the cases are few and scattered.

SMALL-POX IN CHICAGO. — The small-pox outbreak which threatened to spread widely in Chicago the last two months has been checked, and is apparently not becoming epidemic, there being less than a dozen cases last week.

PROFESSOR FRAENKEL TO GO TO HALLE. — Professor Carl Fraenkel, of Marburg, has been appointed to the Chair of Hygiene at Halle, and will begin his work there in the early spring.

DR. BACCELLI AND THE MUD TREATMENT FOR GOUT. — It is reported by the *Lancet* that Dr. Baccelli is to visit the *Stabilimento Terminale* of Albano, near Padua, to undergo the mud treatment for his gout.

DEATH OF DR. OERTEL. — Telegraphic news reports the death of Dr. Oertel, of the Hygienic Institute of Hamburg, from Asiatic cholera contracted while making investigations of infected water from the Vistula.

THIOL IN ERYSIPELAS. — Dr. Rudheff, of St. Petersburg, in his recent hospital report especially mentions the good results obtained from the use of thiol in cases of erysipelas. He applies a forty-per-cent. solution to the affected parts five times a day.

THE DEMI-MONDE OF BERLIN. — According to a recent report of a committee of the Berlin Medical Society, the members of the demi-monde were estimated to number from 40,000 to 50,000. In 1886, the number of professional prostitutes was only 3,000.

ST. LUKE'S HOSPITAL, NEW YORK. — Dr. Charles A. Powers has resigned his positions as attending surgeon to this hospital and to the New York Cancer Hospital, and his lectureship on surgery at the Post-Graduate Medical School, and has removed to Denver, Col.

THE NEW YORK STATE MEDICAL ASSOCIATION. — The Eleventh Annual Meeting of the New York State Medical Association, will be held Tuesday, Wednesday and Thursday, October 9, 10 and 11, 1894, at the Mott Memorial Hall, 64 Madison Avenue, New York City.

THE COST OF THE INSANE TO LONDON. — The report of the Asylums Committee of the London County Council for the last year shows an expenditure in the department of lunacy of over two million dollars. The board has over eleven thousand insane persons in its charge, an increase of fifteen per cent. in the last four years.

THE ILLNESS OF THE CZAR. — There would seem to be little doubt that the Czar of Russia is ill, if the "special authenticated" reports of the daily press are correct in their medical diagnosis. The illness thus far is due to the following different afflictions: "two or three strokes of apoplexy," "cancer of the stomach," "Bright's disease," "diabetes," "taking cold while waiting in a telegraph office for a message from his son."

AN OPHTHALMIC CLINIC IN PERSIA. — Some time ago Dr. Galezowski, of Paris, was called to Persia to treat the Shah's son for some ocular weakness due to general causes. The Shah is reported so pleased with the success of French ophthalmology that he has established a clinic for diseases of the eye in Persia and placed it under the direction of an appointee of Dr. Galezowski.

AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION. — The following officers have been elected for the coming year by the American Electro-Therapeutic Association: President, Dr. A. Lapthorn Smith; Vice Presidents, Drs. J. H. Kellogg and Charles R. Dickson; Secretary, Dr. Emil Heuel, New York City; Treasurer, Dr. R. J. Nunn, Savannah; Executive Council, Drs. W. J. Herdmann, Augustin H. Goelet, W. J. Morton, G. Betton Massey and O. B. Douglass.

PHYSICIANS' BEQUESTS TO HOSPITALS.— Several very generous bequests to medical charities have recently been made by physicians. The late Dr. Albert B. Miles, Surgeon of the Charity Hospital of New Orleans, left $10,000 each to the following institutions: Medical Department of Tulane University of Louisiana; Charity Hospital of New Orleans; and the Hôtel Dieu, also of New Orleans. Mr. Gervas Taylor, of Ireland, left £27,750 to various Dublin hospitals.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, October 3, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 85, scarlet fever 37, typhoid fever 49.

HARVARD MEDICAL SCHOOL. — The Harvard Medical School opened on September 27th. The entering class is the largest in the history of the school, there being this fall one hundred and sixty-one matriculates.

HARVARD MEDICAL SCHOOL EVENING LECTURES. — The evening lectures at the Harvard Medical School, which were so successful last winter, are to be continued this year. The lectures will be given at the Medical School on successive Thursday evenings during the fall and winter, and all members of the profession are cordially invited to be present. The first lecture of the course will be given on Thursday, October 11th, at 8 P. M., by Surgeon-Major John van R. Hoff, U. S. A., the subject being "A Glance at the History of Military Sanitation." This is to be followed by a lecture on "The Duty of a Military Medical Officer in Peace and War." The following lectures have thus far been arranged for: Dr. S. J. Mixter, "Modern Surgery in Private Practice," "Surgery of the Intestine"; Dr. D. W. Cheever, "Medical Ethics"; Prof. W. T. Councilman, "Bright's Disease"; Prof. T. Dwight, "Applied Anatomy of the Head and Neck in Adults and Children"; Dr. J. H. McCollom, "Diseases Dangerous to Public Health"; Prof. J. C. White, "The Cutaneous Features of Tuberculosis, Syphilis and Leprosy"; Prof. H. C. Ernst, "Tuberculosis-Immunity"; Dr. E. Cowles, "The Relation of Insanity to Neurasthenia"; Dr. F. H. Davenport, "The Disorders of Menstruation"; Asst.-Prof. M. H. Richardson, "The Operative Surgery and Prognosis of Mammary Cancer," "A Consideration of Intestinal Obstructions, Acute and Chronic, with Technique of Resections"; Dr. T. W. Fisher, "Psychiatry, Old and New, in New England"; Asst.-Prof. W. T. Porter, "The Physiology of the Cortex of the Brain"; Dr. A. Worcester, "Trained Nurses." A circular giving the dates of the lectures may be had at the Medical School.

An Ambulance for Cambridge, Mass. — The city government of Cambridge, Mass., has appropriated six hundred dollars for the purchase of an ambulance, for which there has been a long-existing need.

The Carney Hospital Training School for Nurses. — The graduating exercises of the Carney Hospital Training School for Nurses were held October 1st. Six nurses were given diplomas.

Dr. Pliny Earle's Bequest to Leicester, Mass. — The town of Leicester, Mass., has received six thousand dollars under the will of the late Dr. Pliny Earle, for the erection of a building for the public library of the town.

NEW YORK.

Placarding of Apartments where Contagious Disease Exists. — At the last meeting of the Board a recommendation made by Dr. H. M. Biggs was adopted providing for the better protection of the public by the placarding of all apartments where there are contagious diseases. The warning placards are to be in different colors: white for diphtheria, red for scarlet fever, and blue for measles.

Mortality. — During the week ending September 29th there were but 703 deaths in the city, against 1,017 reported births. The mortality from all classes of diseases was below the average, and this was noticeably true of the contagious diseases. From small-pox, scarlet fever and measles there were 2 deaths each, from diphtheria, 31, typhoid fever, 12, malarial fever, 4, consumption, 84, pneumonia, 50, bronchitis, 12, cardiac diseases, 44, and Bright's disease, 37.

New Quarters for the Board of Health. — On September 29th the City Health Department moved from its old quarters in the building on Mott Street which it shared with the Police Department for many years, to the new Criminal Court Building on Centre Street, adjoining the Tombs prison. In its new location the Board of Health will have much more ample accommodations than in its former quarters, and the facilities for the proper discharge of its functions will be greatly increased. Fourteen rooms have been assigned for its use on the ground floor of the building, nine on the second floor, and two on one of the other floors.

Miscellany.

FIRST AID IN ELECTRIC ACCIDENTS.

Dr. W. S. Hedley, of Brighton,[1] writing of the frequency of accidents from electric wires in modern municipal life, says it is time that some carefully considered authoritative code of instruction be prepared for use in such cases, and suggests the publication of some simple rules for first aid for the use of non-medical persons. He suggests the following list:

Rules for Guidance in Electric Accidents.— (1) Break the circuit at once, if there be an interrupter close at hand and you know how to use it. If not, lose no time, but proceed to Rule 2. (2) Do not touch the man's body with your bare hands, but if india-rubber gloves are not at hand pull him off the cable by his coat-tail, or fold your coat or some such dry article into two or three thicknesses, and, using this as a pad to take hold of the body, pull it away from the circuit and resort to Rule 5. (3) If unable to get him off, raise with covered hands that part of the body which is touching the earth, or one of the poles of the circuit. This will break the circuit, and it will usually be thus possible to get him easily away, and, if so, proceed to Rule 5. (4) If still unsuccessful, make another pad, and, placing it between the ground and that part of the body in contact with the ground, continue your efforts to detach him. (5) Having pulled him away from the cable, free his neck from clothing, and treat the case as one of drowning, one method being as follows: (6) Open his mouth, and, taking hold of the front part of the tongue with your fingers (covered with a handkerchief if you have one), draw the tongue forwards, and gradually let it go back sixteen times a minute. Be sure that the *root* of the tongue is acted upon and drawn forward. If the teeth are clenched and you cannot get them apart with your fingers, gently separate them with the handle of a pocket-knife or by a small piece of wood, cork, etc. (7) Resist the efforts of the bystanders to pour stimulants down his throat until a medical man arrives and "takes over" the case.

THE DANGERS OF THE BICYCLE.

There is no safety in a bicycle. At all ages and to both sexes it offers under the guise of a pastime an insidious allurement to deformity and disease. At first it was hoped that the danger from the wheel was only to the pedestrian or that the risk to life and limb from reckless riding into obstructions was the rider's fault and that the docile wheel was innocent. But pathology and evil, like a rat in the wall, cannot be long ignored. Clinical evidence has now been adduced by reported cases, to show that no one can safely ride a velocipede.

---

[1] Lancet, September 15, 1894.

The young and growing child should not ride it for his cartilages are plastic, and his spine pliable, and kyphosis rides with him on the saddle. The maiden and the young matron may not ride with safety for the effect upon their pelvic viscera is said to be much more evil than running a sewing machine indoors. The refreshment and vigor gained from a spin into the country along smooth roads bordered by green fields and running brooks, under a clear fall sky, cannot compensate an outraged Hygeia. The contents of a woman's pelvis should not be jarred, these medical reporters tell us, better a total extirpation than a jolt.

But surely the vigorous and adult young man may ride! Far from it, says the Frenchman. The Academie has heard already a long list of virile evils from this form of "*le sport.*" Prostatitis, cystitis, orchitis, epididymitis, even urethritis, follow from the strain; and if the young men of France are to be saved, they are warned not to indulge in the practice of bicycling. The aged, who have good rigid cartilages and spines and whose reproductive viscera are less injurable, escape these early dangers, but are not yet safe in taking to a wheel.

M. Petit reports three cases of sudden death attributed to bicycles; two of them had recognized heart-disease, the third was over-corpulent.

Quæ cum ita sint, surely the bicycle is to be looked upon as a menace which threatens us almost from the cradle to the grave, and a machine more to be avoided than a roulette wheel. But it is to be doubted whether such a beneficial exercise will perish because a few imprudent persons with cardiac lesions overdo themselves, or a French youth excoriates his perineum. There have been too many spindly children built up to healthy vigor, and too many chlorotic, languid girls made rosy and buxom by riding, for physicians to be easily alarmed and dissuaded from believing in "*wheeling.*"

◆

THE ATTRACTION OF FOOTBALL FOR INTELLECTUAL MEN.

In a well-reasoned article on the present state of college football, Prof. E. L. Richards, of Yale,[1] speaks of the attractions of the game for intellectual men as well as for the student of muscular science. He says, speaking of the relative attractions of football and other athletic games:

"That the game has had attractions for intellectual men in the past is shown by the fact that the average scholarship of men on the football teams has of late years been higher than that of men in the other athletic organizations. In the years 1879 to 1888 the average standing of men not on athletic organizations was, on a scale of 4, 2.69; for members of the university boat crew the average was 2.52; for members of the baseball nine it was 2.41; for members of the football team it was 2.68. Track athletics were not in existence as an organization through the whole decade, but for the few years when there was a university team the average was 2.66. In the previous decade, 1869 to 1878, it is only fair to add that the average of the football men was slightly below that of the other athletes, it being 2.51 to their 2.56. I can only account for the fact of the rise of the average in the second decade by the change in the numbers of the team from twenty to eleven — a change giving opportunity for more skill, thus rendering the play more attractive to men of mind. Notwithstanding the present style of mass play, which puts a premium on physical strength and weight, it was a surprise to me to find that the average scholarship of the sixteen men from the academic department, including players and substitutes, was higher than the average of any class which ever graduated. I cannot believe, however, that the high scholarship of football players will always prevail, unless the style of the game be changed to one which admits of more open play.

"The present style of mass play and momentum play puts a premium on weight and brute force. The mingling men in masses makes injuries more probable than in an open style of play. The mass play makes the game as little as possible a kicking game. It eliminates a great deal of the element of skill. Skill ought to be encouraged by setting some sort of premium on it. Increasing the number of points scored by a drop-kick from the field might accomplish this somewhat. Some changes in the rules regarding 'interference' would do more. If, again, the 'warnings' for 'rough play' were entirely omitted, and the umpire were instructed to send a man off the field at the first offence, captains would train their men to avoid these plays entirely. Then the experts, in reforming the game, could not do better than turn their attention to the umpires. If a plan for training umpires could be devised it would be a good thing."

◆

SOME CLINICAL FEATURES OF THE BACTERIOLOGY OF DIPHTHERIA.

Dr. Welch, in his report in behalf of the American Committee on Diphtheria to the Congress of Hygiene and Demography at Budapest, presents[1] a careful study of the bacteriological investigations of diphtheria made by various observers in the United States up to May, 1894; the first study was made in 1889, and since then between six and seven thousand cases have been bacteriologically recorded. Of the conclusions given in *résumé*, many are of statistical or scientific interest only, but others are of great clinical interest. It is felt that the results of official bacteriological examination of cases by board of health, are satisfactory and of use in controlling supervision and isolation of cases, as well as for diagnosis. Of all suspected cases between 58.5 and 67.5 per cent. are found to be true diphtheria, and these are for the most part uncomplicated by scarlet fever. At least 80 per cent. of the cases of membranous croup are of diphtheritic origin.

"In general the great majority of cases of pseudomembranous anginas in scarlet fever are due to streptococci, but where diphtheria is prevalent and opportunities are favorable for exposure to diphtheria a large proportion may be due to the diphtheria bacillus."

The pseudo-membranous inflammations of the throat not caused by the Klebs-Löffler bacillus, are in most cases due to the streptococcus pyogenes,— though other bacteria may be associated. He says: "The mortality in these affections is low in private practice, being 1.7 per cent in 408 consecutive cases in New York. In hospitals it may be as high as 25 per cent. Death is generally due to some complication, the most important complications being scarlet fever, membranous laryngitis, and broncho-pneumonia. The disease seems to be only slightly, if at all contagious."

---

[1] Popular Science Monthly, October, 1894.

[1] American Journal of Medical Sciences, October, 1894.

Of clinical and practical importance are the results of the investigation of the length of time a case of diphtheria is to be considered contagious. In 43.2 per cent of the cases studied for this purpose, the diphtheria bacilli disappeared within three days after the complete disappearance of the exudate. In others the delay was longer, in one case being seven weeks.

"The value of isolation is statistically proven, for in 14 families, with 48 children, where little or no isolation of a case of diphtheria in each family was undertaken, virulent diphtheria bacilli were found in 50 per cent. of the children, of whom 40 per cent. later developed diphtheria. The bacilli were found in less than 10 per cent. of the children in families where the case of diphtheria was well isolated.

"Antiseptic irrigation and cleansing treatment of the throat lessen the liability of those thus exposed to develop diphtheria.

"All members of an infected household should be regarded as under suspicion, and where isolation is not enforced, the healthy as well as the sick should be prevented from mingling with others until cultures or sufficient lapse of time give the presumption that they are not carriers of contagion."

◆

Correspondence.

"THE MODEL SURGICAL CLINIC."

BERKSHIRE CO., MASS., September 26, 1894.

MR. EDITOR: — In the very accurate and trustworthy account of a modern model surgical clinic recently given in the JOURNAL,[1] the writer seems to have omitted in the report of the chemist, that the patient was not examined for lead disease, inasmuch as that fad had faded out some time ago; and that as regards arsenical poisoning, it was not possible, without an ophthalmoscope to perceive anything green in the patient's eyes, besides he had habitually worn an unlined soft hat, without a green (or any other) band, and had not eaten any green peas during the season.

These slight omissions, however, may be inserted in future editions.

We hope that similar reports will be frequently given, that the irregular unregistered "practiser" (*vide* Gay *passim*) may be duly posted in all the truly scientific methods of the day.

Through want of proper education, I am compelled to subscribe myself, Unqualifiedly yours,

M.D. (*limited*).

◆

A WARNING TO PHYSICIANS.

BOSTON, October 1, 1894.

MR. EDITOR: — A man representing himself to be Dr. J. B. Kilsey, stating that he was burned out in the recent Minnesota fire, who has been obtaining money of the profession in this vicinity, and who presents a letter from N. J. Hughes, Rector of St. Mary's Church, New York, is a swindler, and said letter is a forgery.

Very truly yours, MARLBORO STREET.

"DIPHTHERIA CASES."

HARVARD UNIVERSITY MEDICAL SCHOOL.
BACTERIOLOGICAL LABORATORY.
BOSTON, October 2, 1894.

MR. EDITOR: — Permit me, through your columns, to ask the gentlemen who have "diphtheria-cases" from this laboratory to return them as soon as possible. The demand upon us for investigations of this nature in the city makes this request necessary. Very truly yours,

HAROLD C. ERNST, M.D.

METEOROLOGICAL RECORD,

For the week ending September 22d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..16	30.12	62	65	58	100	100	100	N.E.	N.E.	3	3	G.	G.	
M..17	30.10	62	65	60	97	97	97	N.W.	N.E.	3	4	O.	O.	0.12
T..18	30.08	64	68	59	95	98	96	N.W.	E.	4	2	O.	O.	
W..19	30.04	60	62	59	100	100	100	E.	E.	10	14	O.	R.	0.25
T..20	29.76	70	80	60	99	93	93	S.E.	S.W.	4	10	O.	C.	1.34
F..21	29.96	70	80	61	95	89	92	W.	N.W.	10	4	C.	C.	
S..22	30.10	70	80	60	88	81	81	W.	S.W.	4	10	C.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 22, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,956,000	665	307	19.95	11.40	11.70	1.05	4.20
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,139,457	378	140	18.36	12.15	7.56	2.70	6.21
Brooklyn	1,043,000	447	226	22.88	11.22	12.98	1.32	6.38
St. Louis	540,800	—	—	—	—	—	—	—
Boston	501,107	239	95	23.94	15.12	12.60	3.36	5.88
Baltimore	500,000	—	—	—	—	—	—	—
Washington	285,000	105	35	19.95	8.55	7.60	3.80	[illegible]
Cincinnati	325,000	—	—	—	—	—	—	—
Cleveland	325,000	90	45	32.19	3.33	13.32	3.33	1.11
Pittsburg	272,000	—	—	—	—	—	—	—
Milwaukee	265,000	—	—	—	—	—	—	—
Nashville	87,754	26	7	3.85	11.55	—	—	—
Charleston	65,165	—	—	—	—	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	100,410	28	12	35.70	3.57	17.85	14.28	3.57
Fall River	92,233	35	15	42.90	2.86	41.04	—	—
Lowell	90,613	27	11	33.33	11.11	18.50	—	3.70
Cambridge	79,607	23	13	34.80	—	21.75	8.70	—
Lynn	65,123	20	10	35.00	10.00	20.00	—	—
Springfield	50,284	10	2	30.00	20.00	10.00	10.00	10.00
Lawrence	49,900	—	—	—	—	—	—	—
New Bedford	47,741	20	7	25.00	20.00	20.00	—	—
Holyoke	43,348	—	—	—	—	—	—	—
Brockton	33,939	8	2	75.00	25.00	37.50	12.50	12.50
Salem	33,155	11	5	54.54	—	27.27	9.09	18.18
Haverhill	32,925	14	4	14.28	35.70	7.14	7.14	—
Malden	30,209	10	2	10.00	—	—	10.00	—
Chelsea	29,806	14	9	21.42	7.14	14.28	—	—
Fitchburg	29,383	7	0	—	—	—	—	—
Newton	28,837	10	8	—	10.00	—	—	—
Gloucester	27,293	—	—	—	—	—	—	—
Taunton	26,955	12	6	16.66	—	16.66	—	—
Waltham	22,058	6	3	16.66	16.66	33.33	16.66	—
Quincy	19,642	—	—	—	—	—	—	—
Pittsfield	18,802	14	6	21.42	21.42	21.42	—	—
Everett	16,585	7	3	—	14.28	—	—	—
Northampton	16,331	9	3	—	11.11	—	—	—
Newburyport	14,073	5	1	—	—	—	—	—
Amesbury	10,920	3	1	—	—	—	—	—

Deaths reported 2,282, under five years of age 1,007, principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 512, consumption 222, acute lung diseases 176, diarrheal diseases 282, diphtheria and croup 105, typhoid fever 49, scarlet fever 23, whooping-cough 22, malarial fever 14, measles 6, cerebro-spinal meningitis 4, erysipelas 4, small-pox 3.

---

[1] Vol. cxxxi, No. 8.

From scarlet fever Cleveland 10, New York 5, Boston and Lowell 2 each, Brooklyn, Lynn, New Bedford and Northampton 1 each. From whooping-cough Philadelphia, Brooklyn and Washington 4 each, Boston and Cleveland 3 each, Fall River, Cambridge and Lynn 1 each. From malarial fever New York and Brooklyn 4 each, Philadelphia 2, Nashville, Lowell, Springfield and Waltham 1 each. From cerebro-spinal meningitis Washington, Lynn and Chelsea 1 each. From measles New York 5, Cleveland 1. From erysipelas New York 2, Philadelphia and Brooklyn 1 each. From small-pox New York 3.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 22, 1894, TO SEPTEMBER 28, 1894.

Captain Charles E. Woodruff, assistant surgeon, is relieved from duty at Fort Assinniboine, Montana, and ordered to Fort Sheridan, Illinois, for duty, relieving **Captain Francis J. Ives**, assistant surgeon.

Captain Ives, on being relieved by **Captain Woodruff**, is ordered to Plattsburg Barracks, N. Y., for duty, relieving **Captain Harry O. Perley**, assistant surgeon.

Captain Perley, on being relieved by **Captain Ives**, ordered to Baltimore, Md., for duty as attending surgeon and examiner of recruits, relieving **Captain Louis W. Crampton**, assistant surgeon.

Captain Crampton, on being relieved by **Captain Perley**, is ordered to Fort Meade, South Dakota, for duty.

First-Lieut. Benjamin Brooke, assistant surgeon, is relieved from duty at Camp Pilot Butte, Wyoming, and ordered to Fort Canby, Washington, for duty.

First-Lieut. Thomas H. Raymond, assistant surgeon, is relieved from duty at Fort Canby, Washington, and ordered to Fort Riley, Kansas, for duty.

Captain John L. Phillips, assistant surgeon, ordered to report in person to the commanding officer Fort Walla Walla, Washington, for duty at that station, the assignment to duty at Fort McKinney, Wyoming, being revoked.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 29, 1894.

N. J. **Blackwood**, passed assistant surgeon, detached from Naval Hospital, Norfolk, and to the U. S. Receiving-ship "Independence."

J. B. **Parker**, surgeon, detached from U. S. Receiving-ship "Independence," home and wait orders.

L. W. **Atlee**, passed assistant surgeon, detached from the U. S. S. "Pinta," home and one month's leave.

Howard Wells, surgeon, detached from the U. S. S. "Detroit" and to the U. S. S. "Montgomery."

Howard E. Ames, surgeon, detached from the U. S. S. "Montgomery" and to the U. S. S. "Detroit."

George B. Wilson, passed assistant surgeon, detached from the Naval Hospital, Norfolk, and to the U. S. S. "Castine."

C. D. W. **Brownell**, assistant surgeon, detached from the U. S. Receiving-ship "Vermont" and to the Naval Proving Ground, Indian Head, Md.

L. H. Stone, assistant surgeon, detached from Naval Proving Ground and to the U. S. Receiving-ship "Vermont."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOUR WEEKS ENDING SEPTEMBER 22, 1894.

Fessenden, C. S. D., surgeon. Granted leave of absence for thirty days. September 12, 1894.

Murray, R. D., surgeon. To proceed to Beaufort, S. C., on special duty. September 20, 1894.

Bailhache, P. H., surgeon. Detailed to represent service at meeting of American Public Health Association. September 21, 1894.

Vansant, John, surgeon. Granted leave of absence for thirty days. August 30, 1894.

Hutton, W. H. H., surgeon. Relieved from quarantine inspection duty and ordered to rejoin station, Detroit, Mich. September 12, 1894. Granted leave of absence for thirty days. September 20, 1894.

Sawtelle, H. W., surgeon. Granted leave of absence for five days. September 14, 1894.

Gassaway, J. M., surgeon. Granted leave of absence for one day. September 17, 1894.

Banks, C. E., passed assistant surgeon. To report at Bureau for temporary duty. September 10, 1894. Detailed to represent the Service at meeting of American Public Health Association. September 21, 1894. Relieved from temporary duty at Bureau and directed to rejoin station (Portland, Me.). September 22, 1894.

Carmichael, D. A., passed assistant surgeon. Granted leave of absence for thirty days without pay. September 6, 1894.

White, J. H., passed assistant surgeon. Detached as chairman, Board to locate Quarantine Station South Port, North Carolina. September 13, 1894.

Bratton, W. D., passed assistant surgeon. To proceed to Wilmington, N. C., for duty. August 27, 1894.

Wertenbaker, C. P., passed assistant surgeon. To assume command of Deleware Breakwater Quarantine Station. August 27, 1894.

Stimpson, W. G., passed assistant surgeon. To proceed to Port Townsend, Washington, and assume command of quarantine station. September 10, 1894. Granted leave of absence for five days. September 15, 1894.

Brown, B. W., passed assistant surgeon. To report at Washington, D. C., for duty. August 31, 1894. Detailed as acting chief clerk, Marine-Hospital Bureau. September 21, 1894.

Houghton, E. R., passed assistant surgeon. Granted leave of absence for seven days. September 19, 1894.

Eager, J. M., assistant surgeon. To proceed to Mobile, Ala., for temporary duty. September 11, 1894.

Strayer, Edgar, assistant surgeon. To proceed to Pittsburgh, Pa., for duty. August 21, 1894.

Prochazka, Emil, assistant surgeon. To proceed to Detroit, Mich., for duty. September 10, 1894.

PROMOTION.

Rosenan, M. J., assistant surgeon. Commissioned as passed assistant surgeon. September 4, 1894.

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The first lecture this winter will be given on Thursday evening, October 11th, at 8 o'clock, by Surgeon Major John Van R. Hoff, U. S. A. Subject, "A Glance at the History of Military Sanitation." Physicians are cordially invited.

RECENT DEATHS.

Myron Underwood, M.D., of Eldora, Iowa, died August 12th. During the War of the Rebellion he was surgeon of the Twelfth Iowa Infantry.

George Washington Davis, M.D., M.M.S.S., died in Holyoke, Mass., September 18, 1894, aged forty-seven years.

BOOKS AND PAMPHLETS RECEIVED.

Treatment of Face Presentation. By Charles Jewett, M.D., Brooklyn, N. Y. Reprint. 1894.

Atony of the Intestine. By Julius Friedenwald, A.B., M.D., of Baltimore, Md. Reprint. 1894.

L'Ichthyol dans le traitement des uréthrites et des cystites. Par le Dr. Roberto Villetti, Médecin des hôpitaux de Rome. Rome: Imprimerie Innocenzo Artero. 1894.

Ueber die Anwendung des Ichthyol bei Wunddruck der Füsse. Von Dr. Leopold Herz, k. u. k. Regimentsarzt in Pilsen. Wien: Aus dem Aerztlichen Central-Anzeiger. 1894.

Young's Orthopedic Surgery; a Manual of Orthopedic Surgery for Students and Practitioners. By James K. Young, M.D., Instructor in Orthopedic Surgery, University of Pennsylvania, Philadelphia. Philadelphia: Lea Brothers & Co. 1894.

Appunti Sull'Azione Fisiologica e Terapeutica Dell'Ittiolo. Clinica Medica di Padova, diretta dal prof. A. De Giovanni. Dott. Angelo Ceconi, (assistente). Estratto dalla Gazetta degli Ospedali e delle Cliniche, 1894. Milano: Casa Editrice Dottor Francesco Vallardi.

Psorospermoses Cutis. Von Dr. A. Ravogli, Cincinnati. Uber die Beziehungen des Ekzems zu den Schleimhauten. Von Dr. von Sehlen, Hannover. Sonder-Abdruck aus Monatshefte für Praktische Dermatologie, 1894, Verlag von Leopold Voss, Hamburg u. Leipzig.

Original Articles.

STUDIES IN THE PATHOLOGY OF DIPHTHERIA.

BY J. H. WRIGHT, M.D.,
Assistant in Pathology, Harvard Medical School.

(Concluded from No. 14, p. 335.)

III.

The pathological anatomy and bacteriology of experimental diphtheria.

In the course of all of this work autopsies on guinea-pigs which have died after inoculation with the Klebs-Löffler bacillus have been made in 160 instances. This number includes two animals inoculated from an autopsy not included in our list. In the majority of cases notes have been taken with reference to the condition of the tissues at the seat of inoculation, the presence or absence of the characteristic subcutaneous edema, the presence of the acute lymphadenitis, of fluid in the thoracic cavity, of edema of the lungs, of necrotic foci in the liver and the condition of the suprarenal capsules.

These points embrace nearly all of the gross lesions which are observed in experimental diphtheria, and it has been considered worth while to give here in a statistical manner the results of our observations.

Local reaction of varying intensity has been observed in 145 of the 160 guinea-pigs. This has consisted in general of injection, edema, hemorrhage, fibrinous exudation and necrosis of the tissues of the abdominal wall. Great variation is observed in the character of the lesions at this point. In some cases nothing more than slight injection and a few slight hemorrhages are seen, while in others all of the conditions mentioned may be present. In animals which have survived for some days the tissues at this point may be sometimes observed to be infiltrated with a dense, tough, brawny material extending over a considerable area and greatly increasing the thickness of the belly wall. Over this area the skin is tightly adherent. In 13 animals, including 2 which did not succumb to the effects of the inoculation, ulceration has been observed. In some of these the eschar has been several centimetres in diameter. The sloughing process seems to be preceded by an induration of the character above described in the tissues beneath.

The occurrence of the typical gelatinous edema of the subcutaneous tissues of the abdomen and thorax has been observed in a certain number of cases.

Local edema, more or less extensive, may be said to have been present in about 100 of the 160 animals.

Enlargement and usually more or less congestion of some or all of the lymph-glands of the inguinal and axillary regions has been noted in 142 of the autopsies. In some cases the glands have presented a hemorrhagic condition.

The lymph-glands at the brim of the pelvis in the retroperitoneal region and those of the mesentery seem to be usually affected along with the superficial ones. Congestion of the mesenteric glands is much less frequent, however, than in the case of the retroperitoneal glands.

Effusion of fluid into the thoracic cavity has been noted in 68 of the 160 autopsies. The fluid was almost invariably colorless and varied greatly in amount. In some instances the thorax has apparently been completely filled. Edema of the lungs is recorded in 82 cases.

A characteristic lesion of experimental diphtheria is the presence of necrotic areas, visible to the naked eye in the liver. These lesions are not common, as will be apparent from the fact that they have occurred in about 49 instances, or 31 per cent., and their occurrence seems to bear no relation to the duration of the infection in the animal.

A more striking phenomenon, however, than any of the preceding, is the congestion or hemorrhagic condition of the suprarenal capsules. These have been found more or less red in color, instead of the normal bright yellow, in 130 of the 160 cases. This condition is almost invariably present in animals which have succumbed within a few days after inoculation; and in general it may be said that the combination of all the lesions enumerated above is to be more frequently observed in acute cases.

But one of the animals inoculated in the course of the work developed paralysis. This is in accord with the experience of Löffler, who seems to have observed it very rarely in the guinea-pigs inoculated by him.

In our study of the bacteriology of experimental diphtheria the main purpose has been to determine the frequency with which the Klebs-Löffler bacillus invaded the blood and internal organs of the inoculated animal. In this disease in the guinea-pig as well as in diphtheria in man, the bacillus has been considered as remaining at the point of invasion. The only observations of its occurrence in the organs of an inoculated guinea-pig which we have found in the literature is that of Zarniko,[6] who mentions having met with it in a necrotic focus in the liver, and that of Abbott,[22] who has reported the presence of the bacillus in certain lymphatic structures in the mesentery.

At the autopsies of the animals, as a matter of routine, cultures have been made from the seat of inoculation, blood of heart, liver, spleen and kidney. The coagulated blood serum previously described has been the medium employed for the purpose, with a few exceptions. As in the autopsies on man, rather more material than is usual has been commonly taken for each culture, by means of the coarse flattened platinum wire. In a few cases cultures have either not been made at all or only from some of the above-named situations. The numbers given below include cultures from three animals which have not died spontaneously, but have been purposely killed. The results may be briefly summarized as follows: among 155 livers from which cultures were made, 19 yielded Klebs-Löffler bacilli. Of 152 cultures from as many spleens, 15 contained the same organism. The bacillus also grew in 4 of 151 cultures from the kidney, and in 7 of 153 cultures from the blood of the heart.

The organism has therefore occurred most frequently in the liver and spleen, being found in the former in 12 per cent. of the autopsies. The colonies which develop in these cultures are, as a rule, few in number, rarely exceeding a half-dozen in a tube. The presence of the Klebs-Löffler bacilli in the viscera does not seem to bear any relation to the length of time the animal survived nor to the clinical character of the case from which the culture used for inoculation was derived, nor is its presence in the liver definitely associated with the occurrence of the foci of necrosis alluded to above. Moreover, we have no reason to believe that its presence in any internal organ has any effect *per se* upon the tissue of that organ.

The cultures from the seat of inoculation in 161 animals have contained the bacillus inoculated in all but 20. It may also be mentioned that from three guinea-pigs the organism has been recovered by culture from the seat of inoculation about thirty-one to thirty-eight days after the date of inoculation. The persistence of the bacillus in the tissues for this length of time is interesting.

IV.

Cases of infection of various ulcerated surfaces and inflammatory processes with the Klebs-Löffler bacillus, as well as some other instances in which it has been observed.

The occurrence of the Klebs-Löffler bacillus in other pathogenic processes than diphtheria has been rarely noted in the literature. The only other condition in which its presence has been repeatedly demonstrated is rhinitis fibrinosa. That this disease, however, is really to be regarded as a form of diphtheria of the nasal mucous membrane, has been shown by the work of Concetti,[23] Stamm,[24] Baginsky [25] and Abbott.[26]

In the edematous tissue about tracheotomy wounds in diphtheria, Spronk [27] has found the Klebs-Löffler bacillus in three cases. It has also been observed by Neisser [28] in a superficial ulceration about the anus of a diphtheria case, and was proven virulent. Brunner [29] isolated it from three cases of inflammation of the fingers and from a case of phlegmon of the scrotum. The bacilli from only two of these were found to be virulent, the others yielding organisms of a mild degree of virulence. In all four cases the bacillus was accompanied by pus organisms.

In diphtheritic conjunctivitis its presence has been reported by Escherich,[2] by Babes,[30] by Elschig [31] and by Kolisko and Paltauf [16] in single cases. In the case of the first mentioned the organism was non-virulent. Three cases of the occurrence of the Klebs-Löffler bacillus in the pus of otitis media have been reported by Councilman,[32] and one case of its occurrence in diphtheritis of the stomach by Löffler.[21] Finally, Howard [33] has found it in pure cultures and in large number in the valvular vegetations, spleen and kidney of a case of ulcerative endocarditis. The organism here was found to be non-virulent. The writers named seem to comprise all those who have observed this organism in inflammatory processes other than diphtheria.

It will be noted that in most of the few cases in which inoculations have been made, the bacillus from these sources has exhibited little or no virulence. This lack of virulence, or rather the manifestation of only slight virulence, towards guinea-pigs has also been observed in some of our cases, as will be seen below.

In the study of cases of the occurrence of the Klebs-Löffler bacillus which are reported in this section, the same methods as those described in the preceding section have been employed.

When convenient the sterilized cotton "swabs" have been used for obtaining the material for culture. The bouillon cultures used for inoculation have been made in the one-per-cent. sugar bouillon colored with litmus, which was mentioned in the first section of this work. Cultures, have, as in the other cases, been made from the organs and the seat of inoculation of the animals which succumbed.

Some of the cases have been observed at the autopsies reported in the second section, but it has been thought better to reserve the special descriptions for this section.

Case I. Fistula in ano. Wm. B., aged eighteen years. Admitted to contagious wards of the Boston City Hospital with diphtheria. Klebs-Löffler bacilli were found in throat by culture. The patient also had a fistula in ano. Some two weeks after admission active inflammation developed in this. The ulcerated surface exposed between the nates was about one inch square. The tissue about it was inflamed for two or three inches. The ulcer was covered with a greenish, slimy exudation, and eventually a false membrane was formed. This acute condition subsided after a time, and the patient also recovered from the diphtheria.

A culture from the ulcer showed the presence of Klebs-Löffler bacilli. These were found very virulent, the two animals dying in thirty-six and seventy-two hours respectively after inoculation with .2 c. c. and .4 c. c. of a twenty-four-hour bouillon culture. They exhibited the characteristic lesions, and the organism was recovered by culture from the seat of inoculation in both.

Case II. Ulcer on arm. Winifred C., aged ten months. *Vide* Case X. Admitted to contagious wards with diphtheria. Klebs-Löffler bacilli demonstrated by culture. Some time after admission, from a vaccine pustule on left arm a deep gangrenous ulcer formed. A culture from this showed the presence of Klebs-Löffler bacilli.

Two guinea-pigs, weighing 210 and 260 gms. received respectively .2 and 1 c. c. of a twenty-four-hour bouillon culture of the third generation. Both survived from seven to eight days. At their autopsy, exudation and infiltration was found at the seat of inoculation. The only other marked lesion was edema of the lungs in each, as well as some glandular enlargement.

The Klebs-Löffler bacilli were recovered by cultures from the seat of inoculation in both, and from the liver, spleen and kidney of one. The cultures from the other animal showed the presence of the bacillus in the spleen alone.

Case III. Excoriations on face. Charles Van G., aged three years. *Vide* Autopsy VII.

At the autopsy of this case, excoriations on face and nose were noted and cultures made from them. In the culture from the excoriation on the nose Klebs-Löffler bacilli and streptococci developed and in that of the excoriations on the face, Klebs-Löffler bacilli. No animal inoculations were made.

Case IV. Excoriation on lip. Fred B., aged four years. *Vide* Autopsy V.

At the autopsy of this case a number of small excoriations were observed on the lip below the nasal opening. Klebs-Löffler bacilli developed in the culture made from these.

A guinea-pig weighing 425 gms. received .3 c. c. of a twenty-four-hour bouillon culture (third generation) of this bacillus subcutaneously. The animal died in forty-eight hours.

The usual appearances of acute experimental diphtheria were noted at the autopsy. The bacillus was recovered by culture from the seat of inoculation, but from nowhere else.

Case V. Excoriation on leg. Sarah F., aged two and a half years. *Vide* Autopsy XIV.

At the autopsy of this case a slight excoriation over anterior aspect of the left tibia was observed and a culture was made from it. Klebs-Löffler bacilli and staphylococcus pyogenes aureus developed in this. No animal inoculation.

Case VI. Ulcer on leg. Idella McL., aged five years. *Vide* Section I, Series 2. Admitted to the contagious wards with diphtheria. Klebs-Löffler bacilli present by culture. Some time after admission a deep undermining ulcer with brawny edges and grayish base formed on right leg. It was supposed to have originated from a puncture with a hypodermatic syringe.

A culture on two occasions, several days apart, showed the presence of Klebs-Löffler bacilli. The bacilli obtained from the first culture did not cause the death of the animal until about twenty-nine days after inoculation. The guinea-pig weighed 190 gms. No definite lesions were found at the autopsy, and the bacillus was not recovered from the seat of inoculation. The second culture, however, furnished a virulent organism, killing a guinea-pig (weight 210 gms.) in thirty-six hours. The quantity inoculated in each case was .2 c. c. and a bouillon culture was used. The first animal was inoculated with a culture of the fifth generation and the second animal with one of the third generation. It may be possible that the discrepancy in the results of the inoculation may have been due to some attenuation of the organism which was obtained in the first instance. It may be added that the second animal showed characteristic lesions and the bacilli were recovered from the seat of inoculation but from none of the organs.

It is worthy of note that the bacilli from the nose of this case showed little or no virulence.

Case VII. Ulcer on hand. Annie O'T., aged one year. *Vide* Autopsy XII.

At the autopsy of this case a small superficial ulcer less than one centimetre in diameter was observed on the left hand. A culture made from this yielded Kleb-Löffler bacilli as well as other organisms.

A guinea-pig weighing 220 gms. was inoculated subcutaneously with .3 to .5 c. c. of a twenty-four-hour bouillon culture of the third generation. The animal survived four and a half days. Characteristic lesions were found at the autopsy. The blood of the heart as well as the seat of inoculation was found to contain Klebs-Löffler bacilli. In the culture from the former but one colony developed. The other organs were negative. It may be mentioned that the bacilli from the bronchus and from the lung of this case were also found to be of medium or slight virulence toward the guinea-pig, as may be seen by Autopsy XII.

Case VIII. Otitis media. Pus from ear. Irene T., aged one year. *Vide* Autopsy IX and Case IX.

The otitis media with perforation of the tympanum occurred in the course of diphtheria. Klebs-Löffler bacilli had been present, by culture, in the nose for some time (*vide* Section 1, Series 2). A moderate number of Klebs-Löffler bacilli and numerous streptococci were found to be present in cultures made during life from the thin but abundant purulent discharge from the ear.

A guinea-pig weighing 190 gms. was inoculated subcutaneously with .2 c. c. of a twenty-four-hour bouillon culture (third generation) of the Klebs-Löffler bacilli thus obtained. The animal died in thirty-six hours with characteristic lesions. The bacillus was recovered only from the seat of inoculation.

Case IX. Mastoid abscess. Irene T. *Vide* Autopsy IX, *et supra.*

At the section the calvarium and brain were removed and the mastoid cells on both sides broken open. Both were found to contain creamy pus. A culture was made from the pus of the mastoid bone of the side opposite to that of the ear from which the culture mentioned above was taken (*intra vitam*). On this there developed Klebs-Löffler bacilli and streptococci. No animal inoculated.

Case X. Otitis media (?). Pus from ear. Winifred C., aged ten months. *Vide* Case II.

Admitted to contagious wards with diphtheria. The presence of Klebs-Löffler bacilli was demonstrated by cultures. In the course of her stay in the ward a discharge from the ear was observed. This was found to contain Klebs-Löffler bacilli along with other organisms.

A guinea-pig of 340 gms. weight, which was inoculated with .3 c. c. of a twenty-four-hour bouillon culture, fifth generation, survived eleven and one-half days. Some of the lesions of experimental diphtheria were found at the autopsy, principally shown by a red color of the suprarenals. The bacillus was recovered from the seat of inoculation. As in the case of the bacillus from the ulceration on the arm of this same patient, this bacillus from the ear showed only a slight degree of virulence. Some attenuation by cultivation may have taken place, however, as it was inoculated in the fifth generation.

Case XI. Purulent conjunctivitis with keratitis. Charles R., aged four years. *Vide* Autopsy X.

At the autopsy the right eye was observed to contain a considerable amount of pus beneath the lids, and the cornea was cloudy. A culture from the pus showed the presence of Klebs-Löffler bacilli in addition to pus organisms. No inoculation of an animal was made.

Case XII. Thomas M., aged six years. *Vide* Autopsy XI.

At the autopsy a culture was taken from the paronychia of the toe. In this there developed Klebs-Löffler bacilli and numerous colonies of staphylococcus pyogenes aureus.

A guinea-pig weighing 200 gms. was inoculated with .2 c. c. of a twenty-four-hour bouillon culture, third generation, of the Klebs-Löffler bacilli thus obtained. The animal survived, as did also the guinea-pig inoculated with the Klebs-Löffler bacillus found in the bronchial gland. As has been stated elsewhere, virulent bacilli were found in the throat of this case during life. The organism inoculated was studied in cultures on blood serum, agar and litmus bouillon, and was found both in cultures and in morphology to agree with the typical Klebs-Löffler bacillus. The litmus bouillon was rapidly colored red, which, according to Escherich,[2] is only seen in cultures of the virulent bacillus.

Case XIII. Acute ulcerative endocarditis. Autopsy by Dr. Councilman. Body, that of a young man.

Anatomical diagnosis. Acute ulcerative endocarditis, acute intracapillary glomerulo-nephritis.

Bacteriological diagnosis by cultures: Spleen, liver, both lungs, wall of left ventricle of heart, all negative. Aortic valve (vegetation), Klebs-Löffler bacilli (a half-dozen colonies), pneumococci, staphylococci, bacillus coli communis. Tricuspid valve, Klebs-Löffler bacilli (a half-dozen colonies), pneumococci and other organisms. Kidney, two typical colonies of typical Klebs-Löffler bacilli developed in the culture.

The Klebs-Löffler bacilli from the valves of each side of the heart were inoculated in bouillon cultures into four guinea-pigs. The quantities used varied from .3 or .4 c. c. to 1 c. c. All of the animals survived, the inoculation having little or no effect upon them even locally. The bacilli from each valve were also carefully studied in their growth in bouillon, agar, blood serum, potato and gelatine as well as in their morphology. In all these respects they were found to be identical with the Klebs-Löffler bacillus.

It may be mentioned also that they produced a rapid reddening of the litmus-sugar bouillon, which Escherich states is only done by virulent Klebs-Löffler bacilli. This red color was rapidly produced and persisted indefinitely. The agar cultures were never observed to show the brown color which the same writer regards as characteristic of the so-called pseudo-diphtheritic bacillus. The bacillus found in the kidney also changed the bouillon to a red color.

This case resembles very much the case of ulcerative endocarditis reported by Howard, which we have before alluded to. In that case a non-virulent Klebs-Löffler bacillus was found in the valvular vegetations and in the organs. Its identity with the true Klebs-Löffler bacillus in all respects except virulence was fully demonstrated.

CASE XIV. From a tuberculous lung. John S., aged twenty-six years. Autopsy by Dr. Councilman.

The case was essentially one of disseminated tuberculosis. The lungs were most affected. At the autopsy cultures were made as usual from all the organs. There was a tuberculous ulcer of the trachea from which no cultures were made. In the culture from the lung numerous colonies of Klebs-Löffler bacilli and streptococci developed, in addition to a few colonies of staphylococcus aureus and other organisms. Streptococci and other organisms were present in the culture made from the spleen, while the kidney and liver were sterile.

The Klebs-Löffler bacillus from the culture from the lung was inoculated into a guinea-pig weighing 200 gms.; .5 c. c. of a twenty-four-hour bouillon culture of the second generation was used. Death in thirty-six hours, with the lesions of experimental diphtheria. The bacillus was recovered from the seat of inoculation, but from none of the organs.

CASE XV. From a lung in the stage of gray hepatization of a lobar pneumonia. Annie K., aged fifty-eight years. Autopsy by Dr. Wright.

At the autopsy portions of both lungs were found to be consolidated, and were in the stage of gray hepatization. One lung had partly broken down, and a thoracentesis had been performed. The culture from a consolidated area in one of the lungs developed Klebs-Löffler bacilli (not numerous) in addition to numerous colonies of streptococci and a few of the staphylococcus pyogenes aureus, as well as other bacteria. The cultures from the blood, kidney, spleen and liver showed the presence of a streptococcus septicemia. The throat was not examined. A guinea-pig inoculated in the usual manner with the Klebs-Löffler bacillus died after about three weeks. No lesions found.

The organism agreed with the Klebs-Löffler bacillus in its morphology and in its growth in blood serum and in litmus bouillon, which latter was reddened. The production of acid thus indicated is said by Escherich, as before noted, to occur only with the virulent form of the organism. The bacillus has not proven virulent and constitutes another exception to that writer's statement.

CASE XVI. From the skin of the thigh of a diphtheria patient. Beatrice C., admitted to hospital with diphtheria. As the child lay in its crib with one thigh exposed, a culture was obtained by rubbing a swab over the skin where a dark reddish area was observed. This area of discoloration was evidently due to a puncture with a hypodermatic syringe. There was no ulceration. A moderately large number of colonies developed, among which was a fair proportion of colonies of the Klebs-Löffler bacillus. This, when inoculated into a guinea-pig, caused its death in seven and a half days. The animal weighed 230 gms., and received .2 c. c. of a twenty-four-hour bouillon culture of the second generation. At the autopsy of the animal dense induration and exudation in the tissues about the point of inoculation were found, together with lymphadenitis and some edema of the lungs. The spleen was large and soft. The suprarenals normal. The bacillus was recovered from the seat of inoculation, but from nowhere else.

CASE XVII. Unsuspected diphtheria. Autopsy by Dr. Wentworth on the body of a child.

The child had been wearing a trecheotomy tube for some two months, in consequence of an operation on the larynx for a new growth. Death occurred rather suddenly after a slight rise of temperature lasting about three days. The organs were brought to the laboratory for examination. Diphtheritic membrane was found in the trachea about the bifurcation. No broncho-pneumonia. A culture from this showed the presence of Klebs-Löffler bacilli and streptococci. No animal inoculations were made.

The striking thing about the Klebs-Löffler bacilli obtained in these cases is the large proportion of mildly virulent or non-virulent forms among them. Out of 12 cases in which the virulence has been tested, three have yielded bacilli of little or no pathogenic effect on the animals, and in three other cases the guinea-pigs inoculated from them have survived seven and a half days and longer. It may therefore be said that a mild degree of virulence, or none at all, has been observed in 50 per cent. of the organisms so obtained which have been tested.

These results are in accord with the experience of others, as noted in the first part of this section. Whether this lack of virulence of the bacillus is due to attenuation by long-continued residence away from its normal habitation, the air-passages, future study may decide.

From a consideration of certain of the above cases, we think that we are justified in holding that any excoriated or ulcerated surface on the body of a diphtheria patient will usually be found to be infected with the bacillus of that disease.

V.

On the morphology and biology of the Klebs-Löffler bacillus.

The Klebs-Löffler bacillus in its morphology is the most characteristic and at the same time the most variable organism known to bacteriologists. As has best been shown by Abbott,[34, 26] its morphology varies markedly with the medium upon which it is grown, so that the bacilli from a blood-serum culture will have little resemblance in form to their descendants growing on an agar culture.

The bacilli from bouillon cultures are also different in morphology from these. Its microscopic appearance, when taken from a blood-serum culture and stained with Löffler's methylene-blue, is so characteristic that the practised eye can identify the organism by this alone. The gross appearances of the same culture are also of importance, though less characteristic.

In our work we have based the recognition of the Klebs-Löffler bacillus mainly upon its macroscopic and microscopic peculiarities when growing on this medium and, in most cases, in bouillon as well.

After a large experience in the study of the morphology of the Klebs-Löffler bacillus under these conditions, we think that at least two forms of it may be recognized. One of these is the more common, and is distinguished by being a more or less segmented rod with intensely staining ends and perhaps one or two sharply defined intensely staining areas between. The other form is much longer and much more segmented, often somewhat constricted at the middle and gently swelling toward either end, one of which may be somewhat thicker than the other. This long form presents usually two slight curves. Aside from its greater length, it is also distinguished from the shorter form by not commonly presenting the sharply defined, deeply staining points in its protoplasm; but it is irregularly segmented, each segment staining fairly deeply and uniformly, and being separated from the next by a narrow, faintly-stained interval.

We have satisfied ourselves that these long forms are a distinct type of the bacillus, and are not the product of special conditions. They have occurred only in a small proportion of the cases. This form does not change in successive cultures.

The existence of the different forms of the Klebs-Löffler bacillus has been noted by others. Martin [35] recognizes three — a short, a medium and a long form, and claims that there is definite relation between the severity of the case and the form or type of bacillus found in it. In our cases, however, we have not made out any constant association of either one of the two forms alluded to, with either mild or severe cases of diphtheria. Moreover, we have not observed any constant differences between these two forms as to their virulence towards guinea-pigs.

As to the much-mooted question of the pseudo-diphtheritic bacillus, we are of the opinion of Roux and Yersin,[1] Abbott [37] and others, that in many instances the organism to which this name has been applied is nothing but a non-virulent form of the Klebs-Löffler bacillus. The work of these investigators and others, as well as our own results, shows that there are Klebs-Löffler bacilli which are not virulent towards guinea-pigs, but which are otherwise identical with virulent bacilli. This is not surprising in view of what we know of the great variation of other bacteria in their effects upon animals.

These non-virulent forms of the diphtheria bacillus seem to have been called pseudo-diphtheria bacilli by some writers, owing to the apparently deeply rooted conviction that all true Klebs-Löffler bacilli are virulent towards guinea-pigs, which is not true. The term "pseudo" should no more be applied to a non-virulent diphtheria bacillus than to a non-virulent specimen of the frequently deadly staphylococcus pyogenes aureus.

In addition to these non-virulent forms of the true Klebs-Löffler bacillus, v. Hofman,[5] Zarniko,[6] Escherich [2] and others have described more or less clearly other non-virulent bacilli which resemble the Klebs-Löffler bacillus very much, and yet differ from it in certain respects. These they have also named "pseudo-diphtheria" bacilli. In the course of our studies on diphtheria and other pathological processes, we have not infrequently met with organisms of this character; but their morphological and cultural peculiarities sufficed after careful study to exclude them from consideration. We consider that these and the so-called pseudo-diphtheria bacilli of Escherich and others have nothing more to do with the causation of diphtheria than scores of other bacilli which may be found in the pharynx.

In conclusion, a point in the biology of the Klebs-Löffler bacillus deserves attention. As is well known, the diphtheria bacillus in its growth in neutral or slightly alkaline bouillon, produces an acid reaction in the medium. This has been regarded by some writers as one of the characteristics by which it may by distinguished from the so-called "pseudo-diphtheria" bacillus. Escherich,[2] moreover, considers that the production of the acid reaction, as shown by the changing of the violet color of the litmus-sugar bouillon to a red, is a reliable sign of virulence in the culture. He has recently stated that he has never seen an instance where an acid-forming culture has failed to kill the animal. This has not been our experience, for we have tested the acid production by the bacilli of most of our cases in the same way that Escherich did. We have found that the bacilli from all sources which have shown little or no virulence, have all without exception turned the litmus bouillon red. These cases which have furnished organisms of little or no virulence have been 21 in number, in 20 of which the culture used for testing the acid production was also used for inoculation. We cannot, therefore, agree with Escherich as to the significance of a reddening of the litmus bouillon cultures.

Lastly, it may be said that we have never observed a satisfactory instance of a change of the red color of the bouillon back again to violet or blue in any of the large number of bouillon cultures which we have kept for a long time. This is surprising in view of the results of others, who have found that the acid reaction which first appears, later gives place to an alkaline reaction, so that we should expect to have the color of the litmus change accordingly.

All of the studies contained in this paper have been carried on under the direction of Professor Councilman of the Harvard Medical School, to whom the writer is under many obligations for good suggestions and active interest in the work.

REFERENCES.

1. Roux and Yersin. Annales de l'Institute Pasteur, 1890, No. 7.
2. Escherich. Berliner klin. Woch., 1893.
3. Escherich. Centralblatt für Bakteriologie und Parasitenkunde, Bd. vii, 1890.
4. Löffler. Mitteilungen aus der Kaiserliche Gesundheitsamte, Bd. ii, 1884. Centralblatt fur Bakteriologie und Parasitenkunde, Bd. ii, 1887.
5. v. Hofmann. Tagebl. d. 60 Versamml. deutsch. Naturforscher und Aerzte in Wiesbaden, 1887. Wiener med. Woch., 1888, 3 u. 4.
6. Zarniko. Centralblatt fur Bakteriologie und Parasitenkunde, Bd. vi, 1889.

7. Beck. Zeitschrift für Hygiene, Bd. viii, 1890.
8. Spronk. Centralblatt allgem. Pathol. u. path. Anat., Bd. i, 1890. Centralblatt für Bakteriologie und Parasitenkunde, Bd. x, 1890.
9. Welch and Abbott. Johns Hopkins Hospital Bulletin, 1891.
10. Janson. Hygiea, April, 1893.
11. Heubner. Vortrag gehalten in der med. Gesellsch. zu Leipzig, 1892.
12. Tobiesen. Centralblatt für Bakteriologie und Parasitenkunde, Bd. xii, 1892.
13. Morse. Boston City Hospital Reports, 1894.
14. Löffler. Deutsches med. Woch., 1890.
15. Forsch. Zeitschrift für Hygiene, Bd. xiii, 1893.
16. Kolisko and Paltauf. Wiener klin. Woch., 1889.
17. Schmorl. Schmidt's Jahrb., Bd. ccxxxvii, Heft 1, p. 110.
18. Johnston. Montreal Medical Journal, September, 1891.
19. Strelitz. Archiv. für Kinderheilkunde, Bd. xiii, 1891.
20. Flexner. Johns Hopkins Hospital Bulletin, 1893.
21. Löffler. Centralblatt für Bakteriologie und Parasitenkunde, Bd. viii, 1890.
22. Abbott. Johns Hopkins Hospital Bulletin, 1893, No. 30.
23. Concetti. Archiv. Ital. di Laringologia, 1892, Anno xii.
24. Stamm. Archiv. für Kinderheilkunde, Bd. xlii.
25. Baginsky. Berliner klin. Woch., 1892.
26. Abbott. The Medical News, May 13, 1893.
27. Spronk. Centralblatt allgem. Path. u. path. Anat., Bd. iii, 1892.
28. Neisser. Deutsches med. Woch., 1893.
29. Brunner. Berliner klin. Woch., 1893 and 1894.
30. Babes. Progrès Méd., 14 Année, 2 Série, T. iii, 1886.
31. Elschig. Wiener med. Woch., 1893, No. 32.
32. Councilman. American Journal Medical Sciences, November, 1893.
33. Howard. Johns Hopkins Hospital Bulletin, 1893.
34. Abbott. Transactions Association American Physicians, 1893.
35. Martin. Annales de l'Institute Pasteur, 1892, No. 5.
36. Booker. Archives of Pediatrics, x, 1893.
37. Abbott. Johns Hopkins Hospital Bulletin, 1891.
38. Barbier. Arch. de méd. exper. et d'anat. path., T. ii, 1891.

◆

WHAT CASES SHALL THE MEDICAL EXAMINER "VIEW"?[1]

BY J. A. MEAD, M.D., OF WATERTOWN.

ALL civilized communities have taken away from the individual the right to punish wrong done him, and, in order that the guilty may be more surely punished, and the innocent not unjustly suspected, have established a complicated legal machine that without prejudice or haste shall deal out justice to all. Having thus replaced the rights of the individual, this system must justify its existence by demonstrating its ability to punish the guilty, and to protect the innocent better than did the system it supplanted.

The coroner system, from inherent defects, was unable to do this in a satisfactory manner, and, losing the respect of the community, was abolished. Out of the ruins of this discredited system sprang the medical examiner, who is an important factor in the legal machinery that seeks to detect and punish the criminal. If the medical examiner is to escape the fate of the coroner, he must avoid the mistakes of his predecessor, and prove to the people of the State that his actions are wise and discreet.

I find on inquiring of different medical examiners, representing each county in the State, that there is a decided lack of uniformity in their answers to the question that heads this paper. It seems to me of great importance that this Society should answer this question as definitely as possible, and that the combined wisdom of the members thus expressed should be a proper guide of action for the individual members.

The law under which the medical examiner acts provides that he shall view the "dead bodies of such persons only as are supposed to have come to their death by violence," and that, if upon a view and examination, he is convinced that death was due to violence, he shall set in motion the legal machinery that shall protect the innocent and punish the guilty. It is his early appearance in a legal case that gives to the medical examiner his great importance; and, as the character of the harvest depends upon the quality of the seed, so the result of a legal trial may depend upon the wisdom of the medical examiner. It is his duty to first discover upon and around the body of the deceased the signs of violence that, read aright, give the correct clue to the legal authorities. This evidence is often fleeting, and if not observed early, or if it receive the wrong interpretation, the whole course of justice in this particular case is changed, and the medical-examiner system receives the blame that should attach to the individual.

The office of medical examiner, while affording members of our profession opportunities for scientific observation and research, was created to render the detection and punishment of crime more certain and effectual. It is with this idea in mind that we must attempt the solution of the question that this paper is discussing.

The phrase, "supposed to have come to his death by violence," is very indefinite and elastic; it wisely leaves the medical examiner's field of action unfenced and uncircumscribed. It does not say upon whose supposition the examiner shall act, nor does it limit his action to those cases that are known to be due to violence; in fact, he is to decide this very point by his examination.

The only discussion of this question that I find in the excellent "Transactions" of this Society is the paper by its first president, the late Dr. Hosmer. In his able paper, he cites the following case to illustrate his interpretation of this question: "One morning, a police-officer requested me to give immediate attention to a case which had occurred five miles away. At much personal inconvenience I responded to the summons without delay. I found in the custody of the undertaker the body of an elderly man, who, early in the day, while in company with a friend, had died suddenly in the street. Careful interrogation failed to discover any suspicion of violence, that death was not a natural one, and also elicited the statement that the deceased had recently consulted a neighboring physician. The fact that the death had been sudden and public was assigned as the only reason for calling a medical examiner. I sought the physician who attended the deceased. On the demand of the instant, he could not furnish the information desired. He promised to investigate and report: in a very short time he wrote me as follows: 'Mr. —— had a marked stenosis of the mitral valve; was moderately comfortable with care. I learn that he had been drinking hard a day or two preceding death.' Such evidence as this fully confirmed me as to the correctness of the conclusion at which I had arrived, and upon which I had acted, when, in the presence of the dead body, I had expressed the opinion that the case did not come within the province of the medical examiner. There was no duty prescribed by law that I could perform, there was no service that I was qualified to render; and, rendering none, I considered myself entitled to no compensation, and have never claimed any."

---

[1] Read at the Annual Meeting of the Massachusetts Medico-Legal Society, June 12, 1894.

From the above account it would seem that the policeman's suspicions were aroused by the suddenness and the unnaturalness of the death, and that he thought some one in authority should investigate the case; it seemed to him different from the usual form of natural deaths with which he was familiar, and he was compelled then, it seems to me, to conclude either that it was a violent death, or that it was caused by some natural agency with which he was unacquainted. He was in duty bound, therefore, to refer it to the man appointed by law, and fitted by professional attainments to settle this question. After a careful examination, and a use of the knowledge the possession of which caused him to be appointed to the position of medical examiner, Dr. Hosmer decided rightly that the death was due to natural causes; but wrongly, it seems to me, that it was not a proper case for the medical examiner to view.

Every medical examiner with much experience can recall similar cases in which the friends or relatives startled by the unusual manner of death, and influenced by that suspicion so useful in a case of crime, and so harmful in a case of a natural death, have accused some one of having given something injurious to the deceased; and this is particularly true if, as in this case, the deceased was a drinking-man. In such views, while the medical examiner contributes nothing toward the detection and punishment of the crime, he does, by establishing the innocence of the suspected person, contribute something towards the protection of the innocent, which is an important result of the law whose object is to protect the innocent, and to punish the guilty.

Dr. Hosmer restricted the duties of the examiner within too narrow limits, and, in subsequent talks with me on this subject, he modified his opinion very materially. He was influenced in writing this paper by the desire that the medical examiner should not fall into the error of the coroner by being too officious, and in seeing this point clearly he lost sight of the fact, it seems to me, that the examiner must, like the district attorney, investigate many cases that prove to be innocent. It is unwise to allow the police-officers or other persons to think that they can decide the cause of death in such cases as that quoted from Dr. Hosmer's paper. An early examination in all doubtful cases should be made by the medical examiner, because, by his training and experience, he is competent to dispel or confirm the doubt that surrounds the case. Not even the physician has the medical examiner's insight in such cases because it can only be acquired by constant experience and attention to the many problems that such cases present. Just as the practised prospector sees signs of hidden treasure which his experience enables him to locate better than the inexperienced observer, so the medical examiner ought to be able to detect signs of foul play and crime in some detail that would escape the ordinary practitioner. It is particularly in these cases of violence, in which the cause of death is so obscure and hidden that the ordinary observer would decide it to be natural, that the medical examiner does the finest work, and, in order that he may have every opportunity to successfully perform his duty, he should be the first to examine all cases of sudden death.

If from a legal point of view, the medical examiner does not have at present the right to view all cases of sudden death, and if it should seem after a careful discussion of this subject that he should have this right, then it is the duty of this Society to ask that the law be amended. Such an amendment will make the safeguards of society stronger and more effectual, and cause the people to have an increased respect for the law that gives them so many proofs of its efficiency and fitness.

◆

COMMENTS ON A CASE OF HOMICIDE.[1]

BY A. H. HODGDON, M.D., OF DEDHAM.

Mary E. was an unmarried woman of seventy years who had resided upon a small farm in a remote portion of the town of Dedham.

She had formerly been a school-teacher, and was a person of fair education and much respected. For a year before her death, a young German named Hoffman had lived with her, and at her request had procured a second German from Boston to perform some laborious work. A few days after this, on Hoffman's return to the place late in the afternoon, both Miss E. and the second German were missing. Subsequent search revealed the dead body of Miss E. doubled up in a small closet and stiff in rigor mortis. There were no marks of a struggle in the house, and from the appearance of the beds and table, it was evident that Miss E. had met her death some time after early morning.

A superficial examination of the body showed finger-marks about the throat and blood on the floor and on the clothing about the genitals.

An autopsy on the next day revealed the following: Rigor mortis still present. The labia minora presented on the left side extensive ecchymoses on their inner surface, varying from one-half an inch to one inch in diameter, and on the right side a distinct ecchymosis the size of a French pea. There was a discharge of blood from the vagina and distinct laceration of the fourchette on the posterior portion of the vagina to the extent of one inch. The chest, and especially the upper portion thereof, presented purplish discolorations, marked here and there frequently by very dark purple spots somewhat elevated, which on section were found to be effusions of blood into the true skin. This same condition appeared on the face. The tongue was slightly protruded and held between the closed teeth. The mouth contained much vomitus. On the removal of the scalp there was found evidence of frequent blows upon the head, but no fracture of the skull was discovered. The tissues of and about the trachea showed distinct effusion of blood. Both lungs were engorged with blood, and the bronchi contained partly digested food, as did also the larynx, trachea and esophagus.

The fluid removed from the vagina was carefully examined under the microscope, and was found to contain no spermatozoa.

The cause of death was certified to be suffocation induced by throttling, and by inhalation into the respiratory tract of food thrown up by the stomach; and it was also certified that an attempt had been made to commit rape, an entrance into the vagina having been made.

At this point the case came to a standstill for over two years, when at last, the supposed author of this crime having been betrayed to the police through the offer of a reward, he was taken, indicted and tried.

---

[1] Read at the Annual Meeting of the Massachusetts Medico-Legal Society, June 12, 1894.

It seemed probable that the murderer had throttled and stunned his victim first, and then, while attempting to commit rape, had so pressed on her abdomen and stomach, as to force the contents of the latter up into the pharynx and mouth. Yet at the beginning of the trial it was found that a former district attorney had so drawn the indictment that the charge of murder during an attempt at rape had not been distinctly made, and owing to this, a conviction of murder in the second degree only was obtained. Undoubtedly rape was the prime object of the assault, and that, too, when the woman assaulted was seventy years old; and the question was asked by the defence whether atrophy and shrinkage of the parts would not render connection impossible. The autopsy, however, showed a fairly patulous vagina. The absence of semen probably showed want of emission. How long semen would withstand putrefactive changes while still in the vagina seems to be still undetermined, as there appears to be no record of time in such cases. While dry in stains on clothing, they are said to have been detected by Bayard after six years, and by Roussin after eighteen years. The defence held that simple ocular inspection was not sufficient to determine whether the tear in the fourchette was recent or not, and their experts contended that the tear should have been excised and the sections submitted to the microscope. The punctated effusions and ecchymoses on which Tardieu has laid so much stress were very marked over the chest and face; and these, he asserts, although they may appear in cases of suffocation from compression of the chest wall, are best marked and most characteristic in death by strangulation.

The medical evidence in this case was conclusive, and no real effort was made to gainsay it. Although the remaining evidence was largely circumstantial, it was sufficient to convict the prisoner of murder in the second degree, and he was sentenced to State's prison for life, escaping a death sentence undoubtedly very largely from the flaw in the indictment above alluded to.

The other occurrence in this trial ought, it seems to me, to be spoken of here. In this trial, and at one other which occurred shortly after, a regularly appointed medical examiner of this State appeared as an expert for the defence, engaged by the defence for this purpose and in one case, at least, paid by the defendant. Such action occasioned much comment and surprise at the time, and the propriety of such conduct was at once doubted. The question of our status as medical examiners with reference to the State arose. Are we State officials now and for all the while we hold our commissions? or is our official life an intermittent one that can be taken up and laid down as duty or emergency may demand? Are we counsellors looking with a partial eye at each case? or are we true experts, seeing each case with an impartial eye? The statute under which we are appointed simply says that the Governor "shall nominate and by and with the advise and the consent of the Council, shall appoint in each county able and discreet men, trained in the science of medicine, to be medical examiners in such county"; it then goes on to define our duties, giving no indication, however, bearing on the subject in hand. A former attorney-general of this State once spoke in my hearing with a great deal of warmth on this matter, saying that if he knew of a medical examiner appearing against the government, the medical examiner would not hold office long. Upon just what ground he stood, I could not see, unless he should persuade the Governor and Council that such conduct was sufficient cause for removal. That the lawyers do not agree upon this matter, any more than on many others, is shown by the letters from two district attorneys of this State lately received by me, and which I will now read:

Dear Sir: — I do not know what the feeling of other district attorneys may be, but personally I can see no objection to a medical examiner testifying either for the Commonwealth or the defendant in a criminal trial. It seems to me that if the expert had his true position in litigation, such a question would hardly arise.

However, even now, although we are accustomed to consider experts as a species of counsel, sometimes fairly so, I am not prepared to say that the medical examiner is under a retainer to the Commonwealth. I see no objection to his assisting in discovering and declaring the truth in any disputed case, whether he do so as a witness for the Commonwealth or the defendant.

I am very truly yours,
W. H. Moody.

On the other side is the following:

Dear Sir: — I think that medical examiners should not appear as experts against the Commonwealth in other districts than their own. They are officers of the Commonwealth. There seems to me to be the same impropriety in a medical examiner so doing that there would be in a district attorney defending a criminal outside his district.

Very truly yours,
John A. Aiken.

I am inclined to side with the latter view, and must confess that I have always considered myself a State officer, but not necessarily a "species of counsel." For us to appear on the side of the defence in opposition to another medical examiner, weakens our position and at once lowers us to a "species of counsel." The whole matter is one of opinion, but to me it has seemed to show a lack of propriety and good form to stand with the defence and opposed to the Commonwealth in such cases.

◆

SUICIDE OR HOMICIDE? A CASE FOR MEDICO-LEGAL DIAGNOSIS.[1]

BY C. S. HOLDEN, M.D., OF ATTLEBOROUGH.

The case to which I will call your attention does not perhaps invite you to assist me in deciding if it be one of suicide or homicide, as the title states, so much as to ask for an opinion as to the manner in which the several wounds found on the body were received, and as to whether they were all post-mortem, or antemortem.

The subject, Patrick McCarthy, of North Attleborough, an old man of sixty-five years, living peacefully with an unmarried son and daughter, a man possessed of no property, but a very useful member of the household, and of good habits, left his home in cheerful spirits after eating breakfast, Saturday, the eighth day of July, 1893. His absence from dinner was unusual; and when he did not return for supper, search was immediately begun for him. He was last seen about 9 o'clock that forenoon, leaving a saloon which was situated about a quarter of a mile from his residence, where he had drunk twice of ale. He lived in a thickly settled portion of the town, was well known, and because of his kindly manners was a general favorite.

---

[1] Read at the annual meeting of the Massachusetts Medico-Legal Society, June 12, 1894.

The next morning, two men, while rowing in a boat on a pond about a quarter of a mile from where McCarthy lived, and about the same distance from the saloon, saw, perhaps twenty feet from the shore, the gray head of a man apparently floating just beneath the surface of the water. The body was taken to the shore, identified as that of McCarthy's, and I was called to view it.

The posture of the body was that of semi-sitting, and it was properly clothed. The head, face and neck were covered with cuts and bruises. The most striking features were the loss of the right ear, a large denuded surface on the right side of the neck which exposed the opened external jugular vein, and the absence of all blood from the clothing.

An autopsy was made that afternoon and the following facts were ascertained: The body was that of a man well nourished, rigor-mortis was present, and cadaveric hypostasis was marked on the face and the upper part of the chest. The palms and the hands were blanched and wrinkled, and crepitation was noticed by pressure applied to the right side of the chest down as far as the nipple. As was stated, the neck and face on the right side were the seat of many injuries. Beginning with the nose, on the right side there was a cut one inch long, the tip of the nose was denuded of skin and a V-shaped cut extended through the cartilage separating it from the bone. Just below the right eye was a scratch three-fourths of an inch long. There was a bruise on the cheek one inch in diameter; three other smaller bruises on the cheek, from which the skin was partially denuded. The right ear was separated from the side of the head leaving a jagged irregular edge, the auditory canal being filled with clotted blood; below the ear and in front was a denuded surface two and one-half by one and one-half inches wide, the lower border irregular in outline; in this wound the opened external jugular vein was seen. Behind and slightly above the right ear was a scalp wound one and one-half inches in diameter; below and behind this was a cut two inches long that did not go through the scalp; leading into this from above was a cut one inch long and from below a cut an inch and a half long. Above and three inches behind the right ear was a cut three inches long extending through the scalp, and in this region were several other cuts and scratches from two to three inches long.

Passing to the internal examination of the body, the lungs, deeply pigmented, were prominent and did not collapse after the sternum was removed; both were firmly attached to the thoracic walls, the pleural cavities being nearly obliterated. On applying sufficient force to remove the lungs much water tinged with blood escaped into the thoracic cavity. A ligature was applied so as to include the trachea and the large blood-vessels, and the lungs and heart were found to float in water. Pressure applied to the cut surface of the lungs caused the escape of a watery fluid, in fact, the lungs seemed to be saturated with water. The heart, opened under water, showed the escape of bubbles of air or gas; the left side of the heart was nearly empty, while the right side was filled with soft clots.

The abdominal organs were normal; the stomach contained about four fluid-ounces of light-brownish colored fluid.

On removing the scalp, areas of discoloration were noticed beneath the external wounds. The brain was normal and the skull was not fractured.

The wounds found on the face and neck and described as cuts and bruises were peculiar in appearance. The cuts, with one or two exceptions, would perhaps more properly be described as deep scratches. The denuded surface on the neck was deeper at its upper portion, gradually growing more shallow until at its lower border the line was irregularly notched.

A second visit to the pond in which the body was found and a more careful examination of the premises, revealed agencies that could possibly have caused some of the injuries noted. Along the shore of the pond, about fifty feet from where the body was found, was a short section of barbed-wire fence several lengths of which were submerged. Although there was no current in the pond, it is perhaps possible that the face of the body came in contact with the barbed wire causing the injuries. This may have been the case, although one would suppose that if the body had been in contact with the fence a sufficient length of time to cause the injuries, the clothing would have become attached to it. The bottom of the pond is composed of soft mud, there being no stumps of trees or large stones anywhere in the vicinity. The other injuries might have been due to the body being struck by a row-boat, although it seems hardly credible that an ear could be severed from the body in such a manner.

An inquest was held but no decision has been made by the judge. The medical evidence was to the effect that the cause of death was drowning, and that the wounds were probably received after death in some manner unknown.

WHAT SHALL WE DO WITH TENDER AND PAINFUL STUMPS AFTER LAPAROTOMY?

BY BYRON ROBINSON, CHICAGO.

WHAT shall we do with painful and tender stumps after laparotomy, has no doubt puzzled many gynecologists. In one of my series of one hundred laparotomies, three patients bitterly complained of tenderness, pain, and a dragging, sickening sensation on active exercise. Careful vaginal examination soon convinced me that it was in the left stump of the broad ligament. The painful stump had periods of exacerbation. It would remain relatively quiet for some time, and the patient would only complain of it as a tender spot, or a little increased ache toward night after the day's exercise. But the sense of a tender locality in the pelvis would not entirely disappear. Only by slow, careful and gentle manipulation can one locate the stump in times of quietude. At the times of exacerbation the tissue around the stump, or especially a large part of the pelvis, will be so tender that one cannot localize any distinct point. There may be occasionally slight edema and thickening, but general local tenderness and pain is the general symptom. One patient complained of burning in the whole lower abdomen and pelvis. In this special series of one hundred cases the neurotic stumps appeared all (three) on the left side. This may be owing to the clinical observation that the left appendage is affected seven times out of ten. Again, the blood-vessels and nerves are more in quantity on the left side. The veins do not return with the same facility as they do on the right. The nature of the cases may be better understood by a short presentation of them.

CASE I was single, twenty-eight, slight build, one hundred pounds, old hip-joint trouble. She was delicate in appearance, and in a neurotic, sensitive condition. She had had salpingitis and ovaritis for about two years. The left appendage was found thickened and tender, especially more than the right. In laparotomy I removed both appendages, tied the tubes with twisted silk (No. 12), and closed the abdomen without drain. She recovered well. Some three months later I was called for rectal trouble, or rather pain in the pelvis with mucal discharges from the rectum. She had severe spells of pain in the pelvis. At first I could not locate any tender point or stump by the most careful examination, though she was slightly tender on the left side. I called Dr. Furguson, who excluded the hip-joint from any guilt in the trouble. I then called Dr. Bacon to pronounce whether any rectal disease existed, but he said the rectum was guilty of nothing. After the joint and rectal specialists had found nothing in their fields, I kept up periodic examination; and some six months after the operation the trouble could be quite distinctly located in the left stump of the broad ligament. The irritation on the stump is reflected on the rectal nerves, and to the patient the disease appears to be in the rectum. She is unable to work, and has an exacerbation of the pelvic pain every three to six weeks, at which time considerable mucal discharge arises from the rectum. All wounds are perfectly healed.

CASE II from this series of one hundred sections, occurred in a married woman of thirty-two. She had no doubt been infected by her husband seven years before at marriage. She was neurotic, pale and irritable. She had dysmenorrhea, and was generally run down. In laparotomy I allowed Dr. Sessions, the interne at the Woman's Hospital, to tie the ligature around the appendages after I had enucleated them from a bed of severe inflammatory adhesions. No. 12 silk was used. Six weeks after the operation she developed pain on the left side and since, that is for eight months, she has been a severe sufferer. In fact, she says now she suffers more than before the operation. The tenderness in the left side is easily localized, and to move it causes agony, especially at times of exacerbation, for she has times of relatively ease and quiet. Her wound healed perfectly with no drain-tube.

CASE III was in a married woman of thirty-six, who had been ill for some two years. In laparotomy both appendages were removed, tied off with No. 12 silk, and the abdomen closed with no drain. She developed emphysema in the right side, the size of a saucer, just above the ilium. She had also pleuritis on the right side. Recovery was slow and she complained of much pain for a month on the side. Three months after, she visited my office, when I found that the left stump had a tender spot on it. She gained flesh, but the pain in the left stump is very severe on slight pressure. Her wounds healed perfectly. On digital examination previous to the operation the left appendage was the more diseased.

In this series of one hundred sections three distinct cases arose of painful and tender stumps. They were all on the left side. In all, the left appendage was more diseased than the right. The silk used was No. 12, braided and well boiled. They were all of a neurotic disposition, debilitated by long-continued disease. The diseased, painful and tender stump began to be localized in the earliest case six weeks after the operation. The cases are now continuing six to ten months old. No drain-tube was used, and the wounds all healed perfectly. It is likely that one or all will require a second operation.

The question now arises, How can we avoid a painful and tender stump after section? I have tried kangaroo tendon in the abdomen, but not long enough to secure pronounced views on the matter. It is not yet fully understood what produces a neuroma on the end of a ligated stump. It does not appear to be merely infected wounds. It does appear to occur in neurotic, debilitated patients.

In my clinic come patients from other gynecologists, who suffer from painful and tender stumps. Such patients are neurotic, but they may have been made neurotic by continued pain and irritation in the stumps.

It would no doubt be better, if it were possible, to isolate the arteries and ligate them alone.

The occurrence of a painful and tender stump in a neurotic patient is a severe blow to surgery, as such patients give unlimited scathing criticism to operations. It makes them everlasting foes to surgery.

Our suture materials and our methods of application may yet be changed for the better.

Medical Progress.

RECENT PROGRESS IN GYNECOLOGY.

BY F. H. DAVENPORT, M.D.,
Instructor in Gynecology, Harvard Medical School.

TREATMENT OF THE STUMP AFTER MYOTOMY.

MANGIAGALLI[1] in a paper read before the International Congress at Rome discusses the various methods of operating, and comes to the following conclusions:

(1) The influence of the treatment of the stump on the mortality in cases of hysterectomy has been exaggerated.

(2) Other general and local conditions deserve much more attention; as the intra-ligamentous development of the tumors, which gives a bad prognosis.

(3) In order to be able to estimate the results of all methods of myotomy, it is necessary to divide fibromata into (a) intraligamentous, (b) subserous, submucous and interstitial. The second class gives with either an extra- or intra-peritoneal treatment of the stump a mortality of about five per cent., which can with difficulty be improved by total extirpation (abdominal or abdomino-vaginal).

(4) The intraperitoneal treatment of the stump must with few exceptions displace the extraperitoneal, since it gives the same mortality with less danger.

(5) The Zweifel method is to be preferred on account of its simplicity, and the possibility of rapid performance. Mangiagalli covers the elastic ligature with the dissected peritoneal flaps, without removing it as Zweifel does.

(6) The intraligamentous fibroids show at present a

---

[1] Cent. für Gyn., No. 16, 1894.

comparatively high rate of mortality, and as yet there is no special method of operating which has the preference though the total extirpation per abdomen is the one which affords the best chance.

(7) Vaginal hysterectomy is calculated by *morcellement* and the clamp method to widen the indications for myotomy; still it cannot be employed in all cases, so cannot be compared with other methods. It is a good substitute for castration in those cases where this is indicated.

Jacobs, in the same discussion, says that the ideal operation is the complete extirpation, body and neck, so as to avoid leaving a stump, to lessen shock, and to diminish the amount of blood lost which is important with patients who are already anemic. He employs the abdominal method as follows: (1) Opening of both vaginal cul-de-sacs, and clamping of the uterine arteries. (2) Laparotomy. The tumor is lifted out, both broad ligaments clamped with specially constructed clamps. The uterus is then removed through the abdominal wound, after the broad ligaments have been cut. The abdominal wound is then closed, and the vagina filled with iodoform gauze.

Péan refers to the old idea, that very large tumors, or those which immediately threaten life should be operated on, and says that having recognized that the most of these tumors lead to complications which threaten life or render it miserable, his principle is to remove them while small. His experience is summed up as follows: As soon as a fibroma of the uterine body is recognized, it should be removed by the abdominal method without regard to its situation, provided it is of good size, using the elastic ligature, clamps and *morcellement;* if of small size, by the vaginal method. He refers to one class of tumors which develop in the posterior wall of the uterus and so press down the posterior cul-de-sac, and displace the neck, that it is impossible to remove them by the vagina. These he removes by an incision laterally through the perineum and the recto-vaginal septum up to the peritoneum. His method should be read in the original.

Laudau's conclusions are as follows:

(1) For tumors which do not reach higher than the umbilicus the best operation is hysterectomy by means of piecemeal enucleation by the vagina.

(2) In the case of larger tumors, laparotomy, and rapid enucleation of the single or multiple fibroids, and extirpation per vaginam of the stump.

(3) It is important not to close the peritoneal cavity entirely, and with the use of clamps this is fortunately impossible.

MASSAGE BY THE THURE-BRANDT METHOD.

Jentzer[2] gives the results of his treatment of 145 gynecological cases by the Thure-Brandt method of massage, as follows:

(1) Two cases of prolapse with elongation of the neck, in women twenty-three and twenty-nine years of age cured in twenty-three and thirty-five days, and since then no recurrence.

(2) Fifty-seven cases of subinvolution after childbirth or abortion without retention of placenta. All cured in from twelve days to two months.

(3) Twenty-two cases of parametritis resulted in cure after from two to six months' treatment.

(4) Nineteen retroversions, only two cures. The author is inclined to think that his poor success in comparison with the results attained by Thure-Brandt, is due to his lack of experience with the method. He adds, however, that in fifteen cases there were firm adhesions which disappeared under massage, and that in consequence the patients were subjectively better, though the retroversion persisted.

(5) Eleven cases of weakness of the neck of the bladder following repeated confinements. Treatment lasted from one to four weeks, and resulted in cure in eight cases, improvement in one, and no change in two.

(6) Seven cases of hydrosalpinx, of which four were cured, and three not.

(7) Twenty-seven cases of menorrhagia, of which the majority occurred during the menopause. Eight of the number were curetted. There were twenty-three cures, two cases were improved, and two showed no result.

The author speaks in favor of employing massage during menstruation. He refers to the opinion of Auvard that the catamenia are a contraindication because massage would be apt to increase the flow. Brandt maintains the opposite and Jentzer's experience confirms the latter opinion. He has often found that obstinate adhesions are more easily separated at that time.

His conclusions are as follows:

(1) Massage during menstruation must be very gentle, and the sittings should be short.

(2) When so carried out, massage has an effect upon the vasa constrictoria, and prevents blood stasis.

(3) The movements for relieving congestion should always be employed during the sickness and for a short time only.

(4) Massage at this time has often the effect of relieving pain.

(5) It never, if carried out as explained, causes inflammation.

(6) If massage treatment is suspended during the catamenia, it prolongs the time necessary for cure.

(7) Metrorrhagia is benefited by massage.

(8) Pelvic exudates are more quickly absorbed.

(9) Adhesions disappear quicker and more easily.

[Massage as advocated for the cure of so large a range of gynecological affections, seems to us open to so grave objections, that its employment cannot be wisely recommended to practitioners generally. It will certainly not tend to lessen the unfavorable opinion we have formed of it, to hear it advised that it should be practised during menstruation. We are of the opinion that neither American physicians would advise it nor American patients would be willing to submit to it for the sake of the slight benefits which are claimed to follow its use.— Rep.]

CONSERVATIVE TREATMENT OF TUBAL AFFECTIONS.

Vuillet[3] speaks warmly for conservatism in the treatment of pyosalpinx, and hydrosalpinx, and cites two cases of pregnancy following such procedures. His conclusions are as follows:

(1) The majority of cases of purulent or serous collections in the tubes whether of one or both sides, can be cured by conservative methods. These consist either in simple puncture, or puncture with washing out, or puncture followed by incision and drainage.

(2) These methods are not dangerous in careful

---

[2] Centralblatt für Gyn., No. 18, 1894.

[3] Cent. für Gyn., No. 16, 1894.

hands and with the employment of thorough antisepsis, cure occurs without complications.

(3) Two cases of pregnancy after cure by this method show that the tubes, even though pus has been present, may resume their function.

(4) It is, therefore, the duty of gynecologists to employ this conservative method before deciding to remove the tubes and ovaries. In most cases these organs can be preserved and the women not doomed to sterility.

THE CURATIVE EFFECT OF BATHS IN DISEASES OF WOMEN.[4]

The treatment by baths plays an important part in gynecology, especially in the class of cases characterized by exudates of the pelvic peritoneum. What is ordinarily meant by the term exudate, may be divided from a pathologico-anatomical standpoint into two forms: (1) the true serous, fibrinous or purulent collections in the pelvic structures; and (2) the peri- and para-metric connective-tissue bands and cicatrices, which must be regarded as the results of the other group. While the treatment of the first class of cases by balneotherapy shows most brilliant results, even an absolute *restitutio ad integrum*, in the case of adhesions and chronic thickenings, the effect is merely symptomatic, reducing sensitiveness, and relieving pain, and favoring general improvement.

According to Dührssen these cicatrices do not in themselves cause pain, but favor the establishment of endometritis which is relieved by the baths. To be sure the endometritis can be ordinarily more easily cured by curetting and cauterization, hence these measures should be tried before a course of baths.

Permanent results are not to be expected in cases of (1) retroflexion of the uterus with adhesions, (2) fixation of one or both ovaries by perioöphoritic bands, (3) collections of pus in tubes or ovaries, as often occurs in connection with gonorrheal infection. Appropriate treatment of the third class is laparotomy with removal of the diseased organs, of the first and second, forcible separation of the uterine and ovarian adhesions, and consequent increased mobility of the organs, under anesthesia. The movable uterus is then replaced, and according to Schultze held by a pessary. Dührssen, on the contrary, prefers vaginal fixation, and later massage, as advised by Chrobak. The mobility of the ovary should be maintained by massage after the method of Thure-Brandt.

It is, therefore, essential in order to select appropriate cases for treatment by baths in the first place to establish a correct diagnosis.

ASCITES, ESPECIALLY FROM A GYNECOLOGICAL STANDPOINT.

Litten[5] says that the diagnosis of ascites rests mainly upon the configuration of the abdomen, the form of the dulness, the fluctuation, and the variation in percussion on change of position. A point of very important diagnostic value is the etiology, particularly the question whether the vena cava inferior, or the portal vein is the seat of the disease. If the first is the case, there is swelling of the extremities, of the abdominal walls, and of the external genital organs; if the second, these are wanting, but the veins of the abdomen become prominent. This last occurs in diseases of the respiratory and circulatory apparatus, the first in affections of the liver, kidneys and peritoneum.

Ascites may be confounded with dilatation of stomach and bowels, though this occurs seldom. The most common condition for which it may be mistaken is a monocyst of the ovary, but only when it is not very large, and does not lie everywhere against the abdominal wall, or is grown to it, in which case there will be no difference in the percussion note on change of position. There is no sure point of differential diagnosis. The examination of the fluid sometimes gives important information; if it contains bile, or becomes blue on exposure to the air, or if chylous, it is ascites; if it coagulates soon after removal, that speaks for a dermoid cyst of the ovary. Urea, leucin or sugar are in favor of ascites, paralbumin of an ovarian tumor. Specific gravity has no importance, and the cells are usually too much changed to have any diagnostic value.

A good method of differential diagnosis is the examination of the fluid by means of centrifugal force. When applied to ascitic fluid, even though perfectly clear, there remains in the reservoir of the tube of the machine a small deposit of blood which resembles a spot of sealing-wax. This was never observed in the fluid from an ovarian tumor.

Especially difficult of diagnosis are the cases where there occur both ascites and ovarian growths, especially the small ones which cannot be palpated, such as papillomata of the surface of the ovary. In such case an exploratory incision is to be made.

THE RELATION OF GASTRO-INTESTINAL AFFECTIONS TO DISEASES OF THE FEMALE GENITAL ORGANS.

Theilhaber[6] gives details of 45 patients who had been sent to him for gynecological examination by Dr. Crämer a specialist for diseases of the stomach and intestines. They all suffered from stomach disorders, 25 with nervous dyspepsia, 12 from atony of the stomach, 2 with catarrh of the stomach, 2 with chronic intestinal catarrh, and 4 with other affections.

The gynecological examination revealed absence of any abnormality in 4 cases; in 19, catarrhal endometritis, with more or less thickening of the parenchyma of the uterus; in 4, endometritis hemorrhagica; 10 cases of retroflexion and version of the uterus; 3 of oöphoritis; 2 parametritis; 1 of old puerperal parametritis; 1 of retroversion of the anteflexed uterus; and 1 of small ovarian tumor.

As regards the connection between the gynecological troubles, and the stomach and bowel affections, Theilhaber divides the cases into three groups. The first embraces those cases in which the gynecological condition is only a chance occurrence. In the second group belong those cases in which the gynecological disturbances are caused by the gastro-intestinal affection. Theilhaber mentions here especially cases in which metrorrhagia and dysmenorrhea are caused by constipation. In the third group the uterine condition is the cause of the stomach trouble.

Six of the patients with nervous dyspepsia suffered from retroflexion; in four of these the dyspepsia was cured by the reposition of the uterus; in two, not. Nervous dyspepsia and endometritis hemorrhagica existed in three cases. In two the digestive difficulties, which had existed for years, disappeared after curetting; one patient withdrew herself from treatment.

---

[4] Address before the Balneological Congress, by Dührssen of Berlin. Cent. für Gyn., No. 24, 1894.

[5] Deutsch. med. Woch., 1894, No. 8.

[6] Münch. med. Woch., xl, 1893.

Of eleven cases of nervous dyspepsia and catarrhal endometritis, local treatment of the uterus had prompt effect in eight. Four cases of atony of the stomach which were associated with various local conditions were cured coincidently with the cure of the uterine conditions. Theilhaber concludes from his observations that in all cases of nervous dyspepsia, atony of the bowels, or of the stomach, hyperacidity, want of acidity, and periodical gastralgia, in women where for a long time a rational medicinal treatment has not been successful, a thorough gynecological examination should be made, especially when the patients complain of irregularities of menstruation, or leucorrhea. Still, though the gynecological treatment is important, it is often necessary that treatment of the stomach trouble should be also carried out.

◆

Reports of Societies.

MASSACHUSETTS MEDICO-LEGAL SOCIETY.

F. W. DRAPER, M.D., SECRETARY.

The Society held its annual meeting June 12, 1894, in Boston, twenty-seven members present, and Dr. Z. B. Adams presiding.

The following officers were elected to serve during the ensuing year: President, Dr. Z. B. Adams; Vice-President, Dr. S. W. Abbott; Corresponding Secretary, Dr. B. H. Hartwell; Recording Secretary, Dr. F. W. Draper; Treasurer, Dr. A. E Paine.

Dr. J. A. Mead presented a paper on the question,

WHAT CASES SHALL THE MEDICAL EXAMINER "VIEW"?[1]

Dr. Hartwell, of Ayer, said that the question discussed in the paper read, had always been one of doubt. It had been his practice to take a middle ground between the two extremes, represented on the one hand by the rule not to see any case except those in which violence at the hands of another was the cause of the death, and on the other hand, by the rule laid down by the reader that the medical examiner should investigate cases of sudden death as well as cases of violence only. He had thought it best, if he erred at all, to err on the side of the Commonwealth. It would be impossible for the law to state what cases should be included. The medical examiners were appointed as "discreet" men, and much depended on their judgment and good sense. They were human, and to a certain extent selfish; and if they wished, acting for themselves, they might add to their bank account in performing their duties. The law provides that "when a medical examiner shall be notified that there is lying within his county the dead body of a person supposed to have come to his death by violence," etc. There is a great deal of latitude of meaning in the word "supposed" and in the word "notified." Any one may "notify." It had been his custom to make the fullest practicable inquiries before responding; and if the case was clearly not one in which unlawful violence was an element, he had not responded, but had saved expense to the State. He would view all bodies where there was any doubt in the matter, so that there should not later come up a question of neglect.

There are many laws in the Commonwealth similar to the law concerning inquests. Most of the country places are under the jurisdiction, in minor matters, of district courts; but the selectmen of any town can have a justice appointed who shall have authority to issue warrants. There is one small town with such an officer, an estimable man, a lawyer and chairman of the board of selectmen, who recently issued ten warrants in a single affair, getting a dollar for each warrant. Two boys got drunk, assaulted some people in the town, broke into a house and stole, were arrested and locked up, and broke out. Five warrants were issued against each of those boys: one for getting drunk, another for assault and battery, a third for breaking and entering, a fourth for breaking out, and a fifth for larceny. If that case had been brought before the district court, two warrants would have been issued without expense.

In a similar way, medical examiners may err. Shall they make a "view" and get five, six, seven, or eight dollars from the county, or shall they not? It had been his habit, he said, to take a conservative course.

The law requires an inquest in all cases of fatal railroad accidents. Other classes of cases in which the medical examiner should act are these: fatal accidents to the employees of corporations or of individuals, and sudden deaths from natural causes or by suicide.

Dr. Hurd, of Newburyport, said that the majority of sudden deaths in his vicinity were cases of drowning; and it had seemed to him that, even where there was no ground to suppose that any violence was used, these cases came within the jurisdiction of the medical examiner. For instance, a schooner was wrecked, and seven persons were drowned in attempting to reach shore in a boat. Now, as those bodies were successively washed ashore, the question came, What was the use of a medical examination? In the first place, the medical examiner could best manage the problem of identification, and, in the second place, he could give proper direction as to the burial of the bodies; he would thus fulfil a public duty, although there was no suspicion that any of the deaths were deaths from criminality, and it had seemed clear that, if there had been fifty of these bodies, instead of seven, to drift ashore, they would be proper cases for the medical examiner.

Another case cited presented a different problem. The body of a child was found in a lake. The circumstances of the drowning were known to be due to accident, and had been observed by witnesses who were unable to render help. In such an instance, ought the medical examiner to put the State to the expense of an examination? Every little while such a case occurs; and if the examiner goes in response to a summons, it takes several hours and some trouble; he can hardly afford to do the service gratuitously.

The impression is abroad, Dr. Hurd said, that in all cases of sudden death the medical examiner should attend. He did not know of any rule that could be laid down in such cases as to how far he was warranted in declining to respond to a summons under the belief that any examination was needless. The cases of people found dead in bed should always be investigated. Whether a charge should be made in any given case should be left to the discretion of the examiner; but he would be inclined to lay down the rule that in cases of accidental drowning it was proper for the medical examiner to attend and make a charge for his attendance.

---

[1] See page 362 of the Journal.

Dr. Hoitt, of Marlborough, said the medical examiner was often called to cases outside his duty, because the public had imperfect ideas of the limits of that duty. In his district, he said, it often seemed to be the impression that the medical examiner was to settle all causes of death where a physician was not in attendance; or, even if he had been in attendance, in the event of a sudden death. He had been called, too, in cases of accidental drowning; and the people were indignant because he had expressed the belief that such affairs were not within his duty; and they were indignant, also, because the State would not employ a diver to search for a body drowned. He had investigated cases and had refrained from making any charge, believing the State would not uphold him. In one case, however, in which he had made an autopsy upon the body of a man found dead in his bedroom after a spree with suspicious characters, his fees for the service and those of his witnesses were in abeyance for nearly a year, because in his report to the district attorney he had stated the ascertained cause of the death to be heart disease.

Dr. Hoitt suggested that, in order to avoid the embarrassments growing out of the present state of things, it would be better to pay a regular salary to all the medical examiners, proportioned according to the average number of cases investigated annually in the several districts.

Dr. Presbrey, of Taunton, commented on the popular misapprehension that a medical examiner, paid according to the fee system, was inclined to abuse the opportunities of his office by taking up cases outside his strict duty in order that he might profit pecuniarily. He deprecated this view as a discreditable and mercenary view, inherited from the corrupt coroner system. He had heard more criticism on the part of court officials to the effect that the medical examiners had not gone far enough in the direction of thoroughness than he had of the opposite kind, the tendency of the legal mind being to insist that in every case the duty of the examiner should be done to the fullest degree.

Dr. Jack, of Melrose, mentioned the case of a drunkard who had died at his home while under treatment according to the Keeley system, and the question had arisen whether the remedies had had anything to do with his death. The conclusion was reached that the death was due to natural causes, and was so reported. A judge of the district court had asked, by letter, what was the need of a medical examiner if the death was due to natural causes? To this Dr. Jack had replied that it was the duty of the examiner to determine the very fact, that the death was not due to violence.

Dr. Jack quoted the facts of another case in which a man had been injured by the fall of a building, and had lived an hour after being rescued from the ruins, being meanwhile in the care of a surgeon. Though summoned to this case as a medical examiner, he had declined to respond, upon learning the facts.

Dr. Cutts, of Brookline, said he had formerly considered suicides as outside the limits of his duty as a medical examiner, but his present practice was to respond when summoned to such cases. It was not his custom to make any charge for investigating cases of sudden death by heart disease or other natural causes, although he thought it would be a desirable change if authority were given to the medical examiners, or to some physician, to take official charge of such cases. It would be better to err upon the side of the Commonwealth's interests and make views, returning them with the proper charges, not for the sake of the fees but as evidence of duty done, leaving it to the county commissioners to disallow the fees if they thought fit.

Dr. Presbrey, replying to Dr. Cutts, said that the law already provided for the cases of sudden death from natural causes; for the local board of health had authority to appoint a medical agent to discharge the function alluded to, and if this officer in his investigation came upon suspicious appearances, he would naturally transfer farther inquiry to the medical examiner, who under such circumstances would not hesitate to act.

Dr. Munsell, of Harwich, said the whole matter of responding to calls appeared to be left to the discretion of the medical examiner; and he quoted with approval the advice which he had received from a former district attorney of his district, who later became attorney-general: "You had better make ninety-nine uncalled-for views than to let the one hundredth go by." He described the unpleasant effects that would probably follow a hasty conclusion not to investigate a case, and said he thought it was worth the fee and mileage to quiet suspicions that would run through a neighborhood and cause discord and bad feeling over an undetermined case. He cited a case in his own recent experience which illustrated his position, wherein an accidental fall down some cellar stairs had, by neighborhood gossip, developed into a homicide in the popular view, and the suspicions and excitement thus engendered had been speedily quieted by the medical examiner's observations and conclusions, excluding unlawful violence from the affair.

Dr. Holden, of Attleborough, read a paper entitled

SUICIDE OR HOMICIDE? A CASE FOR MEDICO-LEGAL DIAGNOSIS.[1]

Dr. Pinkham, of Lynn, said that in the case reported the manner of the death, whether by suicide or homicide, was undetermined and indeterminable. It seemed incredible, one might say impossible, that a man intending to kill himself should make the number and kind of wounds observed. On the other hand, on the supposition that the wounds indicated homicide, their variety was extraordinary; one must suppose, in such a case, the use of one weapon and the resulting lesions would be similar in character. The real cause of the death was drowning, which might have been either suicidal or accidental.

Dr. Hodgdon, of Dedham, read a communication with the title,

COMMENTS ON A CASE OF HOMICIDE.[2]

Dr. Presbrey, of Taunton, said there were arguments on both sides of the question whether it was proper conduct on the part of a medical examiner to appear as an expert for the defence in trials for homicide. He hoped he would not be called upon to decide the question for himself in practice. He thought, however, that the highest view of the position of the medical examiner would deter him from accepting the position of a medical expert for the defendant.

Dr. Adams, of Framingham, said that, in his belief, it lowered the medical examiner in the eyes of the community to appear against another medical examiner in any criminal case.

---

[1] See page 364 of the Journal.

[2] See page 363 of the Journal.

Dr. Draper, of Boston, said that the matter seemed to him of sufficient importance to justify the Society in making an explicit statement of its judgment concerning it. He remarked that it was obvious that the appearance of a medical examiner acting as a medical expert for the defence was designed by the counsel for the defence to weaken or to annul the strength of the government's position in the case, and he felt sure that any medical examiner who lent himself to that end, to injure the effect of the evidence of a brother medical examiner who was acting in good faith for the State, was approaching the line of unbecoming conduct, if he did not really transcend it. He thought that the circumstances related in Dr. Hodgdon's paper afforded an opportunity to the Society to place its disapproval upon that kind of conduct; and he offered the following, and moved its passage:

> *Resolved*, That in the opinion of the Massachusetts Medico-Legal Society it is improper and objectionable conduct in medical examiners to accept service as medical experts for the defence in trials for homicide in this Commonwealth.

Dr. Pinkham, of Lynn, heartily favored the resolution. Medical examiners are not advocates; in theory, their evidence is impartial; they occupy an independent position; they are ready to state facts favorable for the defence as well as those favorable for the prosecution. Any medical examiner who has not this feeling of the character of his position and who goes into another district as an expert witness for the defence has lowered himself and has taken an improper position, not only because he is opposed to a fellow medical examiner but because he has consented to be in a certain sense an advocate, as all hired expert witnesses are. This position is one which no honorable member of the Society should occupy.

Dr. Presbrey, of Taunton, in view of the importance of the subject, and in order that it might be discussed more fully and deliberately, moved to lay the resolution on the table, for farther consideration at the next meeting.

After brief discussion, the motion to lay on the table was unanimously adopted.

ANNUAL MEETING OF THE AMERICAN PUBLIC HEALTH ASSOCIATION.

Montreal, P. Q., Sept. 25, 26, 27, 28, 1894.

A week of almost cloudless sky, an unusually large attendance, and a cordial reception by the local authorities have given to the meeting of this week an unusual interest.

The meeting was called to order on Tuesday morning by the President, **Dr. E. P. La Chapelle**, of Montreal. A telegram of regret together with a resolution of the same character was sent to several of the Mexican members of the Association who were absent either on account of their own illness or that of members of their families.

The number of papers presented during the sessions of the Association, was unusually large, and embraced almost every topic included in the scope of Public Sanitation.

First upon the list came a paper entitled

HYGIENIC NOTES MADE ON A SHORT JOURNEY THROUGH ITALY IN 1894,

by **Dr. Geo. F. Nuttall**, Ph.D., Associate of Hygiene in Johns Hopkins University.

Dr. Nuttall's observations had reference to the sanitary condition of Naples, Rome and Florence; their water-supplies and sewerage systems, both ancient and modern; the housing of the people; and the care of streets. Special mention was made of the progress of cremation in Italy, and the methods employed for incineration of the dead in the Italian cities.

Dr. Lee, Secretary of the Board of Health of Pennsylvania, presented a paper entitled

THE CART BEFORE THE HORSE,

in which he denounced the practice of introducing public water-supplies in cities and towns, before the advent of general systems of sewerage and sewage-disposal.

Dr. Wyatt Johnston, Bacteriologist of the Provincial Board of Health of Quebec, described the

WATER-SUPPLY OF MONTREAL,

which is obtained from the St. Lawrence River, about a mile above the Lachine Rapids. The water is conducted by an open conduit to a settling basin of about 23,000,000 gallons capacity, where it is purified by sedimentation. Dr. Johnston's observations showed that a considerable percentage of the bacterial impurity was removed by means of sedimentation. The length of time in settling was necessarily short, since the daily consumption of water (18,000,000) nearly equalled the capacity of the reservoir. A smaller reservoir of 1,500,000 gallons near the top of Mount Royal furnishes the high service, and affords better fire protection.

Dr. A. N. Bell, of Brooklyn, N. Y., presented a graphic description of

THE GROUND WATER-SUPPLY OF BROOKLYN.

Prof. F. T. Shutt, Chemist of the Federal Experimental Farm at Ottawa, spoke of "Air and Water on Farm Homesteads."

He had examined samples of water from wells on Canadian farms, and very frequently found it to be polluted. The purest water is certainly to be found in the country; but owing to the negligence of the people, it is a fact that villages and rural districts are much worse off in this respect than the cities.

Mr. Geo. W. Fuller, Biologist in charge of the Experiment Station of the State Board of Health at Lawrence, Mass., presented a strong plea in favor of the sand filtration of water. In Lawrence, where the system has been introduced, the death-rate from typhoid has been reduced 60 per cent., and the experiment has proved amply that it is possible to protect communities having a polluted water-supply.

AFTERNOON SESSION.

Dr. Charles Smart, Surgeon, U. S. N., presented the

REPORT OF THE SPECIAL COMMITTEE ON POLLUTION OF WATER-SUPPLIES.

The report reviews at length the influence which a polluted water-supply may have had in the recent cholera epidemics in Europe and upon the spread of typhoid fever on both continents. The efforts to purify water by sand filtering are also reviewed, wherever made, and the report concludes:

"From this brief review of facts and opinions concerning filtration it will be seen that your committee hesitates to reaffirm its former positive language with regard to the sufficiency of filtration as protection against typhoid fever. Nor, on the other hand, do we regard the testimony as authorizing a formal declaration of opinion in favor of the efficiency of filtration. Our experience in this country is as we have seen, extremely limited, but it is hoped that the success achieved at Lawrence will lead to the filtration of other surface waters, each of which will probably teach an important lesson in connection with bacteriological experiments and with the mortality from typhoid fever, before and after the construction of filter-beds. In view of an unbroken record of typhoid fever in communities that use raw river water, and an equally unbroken record of lessened typhoid-rates following the filtration of such river-supplies, your committee considers that in Washington, D. C., special attention should have been given to the improvement of the general supply. This country needs some practical lessons in methods of water purification.

"In conclusion, your committee desires to invite attention to a proposition emanating from the McGill University of this city, for which credit is to be given to Professors J. George Adami and Wyatt Johnston, the latter a member of this committee. Impressed with the difficulty of reconciling observations made upon water bacteria with the descriptions of the various species that have been published up to the present time, and recognizing how much good and useful work is lying unpublished and incomplete from fear lest publication should after all result in renaming species that have already been described and in adding to the confusion already existing, these gentlemen desired to do something to aid in remedying the present unsatisfactory conditions. As the task of establishing order out of the present chaotic state of the literature of the water bacteria is too great for one man to undertake, the idea of a co-operative investigation is offered as the only means of speedy advancement in this line of work. Your committee considers that great advancement may be made by the practical development of this suggestion, and to further the accomplishment of this, it recommends that when its membership for the coming year is announced, it may be authorized to increase the number of its members by adding to the list the names of such investigators as may be willing to co-operate in this scheme of bacteriological study."

It was then moved by **Dr. Gardner**, of London, Ont.:

Resolved, That, in view of the danger to the public health by the sewage contamination of our fresh-water lakes, rivers and streams, this Association memorialize the different Federal Governments, as well as the State and Provincial Governments to pass laws prohibiting the contamination of these water-supplies by sewage from cities, towns and villages, and compel them to provide some means for the treatment and oxidization of this sewage before emptying it into these places.

This resolution, with a motion to adopt the report, was referred to the Executive Committee without discussion.

Dr. C. A. Hodgetts, of Toronto, presented the subject of

THE MANAGEMENT OF EPIDEMICS OF DIPHTHERIA IN RURAL DISTRICTS,

and dwelt with special emphasis on the necessity of cleansing the house and clothing by the liberal use of soap and warm water, after the manner employed in Glasgow.

Dr. P. H. Bryce, Secretary of the Provincial Board of Health of Ontario, read a paper on

THE PRACTICAL DIFFICULTIES EXPERIENCED BY OFFICERS OF HEALTH IN DEALING WITH CASES OF DIPHTHERIA.

A prominent point in the paper was the difficulty of diagnosis between simple sore throat and diphtheria. He emphasized the importance of bacterial examinations for all doubtful cases, and advised the isolation of doubtful cases.

Dr. J. E. Laberge, Bacteriologist of the Board of Health of Montreal, read a paper in French upon

VACCINATION AS A PREVENTIVE OF CONTAGIOUS DISEASES,

which was mainly an exposition of the methods and principles enumerated by Pasteur.

Dr. J. D. Griffith, of Kansas City, read a paper on the

INNOCUOUS TRANSPORTATION OF THE DEAD.

He advised that a special compartment be prepared and set aside on baggage-cars for the transportation of bodies. This compartment should be lined with zinc and asbestos and covered with ice.

Dr. Hingston, of Montreal, said that the bodies of people who have died from infectious diseases were not allowed to leave the city, and on general principles the transportation of dead bodies should be stopped.

This sentiment met the general approval of the meeting, and finally it was decided to refer the whole matter to a special committee.

EVENING SESSION.

The exercises of Tuesday evening were held in Windsor Hall, and consisted in the formal opening of the Association, together with the Address of the President. Brief Addresses of Welcome were made by **Dr. Robert Craik**, Chairman of the Local Committee; by **His Honor Lieutenant-Governor Chapleau**, of the Province of Quebec; by **Mayor Villeneuve**; by **Hon. L. P. Pelletier**, Provincial Secretary; and by **Dr. G. Mendizabal**, of Orizaba, Mexico — the latter in Spanish.

THE PRESIDENT'S ADDRESS.

The President, **Dr. E. P. La Chapelle**, of Montreal, then delivered the annual address, in the course of which he said: "The American Public Health Association, since its foundation, now twenty-two years ago, ever true to its mission, has never ceased to labor for the advancement of sanitary science, for the promotion of measures and organizations that should effect the practical accomplishment of the laws and principles of public hygiene. It has thus realized the brightest hopes and most enthusiastic provisions of its worthy founders, and has extended its benefits and influence over the whole of North America. To-day it embraces the three great countries that form this vast continent: the United States of America, the Republic of Mexico, and the Dominion of Canada — all three working together in brotherly emulation, recognizing no political boundaries, and valiantly striving to attain one unique and humane object: the dissemination to all of the knowledge of public hygiene and the development of respect for its decrees. Every year the Association changes its place of meeting, and this for good reasons. The spirit of its founders being to establish above all, a body for the diffusion and popularization of public sanitary science, this object could not be better attained than by extending to its greatest limits the influence of the Association; and for this purpose, no surer means could be found than bringing together its distinguished members in different, distant cities."

The speaker introduced the important subject of a Minister or Cabinet-Officer of Public Health, as follows: "May we not hope that governments, fully realizing the importance of those questions and wishing to afford greater facilities for protection, will soon see the necessity of creating a new department in their cabinets — that of Public Health; and that, in the near future, all governments will be advised and supported by a competent specialist, a minister of public health? We can easily foresee all the good that will arise from the creation of such a position."

The address was comprehensive, scholarly, and well-suited to the occasion. Special emphasis was laid upon the importance of maintaining pure supplies of food and water, and of devoting more attention to the study and prevention of alcoholism, which he considered as one of the greatest foes to public health in the higher Northern climates.

SECOND DAY.— WEDNESDAY.

The first paper of the second day's session was read by Dr. E. Gauvreau, Director of the Vaccine Institute at St. Foye, Quebec, upon

THE CULTURE AND COLLECTION OF VACCINE LYMPH.

The paper showed that unusually good care is taken at this establishment to secure a pure and efficient supply of vaccine lymph for the use of physicians and boards of health.

Dr. N. E. Wordin, of Bridgeport, Conn., presented the subject of

THE RESTRICTION AND PREVENTION OF TUBERCULOSIS.

He advocated stringent means, including the placing of tuberculosis among dangerous infectious diseases, and compulsory disinfection of apartments occupied by consumptives. "Nursing of children by tuberculous females should be forbidden, also expectoration upon floors and in public places. Sputa of consumptives should be burned, and in general hospitals consumptives should be isolated."

Dr. F. O. Donohue, President of the New York State Board of Health, spoke of the examination of the milk-supply for tuberculosis. Since 1892 there has been a law in New York State providing for the slaughter of cattle found to be suffering from tuberculosis. Examination of animals immediately began, and out of 22,000 cattle 700 were ordered to be killed. The proof that there were so many diseased cattle was sufficient to require the formation of a special commission to inspect the milk-supply, which has not yet made any official report.

Dr. Paul Paquin, of Missouri, in a brief paper, recommended that

CONSUMPTIVES SHOULD NOT MARRY,

and advised every possible means, short of actual legislation, to discourage such marriages.

Dr. Sewall, of Denver, Col., read a paper on the

SEGREGATION OF CONSUMPTIVES IN ARID REGIONS,

in which he advised the establishment of a number of cottage sanatoria in places situated at altitudes of 5,000 to 8,000 feet above the sea-level, where consumptives might be successfully treated. He advocated the use of out-door employments and recreation as a necessary part of such treatment.

AFTERNOON SESSION.

The usual afternoon session was omitted; and the Association went by rail to Lachine, where they were taken on board a steamer and conveyed down the Lachine Rapids, arriving at Montreal before sunset.

EVENING SESSION.

At the evening session, Dr. F. Montizambert, Superintendent of Canadian Quarantines, gave a graphic description of

THE QUARANTINE STATION, AND THE METHODS EMPLOYED AT GROSSE ISLE, BELOW QUEBEC.

The buildings, appliances, etc., were illustrated by lantern slides, and formed a fitting introductory to the excursion of the Association, which was made the following Friday.

Prof. J. C. Cameron, M.D., of McGill College, presented in an illustrated lecture,

SOME POINTS IN THE HYGIENE OF THE YOUNG IN SCHOOLS.

Special prominence was given to the construction of school desks and seats, and to the hygiene of respiration.

Dr. T. D. Crothers, Superintendent of Walnut Lodge Hospital of Hartford, Conn., read a paper upon

THE INFLUENCE OF INEBRIETY UPON PUBLIC HEALTH,

in which he showed, in general, that alcoholism had quite as serious an influence upon the health of a community as some of the minor evils which receive much more attention from sanitary experts. He advised that pauper drunkards be subjected to discipline, and employed in public work until cured.

THIRD DAY. — THURSDAY.

Resolutions relative to Alcoholism, and River Pollution were offered, and referred to the Executive Committee.

VACCINE AND VACCINATION.

Dr. R. Walsh, of Washington, D. C., read a paper upon this subject, the conclusions of which were as follows:

"The selection of lymph and the operation of vaccination has not received from the profession at large the thought deserved. During scares, vaccinations are hastily performed, and often there is no after inspection. The lymph used may be feeble or the operation badly done.

"What are the remedies? An honest observation of responsibility upon the part of the propagator of vaccine and the physician who should use it.

"The physician should see that each infant brought under his care is successfully vaccinated during the first year of its life, and at least again at sixteen. The ideal protection can be secured by vaccinating to the point of saturation — I mean to vaccinate at six months of age, or earlier, and then each succeeding six months until no result is obtained, making test revaccinations at intervals of a few years thereafter. The lymph should be used direct from the propagator, holding him responsible, not after it has passed through the hands of second and third parties and all responsibility lost.

"The accumulation of unvaccinated material, and consequently the increased danger of outbreaks of small-pox, is caused by the general practitioner neglecting to perform his duty at the proper time."

THE PREVENTION OF THE SPREAD OF YELLOW FEVER.

Dr. F. Formento, of New Orleans, Chairman of the International Committee on the Prevention of the Spread of Yellow Fever; read a portion of the report of that committee, dealing chiefly with the history of the prevalence of yellow fever in the United States, and showing that efficient systems of quarantine in recent years had practically excluded the disease from New Orleans and other southern ports.

THE DISPOSAL OF GARBAGE AND REFUSE.

The committee on this subject reported, through its chairman, **Rodolph Hering**, C. E., who had recently returned from Europe, where he found that incineration was almost the only method in use. There are great differences in the character and composition of garbages in the two countries, and methods efficient in one place may not be practicable in another. Disinfection of garbage is impracticable, and all things considered, cremation appeared to be the best method.

Dr. Durgin, Health Commissioner of Boston, presented a new and ingenious device for use in families, for reducing the daily kitchen waste, by means of heat in connection with the cooking-stove or range. The process consisted of expelling the moisture by heat and burning the residuum in the kitchen fire. Education of the people to use such a method would result in a great saving in the expense of garbage collection and disposal in cities.

Col. W. F. Morse, of New York, described the collection and disposal of the refuse and garbage of large cities, with special reference to that of New York City.

CAR SANITATION.

Dr. G. P. Conn, of Concord, N. H., Chairman of Committee on Car Sanitation, presented the report upon that subject. The principal points considered were the construction, heating, lighting, ventilation, and methods of cleaning railway cars, special emphasis being laid upon the importance of thorough cleansing. The difficulty of devising any system of ventilation which is applicable, both to cars in motion and standing still was recognized. Systematic instruction of train employés in the sanitary management of railway cars was advised, and it was suggested that this duty should be added to those of the railway surgeons.

AFTERNOON SESSION.

An unusual number of papers were disposed of at the afternoon session. First upon the list were eight papers upon "School Hygiene." These were followed by as many more upon miscellaneous sanitary questions.

Dr. L. Laberge, Medical Officer of Health of Montreal, described the progress of municipal health administration in the city from its earliest history to the present, and showed that its death-rate had diminished from about 37 per 1,000 annually in 1872, to 24 per 1,000 in 1892.

Mr. J. E. Dore, C. E., of Montreal, presented the subject of the mechanical ventilation of school-houses. In conclusion, he stated that the mode of ventilation in buildings devoted to educational purposes, is a mechanical system which shall cause a current of from 400 to 500 cubic feet per pupil to circulate from bottom to the top, the fresh air having been heated before its introduction to about five degrees below the temperature to be maintained in the room. The heating apparatus placed in the rooms to compensate the loss of heat through the walls should also be planned on this basis.

EVENING.

In the evening, the members of the Association attended a reception, and conversazione at the McDonald Engineering Buildings of McGill University. The company were entertained with music and a series of interesting experiments illustrating the strength of materials used in bridge and house construction.

FOURTH DAY.— FRIDAY.

A committee of three was appointed to investigate the influence of intoxicating liquors upon public health, to report at the next Convention.

The following were elected as officers for the ensuing year: — President, Dr. William Bailey, Louisville, Ky. First Vice-President, Dr. G. P. Conn, Concord, N. H. Second Vice President, Dr. G. Mendizabal, Orizaba, Mexico. Secretary, Dr. I. A. Watson, Concord, N. H. Treasurer, Dr. H. D. Holton, Brattleboro, Vt. Executive Committee, Dr. H. D. Bahnson, No. Carolina; Dr. P. H. Bryce, Ontario; Dr. F. DeVaux, No. Dakota; Dr. Jas. T. Reeve, Wisconsin; Dr. E. Liceaga, Mexico; Dr. P. Thompson, Kentucky.

The **Secretary** presented the question of publishing the transactions of the Association quarterly instead of annually, and the subject was referred to the Executive Committee.

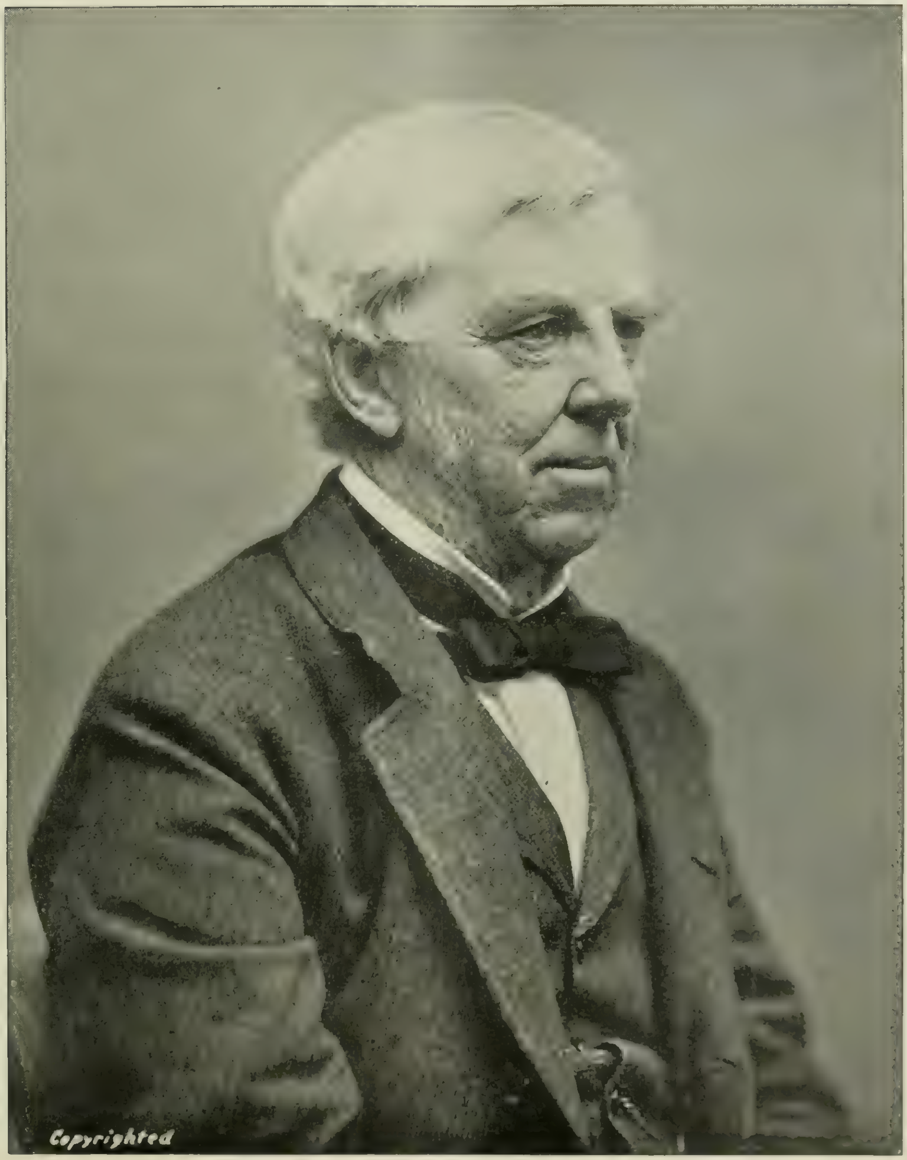
Several papers which were announced for Friday evening were read by title only.

Dr. M. T. Brennan of Laval University, presented a "Plea for Aseptic Vaccination."

The Committee on Nomenclature and Vital Statistics, reported in favor of submitting the question of a revision of the nomenclature in use in America to the principal medical societies, medical colleges and Boards of Health for consideration: they also recommended the use of the geometric rate of increase for estimating the populations of cities, and the adoption of a standard of age-distribution.

In the afternoon, nearly all members present went on board the steamer *Canada*, and proceeded down the river to Quebec and the quarantine station at Grosse Isle, where they arrived on Saturday morning. After a hurried visit at the quaint old city of Quebec, they returned to Montreal on Sunday morning, bearing uniform testimony to the hospitality of their Canadian hosts.

BOSTON MEDICAL AND SURGICAL JOURNAL.
Vol. CXXXI, No. 15.



Oliver Wendell Holmes

Æt. 76.

BORN, AUG. 29, 1809 — DIED, OCT. 7, 1894.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, OCTOBER 11, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 Washington Street, Boston.

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

OLIVER WENDELL HOLMES.

Since its last issue the Journal has lost its oldest and one of its best friends. Oliver Wendell Holmes died at noon on Sunday, October 7th. In common with all his fellow Bostonians, with so many of his fellow countrymen, with so many others still farther away but having the tie of a common language and a kindred human nature, we stop to record our sense of loss — not to mourn, for his was a well-rounded and well-filled life; his years were ripe, his personal sorrows were few, and the pleasures he had given others were many. He was born in Cambridge, August 29, 1809, and was at the time of his death in his eighty-sixth year. Up to last spring, when he suffered from an illness attributed to influenza, his health, saving occasional attacks of asthma by which he had through many years been troubled, had been good, and he retained an unusual physical vigor and sprightly interest in men and things, for his years. He grew old so quietly, so sensibly, so judiciously, so gracefully, that it was difficult for those in occasional contact with him to realize that he was a very old man.

The day of his birth was Commencement Day at Cambridge. He was the third of five children. His father was Rev. Abiel Holmes, a clergyman of a somewhat liberal creed for a Calvinist, settled for many years, from 1792 to 1831, as pastor of the First Parish Church at Cambridge. His paternal grandfather, David Holmes, was a physician who served as a surgeon in the French War and again in the Revolution. On his mother's side he was of Dutch descent. His mother's name was Wendell. Her grandfather, Jacob Wendell, came to Boston from Albany, early in the eighteenth century, and married the daughter of Dr. James Oliver: so that we find a medical ancestor also on the maternal side. A daughter of Jacob Wendell married William Phillips, whose son was Wendell Phillips, and the common Dutch ancestry is alluded to in the lines:

> "Fair Cousin Wendell P.,
> Our ancestors were dwellers beside the Zuyder Zee;
> Both Grotius and Erasmus were countrymen of we,
> And Vondel was our namesake, though he spelt it with a V."

He went to school in Cambrideport for five years, then to Phillips Academy, Andover, in 1824 for one year, and entered Harvard College in 1825. He graduated in 1829. In 1830 he entered the Harvard Law School and studied law for one year under Judge Story and Professor Ashmun. At this time he got his first "attack of author's lead-poisoning," the symptoms of which were exhibited by contributions to the *Collegian*, a clever college magazine.

In the autumn of 1830 he began the study of medicine in Boston at the Harvard Medical School, under Drs. Channing, Ware, Jackson and others. In April, 1833, he went to Europe, and continued his medical studies there until October, 1835. He spent most of the time in Paris at the École de Médecine, and under Louis at La Pitié. He also travelled. In 1835 he returned home, and took his degree of M.D. in 1836 from the Harvard Medical School. In August of the same year he read his poem, "Poetry, a Metrical Essay," before the Phi Beta Kappa Society. In 1836–7 he won three of the four Boylston Prizes offered for medical dissertations, by papers on "Indigenous Intermittent Fever in New England," "Neuralgia," "Direct Exploration." The first of these essays is still a medical classic.

In 1838 he was appointed Professor of Anatomy and Physiology in Dartmouth College at Hanover, N. H. He held this position for two years. June 16, 1840, he married Amelia Lee Jackson, daughter of Hon. Charles Jackson who was for eleven years a judge of the Massachusetts Supreme Court. Miss Jackson was also the niece of Dr. James Jackson, one of the most eminent medical practitioners of his time, and for many years a Professor in the Harvard Medical School. Three children were born from this marriage, two sons and a daughter. Of these, the elder son, Oliver Wendell Holmes, now a justice of the Massachusetts Supreme Court, alone survives. There is also a grandson, Edward Jackson Holmes, the son of Dr. Holmes's younger son. After his marriage, Dr. Holmes lived for twenty years at No. 8 Montgomery Place, now Bosworth Street. From there he moved to Charles Street, and subsequently to the house on Beacon Street in which he died.

In 1847 Dr. Holmes was appointed Parkman Professor of Anatomy and Physiology in the Harvard Medical School. In 1871 the title was changed to Parkman Professor of Anatomy, and physiology was made a separate department. He held this professorship, teaching and lecturing on anatomy, for a period of thirty-five years. In addition he gave some lectures and instruction in physiology and microscopy. Hence his often-quoted remark that he occupied "not a chair but a whole settee" in the Medical School. Dr. Holmes was not a great anatomist, he would hardly have claimed to be such himself; but he was a very careful, conscientious, punctual and painstaking teacher — qualities which are not always found accompanying the other characteristics of such a temperament as his. In addition, he was a delightful lecturer; always concise and clear, and sometimes witty even in discussing a subject ordinarily considered dry. It is fair to say that Dr. Holmes was probably the best lecturer on anatomy of his time in this country. By his manner, his method and his style, he compelled the attention of students who might otherwise, though present in the body, have been absent in spirit.

He was Dean of the Harvard Medical School from 1847 to 1853; University Lecturer in 1863–64; Overseer of Harvard College from 1876 to 1882. In 1882 he was appointed Professor of Anatomy, Emeritus.

Dr. Holmes joined the Massachusetts Medical Society in 1836; in 1852 he was Anniversary Chairman at the annual meeting of the Society, held at Pittsfield, where he then had his summer home; in 1860 he was the orator at the annual meeting, and then delivered his well-known essay, "Currents and Counter-Currents in Medical Science"; at the Centennial Anniversary Dinner of the Society in June, 1881, he delivered a poem, some passages of which still dwell in the memories of those present.

In 1879 the publishers of the *Atlantic Monthly* gave Dr. Holmes a dinner in honor of his seventieth birthday; in April, 1883, a complimentary dinner was given to him at Delmonico's by the medical profession of New York City. In 1889 Dr. Holmes gave his medical books to the Boston Medical Library Association, which held a reception in his honor.

For many years he was President of this Association, and always took much interest in its welfare — an interest shown in many serviceable ways.

His love of books, as books, was great. From his father he inherited the tastes of the antiquary. He knew the literature of medicine and of his department as it is seldom known to-day.

Dr. Holmes received from Harvard College the degrees of A.B. in 1829, of A.M. (Hon.) in 1889, of M.D. in 1836, of LL.D. in 1880; in June 1886, he received the degree of LL.D. from Edinburgh, of Litt.D. from Cambridge, of D.C.L. from Oxford.

In 1857, in response to an appeal from his friend James Russell Lowell who had assumed the editorship of the *Atlantic Monthly*, Dr. Holmes began to contribute to that periodical the chapters of "The Autocrat of the Breakfast Table." This was followed by "The Professor at the Breakfast Table," "The Poet at the Breakfast Table," and "Elsie Venner" ("a medicated novel"). It is not our province to discuss here his purely literary work. We must, however, note that just as the "Autocrat" contributed more than any previous composition to establish his position as a man of letters, so from this period his time and thoughts were turned more and more to literature; he became gradually more a man of letters and less a man of science. But all through his career, whether as a man of science or as a man of letters, the action and reaction of one set of gifts and one kind of training upon other gifts and another training — to the great mutual advantage, adornment, and development of each — is clearly visible; and nowhere is this more evident than in those very pages of the "Autocrat" and the "Professor." Then, if we turn to addresses and poems delivered before medical bodies or on medical subjects, the converse of the statement is again instantly recognized. The style was always worthy of the statement, and the statement rarely failed to merit the style. His essays on "Puerperal Fever" and on "Intermittent Fever in New England" may and should still be read by all who are interested in those subjects, as models of literary statement and of scientific reasoning.

The portrait of Dr. Holmes which we publish this week is at once an excellent likeness and a very pleasing picture of him in his later years — for us by far the most so of any which we know. The photograph was taken by the Boston sculptor, Bartlett, with a view to making a bust. The design was given up, as the necessary sittings were irksome to the subject, and we are indebted to Mr. Bartlett and Dr. J. R. Chadwick for the right to the picture. It was not easy for the painter's brush or the sculptor's chisel to do justice to Dr. Holmes's mobile features. Our portrait and that by Spy (although a caricature) published in *Vanity Fair*, London, June 19, 1886, are those by which we shall like to remember the "Professor" and the "Autocrat." The portrait by Alexander at the Harvard Medical School, that by Billings belonging to the Boston Medical Library Association, and that by Mrs. Whitman presented by Dr. Weir Mitchell to the College of Physicians of Philadelphia, have naturally a more academic character.

We also print to-day an unpublished poem by Dr. Holmes. Some passages have been omitted as being more suited to the familiar professional audience to which it was originally addressed. Other passages will be accepted as worthy of his best and most characteristic moments of earnest playfulness.

We also publish a bibliographical *résumé* of all his writings, both in prose and verse, upon medical and kindred subjects. There may be a few sins of omission, but it is thought to be nearly complete and accurate.

Dr. Holmes was, whilst his vigor lasted, always ready to respond with his pen to appeals for obituary notices of deceased friends and professional brothers of less fame than himself. These notices were always kindly, generous and graceful, as well as just and discriminating. He has left behind him no enemies and hosts of warm admirers who during his life guarded not that "ungenerous silence which leaves all the fair words of honestly-earned praise to the writer of obituary notices and the marble worker." He himself needs no obituary. But we shall long continue to revive our recollections of those former days when he was with us.

AN UNPUBLISHED POEM.[1]

BY OLIVER WENDELL HOLMES, M.D.

This evening hour, which grateful memory spares
From evening toil and unrequited cares;
These curling lips, these joy-revealing eyes,
These mirthful tones, re-echoing as they rise;
These friendly pledges on this festive shrine,
The glistening goblet and the flowing wine;
This genial influence which the coldest heart
Warms to receive and opens to impart: —
Mock the poor Art, who does her subjects wrong,
And steals from Pleasure all she wastes in song.
Yet since you ask this feeble hand to strew
Wreaths on the flowers and diamonds on the snow:
Take all it bears, and, if the gift offend,
Condemn the Poet, — spare! oh, spare! the friend!

Yes, while I speak some magic wand appears,
Shapes the long past (Oh, say not happier) years.
Ye lawless fancies, yet untaught to know
The charms of reason, or the scourge of woe;
Ye boyish dreams, now melting into air;
Ye virgin forms, alas, no longer fair;
Ye scattered friends, with many a tear resigned,
Once all our own, now mingled with mankind,
Since, save in memory, ye appear no more
In the bright Present, let the Past live o'er.
Still in the heart some lingering spark remains —
You cannot chase it from the shrinking veins.
Grief comes too early, Pleasure ne'er too late.
Snatch the fair blossom whatsoe'er its date.
If youth still charm thee, mirth is justly thine;
If age has chilled thee, — lo! the generous wine!

Oh, thoughtless revellers, when you set my task
How little dreamed you of the toil you asked —
How shall I please you? I, a grave young man
Whose fate is drudgery on "the useful plan."
How can I coax you, smooth you, comb you down,
And cheat your frontals of that awful frown?
Portentous scowl! which marks in every age
The blistering, clystering, tooth-extracting sage.
A verse too polished will not stick at all:
The worst back-scratcher is a billiard ball.
A rhyme too rugged would not hit the point,
Its loose legs wriggling in and out of joint.
Shall I be serious, touching, lachrymose,
Mix tears with wine and give you all a dose?
But well-filled stomachs have not room for grief,
For sips and sighs — for porter and roast-beef.
Shall I be learned, and with punch and claw
Dig stumps of Greek from every Ancient's jaw?
But who quotes Cuvier when he feasts on snipe,
Or reads Gastritis when his wife cooks tripe?
Not all the wisdom of recorded time
Can change one tidbit to concocted chyme.
Not all the schools from Berkshire to the Nile
Can melt one sausage into milky chyle.
Nor all the Galens since Deucalion's flood
Change lifeless pudding into living blood.

. . . .

Our noble Art, which countless shoals invade,
Some as a science, many as a trade!
In every column quackery has its line;
From every corner stares the doctor's sign;
From every shore the straining vessel tugs
Ill-scented balsams, stomach-turning drugs;
The keels of commerce clear the farthest surge
Lest some old beldam want her morning purge.
The seaman wanders on his venturous route
To turn a baby's stomach inside out.
Rich were the Queen of yon hepatic isle
With half her subjects squander on their bile;
Rich were Van Buren could he pay his bills
With half his people waste on "Brandreth's Pills,"—
Or with their products fill his farmers' carts
With tare and tred for reproductive parts.

. . . .

Heaven surely ordered, on Creation's morn,
This mighty law — that children must be born.
Hence came the science thou dost show so well
With white forefinger, Madame Lachapelle!
Hence came the forceps, hence the screw to pinch
The soul's own viscus down to half an inch.
Hence came the weapons which the embryos bore
Left in the lurch, their brains escaped before.
(A trivial change — since so oft we find
That babes grown up have left their brains behind).
Hence came the fillet, whence the infant wretch
Mistakes the midwife for her friend Jack Ketch.
Hence came the lever, which the toothless fry
Take for a crowbar, when the monsters pry.
Hence the scooped pinchers with the fangs between
Skull-crushing Davis — thy divine machine.
Hence all the "claptraps" potent to extract
The hero, struggling in his closing act.

So the stout fetus, kicking and alive,
Leaps from the fundus for his final dive:
Tired of the prison where his legs were curled,
He pants like Rasselas, for a wider world.
No more to him their wonted joys afford
The fringed placenta and the knotted cord;
No longer liberal of his filial thanks,
He drums his minuets on his mother's flanks.
But nobly daring seeks the air to find
Thro' paths untrodden, spite of waves or wind.
Hush: decent Muse, and leave such things as these
To modest Maygrier and concise Dewees.

. . . .

Thus with the entrance of the first-born man
The reign of science o'er the earth began;
Nurse of his weakness, soother of his woes,
She waits and watches till his sorrows close.
Nor yet she leaves him when the undying mind
Flits from his clay and leaves the frame behind.

If thou shouldst wonder that mankind must die
Ask the Curator of our Museum, Why?
Were man immortal, who had ever seen
The stomach, colon, kidneys, pancreas, spleen?
Each pickled viscus, every varnished bone,
Seducing schirrus and attractive stone,
Lost to the world, had never come to grace
Our well-filled phials in their padlocked case.
Unknown to fame had Morgagni sighed,
And Louis floated down oblivion's tide,
On Brunner's glands no cheering ray had shone,
And Peyer claimed no patches save his own.
Science, untaught her scalpel to employ,
Had seen no ileum since the days of Troy;
And man the ruler of the storms and tides,
Had groped in ignorance of his own insides.
Thus the same art that caught our earliest breath
Lives with our life and lasts beyond our death.
Man, ever curious, still would seek to save
Some wreck of knowledge from the waiting grave.
Yet, keen-eyed searcher into Nature's laws
Slight not the suffering while thou reck's't the cause.
How poor the solace, when thy patients die
To tell the mourners ALL the reasons why.
Love linked with knowledge crowns thy angel art,
Gold buys thy science; — Heaven rewards thy heart.

Between two breaths, what words of anguish lie;
The first short gasp, the last and long-drawn sigh.
Thou who hast aided, with coercive thumbs.
The red-legged infant, kicking as it comes;
Thou who hast tracked each doubtful lesion home
With probe and scissors, knife and enterotome;

---

[1] These verses, from which some passages have been omitted, were read at a medical supper party about forty-eight years ago.

Short is the opening; short the closing scene;
But a long drama fills the stage between.
Nor deem it strange — since every reason flings
Its sun or cloud on life's unguarded springs;
Since song or science, love of fame or truth,
All feed like vampires on the brow of youth;
Since the red goblet shakes the hand that grasps,
And hot-cheeked beauty wastes the form she clasps —
One-half mankind should spend their time to make
The pills and draughts the other half must take.
Oh! fertile source of never-failing wealth,
Mysterious Faith! thou alchemist of health!
But for thy wand, how vainly should we strive
To cure the world and keep ourselves alive!
Not all the fruit the yellow harvest yields,
When the curved sickle sweeps the rustling fields;
Not all the stores the deep-sunk vessel brings,
When India's breezes swell her perfumed wings;
Not all the gems whose wild Auroras shine
Thro' the black darkness of Golconda's mine,
Can match the profits thou dost still dispense
To thy best favorites, — Ease and Impudence;
Who find Golconda in a case of gout,
Or rich Potosi in a baby's clout.

. . . .

Small is the *learning*, which the patients ask,
When the grave Doctor ventures on his task.
To greet the Quack admiring hundreds come,
Whose wisdom centres in his fife and drum.
Why shouldst *thou study*, if thou canst obtain
A wig, a gig, an eye-glass or a cane?
Greenest of greenhorns; know that drugs like these
Are the best weapons to subdue disease.
Shouldst thou not flourish by enacting lies,
Step into print, good friend, and advertise;
And in the "Post," the "Herald," or the "Sun"
Thus let thine honest manifestoes run:
That great physician, learned Dr. C.,
F.R.S., Staff-Surgeon and M.D.,
Lately from London; now at number four
Left side of North St. (Don't mistake the door)
May be consulted for life's various ills:
Where's also sold the patent "Pickwick Pills."
What grieves the Doctor is, that all mankind
To their own good should be so shocking blind.
He could not stand it, but relief imparts
The grateful feeling of a thousand hearts.
His fee is nothing; 'tis his conscious skill,
Backed by the virtues of the "Pickwick Pill,"
That prompts the Doctor to dispense his cure
To all mankind and also to the poor.
What is dyspepsia? When the humors vile
The cardiac sphincter closes on the bile.
What cures dyspepsia? Why the doctor's skill
(Consult by letter and enclose a bill).

. . . .

Of testimonies which have come in heaps
But two small cartloads now the doctor keeps.
They were too numerous for the public eyes;
Hence the small number which he now supplies.
John Smith, of Boston, aged thirty-five,
Is much surprised to find himself alive,
Which justly owing, as he thinks must be,
Half to his Maker; — half to Dr. C.,
Had a stuffed feeling; used to wake in starts;
Had wind and rumbling in his inward parts.
Had swelled stomach; used to vomit some;
Was often squeamish; thought his brains were numb;
Had fell away; could not digest his food;
Had tried all physic, nothing did him good.
In short, was dying with numerous ills,
Cured by three doses of the "Pickwick Pills."

The doctor's skill, the sluggard clergy owns,
As in the note from Reverend Judas Jones.
Dear Sir: The blessing of the Lord attend
You and your ointment called "the loafer's friend."
My worthy wife, the partner of my toils,
Like Job of old, has suffered from the "boils";
Some on her fingers, wherewithal she knits,
Some on her person, whereupon she sits,
Which quite unfit her when her ail returns
To do her duties by her small concerns.
Since times are hard and earthly comforts dear,
And gospel harvests come but once a year,
With my good deacon I resolved to halve
One precious box of your unrivalled salve.
With Heaven's kind blessing and one hearty rub
We chased away this leprous Beelzebub.
Enough was left to cure our warts and styes,
And six great pimples on my housemaid's thighs.
Please send three boxes, by the earliest hand,
To Judas Jones, your servant at command.
P. S. Your pills have cured my baby's fits;
I'll write particulars if the Lord permits.

The following letter sent to Dr. C.,
Comes from Barrabas Waterpot, M.D.
Dear Sir: The duties which I owe mankind
Have made it proper that I speak my mind;
And while my breast an honest conscience fills,
I can but praise the patent "Pickwick Pills."
I have no interest in the pills at stake,
And never sell them, and but rarely take.
Fit for the welfare of a suffering race,
Their many virtues I now feebly trace:
When taken fasting they the strength maintain;
When on *full stomach* they deplete the brain.
One pill relieves the most drowning thirst;
Two keep one sober, tho' he drink to burst;
One pill a week cures phthisis and the gout,
One-half a pill will keep the measles out;
Rubbed on the fingers they destroy the itch,
Worn next the skin, — lumbago and the stitch;
Tho' like a corkscrew they the bowels search,
A curious fact, — *they never work in church;*
Small children take them with advantage great,
As also ladies in a certain state.
In short, this medicine every want fulfils;
I give no physic but the "Pickwick Pills."
Please print this letter which of use may be,
(Signed) Barrabas Waterpot, M.D.

Here's a small postscript Doctor C. left out
(Of small importance to the public, no doubt).
The pills sell briskly — twenty gross or more —
Send a fresh parcel to the grocer's store;
Put in more *jalap;* never mind expense,
Folks must be *griped* or *grudge the fifty cents.*
Put up three sizes; one three times as small,
For little brats; the big ones *kill* them all.
I want my pay, you poison-pounding knave,
Send me good bills, — how like the d—l you shave.

All this well printed and with bigger type
Words like Dyspepsia, Liver, Humor, Gripe —
Two solid columns in the "Times" would fill,
And make thy fortune by the "Pickwick Pill."
But thou, poor dreamer, who hast rashly thought
To live by knowledge which thy bloom has bought,
Thou who hast waited with a martyr's smile,
Hope gently whispering — "Yet a while" —
Too proud to stoop thy noble aim,
Too poor to pay the price of fame;
Thou all unfriended, while a thousand fools
Vaunt their raw cousins reeking from the schools;
Go, scorn the art that every boon denies
Till age sits glassy in thy sunken eyes;
Go, scorn the treasury which withholds its store
Till hope grows cold, and blessings bless no more.

Peace to our banquet, let us not prolong
Its dearest moments with my idle song.
This measured tread of evermarching rhyme,
Like clock-work, pleases only for a time,

Too long repeated, makes our heart so sick
We cut the weights to stop its tedious click.
Let sweeter strains our opening hearts inspire,
The listening echoes tremble round the lyre.
Dance! Bacchus! Hours of labor come again
To lock the rivets of our loosened chain.
Shine, star of evening, with thy *steadiest* ray
To guide us homeward on our *devious* way.

BIBLIOGRAPHY OF DR. HOLMES'S WRITINGS ON MEDICAL AND SCIENTIFIC SUBJECTS.

Boston Medical and Surgical Journal.

An Introductory Lecture, delivered at the Massachusetts Medical College, November 3, 1847. Vol. xxxviii, 1847, p. 384.
Microscopic Preparations. Vol. xlviii, 1853, p. 337.
Lines written for the Eighth Anniversary of the American Medical Association. Vol. lii, 1853, p. 305.
The Dental Cosmos (Review of). Vol. viii, n. s., p. 99.
Valedictory Address to the Medical Graduates of Harvard University, March 10, 1858. Vol. lviii, 1858, p. 149.
Rip Van Winkle, M.D.: An After-Dinner Prescription taken by the Massachusetts Medical Society at their meeting held May 25, 1870. Vol. lxxxii, 1870, p. 444.
Address at the Commencement Exercises of the Dental Department in Harvard University, February 14, 1872. Vol. lxxxvi, 1872, p. 331.
The Physiology of Versification. Vol. xcii, 1875, pp. 6–9.
Joseph Warren, M.D. A Poem. Vol. xcii, 1875, p. 703.
Letter on Dr. J. B. S. Jackson. Vol. xcv, 1876, pp. 393–395.
An Address delivered at the Annual Meeting of the Boston Microscopical Society. Vol. xcvi, 1877, p. 601.
Letter to Dr. George E. Ellis. Vol. civ, 1881, p. 593.
Poem written for the Centennial Anniversary Dinner of the Massachusetts Medical Society, June 8, 1881. Vol. civ, 1881, pp. 577–580.
Speech on occasion of the Presentation of a Portrait of Dr. J. B. S. Jackson to the Boston Medical Library Association. Vol. civ, 1881, pp. 560–561.
Sonnet written for the Annual Dinner of the Harvard Club, New York, February 21, 1882. Vol. cvi, 1882, p. 187.
Medical Highways and Byways; a Lecture delivered before the students of the Medical Department of Harvard University, May 10, 1882. Vol. cvi, 1882, p. 505.
Farewell Address to the Medical School of Harvard University, Tuesday, November 28, 1882. Vol. cvii, 1882, p. 529.
The New Century and the New Building of the Medical School of Harvard University. Vol. cix, 1883, p. 361.
Letter from Dr. Oliver Wendell Holmes to Dr. Fordyce Barker on his resignation of the office of President of the New York Academy of Medicine. Vol. cxii, 1885, p. 165.
Address before the Boston Medical Library Association at the formal presentation of his medical library, January 29, 1889. Vol. cxx, p. 129.

Single Publications and Pamphlets.

On Indigenous Intermittent Fever in New England; on Neuralgia; on Direct Exploration: Boylston Prize Dissertations for the years 1836 and 1837. Dedicated to Pierre Cha. Alex. Louis, Doctor of Medicine of the Faculties of Paris and St. Petersburg. Boston: Little & Brown. 1838.
Marshall Hall's Principles of the Theory and Practice of Medicine. First American Edition, revised and enlarged by Jacob Bigelow and O. W. Holmes. Boston. 1839.
Homœopathy and its Kindred Delusions. Two Lectures delivered before the Boston Society for the Diffusion of Useful Knowledge. Boston: William D. Ticknor. 1842.
The Position and Prospects of the Medical Student. An Address delivered before the Boylston Medical Society of Harvard University, January 12, 1844. Boston: John Putnam, Printer. 1844.
Report of the Committee on Medical Literature: Transactions of the American Medical Association. Vol i, 1847.
The Benefactors of the Medical School of Harvard University: with a biographical sketch of the late Dr. George Parkman. An introductory lecture delivered at the Massachusetts Medical College, November 7, 1850. Boston: Ticknor, Reed & Fields. 1850.
Currents and Counter Currents in Medical Science. An Address delivered before the Massachusetts Medical Society at the Annual Meeting, May 30, 1860. Boston: Ticknor & Fields. 1860.
Border Lines of Knowledge in Some Provinces of Medical Science. An Introductory Lecture delivered before the Medical Class of Harvard University, November 6, 1861. Boston: Ticknor & Fields. 1862.
Edward Stafford's Medical Directions written for Governor Winthrop in 1643, with Notes by O. W. Holmes. Boston. 1862.
Teachings from the Chair and at the Bedside. An Introductory Lecture delivered before the Medical Class of Harvard University, November 6, 1867. Boston: David Clapp & Son. 1867.
Talk Concerning the Human Body and its Management. Atlantic Almanac, 1868. (Dr. Holmes was joint editor of this annual with Donald G. Mitchell.)
The Medical Profession in Massachusetts: A Lecture read at the Lowell Institute, January 29, 1869. Publications of the Massachusetts Historical Society, 1869.
The Young Practitioner: A Valedictory Address delivered to the Graduating Class of the Bellevue Hospital College, March 2, 1871. New York Medical Journal, April, 1871.
The Medical School, The Chapter on, in the Harvard Book, Vol. i. Cambridge: Welch & Bigelow. 1875.
Visions; A Study of False Sight. By Edward Hammond Clarke, M.D. With an Introduction and Memorial Sketch by Oliver Wendell Holmes, M.D. Boston: Houghton, Osgood & Co. 1878.
Medical Libraries: An Address delivered at the Dedication of the Hall of the Boston Medical Library Association on December 3, 1878. Cambridge: The Riverside Press. 1881.
Medicine in Boston: Additional Memoranda in Memorial History of Boston. Vol. iv, Chap. x. Boston: James R. Osgood. 1881.

Atlantic Monthly.

Homœopathic Domestic Physician. Vol. i, 1857, p. 250.
Agassiz's Natural History. Vol. i, 1858, p. 320.
Brief Expositions of Rational Medicine. Vol. ii, 1858, p. 736.
Mothers and Infants, Nurses and Nursing. Vol. iii, 1858, p. 645.
The Steroscope and the Stereograph. Vol. iii, 1859, p. 738.
The Human Wheel, its Spokes and Felloes. Vol. xi, 1863, p. 567.
The Great Instrument. Vol. xii, 1863, p. 637.
Sex in Education (Dr. Clarke). Vol. xxxii, 1873, p. 737.
Prof. Jeffries Wyman. Vol. xxxiv, 1874, p. 611.
Crime and Automatism. Vol. xxxv, 1875, p. 466.
A Memorial Tribute (to Dr. Samuel G. Howe). Vol. xxxvii, 1876, p. 474.
Benjamin Pierce. Vol. xlvi, 1880, p. 824.

North American Review.

The Mechanism of Vital Actions. July, 1857.

New England Quarterly Journal of Medicine and Surgery, Boston.

Contagiousness of Puerperal Fever. Vol. i, 1843, p. 503.

Proceedings of the American Academy of Arts and Sciences.

On the Use of Direct Light in Microscopical Researches and a model by him of a newly-invented horizontal microscopical apparatus as figured. Vol. ii, pp. 326–332.
In Vol. iv, pp. 373–375, the term Reflex Vision is proposed as a phrase proper to certain original optical experiments, an account of which is given.

Besides the above articles the following poems were written for medical gatherings or deal with medical thoughts. They are now all included in the Riverside edition of his writings, revised and published in 1893:

The Morning Visit.
The Two Armies.
The Stethoscope Song: A Professional Ballad.
Extracts from a Medical Poem: The Stability of Science, A Portrait, A Sentiment.
A Sentiment.
A Poem for the Meeting of the National Sanitary Association.
Hymn read at the Dedication of the Oliver Wendell Holmes Hospital, Hudson, Wis., June 7, 1887.

The Boston Medical and Surgical Journal has published the following articles on Dr. Holmes from various sources:

Editorial remarks on Medical Highways and Byways (from Medical Times and Gazette, London). Vol. cvii, 1882, p. 331.
Editorial remarks in Boston Medical and Surgical Journal. Dr. Oliver Wendell Holmes's Resignation of the Parkman Professorship of Anatomy in Harvard University. Vol. cvii, 1882, p. 426.
Account of his Farewell Lecture to the Students of the Harvard Medical School, November 28, 1882. (Presentation of a Loving Cup by the students and his letter to the donors) Vol. cvii, 1882, p. 546.
A Reception to Drs. Holmes and Bigelow. Vol. cviii, 1883, p. 22.
A Toast from Dr. Fordyce Barker to Drs. Holmes and Bigelow. Vol. cviii, 1883, p. 45.
Appointment of Dr. Oliver Wendell Holmes Emeritus Professor of Anatomy in Harvard University. Vol. cviii, 1883, p. 46.
Resolutions of the Faculty of the Harvard University Medical School on the Resignations of Professors Holmes and Bigelow. Vol. cviii, 1883, p. 72.
Sweet Holmes: a stanza from London Punch on his resignation from Harvard University. Vol. cviii, 1886, p. 86.
The New York Dinner to Dr. Holmes. Vol cviii, 1883, p. 378 and 379.

Presentation of a Portrait of Professor Holmes to the Harvard Medical School. Vol. cix, 1883, p. 404.
New Facts about Dr. O. W. Holmes. Vol. cx, 1884, p. 334.
Dr. Holmes in England. (From British Medical Journal.) Vol. cxiv, 1886, p. 626.
Dr. Oliver Wendell Holmes (Phœbo ante alias dilectus). Vol. cxv, 1886, p. 217.
Announcement of the Oliver Wendell Holmes Hospital, Hudson, St. Croix County, Wisconsin, 1888. (St. Paul, 1888, 15 pp. 8°.)

METEOROLOGICAL RECORD.

For the week ending September 29d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:–

Date.	Barometer: Daily mean.	Thermometer: Daily mean.	Thermometer: Maximum.	Thermometer: Minimum.	Relative humidity: 8.00 A. M.	Relative humidity: 8.00 P. M.	Relative humidity: Daily mean.	Direction of wind: 8.00 A. M.	Direction of wind: 8.00 P. M.	Velocity of wind: 8.00 A. M.	Velocity of wind: 8.00 P. M.	We'th'r.*: 8.00 A. M.	We'th'r.*: 8.00 P. M.	Rainfall in inches.†
S ..23	29.95	72	82	63	92	64	78	S W.	S.W.	6	16	F.	C.	
M..24	30.00	64	70	59	60	54	57	W.	W.	14	10	C.	C.	
T ..25	30.28	57	64	50	64	55	60	W.	N.W.	14	11	C.	C.	
W..26	30.51	48	54	42	61	56	58	N.E.	S.E.	10	9	C.	O.	
T ..27	30.24	54	61	46	72	86	79	N.W.	N.E.	7	5	C.	C.	
F ..28	30.15	58	65	52	94	94	94	N.E.	N.E.	5	7	O.	C.	
S...29	30.08	60	67	52	82	91	86	N.W.	E.	2	4	O.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatning; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, September 29, 1894

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,956,000	703	327	20.82	11.76	12.32	1.40	5.04
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,139.457	346	135	15.95	12.47	6.09	1.45	4.93
Brooklyn	1,043,000	367	189	22.95	13.69	12.15	.54	5.40
St. Louis	540,800	—	—	—	—	—	—	—
Boston	501,107	231	114	31.39	11.61	11.61	3.44	12.90
Baltimore	500,000	—	—	—	—	—	—	—
Washington	285,000	126	50	28.44	7.11	10.27	4.53	7.90
Cincinnati	325,000	91	24	15.40	12.10	6.60	2.20	5.50
Cleveland	325,000	96	58	38.48	4.16	17.68	1.04	—
Pittsburg	272,000	94	40	26.60	10.64	18.02	5.30	2.12
Milwaukee	265,000	—	—	—	—	—	—	—
Nashville	87,754	7	6	14.28	71.40	—	—	14.28
Charleston	65,165	27	12	14.80	7.40	14.80	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	100,410	34	14	26.46	2.94	17.64	2.94	—
Fall River	92,233	33	16	42 42	6.06	42.42	—	—
Lowell	90,613	36	16	33.33	8.34	26.02	5.56	—
Cambridge	79,607	32	13	15.65	6.26	12.52	—	3.13
Lynn	65,123	18	8	16.66	5.55	11.11	—	5.55
Springfield	50,184	17	7	29.40	5.88	—	5.88	—
Lawrence	49,900	—	—	—	—	—	—	—
New Bedford	47,741	21	10	28.56	4.76	18.04	4.76	—
Holyoke	43,348	27	—	33.33	11.11	29.60	—	—
Brockton	33,939	9	1	11.11	11.11	11.11	—	—
Salem	33,155	11	4	18.18	—	18.18	—	—
Haverhill	32,925	7	3	57.12	—	28 56	14.28	14.28
Malden	30,209	7	5	42.88	—	—	14.28	14.28
Chelsea	29,806	15	3	6.66	40.00	—	—	6.66
Fitchburg	29,383	8	3	12.50	12.50	12.50	—	—
Newton	28,837	6	3	50.00	16.66	33.33	16.66	—
Gloucester	27,293	—	—	—	—	—	—	—
Taunton	26,955	8	3	12.50	25.00	—	—	12.50
Waltham	22,058	7	3	28.56	—	14.28	—	14.28
Quincy	19,642	—	—	—	—	—	—	—
Pittsfield	18,802	5	3	40.00	40.00	40.00	—	—
Everett	16,585	6	2	16.66	16.66	16.66	—	—
Northampton	16,331	2	1	—	—	—	—	—
Newburyport	14,073	7	1	—	—	—	—	—
Amesbury	10,920	2	0	—	—	—	—	—

Deaths reported 2,442: under five years of age 1,040; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 557, consumption 261, acute lung diseases 168, diarrheal diseases 294, diphtheria and croup 128, typhoid fever 47, whooping-cough 32, scarlet fever 24, cerebro-spinal meningitis 13, erysipelas 9, malarial fever 9, measles and small-pox 3 each.

From whooping-cough Brooklyn 10, Philadelphia, 8, Boston and Cleveland 4 each, New York 3, Washington 2, Pittsburg 1. From scarlet fever Cleveland 14, Boston 3, New York 2, Philadelphia, Cincinnati, Lowell, New Bedford and North Adams 1 each. From cerebro-spinal meningitis Washington 4, New York, Worcester and Malden 2 each, Philadelphia, Boston and Holyoke 1 each. From malarial fever Brooklyn 8, Philadelphia 1. From measles New York 2, Cleveland 1. From small-pox New York 2, Philadelphia 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442 for the week ending September 15th, the death-rate was 15.9. Deaths reported 3,180: acute diseases of the respiratory organs (London) 143, diarrhea 229, diphtheria 80, whooping-cough 46, fever 44, measles 32, scarlet fever 30, small-pox (London and Birmingham 3 each) 6.

The death-rates ranged from 12.1 in Nottingham to 24.5 in Sunderland; Birmingham 14.4, Bradford 16.5, Croydon 13.0, Hull 15.9, Leeds 14.9, Leicester 16.3, Liverpool 18.5, London 14.9, Manchester 19.1, Newcastle-on-Tyne 19.9, Norwich 14.3, Portsmouth 16.8, Salford 15.5, Swansea 18.0.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending September 22d, the death-rate was 15.7. Deaths reported 3,155; acute diseases of the respiratory organs (London) 172, diarrhea 163, diphtheria 76, whooping-cough 58, fever 44, measles 39, scarlet fever 32, small-pox (Birmingham 2, Wolverhampton 1) 3.

The death-rate ranged from 6.2 in Halifax to 23.5 in Liverpool; Birmingham 14.1, Bolton 14.5, Bradford 14.4, Gateshead 12.8, Leeds 18.1, Leicester 13.8, London 14 5, Manchester 19.2, Newcastle-on-Tyne 19.6, Nottingham 11.2, Portsmouth 18.0, Sheffield 16.8, Sunderland 15.6, Swansea 15.3.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 29, 1894, TO OCTOBER 5, 1894.

Leave of absence for two months and fifteen days, to take effect on being relieved from duty in the Department of Texas, is granted **Captain William B. Davis**, assistant surgeon.

Leave of absence for one month is granted **Captain Adrian S. Polhemus**, assistant surgeon, with permission to apply to the proper authority for an extension of fourteen days.

The extension of leave of absence on surgeon's certificate of disability granted **Lieut.-Col. Joseph R. Gibson**, deputy surgeon-general, is further extended six months on account of sickness.

SOCIETY NOTICE.

Massachusetts Medical Society, Suffolk District. – The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, October 17th, at 8 o'clock.

Papers: "The Treatment of the So-called Incurable Purulent Pleurisies by Professor Revelliod's Method," Dr. C. G. Cumston. "Acute Leukemia," Dr. R. C. Cabot. Dr. J. J. Thomas will open the discussion.

Business: The election of the chairman of the Section.

Henry Jackson, M.D., *Secretary.*

RECENT DEATHS.

Oliver Wendell Holmes, M.D., M.M.S.S., died in Boston, October 7, 1894, aged eighty-five years.

Albinus Otis Hamilton, M.D., M.M.S.S., died in Dorchester, Mass., October 4, 1894, aged sixty-two years.

Prof. Dr. Lemcke, Director of the Polyclinic for Diseases of the Nose and Throat at Rostock, died September 13th, aged forty-four years.

Hanbury Smith, M.D., of New York, died September 13th, aged eighty-four years. He was for some time superintendent of the Ohio State Lunatic Asylum.

BOOKS AND PAMPHLETS RECEIVED.

Tea and Its Effects. By James Wood, M.D. Reprint. 1894.

Color-Blindness in Asiatics. By F. B. Stephenson, Surgeon, U. S. N. Reprint. 1894.

A Study of Scarlet Fever at High Altitudes. By J. N. Hall, M.D., and Wm. P. Munn, M.D., Denver, Col. Reprint. 1894.

On Epilepsy in Early Life, with Especial Reference to the Colony System in the Care and Treatment of Epileptics. By William Philip Spratling, M.D., of New York City. Reprint. 1894.

Original Articles.

THE EDUCATIONAL ASPECT OF COLLEGE ATHLETICS.[1]

BY W. M. CONANT, M.D., BOSTON.

The chief consideration of any young man should be health. The first consideration of a parent for a young child is that it be healthy; and any education that is not healthy, or does not promote the health is not wise, no matter from what source it comes. The three things which lead up to health in a child are plenty of food, a sufficient amount of exercise, and some form of stimulation. It is a well-known fact among educators of children that much of the teaching of a child in the past has been wrong, and in many cases pernicious. There is a growing feeling among men interested in this subject that many of the cases of chorea seen in young children are often due to improper methods of instruction in the schools. When it is remembered that the muscles are one-half the total weight of the body, it will be seen without any argument that good food is one of the main essentials of health; when it is further remembered that one-third of the nutrition of the system is spent in the repair of the muscles, it will become more evident that the muscles play a much more important part in the human economy than most men have been willing to grant.

At the present time there is a growing tendency among the educators of young children, to make use of what is known as the free-arm movement. This is now used in England, on the Continent, in France and Germany, and is beginning to get a recognized place in this country. This movement is based on the well-known fact that in early life certain motor areas of the brain have not been sufficiently developed to allow of their excessive use. It is a well-known fact that the more skilled movements of the arm and of the hands, do not come until the child is well along toward puberty or even later in some children. It is this fact that has made certain teachers object to many phases of the Kindergarten system, especially that part which has to do with minute manipulations of the fingers, either in weaving little mats or in modelling small objects in clay. Anything which requires over-nicety of the fingers is a strain on the physiological nature of the child. So, too, the old forearm method of writing, if carried to excess is unwise, because all the areas required for this style of writing are not thoroughly developed in a young child. It is for this reason, therefore, that it has been at last recognized that there is a certain distinct relation between the motions of the muscles and the capacity of the brain to furnish a sufficient amount of strength to move said muscles. It is for this reason that at the present time the gymnastic exercises in the schools on the Continent and in England, and in some parts of this country, have been thoroughly graduated, and it has been found that certain plays develop certain parts of a child, and that certain other plays are of distinct disadvantage to the same child. Therefore, there has been a distinct and careful scheduling of said plays; and it is possible at the present time to obtain charts giving certain forms of plays which are suitable for children of a certain age, and there is another set of plays which must be taken up only when the child is further advanced.

Many of us have been in the habit of looking upon athletics as a "fad"; and while we have been willing to admit that they may have been useful in a certain number of cases, we have been loth to believe that what are commonly called sports and games, have any decided educational advantages. If we grant, however, that in all education the first consideration is the health; if we grant that the health depends upon good food and upon a proper amount of exercise, together with some stimulant for the child to take such exercise, then it seems to me, we must approach the subject of college games in a more serious manner than has been our wont. It is possible that after a time we may be willing to believe that the college sports and games, when not carried to excess, become one of the very best methods of getting a proper amount of exercise needed for health. If it is true that a child needs a certain amount of daily exercise so that there shall be a proper use of the muscles, and so that the functions of nutrition shall be properly worked, how much more important is it that the man who is expected to spend a certain number of hours in hard, laborious brain work, should need or even demand a certain amount of daily exercise in order to keep the system in a healthy state. Otherwise there is great danger that the physical side of the system will suffer as the intellectual improves. No one, I think, will for a moment gainsay that a man or a youth with acute dyspepsia and a small, emaciated frame, is ever likely to give rise to any great thoughts. If these things are true of young children, that they need this careful and intellectual oversight that there shall not be any over-development of the physical and so tiring the brain of nervous force, how much more is it true of young men and youths at the average age of entering college, who are not possessed with the same effervescence of spirit that a child has after it is freed from school.

There is no question in the minds of both physician and of the educator of children that the old system, sometimes spoken of as the "sit-still system," has done a very great amount of harm to children while they are growing up. This is best seen by that nervous, restless, easily excited condition which a child gets into from the very fact that it has this repressed feeling. How much wiser is it to allow the child a certain amount of free-arm movement even in its plays and in its daily life, than to keep it cramped up within certain bounds. To one who has had experience in athletic training the set and daily practice of certain forms of athletics known as gymnastic training, have been extremely difficult to keep in force from day to day. Some form of stimulus, like the desire to emulate some other boy on a football team, or on a crew, or on a nine, has been needed. It is a well-known fact that a large proportion of the athletic work done in most of the gymnasiums, is done largely with the idea of getting well in trim either for some sport or to take part in some contest. If one goes so far as to believe that a man thinks with his muscles, he is forced to admit that an amount of muscular activity when not carried too far, means brain development. There are certain prominent teachers at the present time, who claim that with every act or thought there is a corresponding muscular action. Whether one believes this to the full extent or not, there can be no question that muscular action develops cerebration and that the man who is muscularly tired is usually mentally tired; and it is a curious phenomenon that a man may to all appearance be in a perfect condition physically, but the mental condition may be so far overworked that there is no response when muscular action is required. This intimate relation between the muscular system and the brain, and between the brain and the muscular system, has too often been overlooked, and we have been too ready to consider that a man who has apparently what is known as "brute strength," is therefore much more preferable than a man who has what is known as "nervous strength." The highest form of muscular development is that form in which the nervous strength predominates over the muscular and is practically the true physical strength of the youth. Let us examine this relation between the muscles and the brain a little more closely; and in doing so it is my purpose to make use of an article by Dr. Hartwell which was published in "Hare's System of Practical Therapeutics." While his exact words will not be quoted, his idea will be used.

---

[1] Read before the Boston Society for Medical Improvement, May 14, 1894.

The bones and the muscles constitute the working force of the body, and the obvious results of proper exercise are the growth of these two forces; but these forces are ruled by the nervous system. Foster in his "Text book of Physiology," claims that the whole of the rest of the body is used: "First, in the preparing of raw food and so bringing it to the nervous and muscular tissues, that these may build it up into their own substances with the least trouble; and, second, in receiving the waste matters which arise in the muscular and nervous tissues and preparing them for rapid and easy ejection from the body." The muscular system, therefore, has two servants: one that serves its food, the other that takes away the refuse; each helps the other as well as the muscles, and all are controlled by the nervous system. The movements of the muscles allow them to take up a proper amount of proteids, fats and carbon-hydrates, and while resting forms nitrogenous waste and gives off carbonic acid.

Next to movements due to muscular action, the most obvious results of exercise are increased circulation and ventilation of the blood, and are either direct or indirect; the most important direct being greater flow of the blood and absorption of oxygen and food materials. The most important indirect are improved nutrition, enlargement of the body, and improved functions. The result of direct and indirect effect of exercise upon the nervous system has been omitted in the above, because the most important, and will be spoken of a little later. The direct efforts of exercise upon the circulation and respiration have been spoken of by Foster as follows: "The capacity for arduous muscular labor is determined not by respiratory mechanism alone, but by both, and especially by working together in harmony and concert. The quickened ventilation would be idle unless it were accompanied by a quicker circulation, and a quicker circulation would similarly be of comparatively little use unless accompanied by increased ventilation; and, as a rule, it may perhaps be said that when two men differ in capacity for strenuous work, such as running a race, the difference though it is often spoken of as wind or power of breathing, is in reality not a difference in ventilative capacity, but a difference in the power of the heart to keep up and work in harmony with the increased respiratory movements."

After good food, nothing so promotes the normal growth and development of the body as well-regulated muscular activity. Thus far nothing has been said of the effect muscular exercise has on the central system. The nervous aspect has often been overlooked by writers on this subject. Maclaren defines exercise as "muscular movement," and declares its object to be "the destruction and renovation of tissue." This is the ordinary view taken by many text-books on physiology. It is therefore not strange that school-teachers and teachers in gymnasiums believe this to be true. It is not true, however, and it can be demonstrated that fencing, swiming, running, etc., are much more exercises of the central nervous system than of the muscular system. They all demand a certain amount of muscular power, but they also demand much more than muscular power. A muscle is not a simple organ, but is made up of two distinct, though united, mechanisms; the muscle proper, and the regulating mechanism, which consists of nerve-fibres and gray nerve-cells. Each has its own blood-vessels and lymph-capillaries. If in life the two become disjointed, or if either suffers from improper nourishment, lack of exercise or structual loss, the duality is thrown out of gear and its work is either upset or abolished, in much the same way as when an attempt is made to split a human being into a mental half and a muscular half, and endeavor to train each half to act as if whole.

Herbert Spencer's "Law of Evolution," as applied to the nervous system, is as follows: "A progressive integration both of structure and function, during which there is a passage from the uniform to the multiform, the simple to the complex, from the general to the special. During the evolution of the nervous system the fundamental portion is first developed. The nervous system of man is at first similar to that possessed by animals which possess a nervous system, or, at any rate, all those who are sufficiently elevated to possess a spinal cord; but as development proceeds, the nervous system of man becomes gradually differentiated from that of an ever-increasing number of the lower animals, while still maintaining a general likeness to the nervous system of the higher animals up to the time of birth. This, then, constitutes the fundamental portion of the nervous system of man; but after birth the accessory portion, which up to this time appears in a rudimentary condition, now undergoes progressive development. It will thus be seen that the fundamental port on is first developed, and that superaddition of the mental portion greatly increases the multiformity or compass and the specialty of the human nervous system, and that it is the latest product of its evolution." Ross says, regarding the difference between accessory and fundamental functions, as follows: "The movements of the hand afford the best example of the accessory functions of the spinal cord. These movements are peculiar to man, and by far the greater number of them are acquired after birth. It may, therefore, be expected that the development of the structure which represents these movements in the spinal cord will also take place after birth. The movements most characteristic of the upper extremity are supination and pronation of the forearm and special complicated movements of the hands and fingers. These cells appear at a late period of the development of the cord; hence, they form a specialty of structure which corresponds to some specialty of function. These cells remain small in the adult, and consequently may be expected to preside over the action of small muscles."

It is evident that the arms of a mechanic and those of a ten-year-old boy differ greatly in size and strength, but the difference which exists between them lies in the nervous force which represents the movements of which their respective muscles are capable, rather than in the muscles themselves. Not only are the motor nerves of the mechanic larger, but the cells in the motor areas of his brain and spinal cord are also more numerous and more widely connected with other cells. Exercise plays, if not the greater, a very considerable part in producing this result.

Sir James Crichton Browne says: "These facts, that cerebral centres never properly exercised do not develop, and when once developed they are not so liable to waste on the withdrawal of appropriate stimuli or when cut off from their natural activities, strongly inculcate the importance of educating every centre at its nascent period, and the danger of postponing education until the nascent period is over. A large district of the brain is made up of motor centres and is concerned with motor ideas. The growth of that district is evidently to some extent dependent upon muscular exercise, and if that is withheld at the growth period, the development of that district is arrested. The differences which we notice between man and man in deportment, gait and expression, are but the outward and visible signs of individual variations in the development of the motor centres of the brain; and the stammering, grimaces and antics, which are so common and annoying alike to those who suffer and those who witness them, are probably, in many instances, the effect of neglected education of some of these centres, and might have been abolished by timely drill and discipline."

All this points to the fact that muscular exercise demands more careful attention than it has yet received. Exercise has a twofold effect upon the muscles, first strengthening the health of the nervous muscular mechanism, and a special effect, namely, the beginning, transmission and regulation of stimuli. Exercise, therefore, has for its aims the promotion of health and the acquisition of correct habits of action. The first is hygienic; the second is educational. True education has, therefore, for its main object the proper development of the nervous system. The principles of all forms of physical training, however various, are based upon the power of the nervous system to receive impressions and to note them or their effects. It is high time that our colleges dealt with this matter as it deserves. It must no longer be left to the whim and judgment of persons not fitted to deal with such problems, but it must be handled with patience and by the use of intelligence, organization and money. At the present time it will not do for any college or university to look upon it as not worthy of very careful consideration. It is not necessary for the colleges to turn out specialists in any special sport; what is demanded is, that there shall be general bodily training which has for its principles a regular system for the attainment of results. Dr. Hartwell says: "Pastimes, out-of-door sports and systematic gymnastics are the forms of exercise which yield the best results in the physical training of school-children and college students. The plays of the kindergarten, the athletic sports to which British and American youths are so devoted, and the systematic gymastics of the Swedes and Germans, have all developed from one germ, from healthful play. The vital energy of this germ is found in the universal and uncontrollable impulse of all healthy children to play. The children of every generation are playing animals. That it is so, is a most fortunate thing for the race; were it not so, the victims of war, pestilence, of education and of business, would be vastly more numerous than they are."

In what follows I wish to show that the athletics in colleges must be divided into different grades, some of which are harmful to certain men, but are not harmful to the right men. And further, that a man should be required to pass through each grade before he is allowed to take part in the more severe contests. The athletic work of any college can be divided into the indoor or gymnastic training, and the outdoor sports, such as baseball, football, rowing, tennis, and track athletics, cricket, etc. Of this, let us first consider what can be done by gymnasium work. Any man who is acquainted with the workings of any large gymnasium must have seen a very considerable number of men who are using forms of apparatus which are totally unsuited to their needs, or else are using the proper apparatus improperly. This must necessarily be true where there are a large number of men at active work, and where the instructors are but few. To get the greatest good out of the gymnastic work it is important that every beginner after having been properly tested, should be thoroughly and accurately drilled in the form of gymnastic exercise that he is to be allowed to take. His muscular system must be tested often enough to give an idea as to whether the form of gymnastic exercise prescribed is having the desired effect or whether it is operating in an unwise direction. There can be no question that on the hygienic side there is much to criticise in most of the gymnasiums one sees at the different colleges. The foul air due to a large number of men, and the fact that the exercising clothes are usually kept in the buildings, are very unpleasant facts, and a source of dissatisfaction to any person who wishes to see the highest good obtained from this form of work. Then, too, the lack of proper and careful instruction which is found in most colleges must always be a drawback to most gymnasium training as seen in our American colleges. Some system like the Swedish or German, or some combination of the two, with the adaptation of the best parts of other systems, will furnish in the end the greatest amount of good to the masses of students.

Much of the gymnastic work which is now done indoors in many of our Eastern colleges could be just as well or even better done by having the simpler forms of apparatus placed outside until late in the fall, and then put out early in the spring, thus enabling men to get the benefit of pure air during their exercise, and at a time when the lungs and the circulatory system are most liable to take that which is bad as well as that which is good. Until some form of gymnastic work can be devised which in itself will be attractive or which will lead up to some form of other athletic training, it hardly seems possible that in our colleges, at least, we shall find the gymnasium a popular place, *per se*. I recognize that a large percentage of the men in many of the colleges do a considerable amount of athletic work in the gymnasium; but most of this work is of a special sort, and is intended by the men to get them in shape either for the crew, the nine, the football team or some other form of outdoor sport. One is struck after visiting Oxford and Cambridge to find how little attention has been given to this side of an athletic training, and how much attention has been given to the development of games and field sports. Neither at Oxford nor at Cambridge is there a building which in even a small New England college would be considered a respectable gymnasium; and it is a common thing to find that most special sports like cricket, lawn tennis, court tennis, rowing and other forms of sport, have special buildings, devoted to their own special sport. Whether this is wise is an open question. There have been a great many criticisms made upon this lack in the general gymnastic training of the British student, and it has been thought that too much time has been wasted on the sports, so called. It seems to me that it is a question open to discussion, and one which will bear a very considerable amount of argument on both sides. The whole thing must depend largely upon the line of physical training that one wishes to pursue. If one goes in simply for exercise without any other qualification, you will expect him to do certain things. If, however, in addition there is the attempt at regular and systematic development, not only of the body but of the mental faculties as well, one must have, in order to get the highest good from such training, a certain amount of stimulus in the work to be done. This fact must always be borne in mind in any form of college athletics; and it is for this reason, therefore, that any form of physical training which would be in itself compulsory would, to my mind, defeat in a large measure the end at which it is aimed. Men who are not interested in any given subject do not usually develop in that line; therefore, if we wish to make our gymnasium attractive, there must be some method, some system, and certain results shown, which prove beyond question that it possesses certain attributes which make it superior to any other form of athletic work.

Of the outdoor sports, tennis and cricket are of such a nature that there very seldom arises any serious disability. They are, therefore, sports that can be recommended; and, as a matter of fact, tennis especially is very largely played by men who take no other form of athletic exercise. A large part of the work done in tennis is done simply from the love of the game and by men who cannot play well enough to have any possible chance of being competitors in intercollegiate contests. It has, however, been found necessary to add even to this sport some form of stimulation which shall bring out the class of men worthy to uphold the reputation of the sport, and this is usually done by one or more tournaments and by grading the men according to their expertness at the game.

Track athletics, rowing, baseball and football are the most severe and arduous sports, and have the severe element, not only of competition among themselves, but with other universities. It is in this competition that both the danger and the great incentive to continue lies. In all these sports it is absolutely necessary that an examination of a man's physical condition should be made, and before he is allowed to take part; a certain per cent. should be required before a man can play on a Class or 'Varsity team. This is only one way of correcting a possible source of evil; and this is due partly to the fact that the passing a test is one that is easily acquired and may be no true indication of a man's condition, or of his ability to take part in prolonged physical work. Another fact is that in many cases the work on the team demands more physical effort than he can give and remain in good health, and therefore, some form of examination or some test must be applied to see whether he is competent to continue in that position. In these sports the results of careful work in the gymnasium begin to bear fruit. The man who enters the sport in the best condition, other things being equal, is the man who does the hardest work and is the most valuable man to the team.

Track Athletics. — This form of physical training demands the care and attention of a man thoroughly versed in the best methods of training his men; more probably depends upon the individual character of the trainer in this sport than in almost any other form of athletic work. It is largely a sport of individual development where each man comes under the eye of a skilled and careful trainer, who advises what is best for his interests, and corrects any tendency to error which he sees. It is, to my mind, one of the most satisfactory forms of sport in which a man can engage, because the time for training is comparatively short and the amount of physical effort is not long sustained, and the general condition of the work does not seriously hamper a man from attending to his regular studies.

Of the other three sports, namely, rowing, football and baseball, we have the hardest form of athletic exercise entered into by college men. From this fact alone a large number of men are necessarily excluded, and it is only a certain number of picked men from the whole mass of students that are able to take part in these contests. There is no question at the present time but that rowing develops a man in an all-round way better than either of the others. Football comes next and baseball last. In the training of a crew there is a great amount of severe muscular and mental strain. It therefore makes this form of exercise all the more dependent upon a careful selection of the men and strict attention during their training that no injury shall be done. The greatest fault of the American system in the training of our crews is that we have no opportunity for stimulating the men, during the long period of training, by contests with other crews. This form of exercise requires a greater regularity of life over a longer period than any other form of athletic work, and it is not therefore strange that of all athletic teams the crew should hold the place of honor. Certainly they richly deserve all the honor given them.

The football work comes at the very best time in the year. The men begin their work after a long vacation and at a time when the weather is constantly growing cooler. There is, however, a considerable risk of injury in the game, especially to the green men who have not been carefully trained in the sport either at some preparatory school or on some school team. The great competition for a place, with a large number of candidates trying, often gives rise to a severe mental strain. The game as at present played has much in its favor. No one can, I think, contend that it is not a rough game, but very few who know anything about the game believe it to be brutal. In this sport there is great need of constant and careful supervision over the players, and special attention must be given to their condition both mental and physical, because, oftentimes, a man in fair condition either mental or physical, may receive a severe injury. Much has been said about the severe injuries from which players suffer; it has been thought interesting, therefore, to insert the following table of injuries received by the Harvard men during the last four seasons. This includes all serious injuries, as far as known, to both the 'Varsity material and men playing on their class teams.

List of Football Injuries.

	1890	1891	1892	1893
Fracture of the nose	9	6	5	4
Dislocation of the shoulder	0	1	0	0
Dislocation of the elbow	0	2	0	1
Injury of the knee-joint with effusion . .	15	12	10	8
Injury of the knee-joint without effusion .	20	16	12	10
Sprains of the ankle	15	16	12	9
Fracture of the metacarpal	4	2	2	3
Fracture of the radius	0	0	0	1
Fracture of the tibia and fibula	0	1	0	0
Teno-synovitis	12	10	8	8
Sprains other than knee and ankle . . .	10	6	8	7
Scalp wounds	4	2	3	3
Injury to shoulder (Tackle's shoulder) . .	6	4	5	4
Severe contusions	6	7	5	5

There can be no question by any one who has carefully looked into the matter but that the class teams should pay much more attention to training in order to get the men into better physical condition to play so severe a game. Most of the injuries in the above list are injuries to men on the class teams. There have been very few, if any, severe injuries to the men on the 'Varsity team.

The game of baseball is one of the most popular of American sports. When seen as a college sport it has the disadvantage of having the severe work come at the time of extreme heat; moreover, this is the time of the annual examinations; and the combination of the games and of the examinations has a very marked effect on the condition of the men on the team. If men work until after midnight on their examinations, they are unable to get a sufficient amount of sleep for the next day's duties; and it is moreover true, that the lack of condition among ball men is not due so much to the game itself, or to the fact that the important games are played during the month of June, but rather to the combination of these two conditions with the annual examinations. In this sport there are a considerable number of injuries; not as many possibly as among football men; but when an injury does occur, it is apt to be of a more serious nature.

There is one thing, I think, which impresses itself upon the mind of any one interested in athletic work, and that is the importance of a man engaging in severe athletic training only a portion of the time. It is this fact which makes it seem unwise for any one man to remain in training the greater part of the year so that he may take an active interest in two great intercollegiate contests. This at once brings up the question as to the value of intercollegiate contests. Many men will admit that athletic contests between classes is a most excellent thing, but they would limit such contests and would not permit any form of intercollegiate contests. Two or three main points should not be lost sight of when this subject is under discussion. First, that intercollegiate contests are the means of education outside of the physical work done. Second, they are the great stimuli which bring about the highest form of athletic work, as shown in the special teams prepared for the contests; they also act in keeping up the athletic interest among the class teams and in athletics generally. Third, they accomplish the best results in our college sports. There can be no question but there are certain drawbacks, but these can all be kept in the background by proper legislation and by strict accountability on the part of the teams contesting.

Another question which is giving rise to a very considerable amount of discussion, is the question of paid coaches. If one believes that athletics are one of the means of educating a young man, there can be no reason given why the best means should not be employed to teach a given athletic subject. There is no reason why if the track athletic team has a paid coach for trainer, the crew, the baseball, the cricket or the football teams should not have the same; and it should make no difference whether the man who can give such instruction is a graduate or not. If he is competent to fill the position and his time is taken from other work, he should be paid, as is any other instructor in any other form of education. Until this fact, that the men are being educated, is made more prominent, there will always remain the feeling that a man who is proficient in baseball, in track athletics, in rowing or in football, must, if called upon, give up a certain amount of otherwise valuable time without any compensation. This has been done in the past greatly to the credit of many men, but the exactions of the details of the sports at the present time are such that very few men, if they have anything else to do, have the time to devote to athletics without a considerable loss to themselves. If no money was charged for admission to the sports, it might be necessary for men to give their time; but with a large income from the different sports, there seems to be no necessity for such a condition.

One great fact found when discussing athletic training is the belief that it is only sport for the young men thus engaged. That athletic training has any educational value many men are unwilling to believe. When the colleges fully recognize this educational aspect of the subject, we shall have the athletic work a part of the college instruction, and all the sports will be used to bring out what is best in a man; and thus there will be a unity of purpose which is now lacking. It is to be hoped that the day will come when the men in charge of our colleges will take that interest which will lead them to inform themselves upon the value of athletics and give it the consideration which the subject demands. Then we shall have the athletic teams under the charge of an appointed authority, and the money now collected by each team will be used as a common fund for the best interests of all the college sports. When this is done, many of the abuses which now exist, and which could be very easily removed, will pass away. It lies with the college faculties to stop much which has been charged against the fair name of athletic sports, and it is for their interest to see that on them must rest the responsibility, because it is not the athletic men who are guilty of excesses, but the followers who are ever ready to indulge in forbidden pleasures. One method of doing this is to restrict intercollegiate contests to the grounds of one or the other contestants.

One other factor must not be lost sight of in considering this question, and that is, the condition to which an athletic training brings a man after he has left his college career behind. I think it is not claiming too much to say that many a man feels that his success in after life is due in a great measure to the excellent condition of his mind and body brought about to a large extent by athletics which he followed when in college. Certainly it is an interesting study to look over prominent men in my own profession, and see how many of them were active and enthusiastic athletes when in college, and at the present time still retain a very strong love for athletic sports. Nor is it confined entirely to the medical profession; a large number of the prominent lawyers and clergymen of my acquaintance have been active and prominent athletes when in college. The athletic training which a man receives in his college course never entirely leaves him in after life; and although he may find his time somewhat occupied by important work, still he finds an opportunity for indulging in some form of athletic work which keeps him physically a healthy man, and mentally a bright one. How many are there of us who have indulged in athletic work that do not look back with pride to the time when we were taking an active part in athletic contests? and how many are there of us who would be willing to forego the memory of that time because of the possibility that we might have received some injury? Certainly the satisfaction to be derived from the contest, and the strength obtained from the training are out of proportion to the injury which may arise.

◆

POSITION IN THE TREATMENT OF ELBOW-JOINT FRACTURES: AN EXPERIMENTAL STUDY.[1]

BY H. L. SMITH, M.D.

THE series of experiments here reported was undertaken with the view of determining, if possible, at what degree of flexion of the forearm, in the case of fractures involving the elbow-joint, the fragments were held in the best position. Such an investigation would seem to be desirable if only from the fact that there is a wide difference in the practice of competent surgeons. While it appears from Robert's paper read before the American Surgical Association two years ago, that the majority of practitioners dress these injuries with the arm at right angles, there is a considerable proportion (15 out of 88) who prefer to fix the forearm in the extended position. Of 65 who used the right-angled position, 37 did so because they thought it insured better coaptation of the fragments; while of the 15 who advocated the extended position 11 gave the self-same reason, namely, that the fragments were by that means more easily reduced and more accurately retained. Evidently both cannot be right.

So far as the writer is aware, no actual experiments have been made hitherto to determine the true facts in the case. It is not claimed, of course, that the conditions of a recent fracture can be exactly reproduced in the experimental work on the cadaver. The latter has been done on adult arms; the majority of the former are in children. One attempt was made to cause a fracture in the manner in which it usually occurs as an accident, but the thickness of the bones made it well-nigh impossible, and the method to be described was used instead.

When the series was commenced the writer had no positive convictions as to the results he might expect to obtain; and, as a matter of fact, the conclusions reached, and the method of treatment which he has been led to adopt in all elbow-joint fractures were the outcome of these experiments solely.

The undesirable results in the case of elbow fractures are due usually to one of two things; (1) limitation of motion, (2) reversal of the normal humero-ulnar angle.

No doubt all would agree that the former of these factors is the one most to be avoided, but there are surgeons who consider the second alone of sufficient importance to be given as a reason for a special mode of treatment, namely, that by extension. Any method, therefore devised for the treatment of these troublesome injuries, must be one which shall obviate, so far as that be possible, both these unwelcome results.

METHODS.

The first experiments were made upon undissected arms. The desired fracture was produced by driving an osteotome through the condyle with a mallet, a vertical incision, about a centimetre in length, having first been made just above one or the other epicondyle. After the chisel had been driven as far as was deemed necessary, the fragment was separated by prying. The fragment was then carefully examined as to its position, ease of displacement, best method of reposition, etc., in all positions of the forearm, from complete (forced) extension, to acute (forced) flexion. The same study was then made after the skin had been turned back, leaving the muscles exposed. Next the various muscular layers were removed in turn until the behavior of the fragment when covered with the ligaments and capsule only could be studied. Finally the ligaments were cut, and the exact variety of fracture noted.

Later experiments were made with arms which had been partially dissected, and for the opportunity of using these, I am indebted to Professor Dwight of the Harvard Medical School. In these cases a method frequently employed has been the cutting of windows in front or behind the joint, and in this way it has been easy to study the behavior of the fragment with the least disturbance of its surroundings and attachments.

The experiments number in all twenty-four. Of the internal condyle there have been seven; of the external condyle, four; of transverse fractures across the lower end of the humerus, four; of "T" fractures, four; of the internal epicondyle, two; and of special fractures with certain additional injuries for the solution of special problems, three.

INTERNAL CONDYLE.

Experiment, August 14, 1892. Male adult. Left arm. Rigor mortis almost absent. Thoroughly broken down. Vertical incision, one centimetre long, just above internal epicondyle. A Macewen's osteotome introduced, and driven downward and inward, the condyle being broken off by prying with the osteotome.

With the arm extended there is increased lateral mobility of the forearm at the elbow, and crepitus can be felt when the fingers are upon the tip of the olecranon. By lateral pressure the humero-ulnar angle can be decreased and restored again. The external lateral ligament seems to prevent the forearm being brought farther than to a straight line with the humerus. With the forearm flexed to a right angle, the olecranon and fragment of the internal condyle can be displaced backward. With the arm extended this is not possible.

Skin reflected by an H-incision. When the arm is extended the muscles in front of the internal condyle are made tense over it and bulge forward, owing to the fact that the broken fragment tends to rotate forward, with its upper, broken surface looking forward and upward. It is held so rigidly in this position that it is difficult to replace it. When the arm is flexed to a right angle the tissues are loosely held, and replacement is easily made by pressure downward and backward upon the condyle. This can best be done by extending the arm and making as great a "carrying angle" as possible, and then flexing it steadily while the thumb of the other hand presses downward and backward upon the tip of the condyle, or upon the upper part of the shaft of the ulna. During this movement the forearm should be brought from a position of supination to one of semi-pronation. If then the same motion is continued to an acute angle, the internal condyle is kept firmly locked and held in its normal position. It cannot be dislodged from its position even by a very considerable force applied directly to it. If the fragment be fixed in this position by the fingers, and the forearm be extended without dislodging it, the humero-ulnar angle is found to be normal. In the extended position the fragment is invariably both rotated and bodily carried forward, and cannot be replaced until the forearm is flexed. The mobility of the fragment is greatest at the position of right angle, and then it steadily becomes less until an angle of a little more than 45° is obtained, at which point it is almost impossible to move it.[2]

---

[1] Read before the Surgical Section of the Suffolk District Medical Society, January 3, 1894.

The muscles are now stripped away in front of the joint, exposing the ligaments and capsule. In the extended position the fragment is in position only when the forearm is adducted in such a way as to decrease the humero-ulnar angle. If the forearm is carried outward so as to increase this angle, the broken surfaces are separated as much as a centimetre very easily. A very slight movement of the hand outward causes the tip of the olecranon to press the fragment out from its normal position, leaving the above space between the broken surfaces. Close apposition is retained only by bringing the forearm inward as far as possible. If the fragment has already rotated forward in the manner described above, the arm being in the extended position, and if then the forearm is flexed to right angles without any special precautions, the fragment may retain its rotated position, the broken surface of the lower fragment still looking upward and forward. If, however, during the act of flexion, pressure is made downward and backward upon the internal condyle, or upon the ulna, this position is remedied. This manœuvre is best accomplished if the forearm is semi-pronated. The lateral ligament holds the fragment of internal condyle close to the ulna, from which it is never separated.

The capsule is now cleaned off thoroughly. It is very easy to displace the whole fragment forward. This is done by pressure upon the olecranon when the arm is extended, or by supinating the hand forcibly, thus twisting the ulna around the radius. When the hand is semi-pronated this is avoided. When the forearm is forcibly adducted so as to destroy the normal humero-ulnar angle, the fragment is displaced forward as well as upward, a very slight amount of motion of the fragment in this direction making a considerable deviation in the direction of the forearm. Simply putting the arm in the extended position, without carefully pressing the ulna backward at its upper end is not sufficient to reduce the fragment. The latter is more apt to be displaced than in the right-angled position, for the olecranon is naturally pushed forward, and there is no leverage for preventing it.

After repeated observations the following conclusion was found to be true: by bringing the forearm into the acute position, with the downward and backward pressure in front of the internal condyle, and with the forearm semi-pronated, the deformity is always reduced, and the fragment is firmly locked in position.

The line of fracture is found to terminate below at the dividing line, between the trochlea and the capitellum.

The result obtained in this experiment was entirely unexpected, and the exactness with which the broken fragment was brought into its true position, and the absolute firmness with which it was held there was very surprising. The ground was gone over again and again, and in every instance with the same result. Just what tissues acted as the controlling force in this locking of the fragments could not be determined from this experiment alone. That point will be discussed later.

Experiment, September 24, 1892. Male, of large bone and muscular. Vertical incision above internal condyle; chisel introduced, and a fracture produced, with a distinct crack.

With abduction of the extended forearm, combined with a slight amount of flexion, the olecranon is thrown out of its fossa, causing it to protrude on the inner aspect of the arm beyond the internal condyle. This dislocation is very easily produced. With the arm forcibly extended the internal condyle is firmly fixed, apparently by the muscles passing in front of it. With the finger in the wound, which is made just large enough to admit the tip of one finger, the fragment is felt to be displaced forward and also, apparently, rotated on its lateral axis, so that it projects about a centimetre beyond the broken surface of the humerus above. The external lateral ligament is felt to be fairly tense.

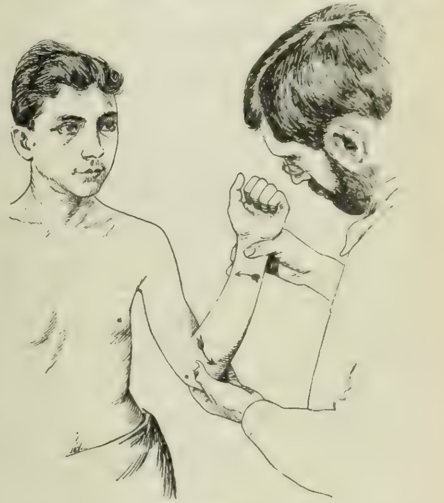


FIGURE I.

With adduction carried as far as possible, so that arm and forearm appear to be in the same straight line, there is a slight separation (half a centimetre), between the fragments at the innermost edge. If the forearm is abducted so that it reaches an angle corresponding to the sound arm, the fragments are separated so as to admit the tip of the finger or at least a centimetre. If an attempt is made to replace the fragment in position, while the forearm is somewhat flexed, and extension is again made, the displacement invariable recurs with the same results as before.

With the forearm slightly flexed (160), the forward rotation can be corrected by pressure on the upper edge of the fragment with the finger in the wound, but it is done with great difficulty or not at all when attempted from outside the skin, and in any case returns at once when pressure is omitted. Displacement forward is more marked than before, and can best be reduced by semi-pronation of the forearm. Complete supination is certain to cause this separation to the extent of one centimetre. If the forearm is strongly adducted, making the whole arm straight, the fragments are held together, but the forward displacement is not corrected. With the forearm carried outward to its normal angle, the whole index-finger can be placed between the fragments. Slightly forced supination makes the anterior displacement very much greater.

---

[2] In this paper all angles are measured from the axis of the humerus, as a zero point, and not from the position of right angles.

Further flexion of the forearm increases the mobility of the fragment, until the right angle is reached, when it suddenly, from a condition of free mobility in all directions, becomes quite firmly fixed, allowing only a slight forward and backward rotation on its lateral axis. There is a slight amount of forward displacement, but it can be easily reduced by the finger in the wound or from without, and does not tend to recur. The manœuvre of replacing it is as follows: Grasp the back of the elbow with the palm of the left (with left elbow) hand, the thumb reaching around in front of the ulna. Make pressure downward and backward with the thumb, at the same time flexing the forearm with the other hand. The best position is obtained with the forearm semi-pronated (see Figure).

Flexion to less than a right angle. If at 60°, the result is the same as with the right angle, except that the fragment is held more firmly, apparently by the action of the triceps. If flexion is carried to 45°, the fragment is firmly locked in excellent position.

The skin is now reflected, and the whole ground gone over again, with exactly the same results. The muscles attached to the external condyle are now cut through, but the results already obtained are unchanged. The tendon of the biceps is divided, but the same facts are observed in each position.

The muscles are now divided down to the capsule in front. There is a greater possibility of anterior rotation, but in the position of acute flexion the fragments are firmly fixed still. The anterior ligament is now divided along the line of fracture, but the position still remains excellent.

The joint is opened, and fracture found to terminate below at the groove inside the capitellum.

In this case the fact was brought out very clearly that it was extremely difficult to bring the fragments into position while the forearm was extended.

Experiment, Harvard Medical School, November 3, 1893. Muscular man. Left arm. All muscles in position. With chisel the internal condyle is broken off obliquely into the joint. The line of fracture is found later to run to the middle of the trochlear surface below. In extension the fragment is movable in every direction. In the right-angled position the same is true. In acute flexion it is held firmly in place.

The lateral and anterior ligaments are cut, without affecting these results. The external condyle is now fractured in the same arm. It is also freely movable except in acute flexion. The triceps is now cut through, leaving the posterior ligament, and the results remain unchanged.

Elbow is now stripped of everything except the posterior ligament. In the extended position the fragments are widely separated from position, and dangle loosely, but when the manœuvre already described is gone through with, the parts come into place perfectly.

In four other cases of fracture of the internal condyle a similar study was made, with slightly varied conditions, such as making windows in front of the joint, cutting different ligaments, muscular structures, etc., but the results were so uniformly in accord with those of the preceding experiments that they will not be given in detail.

EXTERNAL CONDYLE.

Experiment, August 25, 1892. Adult. Left elbow. Rigor mortis present. Broken down. Vertical incision, one centimetre long, with its lower border one centimetre above external condyle. Osteotome introduced, turned to right angle, and condyle chipped off apparently into the joint.

Condyle movable, though not easily. Crepitus most easily obtained by going through the motions of extending and flexing the forearm. Line of fracture can be distinctly felt through the skin. Least mobility when forearm is acutely flexed, greatest when the arm is half-way between full extension and a right angle. No abnormality of relation between bony outlines discovered by feeling.

H-incision and flaps of skin turned down and up. In the right-angled position backward pressure on upper end of radius easily causes separation of the fractured surfaces. With the arm in position of acute flection, interval is not so great.

Muscles divided down to capsule, and reflected. With abduction and adduction of forearm (side to side), the broken fragment closely follows the head of the radius. Broken surfaces easily separated half a centimetre, on firm adduction, with arm extended. With arm at right angles, hand supinated, a slight amount of pressure downward on head of radius separates the fragment, so that the little finger can be introduced between the bones. With the same pressure, if the hand is pronated, this separation is not produced. If pressure is omitted, the forearm being pronated, the fragments approximate each other. With the arm acutely flexed (45°), the fragments remain in good position. Downward pressure on the head of the radius then causes only slight separation.

At this point the osteotome was re-introduced and the fragment more thoroughly freed from the rest of the humerus at its inner end, where it seemed to be slightly adherent. In the extended position the fragment is in fair place, with separation of one centimetre. At the right-angle position the separation is wide, and can be decreased only by upward pressure on the radius. In the acute position the fragment is brought into position automatically, and cannot be displaced. No anterior displacement in full extension. With the arm fully extended, and abduction and adduction performed, there is a motion of about half a centimetre between fragments. At right angles, with upward and downward pressure on the radius, two centimetres is possible; in the acute position almost nothing. In flexion of two to three degrees from full extension, that is, as soon as the olecranon is slightly freed from the fossa, the displacement is as great as at right angles.

Capsule cut anteriorly, leaving those fibres connecting the fragment and the radial head. The line of fracture runs across anterior surface of capitellum, its lowest point reaching a little beyond the centre of the trochlear surface.

Experiment. Right arm. Rigor mortis. Broken down. Same incision as before. Intention is to break off less of condyle. Fragment distinctly movable, particularly when arm is half-way between extension and a right angle. In acute flexion it is firm, as before.

Skin reflected, arm extended fully. It is found that the fragment is carried forward so that the broken surface of the lower fragment projects in front of the upper. At right angles there is good position, the fragments being separated only slightly by downward pressure on the radius.

Muscles cut through above the joint and reflected downward, exposing the capsule. In the extended position the fragment is rotated outward and very slightly forward (can be moved one-half to one centimetre). With arm slightly flexed, so that the olecranon is free, the fragment is rotated still further outward, but can be approximated by forcible abduction, and separated one to two centimetres by adduction. At right angles, the movement is two centimetres, by upward and downward pressure on radius. Much better position when the arm is semi-prone than when supine, if same amount of downward pressure is used. With hand semi-prone and no downward pressure, the fragments are in good position and held firmly.

Arm acutely flexed. Fragments almost perfectly immovable, in good position. When arm is in any position but complete extension and full acute flexion, it is perfectly possible to dislocate the fragment forward.

The surest manœuvre for replacing the fragment is longitudinal extension, with forearm extended, followed by flexion, the thumb at the same time making downward and backward pressure on the upper end of the ulna, the motion being carried to acute flexion.

Capsule opened leaving fragment attached to the radius. Line of fracture found to penetrate the joint at the capitellum, its lowest point appearing at the line of junction (externally) of the capitellum and trochlear surface. Joint forcibly dislocated by abduction and backward pressure. It results in displacement of the fragment so that the external condyle lies with its broken surface looking forward and lying in a plane posterior to the plane of the normal condyles. By flexing to right angles the fragment is brought nearly to position (half a centimetre) without other manipulation. If this motion is carried to an acute angle, the bones accurately approximate and are firmly locked. This movement is repeated several times with the same result.

From the foregoing experiments and from two others not detailed here, it would appear that acute flexion at the elbow serves to replace and retain the broken-off fragment of the external condyle as well as it did that of the internal condyle. In every case the fragment was firmly attached to the head of the radius, which it followed in all its movements, so that it became very easy, when the head of the radius was somewhat loosened, to displace the fragment forward in such a way as to prevent flexion of the forearm beyond the right angle. The writer has met with this condition quite frequently in practice, and in such cases he has found that the use of the acute position becomes almost a necessity if the power of full flexion is to be retained, irrespective of the power of this position to hold the fractured condyle in place. It is in precisely this variety of fracture, namely, that of the external condyle, that treatment by acute flexion has been employed at various times in the past; and it is interesting to observe how fully this mode of treatment is justified by a theoretical study of the conditions present in such an injury.

TRANSVERSE FRACTURES.

Four fractures of this sort were made, the line of fracture usually running transversely just above the torchlea and capitellum. In one case the line was lower, passing through the capitellum, and this simulated more nearly the condition of the epiphesial separation. It is now the conviction of the writer, although he has not concluded his study of the subject, that the cases of "gun-stock deformity" occur usually after fractures which run completely across the bone, including in this list T-fractures and separations of the epiphysis, and that it does not occur as a rule after fractures of a single condyle. Such transverse or complicated fractures allow of considerable rotation of the fragment upon the long axis of the humerus. If this be the case, and then complete extension of the forearm is not recovered (the loss of the last few degrees of extension being very common, as the result of the filling of the olecranon fossa, or of adhesions, and usually being of little or no consequence so far as the functions of the organ are concerned), there results a deformity closely resembling a true reversed humero-ulnar angle. Even where the deformity is due to the changing of the axis of the torchlea, the previous injury has been usually other than the fracture of the condyle in the cases (upward of one hundred) examined by the writer.

From purely theoretical considerations it might be doubted whether a distinct transverse fracture would be retained in good position by acute flexion — whether the lower fragment would not be tilted forward upon its lateral axis. This seems, however, not to happen, or at any rate to such a slight extent as to be safely disregarded in view of the firmness with which the parts are bound together. The following is a type of the results obtained in this variety of fracture.

Experiment, November 6, 1893. Right arm. Muscle in place. Biceps only has been removed. A window is cut in front of the joint. Then with the chisel the lower end of the humerus is cut through just above the condyles. In the extended position the surfaces are separated for at least a centimetre, and are very movable. In the right-angled position the parts are brought pretty well into place, but can be displaced without much trouble. By rotating the forearm inward, as if it were placed across the chest, the lower fragment can be turned around upon its axis for twenty degrees (estimated), and then if it remains there the carrying angle is apt to be decreased almost to nothing, although it was not observed to become an inward angle. In the case of acute flexion the broken surfaces are brought into exact contact and held in place very firmly. In this position carrying the arm inward does not cause the same rotation of the fragment, because, apparently, it is locked in place.

(*To be continued.*)

◆

TOTAL EXTIRPATION OF THE UTERUS BY A NEW METHOD.[1]

BY ALBERT H. TUTTLE, M.D., S.B.,
Surgeon to the St. Omer Hospital, Boston, Mass.

The able description of Krug's method of total extirpation of the uterus and its excellent demonstration by Gustave Zinke at the Pan-American Congress recently held in Washington, aroused within me a feeling of interest in this subject I never before maintained, and seemed to me like a light in the horizon which betokened the birth of another brilliant day in the calendar of abdominal surgery.

After condemning to the terrible sufferings and agonies of the disease in its natural course to death, two cases of uterine cancer, which, even by our latest technique, were in an inoperable condition, and after noting a few scanty reports of combined methods of hysterectomy scattered in recent volumes of medical literature, I began to think seriously for the purpose of devising some method of operating which would admit of a more extensive dissection, and, with a reasonable amount of skill, might be made available for this class of cases.

By scanning the developmental history of hysterectomy, at the same time constantly bearing in mind the dangers and necessities of the operation, I have reached these conclusions, which I have put to the practical test and now respectfully submit for your consideration. The broad facts in the history of the removal of the uterus for disease are as follows: The earliest operations, where the uterus was only partially removed, were made by the abdominal route, and were for the relief of large tumors that menaced life. Later, the vaginal route was adopted, because it is especially adapted to the treatment of carcinomatous conditions, where the cervix is involved and the total extirpation of the uterus required. The recent advance to total extirpation by way of the abdomen seems to be an outcome of the problem of dealing with the stump which by the older methods caused a protracted convalescence, a frequent complication of ventral hernia, and a great mortality, rather than to meet such necessities as cervical cancer. The fact that the mortality is diminished to such an extent that a recent writer says, "In the hands of a skilled operator it ought not to exceed that of uncomplicated ovariotomy," shows what an advance this is over older methods of hysterectomy. The convalescence is about as rapid as after normal labor, and there is not the danger of hernia that exists from an extra-peritoneal treatment of the stump.

---

[1] Read before the Cambridge Society for Medical Improvement

A short time ago I attempted to remove the uterus, per vagina, in a woman about sixty years of age, but owing to a narrow introitus, which was not much improved by incision, and a very rigid condition of the vagina due to senility, I abandoned the operation after sewing up the os and making an incision through the vagina behind the cervix, and made a total removal by way of the abdomen. The staff used was improvised from a steel sound; and as the cervix was undefinable, the vagina short, and the separation of the bladder from the uterus consequently deep in the pelvis, I was in constant fear while making the incision through the anterior vaginal attachment of the uterus, that a fold of the empty bladder would catch over the staff and be incised. This experience led me to believe that a staff with an attachment to fit the canal of the uterus could be made which would accurately define the border of the cervix and serve as a guide for making the incisions through the vaginal vault. After due deliberation, the question of sepsis from the uterine canal forcibly presented; and in order to meet this objection, the idea was conceived of hermetically sealing the canal by sewing in a hollow stem with a cap made to fit over the cervix. The stems were then cast and turned in brass into the following shape the central cone (*a*) which fits into the uterine canal is three-eighths of an inch in diameter, and tapers down to one-fourth, and the length in three sizes is respectively one and three-fourths, two, and two and one-fourth inches. It is penetrated to the depth of one inch with a central cavity (*b*), which is bored with a three-sixteenths-inch drill and reamed out to one-fourth inch at the orifice, ending blindly. The cap (*c*) is a circular disc, three-fourths, one, and one and one-fourth inches in diameter, slightly convex on the outside (*e*) and deeply concave on the inside, the concavity forming a wide groove (*d*) about the attachment of the cone. In the edge of the disc a narrow groove (*f*) is cut for the purpose of guiding the point of the knife in the abdominal dissection. A narrow groove (*g*) is also made on the convex side within one-sixteenth of an inch and parallel to the edge of the disc. In this groove, at regular intervals apart, there are six small holes, which perforate the disc and are intended to receive the sutures that fasten the instrument to the cervix, and which are tied into, and protected by, the groove (*h*).

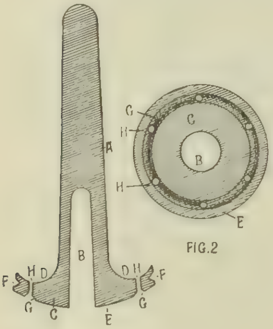


FIG.2

FIG.I.

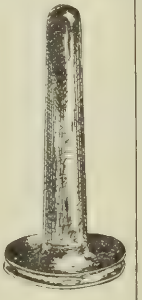


FIG.3.

The benefit of such an appliance is at once manifest; it makes the uterus firm, rigid and more easily manipulated.

The edge of the metal cap serves as director in cutting down from above and defines the borders of the cervix. The concavity of the cap forms a receptacle for iodoform or other antiseptic powder, and with the cone effectually corks up the uterine canal, which is furthermore hermetically and strongly sealed by a line of silk sutures passed around the cervix and through the small holes in the disc.

By preventing the discharge of septic material from the uterus, it admits later the more perfect sterilization of the vagina, which can be maintained.

If, with extensive disease of the cervix, the line of fastening sutures are passed through healthy parts well outside of all diseased tissues, through portions of the vagina if necessary, drawn tight, and tied, the line on dissection will be sharply defined by the metal edge.

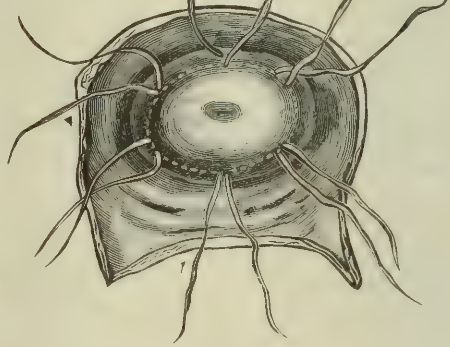


Fig. 4.

Finally, if necessary, a firm hold is offered to the finger or a metal elevator for raising the uterus from below during the dissection and passage of the ligatures about the vessels and broad ligaments.

I found the application of such an instrument more extensive than at first imagined, since it serves to form the basis of a special technique for removing the cancerous uterus, where from the amount of cervical disease, it would be impossible to operate by the usual methods.

Operation.— The patient, after careful preparation of the bowels, is etherized and placed in the lithotomy position; the vagina thoroughly cleansed with soap and a solution of bichloride of mercury; the os, if necessary, dilated; the uterine canal curetted; and the cervix drawn down with tenaculum forceps as far into the introitus as possible. Six strong silk sutures are now passed so as to completely surround the cervix, and their ends kept long enough to tie easily. If the cervical tissue is normal, it is better to hold the instrument, and the needle should pass through it, as seen in Fig. 4; but if the disease has extended beyond the cervix, then it will be necessary to pass the sutures, in part at least, through vaginal tissue.

The uterine canal is again dilated to facilitate the easy entrance of the seal, and douched with antiseptic solution; the seal is then passed wholly in, and if found to fit satisfactorily, is partially withdrawn so as to enable one to bring the sutures through the small holes in the periphery; the sutures are now drawn through the small holes (*sc*) by means of a small crochet-hook, such as is used by women, and in the same manner, by passing the hook through the hole, catching the sutures, one at a time, and withdrawing hook and thread. The two ends of the sutures nearest each other are drawn through the same hole. The groove (*d*) is then filled with iodoform by slightly depressing the cap, and the instrument is pushed as far as it will go into the uterus. The seal in place, with the sutures, is shown in Fig. 5. The sutures are drawn tight and tied in the groove (*g*), so as to firmly fix the instrument to the uterus.

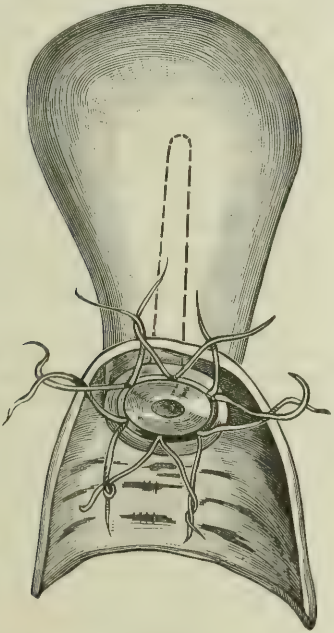


Fig. 5.

A continuous line of running suture is now passed, well outside of the edge of the seal, through the walls of the vagina, so as to completely encircle the cervix, and the two ends of the suture left long enough to tie. Care must be taken not to pass the suture too deep in the region of the bladder lest this viscus be injured. The suture *in situ* is seen in Fig. 6.

An incision through the vault of the vagina, encircling the cervix, between the edge of the seal and line of suture, is made, and the uterus sufficiently freed from its lower attachments, by means of the finger or blunt end of a scalpel, to enable one to close in the vagina below the cap of the seal (see Fig. 6). If there is any hemorrhage from the vaginal artery this is to be checked. The vagina is now closed, leaving the seal in the cavity of the pelvis, by drawing tightly on the ends of the sutures, in the manner of a purse-string, at the same time pushing up the cervix and tying. This is shown in Fig. 7. The sutures for this purpose are best made of absorbable material, such as catgut or kangaroo tendon. The purse-string suture can be reinforced in some cases by one or more over-and-over stitches; or in cases where drainage may be considered necessary, a piece of gauze or wicking may be inserted in the wound before the suture is drawn tight. A piece of iodoform gauze is packed in the vagina, and finishes this part of the operation.

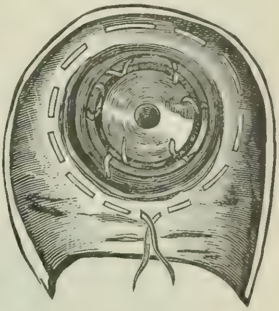


Fig. 6.

The patient is now prepared for an abdominal incision; the cavity of the peritoneum is opened above in the usual manner; the uterus is seized with strong volsellum forceps and drawn up into the wound; a sound is passed into the bladder and the exact limits of the attachment to the uterus determined; an incision is then made through the peritoneal covering of the anterior portion of the uterus about three-quarters of an inch above the bladder attachment, and the peritoneum with the bladder is dissected away from the uterus well along the sides and beyond the edge of the seal below. A large-sized sponge inserted between the uterus and bladder at this period of the operation will protect the latter organ and ureters. The uterus is now drawn forward and downward, and an incision made through the peritoneal covering of the posterior surface; the peritoneum is pushed or dissected well away from the uterus and the incision carefully extended into the broad ligaments. A large, flat sponge is inserted behind the uterus, and the bowels kept out of the way. Clamp forceps are then placed on each broad ligament, outside of the ovaries, the points reaching as far as the metal cap over the cervix, and the uterus with the adnexa cut away from its attachments, keeping as close to the sides of the organ as possible. During this procedure, as often as a vessel is cut across it is immediately tied to insure against hemorrhage in case the forceps should slip.

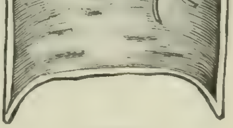


Fig. 7.

After the uterus is removed and the vessels tied the clamps are taken off and any oozing of blood is stopped by suturing. Then the peritoneal cavity is entirely closed below by sewing the anterior reflection of the peritoneum, which was dissected from the uterus, to the posterior; the stump of the broad ligaments should be closed in at the same time. This requires but a single line of continuous suture, which should be taken in the following manner: starting at the anterior end of the wound in one of the broad ligaments, the point of a full-curved Hagerdorn needle is made to enter and come out on the same side of one of the peritoneal folds of the ligament, the needle being carried parallel to, and about a quarter of an inch from the cut edge; it is then passed across to the other fold and entered in the same manner at a point directly opposite the exit of the former stitch; this is continued until the whole line of raw surface from the beginning at one ligament, across the pelvis to the end of the other ligament, is closed in. As the stitches are drawn tight, the cut edges of the peritoneum should be folded in so as to bring the serous surfaces into contact and leave the sutures buried outside of the peritoneal cavity. The manner of inserting the stitches is illustrated in Fig. 8.

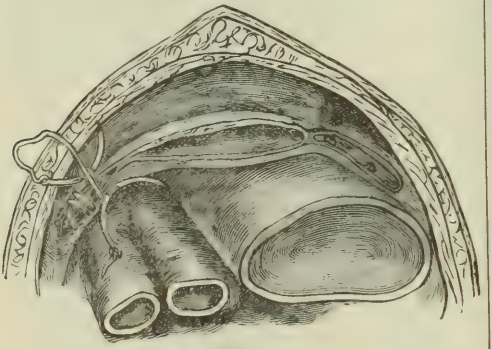


Fig. 8.

Any blood present should be wiped out of the body cavity, and the omentum carefully spread over the bowels. The abdominal wound is closed, layer by layer, and the line of incision sealed with collodion. It is better to use animal ligatures in doing the operation.

It will be seen at a glance that by the above method no raw surface is left with which the gut can come in contact, and form subsequent adhesions; that in case drainage is employed, it is in the cavity of the pelvis below the peritoneum; and that with the patient in the Trendelenberg posture, the operation may be finished intelligently, the parts being in full view and easily accessible. The operation is practically bloodless. Its greatest fault, as far as I have been able to determine, consists of the time it requires, but this is partially compensated for by the fact that the time consumed when the peritoneal cavity is open, is less than by the usual method of supra-vaginal hysterectomy, and also by the fact that the operation when completed is more finished than any other hitherto advanced. For the relief of cancer of the cervix it completely does away with the blind surgery of the vaginal method and the concomitant dangers of hemorrhage, injury to bladder and ureter; for the treatment of other affections which require hysterectomy it avoids the dangers of hernia and sepsis peculiar to the extra-peritoneal treatment of the stump; it avoids the danger of infection in the intra-peritoneal treatment, and is attended with a more rapid convalescence; finally, it has all the advantages of the modern method of total extirpation, with the additional one of greater facility, greater perfection, and wider range of usefulness.

An English surgeon says that people who use rocking chairs the most become deaf the soonest.

Clinical Department.

ABLATION OF OVARIES AND TUBES FOR HYSTERO-EPILEPSY, WITH ENTIRE RELIEF FROM SYMPTOMS SINCE OPERATION.

BY JOE V. MEIGS, M.D., LOWELL, MASS.

Miss D., aged eighteen years, born in Vermont, of French Canadian parentage. Family history good. First menstruated at the age of fourteen; was then confined to her bed under the care of a physician, and for three weeks after for an hystero-epileptic condition. Since then, at every period and at times between periods, she has suffered from this same condition. She has been under the care of a number of physicians at different periods of time, and has taken all of the medicines indicated with but little, if any, relief.

In July, 1892, she came under my care, and gave me her history as written above, and added that the attacks now came on regardless of periods, and were increasing in frequency. She complained that she was unable to work (having lost every position she had ever had on account of her infirmity), and that now she could not go about alone, for the reason that she had had fits on the street and was fearful that she might have more. I saw her several times during the attacks, and have seen her have as many as three in one day, and then at a time between her periods. Advised her to allow an examination to be made under ether, but patient and family objected. Finally, after due consideration, with but little hope of relief, I concluded to try medicines, which I did up to November, 1892, without any amelioration of symptoms. At this time I gained consent of the patient to an examination.

I found marked tenderness over the right and left ovarian region, more over the right than the left. Vaginal examination under ether disclosed both ovaries slightly enlarged; uterus occupied its normal position, but would not admit sound.

I dilated the uterus and awaited results, hoping for some relief. It did not come. The seizures came on just as frequently as before and with the same severity. Patient began to lose all hope of relief.

Finally, with some hesitation, I suggested to her as a last resort, an abdominal section with removal of both ovaries and both tubes. I advised both her and her parents in regard to the operation, its severity, its effects, and the doubt I had in regard to its effecting a cure; explained everything to them, and concealed nothing. She and her family gave immediate consent. Not being quite satisfied as to the advisability of such severe means, I consulted my medical friends and what literature I could find on the subject. My friends, with one or two exceptions, rather advised against operating. The literature at my command gave me but little encouragement.

Finally, at urgent request of patient and her family, I operated at St. John's Hospital, Saturday morning, February 25, 1893, assisted by Drs. Irish, Bradt and Harrington. Ether was administered, abdomen opened in usual manner, patient placed in Trendelenberg posture, and ovaries and tubes brought into view.

The right ovary was enlarged, and showed appearances usually indicative of csytic degeneration. The left ovary was slightly enlarged. I concluded to remove both; which I did in the usual manner, ligating close to the uterus on either side, silk being used.

There being no hemorrhage, the cavity was not washed out. The abdominal walls were brought together, silkworm gut being used. Patient made an uninterrupted recovery, and was discharged in three weeks. Up to the present writing, October 1, 1894, my patient has had no attacks. She insists that she is perfectly well; is able to work every day; and has nothing left of her former trouble excepting the memory of it. As to whether she will ever have a return of the trouble, I am, of course, unable to say; but from her appearance and condition at the present time, I should think not.

Whether castration is advisable in cases of hystero-epilepsy will remain a question; yet in my case, where upon palpation and by vaginal examination the ovaries were found to be tender and enlarged, it would seem as though I were justified in making a section, and after bringing the organs into view and noting that they were diseased, I believe I did my duty in removing them. In any event, by these means I have relieved my patient of the terrible burden she has borne, and her parents of their great and constant care.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JOHN T. BOWEN, M.D., SECRETARY.

Regular Meeting Monday, May 14, 1894, the President, Dr. C. F. Folsom, in the chair.

Dr. W. M. Conant read a paper on

COLLEGE ATHLETICS.[1]

Dr. H. P. Walcott: It is a very great pleasure to me that Dr. Conant has treated this subject in a somewhat wider fashion than the programme for the evening promised. He has shown in his very distinct statement of the value of exercise the importance of its early beginning. I do not believe that college athletics distinctly as college athletics are a matter of any great importance. It does seem to me a matter of immense importance that the young boy should be properly educated in the use of his body, either by the natural instincts that lead a boy to play with his associates, or, if that does not happen to be stimulus enough, by some carefully devised gymnastic exercises. By the time he gets to college, Cambridge at any rate, he is between eighteen and nineteen, and whatever he is going to be physically, has been pretty well settled at that time. The real function of the university or college in then dealing with him is to offer him that amount of professional assistance and guidance, that shall enable him to correct defects in his previous training, and repair omissions that have been made in his life up to that time.

It is not necessary to describe the various means employed at Harvard for supplying this assistance. The Hemenway Gymnasium and its accomplished director with well-trained assistants can afford and do actually place within reach of every student all necessary information as to bodily condition, and the use of appropriate gymnastic apparatus. I cannot think that the governing boards of any college would have been at all likely to select any one of the intercollegiate contests now carried on between the respective institutions as a desirable addition to the years of life there. So long as these contests consisted in an annual meeting of two great rival colleges, the interruption of the proper work of the university was not very great, and any needed stimulus to the outdoor sports was given; but the temptation to increase the number of these events has been apparently irresistible, and the time cannot be far distant when another serious attempt will be made to prevent the useless waste of both time and money incident to her present conduct of athletics. The real interest, it seems to me, of the college authorities is not in the production of a team of nine men or eleven men, or crew of eight men, but rather in that body of many hundred men indulging through a certain number of hours of the day in a reasonable, attractive exercise in the open air, such an exercise as lawn tennis, for instance.

Fortunately Cambridge will soon be in condition to offer the most spacious athletic grounds in this country to the students of the university — the Soldier's Field and the Longfellow Meadows will soon be in condition for general use; a portion of the territory, of many acres in extent, is already prepared, and all students who have any inclination to bodily exercise will there find abundant room for its practice.

Mr. G. W. Weld has made it possible to revive boating upon a much larger scale of usefulness than has been possible for many years, by his generous gift of a fully equipped boathouse; and, whenever this community insists, as I confidently believe it soon will insist, upon having a clean and attractive stream of water between well-kept shores, in place of the present tidal estuary with filthy banks; then I believe that the Charles will present in the pleasant months of the year, the same attractive pictures of active life that are seen in some of the more fortunate university towns on the other side of the ocean.

Pres. F. A. Walker: I speak as a layman. I suppose the question is not as to the value of exercise which all admit, but of the maintenance, perhaps extension, of those college sports which have been made so well known to us during the past few years — college athletics. They may be considered in a great variety of relations. It does not seem worth while to spend much time in replying to the objections which have been made often so intemperately and abusively in the public press in regard to the abuses of college athletics, especially football. Those abuses are incident to the early stages of any system, and will, I have no reason to doubt, correct themselves by general consent of those who take part in them, either college authorities or the young men themselves; and it is better that they should be corrected by the young men themselves than a little later by the intervention of college authorities. We have in this evening's paper a good example of the way in which that thing works — the announcement of the abolition by general consent of the mile-walk, which has been a very unpleasant feature of field athletics.

But there are four relations of college athletics which it may be worth while to consider a moment: first, as to the health of the athletes themselves; second, as to the character and mental development of the athletes themselves; third, as to the promotion of gymnastics throughout the college body outside the body of contesting athletes; and, fourth, to the promotion of gymnastics and physical development of the general community of all classes high and low, those who are younger than college men and those who do not go to college.

---

[1] See page 381 of the Journal.

In regard to the relation of college athletics to the health of college athletes themselves, I cannot speak with authority; but I entertain a strong conviction that any athlete who takes part in competitive sports takes more exercise than is necessary for keeping him in good health, and perhaps more severe than would be desirable. That excess is not necessarily injurious. It means that the nervous force spent in that way cannot be spent in study. Some men sometimes suffer severe injuries in rowing, if not properly supervised, from heart trouble; sometimes severe injuries, though less frequently than is represented, in football; and a man cannot do anything in this world in which he may not be killed. Of course, all these injuries are charged against athletic sports by hostile critics in a very unfair way. While there is some liability of real injury from excess of athletic exercise, the greater part of the excess of all exercises is to the disparagement of scholarship. The young man who comes home from football in the afternoon with head swimming, tired, worn out, is not fit to study very much that evening. I think a great deal depends on the good sense of college bodies. In the institutions in which I have been more particularly interested, I think there has been a fair degree of success in reconciling at least a good college standing with athletic superiority. It is quite remarkable to give the names of men in successive classes. I think it is rather remarkable that that reconcilement has been carried so far as it has. We must admit, I think, on the whole, that scholarship must suffer somewhat at the hands of athletics so far as the athletics themselves are concerned, though, as I said, it is not necessarily so much as is often represented.

As regards the relation of college athletics to the character and general mental development of the athletes, I am disposed to take almost a wholly favorable view. Our modern life demands pluck and nerve and a spirit of self-sacrifice and ability to work together, so that I confess it seems to me an excellent thing that something like what our athletes are called upon to do in these preparations for contests should be had. It is a splendid development of will-power and mental force which brings the greatest fruits upon the fields in which these contests are fought. I confess to a great satisfaction in the development of the character of the young athletes whom I personally know, who have been engaged in these contests representing their colleges and going through hardship and denying themselves the ordinary pleasures of college life for a long term for the sake of an object to which they are devoted. I do not think it is a bad thing to have examples of that: I think it is a good thing. I have a great respect for most of the athletes in the country. I do not think they could have done what they did had they not had a good deal of manliness, spirit and level-headedness. Even if they sacrifice their scholarship in some degree — speaking of the ordinary American college life — I should as soon my son would be a first-class athlete as a third-class scholar. When one considers what is meant by being a first-class football player, what quality he has to exhibit, it seems to me it is something to be bought at a fair price.

More important is the relation of athletics to the promotion of gymnastics in the student body. It is easy to say that of the one thousand students in the university all of them ought to go to the gymnasium and put on their suits. But we know young men require something to stimulate, excite; require examples, something more than the knowledge that such and such a course would be best for them; and I do not think it is possible to doubt that college athletics have a very decided influence in promoting gymnastics throughout the college. I graduated in the old days before there was any college gymnasium, and I remember how little there was of exercise, how badly our men were built up, how much they suffered from want of exercise; and it seems to me a great thing that the body of college men should be encouraged and stimulated to gymnastic training, putting themselves in first-class physical condition as far as possible. It seems to me college athletics make an important contribution to that thing. They furnish the types of splendid physical men, teach the ordinary student to respect men who are well-developed and have a splendid physique, and they have an influence in promoting gymnastics among the body of college men outside the body of representative athletes. It seems to me that it is a result that might be purchased at a considerable price even at a sacrifice on the part of the contesting athletes themselves. I think they are rather the better than the worse for their participation in these games.

Fourth, you have the relation of the college athletics to the promotion of athletics in the general community; and it seems to me that is very important. The colleges of the country have aroused an immense interest. I think we should doubt that it could be aroused to such a degree throughout the whole country. I have been impressed by the developments in what is called interscholastic athletics in the last few years. The colleges, high schools and academies have done much in track athletics, etc., showing that the young fellows are beginning to have some ambition in regard to physical development and physical practice; and I think it is a great thing. The physical basis of life has been too long neglected or not appreciated. It seems to me important that these young fellows and the academies and high schools should have ambition to be well set up, strong, plucky, and to show quality. I do not believe the value of that can be overestimated; and I think the development of athletics in academies, etc., shows that this thing has come to stay. To my mind this is the most important of the four relations of this subject which I venture to indicate.

Mayor Bancroft, of Cambridge: I am not only a layman, but I come without the experience of the distinguished gentleman who has just talked to us; yet a few observations have occurred to me as I have listened to Dr. Conant's valuable paper and to the remarks that have been made. It is curious, to begin with, that physical culture is the only branch of education for which it has been deemed necessary that there should be an emulative stimulus. It has never been deemed necessary, so far as I know, that there should be any emulative stimulus for intellectual culture or for social culture. It may be said that intellectual culture is distinctly the function of a university. The physical, moral, religious, social branches of culture are, it is said, its charge; and yet we are constantly told that physical culture is an important branch of education. It is conceded to be; every body admits it; that is not worth discussing. If it is important, unless it is placed — and perhaps you will say that is the reason — on the same category as social culture and other culture aside from intellectual, why should it be necessary that there should be a stimulus? If it is important to the extent that has been represented, why should not the authorities supervise? Why should it not be directed scientifically? Why should there not be instruction? In those institutions of the technical sort maintained for the government service physical culture is systematically taught, advantageously taught; but in the ordinary institution of learning it is left to itself for the students to develop as best they may with some restrictions. I simply speak of this as a curious fact. I do not undertake to discuss the reasons; it must be accepted as a fact.

I am somewhat in the condition of the member of parliament who said ditto to Mr. Burke, after hearing what General Walker has to say about the four relations of physical culture to college students. I agree entirely that it is to the disparagement of scholarship that men engage in athletic contests, a very serious disparagement of scholarship; and I want to make just one observation upon that, and that is, is it not a pretty dangerous thing for the college student who is to depend upon his scholarship in after-life to receive that disparagement? I have in mind specifically the members of what are termed the learned professions, men who, if they are not to earn their living, are to support the standing of those professions — medicine, law, theology, teaching. Is it not dangerous for men who are to enter those professions to undertake college athletics if there is disparagement? I make no question about men who are to engage in the business pursuits, to whom it makes but very little difference, some tell us, whether their scholarship be better or worse; but professional men, should they engage in intercollegiate athletics? It seems to me the last speaker is entirely sound, if I may again say ditto, in his estimate of the value of intercollegiate athletics and the example of those who engage in them upon the balance of the students. It is valuable as an incentive. It having been conceded that there must be a stimulus of some sort, their chief value lies in that direction — to bring others out; but their value is of the same sort as is the value of the distinguished actor, singer, distinguished chess-player, if you please, in the community at large. The value is not to the individual but to the community; and in these cases the effect upon the community is fully as strong as he estimated. But the main thing in all this discussion, for I cannot lose sight of the fact that it is a branch of education, is in some way to induce every individual — not the four hundred alone at Harvard, but the three thousand — to take some part in athletic exercises, and the part that will fit men who do not conceive that it is their purpose to be shining lights to illumine the pathway of others, but men who want to get the advantage out of athletics that there is for every individual. That is the important thing. There is an advantage in athletics for the man who is to uphold the eminent standard of the professions; and it is that advantage, it seems to me, which it is the business of educators to impress upon those who come under their charge. True, it is not important, these matters of football roughnesses. Occasionally heart disease may be developed in an oarsman; but after fifteen or twenty years' experience I have seen very few cases of that sort. Those are not the important things. The unusual time spent in the university baseball teams, if you please, will regulate itself. Those matters are to be determined, not by college faculties, but by the public sentiment. They will, I believe, regulate themselves; but the important thing, it seems to me, for college men to dwell upon is that the thousands who now, many of them, have no part in athletics except to applaud shining lights, have some regular and systematic exercises they can take to themselves and derive the benefit that is to be derived from physical culture; and that does not mean simply the building up of the muscular fibres, but a great deal more, the formation of habit. It means the appreciation of suitable food, of suitable sleep; and it means that for every student and for every individual; and the importance of this not alone to college students, the importance of this indeed to the community, because I take it the ultimate result of all this physical culture is to increase the efficiency of the race; and it is the duty of every member of the race, particularly the race in this country, to lose sight of no one thing which will assist it to be more efficient.

Dr. W. A. Brooks: I speak as a graduate. It is only seven years since I left Harvard, and I do not claim to have the judgment which older men have in looking at these things. But I believe firmly in intercollegiate athletics; it is therefore needless to say that I believe in college athletics. I recognize that connected with athletics and associated with the different contests there are many evils; but I am inclined to think — in fact, I believe — that these evils can be fully done away with if only those who have the authority are willing to give to them the necessary time and attention. College athletics have for many years shouldered the responsibility for many different kinds of amusement indulged in by college men in general. I do not think it is right that any crew, eleven or nine, should be held responsible for the acts of the student body as a whole. That I think is a matter of department, and should come under the head of college discipline.

What one college man enjoys, another does not. What is exercise for one man is a strain for another. If there is to be a universal exercise, I think it can be readily seen that you can pick upon no one exercise which would be suited to every man. It becomes necessary, therefore, that a variety of exercises should be given; and, as Dr. Conant clearly showed in his paper, to one man must be given one exercise, to another another. It is not possible for you to exercise a truck-horse in a sulky nor a trotter hauling stone, and the different physiques of the college men admit just that difference. A man with a heavy frame is not fitted to take light, quick exercises: he requires a different sort.

But even if you furnish a variety of sports for men to go into, you have still got to furnish an incentive. Individuals, as I said, differ. You cannot influence some men to come out and take exercise unless you drive them, and then it does them practically very little good. But others you can induce to come out. The man who exercises to keep himself in condition is a rare man to find in college, or was in my day.

It has been said that college athletics are detrimental to scholarship. I should like to take an exception to that. I think the scholarship depends upon the personality of the man. In one crew in which I rowed, the stroke-oar was a man who took in Cambridge the highest honors in chemistry for four years. What he would have done if he had not rowed I do not know. There were others in that crew who did not take honors, but how low a standard they would have reached if they had not rowed I cannot tell you.

There are about every college many temptations. It is not right to say that every man there indulges in them. It is proper to say that certain men who would naturally be inclined to indulge in them are kept from them by training for some athletic contest. I know of no other incentive that will make a man for seven months out of eight go to bed at 10.30 and get up at 7 o'clock. The college furnishes many inducements to go the other way. There are clubs, and society buildings where conviviality reigns, where men waste more time than ever men wasted who went into athletics, and yet in the hue-and-cry about the time that is devoted to training for one of our teams we hear nothing about the amount of time that is wasted in social enjoyment. If we were to pick out the greatest evil in any college or university I do not think we would first pick out athletics; I think we would look a little deeper, or rather more superficially. I do not criticise the excesses of college life, but I do criticise the hue-and-cry about athletics when such things are allowed to be passed over.

Are the different intercollegiate contests of any benefit to the college as a whole? We often hear that it is only for the benefit of the few that the intercollegiate contests are gotten up. It must be a benefit to the men who go out every afternoon to watch the teams practise. It gives them a change, and though they are not indulging in the sports, they get a little fresh air.

I said that I thought that athletics had not been properly controlled. I do not think that it is sufficient for a governing board to simply acquiesce in athletic sports and bide their time until by some foolish steps the students or the team have disgraced the university from which they came. I think they are responsible in a great measure for the excesses which follow an athletic contest, responsible not positively, but negatively; responsible because they refuse to punish excesses except by prohibiting athletics. I think if the student body was made once to fully realize that if they indulged in those things the blame would fall upon them and not on athletics, you would soon see a different state of affairs; and this brings me to the danger to the individual in going into athletics. I do not think he is as liable to injure himself by his training, or by the race or by the game which he plays, as much as he is liable to injure himself by the excesses which follow. The sudden going out of training has injured more men than all the training in which they have indulged. In the ten years which I have followed athletics I have noted a gradual change for the better both in the spirit in which the men play and the care with which they train.

Dr. M. H. Richardson: I would refer briefly to the medical aspects of athletics. I have always been very much interested in the subject, from the point of view not only of the student and of the athlete, but from the standpoint of the practitioner. I have no doubt whatever that the systematic practice of athletic sports and games, as they have been developed in this community, is of very great advantage, not only to the colleges, but to the community at large. When I was in college, more than twenty years ago, athletics consisted in a very desultory visit to the old gymnasium, in baseball, and in rowing. There was nothing else in athletics. There was neither football, tennis, bicyling, lacrosse, nor track athletics. To-day we have not only the great inducements of intercollegiate contests to stimulate a very large number to active participation in all sports, but games which in themselves are very attractive, like tennis and like bicycling, and which furnish men with agreeable and useful exercise. Though in football and in rowing no great number of men participate, yet into other lighter and, on the whole, more useful sports every college man can enter and derive great physical benefit. In the exercise of these milder games there is an opportunity for high physical development; while in the more violent contests, like football and rowing, the men are benefited in other ways than in the cultivation of their muscles. I would not venture to say much after the eloquent words we have just heard, but I cannot fail to express my belief that there is a stimulation and an education in all the manly virtues when young men contest in friendly and honorable rivalry games that demand long-continued preparation, sustained effort, perfect self-control, and severe discipline.

I wish to say a word about the physical aspects of the games, the injuries to the players themselves by direct violence and the alleged far-reaching ill effects of training. It is on this branch of the subject that medical men are especially fitted to speak. Much has been said by laymen against athletics on account of a few injuries. I have seen in the last ten years several serious accidents from athletic sports, three of which were fatal and one extremely dangerous. Two of the deaths occurred in sparring, one in fencing — contests seldom regarded as dangerous. These comprise all the fatal accidents from this source that have happened in the last twenty years in this community. Occasionally one meets with dislocations, fractures, while minor injuries are not uncommon. Yet, on the whole, the sum of these misfortunes is trivial. The remote bad effects of athletics, even the more violent, I have never seen personally, though I dare say that there is an occasional instance in which permanent harm has been done either by direct violence or by indirect training. Under the present excellent system of selection and medical supervision I believe the latter source of ill health has been reduced to a minimum. It therefore hardly need be said that there is no good reason for discontinuing sports in which so many hundreds and thousands of men indulge with safety. The really dangerous games may be trusted to regulate themselves. Just as soon as it is known that a certain method of play causes unnecessary hazard, that play will be changed. In spite of every precaution, however, there will be violence, injury and death in all active physical exercise on land or water. A weak blood-vessel in the brain will give way under a blow, or even under excitement alone; a foil will penetrate the mask; a man will fall in that peculiar way necessary once in a million times to cause death; he will drown, bleed to death, break his neck; in a word, once in a very long time a man will be killed or seriously injured in spite of every precaution. It does not follow that all these sports should therefore be given up, but rather that all games shall be guarded by reasonable regulations in order to reduce to a minimum the dangers incident to all exertion.

Great good has been done by the encouragement of physical exercise. I believe that the discouragement of athletics in universities and colleges will be followed by deplorable results to the general physique of the student. What we need most is to cultivate these exercises which are agreeable and at the same time are healthful to the large body of students.

The object of athletics is primarily to cultivate the habit of systematic exercise. This habit, of the greatest importance to health, should not be a perfunctory one; it should be one anticipated and practised with pleasure. Exercise taken reluctantly and without pleasure fails in part to give the mental stimulation which exercise healthfully enjoyed cannot fail to impart.

To promote this primary object in athletics anything should be encouraged which adds to the general interest in the subject. Hence the value of contests, like football and rowing, in which the issue is watched by the whole country. Such contests stimulate an active interest in physical exercise in all classes of life, and help to make us what we have never been, and what it is extremely desirable that we should be, a nation of men of good physical development.

Dr. J. Homans, 2nd: I have been extremely interested in this discussion; and it seems to me there has been a general concensus of opinion that athletic sports tend to do men good in almost every way. I understood the reader to say we train here more severely than in England — for a longer space of time before the contest, and with more exact rules as regards diet and habits. Now we live in a climate tending more to the production of nervous diseases and general nervous disturbances, and therefore a climate much harder on men undergoing severe training. I think I have seen quite a number of men whose health has been affected, possibly not permanently, but certainly for some time by the severity of the training they have been through, the results being evident for a year or so; and I have in mind one or two cases that, in my opinion, have not recovered after ten or twelve years. I should like to ask Dr. Conant how many men he sees on the team that require the use of drugs to enable them to sleep while training, and how many times he has been obliged to lay the men off the team because the training was too severe. I have heard statements made quite a number of times that men had had to use sulphonal and various hypnotics to stand the training.

Dr. C. J. Blake: The question discussed this evening has been that of athletics as affecting the undergraduate, that of the effect upon the graduate has not been touched upon. Mr. Thomas Hughes has expressed himself decidedly in this matter; and in a conversation five years ago I was much interested to find him still holding the same views in regard to the value of athletics in schools and colleges to the man doing intellectual work in later life.

The college student at the end of four years' study and exercise, goes out into the world, and becomes some kind of a specialist according to the course which circumstances make necessary or his inclinations and possibilities make best; and I believe that a review of the men now doing good work in business and in the professions who have followed some form of athletic exercise in a moderate degree while in college, will show that the influence of college athletics upon the staying and working power of these men in middle life has been for good, and for these reasons: It has, in addition to its animal value, helped them to appreciate the worth of that spirit of emulation spoken of this evening, helped them to study and to appreciate the machine in which they live and with which they have to do their work, and helped them to encourage in themselves a habit of self-control which stands them in good stead in later days; and it seems to me, therefore, if it is the province of the college to fit the student for the life he is to live in the world — a useful life — if organized college athletic work is a help in that direction, that such work should be made in some way a part of the curriculum. Hence it should be the duty of the college to see that the undergraduates are encouraged to athletic exercise under proper control.

Dr. Conant: I am very glad indeed to hear Dr. Blake's remarks; coming from him they carry with them additional weight. I have in my paper touched upon this point; but as the time was limited I have preferred to confine myself to one point, namely, that the development we give our children, our boys, our young men, in the form of an athletic education, stands by them long after they have become men. Two questions have been asked me: one was, whether I was in the habit of laying off any of the men from the team; and the other was in regard to the giving of drugs. My connection up to this year has been practically only with the crew and with the football men. Mr. Lathrop has had entire charge of the track athletic men. There has not been a season in which it has not been necessary to lay off every single man one or more times on both the crew and football teams; due sometimes to slight bruises, and sometimes to the fact that I thought the men needed a rest, although there was very little actually the matter. Whenever drugs have been given, there has been the same discretion used with regard to the team as in my own practice. The same discretion has been used in regard to the athletic teams as is used in regard to other men who have come to me, not members of the team. The only drugs given for sleeplessness or pain have been sulphonal and phenacetine; and they have not been given, to my knowledge, in larger than five-grain doses, and very rarely repeated. What drugs a man may have taken on his own account, and without authority, I am unable to state.

I do not agree with Dr. Walcott that the men who go to college at seventeen or eighteen years of age have finished their physical training. At that age they have only just begun it. If he will consult some of Dr. Sargent's records, he will see that there has been a steady building-up of hundreds of men, so that oftentimes a delicate man has been turned out a robust, strong and healthy athlete. I wish to convey the impression that the average man on entering college is nothing but a child as regards athletic work, and that it is for the college to take up and carry on what the fitting schools, many of them, have so admirably commenced. I have seen more men injured by overwork in college than by any athletic contests and sports. We must recognize not only the physical side but also the mental side of this question.

University of Vienna. — The total number of students in the Medical Faculty of the University of Vienna during the last summer semester was 2,427. Of the foreign students 77 came from the United States, 104 from Russia, 43 from Roumania, 29 from Servia, 27 from Bulgaria.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

C. L. SCUDDER, M.D., SECRETARY.

REGULAR Meeting, Wednesday, January 3, 1894; DR. ABNER POST in the chair.

DR. H. L. SMITH reported upon

AN EXPERIMENTAL STUDY OF THE REDUCTION OF ELBOW FRACTURES.[1]

DR. BLAKE: I was very much interested in the paper and in the experiments made. The results seem to bear out the views of the reader as to the value of this method of treatment. I have seen a good many of these fractures at odd times, and my plan has been, remembering the teaching of Dr. Bigelow, that all injuries about the elbow-joint except fractures of the olecranon should be treated with the internal angular splint. Under that method, if carefully applied and with sufficient knowledge on the part of the physician as to the treatment of fractures, the results are reasonably good. I think in most cases of fracture about the elbow-joint, the patient should be etherized in order to get an accurate idea of the kind and extent of the fracture so as to be able to get the parts into proper apposition by relaxing the muscular tension and then putting them upon the splint. I think, in the fractures of children, a great mistake is made by leaving the splint on too long. We know how rapidly the processes of repair go on in the healthy young. After ten to fourteen days, passive motion should be begun. Following this plan, I think you get pretty good results in the average case. Ordinarily I think the results are good if the after-treatment is persevered in sufficiently long. It is a very difficult matter to carry out this part of the treatment in children. The child shrinks from extending a somewhat painful joint, and it requires a good deal of courage and perseverance on the part of the attendant to insist on required continuance of treatment. Looking back over a long period of years, I can recall cases where even when the result immediately following was not very favorable, yet time and use worked wonders in restoring motion. This method of Dr. Smith's, making acute flexion, I have had no experience in. Anything that will lessen the duration and improve the result is to be welcomed. Theoretically, I should think that keeping the arm in that position would tend to shorten the ligaments and make it difficult to get complete extension. Whether that is so in practice I do not know. I do not understand he made any comment on the old-time treatment of fracture of the olecranon. I cannot help commending the pains and care and skill with which these investigations have been carried on, and we shall all be glad if the results are an improvement on the old method.

DR. C. L. SCUDDER: In the treatment of fractures of the elbow I think that it is common experience to find that if there is a loss of motion, it is generally in flexion; that the amount of extension is little impaired. If by this method of treatment, semi-pronation and extreme flexion, greater motion at the elbow-joint is to be obtained it is a distinct step in advance. Experimental work of the sort which Dr. Smith has reported to-night is of very great value, both scientifically and practically.

DR. POST: I remember very well indeed the teaching of Dr. Bigelow that Dr. Blake refers to. He made everything beautifully simple, and his teachings were a distinct advance upon the teachings that had gone before. I do not think his teaching was fully accepted outside of his own scholars, and I think we have all of us found difficulties in reaching results that were perfectly satisfactory. It is as a sort of protest against the unsatisfactory results that have occurred in treatment in the right-angled position that has led to a sort of revolt and the desire to find perfection in the fully extended position. While I have felt that unfortunate results must occur in the flexed position, I have felt in my own mind a peculiar antipathy to the extended position which grows from an experience I had as a very small boy. Among my schoolmates were two boys; one had had an amputation of the arm through the humerus, the other a fracture of the elbow-joint treated in the straight position. The young man who had amputation of course lost entirely the use of his arm; but the young man who had the arm treated in this way had an anchylosed elbow, and was an object of pity to us all. He could not play ball, could not wrestle, could not feed himself with that arm. I used to hear the same remarks from that young man about the carelessness of the doctor that are so familiar nowadays, and that we hear occasionally when something uncomfortable results from treatment in the ordinary flexed position. I never see a poor result from the flexed position that I do not remember that boy, and think that no matter how bad the result is here, whether there is anchylosis or limit of motion, that that patient with the poor results from the fracture treated at an angle is better off than my old friend whose arm was anchylosed in the extended position. I have been extremely interested in Dr. Smith's experiments. I have seen one or two cases that have been treated in the fully flexed position. It is pretty easy to get them in the flexed position with plaster-of-Paris; that really makes very pretty splints. I have not been able to follow the cases so that I know the final results, but it was striking to see how well they kept in position when the cases were first put up. One case I remember particularly, with fracture of the lower end of the humerus. That was a very trying case. I am sure that in that case I got into the extra flexion by working over the case with the child under ether, because I found that was the only position that would hold the child. I know there was a very good result in that case. I think we shall hear more from Dr. Smith's position in the future, that it promises to be the position for the majority, perhaps, of fractures about the elbow-joint, the olecranon being relegated to the straight position.

CREMATION IN ENGLAND. — Cremation is steadily rising in public estimation in England. Among the persons of note who have been cremated during the last few years are: George Hawkins, one of the founders of the Society; John Henry Wellington Graham Loftus, fourth Marquis of Ely; James Nasmyth; Sir John Walter Huddleston; Francis Charles Hastings, eighth Duke of Bedford; Madame Helen Blavatsky; F. S. Leighton; Lady Bramwell; Lord Bramwell; Earl of Northesk; Lord Calthorpe; Lady Catherine Northcote; Sir Henry A. Clavering, Bart.; Dowager Duchess of St. Albans.

---

[1] See page 386 of the Journal.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, OCTOBER 18, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 Washington Street, Boston.

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 WASHINGTON STREET, BOSTON, MASS.

THE SURGERY AND PHYSIOLOGY OF THE SPLEEN.

OPERATIONS for the removal of the spleen, though common enough in animals, which often survive the operation, have but recently been performed in the human subject. One of the earliest successful cases was that of Spencer Wells, in 1866. The spleen was extirpated for malarial enlargement, and a year afterward the blood was normal as to the proportion of red and white corpuscles.

Tricomi, of Padua, subsequently reported three splenectomies, two of which were successful; the patient operated on by Raggi, of Boulogne, who had a malarial spleen, those also of Montenovesi and Bacon Saunders (the latter of Texas) also made a good recovery.

In a recent number of the *Zeitsch. f. Hyg. u. Infectious Kr.*, O. Vulpius publishes an article (reproduced in the *Semaine Médicale*) entitled, "A Contribution to the Surgery and Physiology of the Spleen," in which he reports five splenectomies performed at Czerny's clinics. Of these five patients two succumbed, during the operation, from hemorrhage, as is an almost inevitable result in large leukemic spleens; Czerny now refuses to operate on such spleens. Two of the other patients had hypertrophy from unknown causes; the enormous size of the organ and the existence of grave general disorders had furnished the indication for the operation. These patients made a good recovery. The fifth case was one in which severe contusion of the spleen was followed by perisplenitis with adhesions; partial mortification of the spleen ensued with formation of perisplenic abscess, which subsequently became putrid by invasion of the bacteria of the intestine. This patient also got well.

None of these three patients presented any grave symptom attributable to the functional suppression of the spleen. In two of them, the operation was immediately succeeded by a leukemic condition, which only disappeared at the end of four or five months. In the other patient, the ablation of the spleen was followed by an augmentation of volume of a great number of the lymphatic glands.

Although splenectomy is a modern operation — so modern that Wyeth in his "Text-Book" (1887) says that "it has been performed in several instances on account of the enlargement of the organ in leucocythemia, but without the success which would encourage a repetition of the operation," — yet Vulpius has been able to collect details of 117 operations.

A first group contains 28 operations for leukemic spleen. Only one made a permanent recovery; at the end of three months the blood had become normal again. Two other patients succumbed, the one at the end of thirteen days, the other at the end of eight months, to a state of grave leukemia with progressive enfeeblement. The other 25 patients succumbed rapidly to the consequence of the operation; 20 died of hemorrhage in less than two hours. From these experiences, the author draws the conclusion that the operation is unjustifiable when with increase of size of the spleen there is a high degree of leukemia; the extreme limit of intervention being one leucocyte to fifty red corpuscles.

In a second group, Vulpius includes the spleens of malaria, the so-called idiopathic hypertrophies and lastly, the mobile spleens. Of these, there were 66 cases with 24 deaths, a mortality of 36.36 per cent. The highest mortality is furnished by malarial spleens, the ablation of which is no longer to be advised. In 23 cases, splenectomy was performed for divers causes: simple cysts, echinococci, sarcomata, abscess, amyloid spleen, etc.

In the totality of the 117 cases, there were 58 deaths (a mortality of nearly 50 per cent.); but if abstraction be made of the cases in which splenectomy ought henceforth to be considered as contraindicated (leukemia, amyloid spleen, hypertrophy by venous stasis) there remain 85 cases with 29 deaths in consequence of the operation (about 33 per cent).

The phenomena which ensue on ablation of the diseased spleen in man have not yet been sufficiently studied. In a small number of cases, there was hypertrophy of the lymphatic glands; in a few others, goitre supervened, accompanied in one of them with the symptoms of Basedow's disease. The phenomenon most frequently observed was an augmentation, more or less rapid, of leucocytes. Future researches must determine if this numerical increase of leucocytes (which in some cases was only temporary) is a regular consequence of the operation, or if it is only produced in certain conditions.

In a second part of his article, Vulpius sets forth the various opinions of physiologists on the rôle of the spleen in hematopoiesis. Microscopical anatomy tends to show the possibility of a penetration into the blood stream of colorless corpuscles coming from the spleen; and, on the other hand, it seems to be proved to a certain extent that this organ is the seat of a destruction of red corpuscles. *Per contra*, microscopical researches have not yet demonstrated the formation of red corpuscles. Investigations in the direction of comparing the blood of the splenic vein with that of the artery have not yet given any definite result. It seems, according to the author, to be fairly well established by experimental facts that an abundant loss of blood acts on the spleen as a functional excitant of hematopoiesis.

The results obtained by extirpation of the spleen in healthy animals are of great importance, and from the facts thus far observed we are warranted in concluding that the ablation of that organ is followed by a diminution of the number of red globules and a numerical augmentation of the white.

The subject of accessory spleens possesses some interest. The frequency of these accessory spleens is variable; they are met oftener in Northern than Southern Europe. The existence or absence of these accessory glands may explain in a certain measure the differences observed as far as regards the alteration of the blood after splenectomy in man. Moreover, experiments on animals go to show that a functional suppliance may be exercised from the point of view of hematopoiesis by the lymphatic glands and the marrow of bones.

If the formation of blood really takes place in part in the spleen, we are warranted in supposing that the ablation of this organ must have consequences especially marked in cases where the organism has previously suffered a considerable loss of blood. In fact, experiments seem to show that the regeneration of the blood after hemorrhages is somewhat retarded in animals deprived of their spleen. On the other hand, Vulpius has not observed that the consequences of splenectomy were more grave in animals previously bled than in those which had not been subjected to such depletion before the operation.

We may supplement what has been said above by reference to Banti's monograph on "Splenic Anemia." Banti urged the value of splenectomy in this disease, in order to anticipate the subsequent development of anemia and exhaustion. At the Middlesex Hospital, England, Mr. Pearce Gould recently performed the operation in a case presumably of the kind described by Banti. There was marked splenic enlargement, a light degree of anemia, but no leucocytosis. Splenectomy was performed April 14th by Mr. Gould, who made a long incision in the left linea semilunaris; the pedicle was tied with silk in seven ligatures. The spleen was simply hypertrophied; it had caused great weight and fulness and discomfort. Convalescence was rapid, and was attended by marked increase in the hemoglobin and red corpuscles.

On April 25th Dr. James Murphy also performed a successful splenectomy at Sunderland Infirmary.[1]

In the *Lancet* for September 15, 1894, is an interesting communication by Dr. Edward Milins, entitled, "Rotation of the Spleen; Removal; Recovery." The patient, a small, spare woman thirty years of age, had suffered from severe abdominal pains, vomiting and prostration; a movable swelling on the left side occupied the lower part of the abdomen and seemed to be the cause of the suffering. A laparotomy was made January 2, 1894, and the tumor was found to be an enlarged rotatory spleen. The pedicle was tied off with silk ligatures and the spleen cut away. The abdominal wound was closed with silk sutures. The patient made a good recovery. There has thus far been a great numerical increase in the number of leucocytes, with a marked reduction in the number of red corpuscles.

◆

SPECIAL HOSPITALS FOR CONSUMPTIVES.

KOCH'S discovery of the bacillus tuberculosis has caused increasing attention to be given from year to year by the medical profession to the problem of the prevention of tuberculosis. The subject is now almost constantly under discussion. Last winter the College of Physicians, of Philadelphia, considered it; this spring the Massachusetts Veterinary Association took it up; and lately it was the chief topic at the annual meeting of the New York State Medical Association. During this last discussion, the value and importance of special hospitals for consumptives was strongly urged. In England they certainly have been found serviceable.

Such a special hospital and dispensary for the care and treatment of cases of pulmonary tuberculosis has just been opened in New York. In April last, as mentioned in the JOURNAL at the time, a meeting of ladies was held for the purpose of establishing this institution. As a result, the house No. 230 West 38th Street was secured; and after it had been suitably fitted up for the purposes designed, it was opened informally to the public about the middle of June. No patients were received, however, until the 1st of October, and the first regular business meeting of the Board of Managers was held October 11th, when it was decided that the institution should be known as "The Consumptive's Home." Dr. Charles E. Quimby, the associate of Dr. A. L. Loomis, is the physician in charge, and the principal feature of the treatment employed will be the pneumatic cabinet, with electrical ozone generator. The house-physician is Dr. Walter Sickles, and the consulting Medical Board consists of Drs. A. L. Loomis, Wm. M. Polk, Charles McBurney, A. A. Smith and Henry F. Walker.

In the case of the dispensary patients it is the design that, while they shall receive the best scientific treatment, their daily work shall be interfered with as little as possible.

One chief object of this enterprise is to establish a cottage home in some healthful region not too far from the city, where for a small sum patients can receive the advantages of change of air and out-of-door life; but this very desirable feature of an institution has not yet assumed definite shape. The formal opening of the city home will occur on the 14th of November. It is in such hospital homes in elevated rural surroundings that the regeneration — apart from the mere care — of the pulmonary cripple from among our urban populations, can be most successfully pursued.

---

[1] Lancet, May 5, 1894.

MEDICAL NOTES.

An Epidemic of Dermatitis Exfoliativa. — An epidemic of exfoliating dermatitis is reported from the Workhouse Infirmary of St. George's-in-the-East, London. Some 30 inmates are ill, and already 17 have died.

The River Seine "Catch" of 1893. — The following figures are published as a result of the attempt to keep the River Seine clear of cadavera for the year 1893. There were withdrawn from the river 5,652 dogs, 3,307 cats, 9,108 rats, 1,720 fowls and 3,942 other birds, 4,209 rabbits, 789 pigs, 7 calves, 4 hedgehogs, 33 horses, 15 sheep, 2 colts and 13 monkeys.

The Illness of the Czar. — It is now announced that the Czar Alexander has not Bright's disease, but is the subject of a tumor beneath one of the kidneys. This is pronounced by the Russian medical attendants to be malignant. Dr. Leyden is supposed to take a less unfavorable view of its nature. The London correspondent of the *New York Times* draws a curious parallel between Sir Morell Mackenzie's relation to the cases of the Emperor Frederick and his German medical advisers, and Professor Leyden's relation to the case of the Czar and his Russian medical advisers. In each instance an alien wife complicates the situation.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, October 10, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 90, scarlet fever 33, measles 5, typhoid fever 35. During the week ending at noon, October 17, 1894, the following cases were reported: diphtheria 86, scarlet fever 43, measles 19, typhoid fever 59.

Dr. G. W. Gay, of Boston, who was recently operated on for appendicitis, is now well advanced in his recovery.

A Physician to be Trustee of the Boston Public Library. — Dr. Henry P. Bowditch has been appointed by the Mayor to be a trustee of the Boston Public Library.

Diphtheria in Somersworth, N. H. — A considerable outbreak of diphtheria has occurred at Somersworth, N. H., which has necessitated closing some of the schools.

Closure of a Newton (Mass.) School. — The Davis Primary School at West Newton, Mass., was ordered closed last week by the Board of Health on account of two cases of diphtheria among the pupils. The building is to be thoroughly cleansed, and new floors are to be laid.

Newton (Mass.) Cottage Hospital. — During the last three months there have been, according to the quarterly report of the trustees, 108 patients admitted to the Newton Cottage Hospitals; 103 have been discharged and seven have died.

Annual Meeting of the Corporation of the Perkins Institute for the Blind. — The annual meeting of the corporation of the Perkins Institute for the Blind was held last week. The report of the trustees shows that there are at present 156 pupils at South Boston, 59 at the kindergarten in Jamaica Plain, and 13 in the workshops for adults. The following officers were elected: President, Samuel Eliot, LL.D.; Vice-President, George S. Hale; Treasurer, Edward Jackson; Secretary, M. Anagnos; Trustees, William Endicott, Jr., Edward N. Perkins, Joseph B. Glover, Leverett Saltonstall, J. Theodore Heard, M.D., S. Lothrop Thorndike, Henry M. Howe and George W. Wales.

NEW YORK.

Small Pox at Port Jervis.— An attack of small-pox has occurred at Port Jervis, Orange County, and in consequence the public schools and library have been closed by the local board of health.

Mrs. Crane's Bequests to Hospitals.— By the will of Mrs. Angelina Crane, who died September 20th, the sum of $5,000 is given to each of the three following institutions: St. Luke's Hospital, the Woman's Hospital, and the Home for Incurables.

Columbia College.— The various departments of Columbia College, including the medical school, opened on Monday, October 1st, and President Seth Low made a short address of welcome to the students in the chapel at the morning exercises. The title of the new Bloomingdale property passed into the hands of the college corporation on October 1st, and if the present site of the college is sold promptly for as much as the trustees expect, the amount thus furnished ought to be sufficient to pay off the standing mortgage of $1,000,000, and to meet the expenses of moving and fitting up the new grounds for temporary fashion for occupancy. In his report to the trustees for the academic year ended June 30, President Low makes special mention of the very great honor of which Dr. Abraham Jacobi, Clinical Professor of Diseases of Children in the Medical Department, was made the recipient, in being invited to occupy the chair of pediatrics in the University of Berlin, made vacant by the retirement of Professor Henoch. As is well known, Dr. Jacobi declined this honor, on the ground that America had done so much for him that he felt under obligations to do what he could for America by continuing his work in the medical profession here. In relation to this fact President Low expresses the hope that public spirit and intelligent generosity will build and endow a small hospital for children's diseases. He estimates that $500,000 would be adequate, and goes on to say: "We have the scientific man to give. We have the abundant wealth to provide the means. If only these words come to the attention of the eyes that are ready to see and the mind and heart that are quick to grasp the opportunity, I can scarcely doubt that we have also the generous giver." In the report is also described the incorporation of the Columbia College University

Press, the object of which is to provide for the printing and publication of meritorious works on various subjects, after the manner of the Clarendon Press of Oxford. Among the publications issued from the college will be the following: *The School of Mines Quarterly, Bulletin of the Torrey Botanical Club, Psychological Review,* studies from the analytical and assay laboratories of the School of Mines, contributions from the herbarium of Columbia College, contributions from the mineralogical and geological departments, studies from the biological department, and studies from the department of pathology, College of Physicians and Surgeons, Columbia College.

NEW YORK STATE MEDICAL ASSOCIATION.—The eleventh annual meeting of the New York State Medical Association, was held at the Mott Memorial Hall on Tuesday, Wednesday and Thursday, October 9th, 10th and 11th, with the President, Dr. Thomas D. Strong, of Westfield, Chautauqua County, in the chair. Among the more important papers were the following: "The International Sanitary Conference of Paris in 1894," by Dr. Stephen Smith, of New York; "The Technique of Cæsarian Section, with Exhibition of Cases," by Dr. A. Palmer Dudley, of New York; "Hysterectomy for Uterine Fibroids by Baer's Method, with Report of Nine Successful Cases," by Dr. Joseph Taber Johnson, of Washington, D. C.; "The Anatomy and Surgical Treatment of Inguinal Hernia in the Male, Illustrated by the Stereopticon," by Dr. Henry O. Marcy, of Boston; "Primary Laparotomy in Tubal Pregnancy," by Dr. Joseph E. Janverin, of New York, and "Tetanus: its Etiology, Pathology and Treatment," by Dr. J. Lewis Smith, of New York. The special feature of the meeting was an elaborate discussion on the Prevention of Tuberculosis, which was opened by Dr. H. M. Biggs, of New York, on the afternoon of the second day, and on the evening of the same day the annual collation occurred. Dr. Austin Flint, of New York, was elected President for the ensuing year, and Dr. E. D. Ferguson, of Troy, was re-elected Secretary and Treasurer.

DEATH OF DR. VIRGINIUS A. TURPIN.—Dr. Virginius A. Turpin died at his residence in New York, October 11th, at the age of seventy-five years. He was a Virginian by birth. For many years he was regarded as a high authority on the subject of cholera, and during the epidemic of the disease in the year 1866, he was called by the Board of Health of St. Louis to assume the direction of the cholera hospitals of that city. A considerable portion of his life was passed in Chicago, where he enjoyed a high reputation and had an extensive practice. About two years ago he removed to New York, and since that time his health has been gradually failing.

SOCIETY FOR INSTRUCTION IN FIRST AID TO THE INJURED.— The first series of lectures, for male and female classes, of the present season, under the auspices of the Society for Instruction in First Aid to the Injured, have just been commenced. As long ago as 1882 the project for such instruction was inaugurated by a committee of the State Charities Aid Association, of which the late Gen. George B. McClellan was chairman. It met with so much public favor and developed so rapidly that in the following year this committee was re-organized as an independent society, and ever since it has maintained numerous courses of lectures, which have always been well attended. The medical director of the Society is Dr. W. D. McKim and the medical examiners, on whose report the certificate of proficiency are given, are Drs. Ellsworth Eliot, Jr., Hersey D. Locke, and George A. Richards.

MORTALITY.— Dr. John T. Nagle, Registrar of Vital Statistics, reports that the mortality in the city for the week ending October 13th, was the lowest yet recorded in the department. The number of deaths reported was 656, against 690 during the previous week. The average mortality of the corresponding weeks for the past five years was also 690.

◆

Miscellany.

BOSTON DISPENSARY.

The statistics of this institution for the year ending September 30, 1894, are as follows:

The number of new patients treated at the Central Office is 28,487, classified as follows:

Medical Department. — Men, 3,462; women, 5,533; children, 4,417; total, 13,412.

Surgical Department. — Men, 2,403; women, 1,140; children, 1,056; total, 4,599.

Department for Diseases of the Skin. — Men, 809; women, 550; children, 350; total, 1,709.

Department for Diseases of the Nervous System. — Men, 715; women, 653; children, 79; total, 1,447.

Department for Diseases of the Throat and Nose. — Men, 893; women, 834; children, 551; total, 2,278.

Department for Diseases of Women. — Total, women, 1,072.

Department for Diseases of the Eye. — Men, 259; women, 279; children, 172; total, 710.

Department for Diseases of the Ear. — Men, 183; women, 208; children, 244; total, 635.

Department for Diseases of the Genito-Urinary System. — Men, 1,358; women, 47; children, 2; total, 1,407.

Department for Diseases of the Rectum and Anus. — Men, 123; women, 76; children, 2; total, 201.

Orthopedic Department. — Men, 30; women 51; children, 20; total, 101.

Dental Department. — Men, 262; women, 275; children, 379; total, 916.

The number of visits made by patients, old and new at the Central Office is 71,079, classified as follows:

Medical, 24,205; surgical, 46,874; total, 71,079.

The number of patients treated in the Districts is 16,265 including 241 cases of midwifery, classified as follows:

Men, 2,918; women, 6,622; children, 7,125; total, 16,265.

The results of treatment in the Districts are as follows:

Discharged, cured or relieved.	14,917
Removed to hospitals	1,053
Died	291
Remaining under treatment	86
	16,347
Under treatment at last annual report	82
	16,265

The total number of visits made by District physicians	27,125
The number of patients treated at the Central Office and in the Districts is	44,754
The number of cases of midwifery attended during the year	241
The number of cases of midwifery attended since July, 1856	7,293
Whole number of patients since October, 1796	1,248,730
Whole number of patients since July, 1856	1,129,927
Average daily attendance at the Central Office	232
Largest number present any one day, March 12th	356
Smallest number present any one day, February 13th	91
Number of recipes put up during the year	73,586
Number of house recipes	60,222
Number of District recipes	13,364
Largest number put up in one day, March 12th	394
Smallest number put up in one day, April 13th	110
Number of paid recipes	66,810
Number of free recipes	6,776
Number of paid dental patients	900
Number of free dental patients	16

The list of medical officers is as follows:

Surgeons. — Drs. Edward O. Otis, Frederick M. Briggs, Augustus Thorndike, Rufus E. Darrah.

Physicians. — Drs. Robert Disbrow, Thomas M. Rotch, Harold Williams, Edward M. Buckingham, Russell Sturgis, James S. Howe, William F. Temple, Henry Jackson, Robert W. Greenleaf, Samuel Breck, George A. Sargent, Edward L. Twombly, William E. Fay, William H. Prescott, John J. Thomas, Augustus S. Knight, William E. Chenery, Horace D. Arnold.

Department for Diseases of the Skin. — Drs. Francis B. Greenough, Abner Post.

Department for Diseases of the Nervous System. — Drs. Frederick Coggeshall, William R. Woodbury.

Department for Diseases of the Throat and Nose. — Drs. John W. Farlow, J. Payson Clark, Frederick C. Cobb, William S. Boardman.

Department for Diseases of Women. — Drs. Francis H. Davenport, John B. Swift, Rufus A. Kingman, George Haven.

Department for Diseases of Eye. — Drs. Edward L. Parks, Frederick A. Davis.

Department for Diseases of the Ear. — Drs. Wallace Preble, Ernest E. Doble. Assistant, Dr. Joseph Hicks.

Department for Diseases of the Genito-Urinary System. — Drs. Gardner W. Allen, Charles M. Whitney, John B. Blake, Franklin G. Balch.

Deparment for Diseases of the Rectum and Anus. — Dr. Walter J. Otis. Assistant, Dr. Joseph C. Stedman.

Obstetric Department. — Dr. Charles M. Green. Assistants, Drs. Edward Reynolds, Charles W. Townsend.

Orthopedic Department. — Drs. Edward E. Pease, Edwin W. Dwight.

Pathologist. — Dr. Edward M. Greene.

Dentist. — Dr. A. H. Fisher.

District Physicians. — Drs. Horace E. Bragdon, Nelson C. Haskell, Malcolm Storer, Benjamin Tenney, Frederic B. Lund, John W. Bartol, Warren F. Gay, Frederick R Tower, Farrar Cobb, Howard A. Lothrop and Charles E. Fillebrown.

Apothecary. — George Lachambre.

Wm. H. H. Hastings, *Superintendent.*

◆

Correspondence.

CYANOSIS FOLLOWING THE USE OF "CAFEBRIN."

Boston, October 5, 1894.

Mr. Editor: — I think that your readers may be interested in a case in which an alarming cyanosis was caused by the use of powders of so-called "cafebrin." I am informed that these powders are patented, that their composition is unknown, and that they are advertised to cure headache.

Mrs. B., aged thirty-three, consulted me on October 2d for some uterine trouble. Among other symptoms she complained of violent headaches. I noticed the moment I saw her that the lips and face were blue, and I suspected cardiac trouble complicating the uterine symptoms. On mentioning the fact that her color was peculiar, she said that she had been taking for headache some powders of "cafebrin" which had been put up by a druggist from a prescription given her by her physician. She had taken three that morning — one at 8, one at 10.50 A. M., and one at 12.40 P. M. The time of my examination was 2.30 P. M. The patient informed me that on another occasion the use of cafebrin had caused a peculiarity in the complexion that excited remark among her friends. While in the train coming from a neighboring city she began to turn blue, so that her color was noticed by a lady sitting near her. She felt perfectly well, however, with the exception of the headache, which was not benefited by the powder. Neither she nor her companion was alarmed.

When she arrived at my office the condition of cyanosis was excessive. The face was dusky: the lips and nails were blue. As she lay on my table, with her eyes closed, she looked like a dead person. The pulse was 80, of good quality. The heart sounds were normal. The fingers were cold. The pupils were normal. The respirations were perhaps slightly hurried. She was given about two ounces of brandy.

Being obliged to leave town, I put her in charge of Dr. Brewster, who stayed until her symptoms had subsided.

The chief symptom in this case — cyanosis — seems to me very interesting, following, as was alleged, the use of cafebrin. The existence of cyanosis is quite as inexplicable as the complete absence of discomfort or other physical evidence of incomplete blood-aeration. Whether the effect of the drug was to prevent oxidation, or whether by its action the blood was directly changed in some way — these are interesting questions in connection with this case, which a knowledge of the composition of the powders might help solve. On the other hand, the cyanosis may have been a coincidence. That the symptoms were due to this remedy seems very positive in view of the facts: First, that the powders were put up from a prescription calling for

Cafebrin, ... pulv. vi
S. One; repeat in three hours.

Second, that the peculiar color appeared a few hours after the ingestion of the first powder and soon after that of the second. Third, that a similar attack followed the use of the powder on another occasion. And, finally, that usually there is nothing peculiar about the patient's color.

The case illustrates one of the dangers of prescribing patent medicines the composition of which we do not know. While the condition may not have been at all serious, yet the general appearance of the patient was certainly alarming.

Yours very truly, M. H. Richardson.

METEOROLOGICAL RECORD,

For the week ending October 6th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in Inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..30	30.06	56	58	54	93	76	84	N.E.	N.E.	24	25	R.	R.	
M.. 1	29.92	54	59	48	85	74	80	W.	S.	6	5	O.	C.	
T.. 2	29.93	54	61	48	58	60	59	N.E.	N.E.	12	9	O.	O.	
W.. 3	29.99	58	65	51	64	86	75	S.E.	S.E	9	5	O.	O.	
T.. 4	29.82	62	66	59	89	90	90	S.W.	S	7	10	T.	O.	.20
F.. 5	29.70	64	70	58	85	56	70	W.	S.W.	10	13	O	F.	.22
S... 6	30.00	56	64	49	69	50	60	W.	W.	12	16	C.	C.	
☛														.42

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☛ Mean for week

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCTOBER 6, 1894

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,956,000	690	294	18.46	10.78	9.24	2.38	3.78
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,139,457	389	126	17.94	11.70	5.20	1.30	10.14
Brooklyn	1,043,000	426	197	23.46	10.81	13.11	.92	11.65
St. Louis	540,800	—	—	—	—	—	—	—
Boston	501,107	234	87	21.93	10.75	7.31	1.72	10.75
Baltimore	500,000	—	—	—	—	—	—	—
Washington	285,000	119	40	19.55	13.60	11.05	5.10	3.40
Cincinnati	325,000	87	22	17.85	14.28	4.76	3.57	8.33
Cleveland	325,000	84	30	19.04	8.33	7.14	3.57	2.38
Pittsburg	272,000	—	—	—	—	—	—	—
Milwaukee	265,000	—	—	—	—	—	—	—
Nashville	87,754	30	8	10.00	13.33	3.33	3.33	3.33
Charleston	65,165	36	11	19.46	2.78	5.56	2.78	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	100,410	23	10	43.50	13.05	17.40	13.05	13.05
Fall River	92,233	47	38	34.08	6.39	31.95	2.13	—
Lowell	90,613	35	19	28.60	2.86	22.88	—	2.86
Cambridge	79,607	29	13	44.85	13.80	10.35	—	—
Lynn	65,123	—	—	—	—	—	—	—
Springfield	50,284	5	2	20.00	20.00	20.00	—	—
Lawrence	49,900	—	—	—	—	—	—	—
New Bedford	47,741	21	4	18 04	9.02	9.02	9.02	—
Holyoke	43,348	9	4	66.66	22.22	55.55	—	—
Brockton	33,939	4	0	—	—	—	—	—
Salem	33,155	14	7	35.70	—	28 56	7.14	—
Haverhill	32,925	17	8	—	5.88	—	—	—
Malden	30,209	11	3	9.09	9.09	9.09	—	—
Chelsea	29,806	12	5	41.65	16.66	8.33	—	25.00
Fitchburg	29,383	8	5	25.00	12.50	25.00	—	—
Newton	28,837	11	2	54.54	9.09	9.09	18.18	27.27
Gloucester	27,293	—	—	—	—	—	—	—
Taunton	26,955	15	4	26.66	26.66	—	—	26.66
Waltham	22,058	4	2	25.00	25.00	—	—	25.00
Quincy	19,642	—	—	—	—	—	—	—
Pittsfield	18,802	5	4	—	—	—	—	—
Everett	16,585	6	2	16.66	16.66	—	—	—
Northampton	16,331	6	1	16.66	—	16.66	—	—
Newburyport	14,073	3	0	—	66.66	—	—	—
Amesbury	10,920	2	2	50.00	—	50.00	—	—

Deaths reported 2,407: under five years of age 952; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 506, consumption 266, acute lung diseases 200, diarrheal diseases 239, diphtheria and croup 155, typhoid fever 56, scarlet fever 19, whooping-cough 12, malarial fever 9, cerebro-spinal meningitis and measles 6 each, small-pox 2.

From scarlet fever New York, Boston and Cleveland 4 each, Cambridge 3, Philadelphia 2, Lowell and Marlborough 1 each. From whooping-cough Brooklyn 4, New York 3, Cambridge 2, Philadelphia, Boston and Cleveland 1 each. From malarial fever New York and Charleston 4 each, Cambridge 1. From cerebro-spinal meningitis New York 2, Philadelphia, Cincinnati, Holyoke and Chelsea 1 each. From measles New York 4, Brooklyn 2. From small-pox New York and Philadelphia 1 each.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 6, 1894, TO OCTOBER 12, 1894.

By direction of the acting Secretary of War, **CAPTAIN GEORGE E. BUSHNELL**, assistant surgeon, will be relieved from duty at David's Island, N. Y., by the commanding officer of that post on the receipt by him of this order and will then report in person to the commanding officer Fort Hamilton, New York, for duty at that post, reporting by letter to the commanding general, Department of the East.

By direction of the acting Secretary of War, the extension of leave of absence granted **CAPTAIN C. N. B. MACAULEY**, assistant surgeon, in S. O. 55, Department of the Colorado, September 14, 1894, is further extended one month.

Upon arrival of **MAJOR JOSEPH K. CORSON**, surgeon, at Fort D. A. Russell, Wyoming, **FIRST-LIEUT. GEORGE DESHON**, assistant surgeon, will be relieved and ordered to Fort Logan, Col., for duty.

Upon abandonment of Fort Sully, South Dakota, **CAPTAIN ALFRED E. BRADLEY**, assistant surgeon, is ordered to Fort Keogh, Montana, for duty.

Upon abandonment of Fort McKinney, Wyoming, **FIRST-LIEUT. HENRY A. SHAW**, assistant surgeon, is ordered to Fort Niobrara, Nebraska, for duty.

Upon abandonment of Fort Bowie, Arizona, **CAPTAIN JEFFERSON D. POINDEXTER**, assistant surgeon, is ordered to Fort Riley, Kansas, for duty.

Upon abandonment of Mount Vernon Barracks, Ala., **MAJOR CURTIS E. MUNN**, surgeon, is ordered to Benicia Barracks, Cal., relieving **CAPTAIN OGDEN RAFFERTY**, assistant surgeon.

CAPTAIN RAFFERTY, on being relieved by **MAJOR MUNN**, is ordered to Presidio of San Francisco, Cal., for duty.

FIRST-LIEUT. CHARLES E. B. FLAGG, assistant surgeon, relieved from duty at Presidio of San Francisco, Cal., and ordered to Angel Island, Cal., for duty.

MAJOR VAN BUREN HUBBARD, surgeon, relieved from duty at Fort Spokane, Washington, and ordered to Fort McPherson, Georgia, for duty at that station.

Upon abandonment of Fort Marcy, New Mexico, **MAJOR JAMES P. KIMBALL**, surgeon, is ordered to Fort Wingate, New Mexico, for duty.

Upon arrival of **MAJOR KIMBALL** at Fort Wingate, **CAPTAIN C. N. B. MACAULEY**, assistant surgeon, will take station at Fort Apache, Arizona, for duty, relieving **LIEUT. M. W. IRELAND**, assistant surgeon.

LIEUTENANT IRELAND, on thus being relieved, will take station at Fort Stanton, New Mexico, relieving **FIRST-LIEUT. F. R. KEEFER**, assistant surgeon.

FIRST-LIEUT. KEEFER, on being relieved, will proceed to and take station at Washington Barracks, D. C.

Upon abandonment of Fort Supply, Oklahoma Territory, **MAJOR CURTIS E. PRICE**, surgeon, will proceed and take station at Fort Sill, Oklahoma Territory.

FIRST-LIEUT. ISAAC P. WAVE, assistant surgeon, is relieved from duty at Fort Supply, Oklahoma Territory, and ordered to Camp Eagle Pass, Texas, for duty.

Upon arrival of **FIRST-LIEUT. WAVE** at Camp Eagle Pass, **FIRST-LIEUT. ALEXANDER N. STARK**, assistant surgeon, will return to his proper station at Fort Sam Houston, Texas.

Upon abandonment of Fort Mackinac, Michigan, **CAPTAIN E. F. GARDNER**, assistant surgeon, is ordered to Boston, Mass., for duty as attending surgeon and examiner of recruits, relieving **MAJOR M. W. WOOD**, surgeon, who, on being thus relieved, will proceed to take station at Boise Barracks, Idaho, to relieve **CAPTAIN WILLIAM STEPHENSON**, assistant surgeon.

CAPTAIN STEPHENSON, on being thus relieved, will proceed to and take station at Vancouver Barracks, Washington.

By direction of the Secretary of War, leave of absence for twenty-five days, to take effect upon his relief from duty in Boston, Mass., is granted **MAJOR MARSHALL W. WOOD**, surgeon.

By direction of the Secretary of War, **CAPTAIN FRANCIS J. IVES**, assistant surgeon, having proceeded with troops to Fort Ethan Allen, Vermont, is relieved from further duty at Fort Sheridan, Illinois, and will remain on duty at Fort Ethan Allen, until the arrival thereat of **CAPTAIN AARON H. APPEL**, assistant surgeon, when he will report in person to the commanding officer, Plattsburgh Barracks, New York, under the requirements of Par. 10, S. O. 221, A. G. O., September 20, 1894.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. – A regular meeting of the Society will be held on Monday, October 22, 1894, at the Medical Library, 19 Boylston Place, at eight o'clock, P. M.

Drs. C. L. Scudder and F. B. Lund: "Middle Meningeal Hemorrhage following Injury to the Skull." Discussion opened by Drs. J. Collins Warren, J. W. Elliot, G. L. Walton and W. N. Bullard.

Dr. C. F. Withington: "Meta-Pneumonic Empyema." Discussion opened by Drs. A. L. Mason, E. N. Whittier and Henry Jackson. JOHN T. BOWEN, M.D., *Secretary.*

SUFFOLK DISTRICT MEDICAL SOCIETY. — There will be a stated meeting at 19 Boylston Place, on Saturday, October 27, 1894, at 8 P. M.

Paper: Dr. A. T. Cabot, "Genito-Urinary Tuberculosis." Discussion by Drs. Abner Post, E. S. Wood, Wm. F. Whitney, Paul Thorndike, E. W. Dwight, F. G. Balch and J. B. Ogden.

Incidental Business: 1. Choice of a Committee of Five to prepare a List of Candidates for Officers of the Society.

2. Reading of Amendments to the By-laws of the Massachusetts Medical Society.

Supper after the meeting.

Notice. Members are requested to send to the Secretary corrections or change of address for the next catalogue.

H. L. SMITH, M.D., *Secretary*, 156 Newbury Street.

RECENT DEATH.

DR. WILLIAM H. TODD, died at St. Stephen, N. B., October 7, 1894. He was a graduate of Bowdoin College and a member of the College of Physicians of Edinburgh.

Original Articles.

THE CONTAGIOUSNESS AND CONTROL OF LEPROSY.[1]

BY JAMES C. WHITE, M.D.,
Professor of Dermatology in Harvard University.

It should be wholly unnecessary, but I feel that is due to myself, to state that it is of course impossible to present in any proper form the important subject assigned to me in the inadequate time allotted me. I could in a fraction of it make the categorical statement that leprosy is a contagious disease, and that it has never been, and never can be controlled except by national laws of isolation; but the only and proper reply by those of a contrary opinion to such a presentation would be a denial as simple and categorical. Yet I can scarcely do more than this in my fifteen minutes. You see, therefore, the impossibility of making more than the briefest mention of the evidence upon which my opinions are based. I can only present in the baldest way the text for the discussion which is invited.

It will be well to consider first what should constitute the proof of the contagiousness of a disease.

This should be based upon the following points:

(1) The history of its action upon communities or nations.

(2) The study of its action upon individuals.

(3) Its resemblance to other affections generally regarded as contagious.

(4) The establishment of a satisfactory cause of such contagion.

(5) The influence of control upon its history and course.

Let us apply these test questions to the disease we are considering.

I. THE HISTORY OF ITS ACTION UPON COMMUNITIES AND NATIONS.

You know as well as I the history of its course in Mediæval Europe. Introduced from the East, the boundless home of so many scourges, it became a pestilence of so overwhelming proportions, that no influence of heredity alone could possibly account for its spread. Many thousands of lazarettos were erected to care for it, and the sternest laws enacted to control it. Belief in its contagious nature was then universal. It lingers yet in by-places and border districts of Europe, whilst in its old seats in the Orient it still plays havoc with mankind. In India, it is estimated, there are two hundred and fifty thousand lepers to-day.

This glance backwards shows us how prone are the human tissues to the inception of the disease under favorable conditions, without distinction of race. But it is in the history of its introduction and course among virgin nations in our own day that this subject may be best studied. The extraordinary rapidity of its spread in the Hawaiian Islands can no more be accounted for on other grounds than its infectious nature, than can the appalling ravages of measles among the people of the Faroe Islands when first imported thither. The peculiar social customs of the Sandwich-islanders will readily account for the vast percentage of those affected. A study of its recent introduction into British Guiana and Trinidad demonstrates in the same conclusive manner that its rapid increase among those peoples could not possibly be accounted for, except by infection from person to person. And in still smaller communities this method of dissemination is even more strikingly illustrated, as witnessed in New South Wales, in Parcent, Spain, in Cape Breton, and in its revival in Louisiana. References to such modern instances might be largely multiplied, but these are enough; for if it can be demonstrated that the course of the disease in one nation, or in one small community, can be reasonably explained only through its contagious and infective nature, we need seek no other explanation of its ravages in all lands and all ages.

II. THE STUDY OF ITS ACTION UPON INDIVIDUALS.

Extraordinary difficulties stand in the way of the settlement of our question by a positive demonstration of its capabilities of transference from person to person on account of its long period of incubation. We expose a person to the emanations of variola, and we see the result in a few days; to contact with another infected with syphilis, and the results declare themselves in a few weeks; to contact with the materies of tuberculosis, and the effects may be apparent in a few months; but with leprosy we have reliable data to prove that the disease may not declare itself for years, two, five, or even ten, after a person has been exposed to its influence. Such a retardation of the tangible effects of contagion renders direct historical proof in individual cases almost an impossibility. Again, the tissues of other animals than man, already tested, show themselves utterly indifferent to inoculation experiments, so that we get no response to such methods of investigation. Let us hope ere long some animal as susceptible to the bacillus of lepra, as is the guinea-pig to that of tuberculosis, may be discovered. The possibilities of using human tissues for such a demonstration in satisfactory sufficiency is too remote for serious consideration. It is true that such experiments have been made. I have seen it claimed that thirty-six persons in Norway and Italy were formerly inoculated and without result, but I am unacquainted with the details of the experiments, whether active bacilli were employed or not, and do not know how long these persons were kept under observation subsequently. The results were simply negative, and therefore without positive value. Who knows that the artificial inoculation of syphilis conducted in the same way might not result in similar failure. Consider the history of such experiments with favus. Before a certain date attempts to transfer the disease from one host to another at will were almost always unsuccessful. Now that we know how to do it, this is accomplished with certainty. One inoculation practised by a competent person and in a proper manner of recent date has, as you know, been followed by leprosy. You are all familiar with this experiment of Arning at Hawaii — how pus from a leprous ulcer containing bacilli was injected into the skin, and a bit of leprous tubercle was transplanted into the arm of a condemned criminal, who was then isolated; and how three years subsequently leprosy declared itself, and progressed to full development. Unfortunately the experiment cannot be considered absolutely conclusive, as the victim might have been infected beforehand. But it is not likely to be soon repeated.

We must rely, therefore, upon data of clinical nature for our evidence. We shall find this partly in a careful study of the beginnings of endemics of the disease in small communities, as in that of Louisiana, Cape Breton, and Trecadie, as detailed by myself elsewhere;[2] in the reports of Hawaiian physicians of its dissemination throughout those islands; in the account of its recent importation into a small village in Spain, by Zuriaga, and in the cases recently cited by Dr. Lorand at a late meeting of the Vienna Dermatological Society. Another class of evidence is that of the acquisition of the disease by immigrants of non-leprous nationality into leprous countries, but of this there are so many instances on record that I need only allude to it. More important is the fact of the frequent development of the disease among the personal attendants of non-leprous stock upon lepers. I will mention a few such instances of recent occurrence. A nun, and a ward-tender in a Guiana lazaretto became lepers. In Russia three clergymen from healthy districts became infected after removing to leprous districts and associating with lepers. In Bergen two ward-tenders have become lepers. In New Orleans a priest has acquired the disease. In Hawaii twenty-five white residents are lepers, of whom two are physicians, and three priests, and Father Damien, at last. Twenty of the ward-attendants at Molokai have become affected. Who would for a moment think of explaining such occurrences in hospitals for syphilis except through contagion? The case of Father Damien alone, to cite the one best-known example, is enough to establish the contagious nature of the affection, and to outweigh limitless data of a negative character.

---

[1] Read at the Congress of American Physicians and Surgeons at Washington, May 30, 1894.

III. RESEMBLANCE TO OTHER AFFECTIONS GENERALLY REGARDED AS CONTAGIOUS.

There are two diseases to which leprosy bears a strong likeness, namely, tuberculosis and syphilis. All three of them are still mighty scourges of the human race, and prevail over all parts of the earth. Two of them have had periods of intensified activity within historic epochs in Europe, raging as vast national epidemics. The other has done its fatal work uniformly and incessantly, never exhibiting such extraordinary and spasmodic effects as to deserve the title of pestilence. They are slow in their development and course, and their effects upon the cutaneous tissues are manifested by the most pronounced lesions the skin is capable of exhibiting. They affect nearly all the other structures of the body as well, showing respectively predilections for special tissues, and eventually profoundly impress the whole economy. The anatomical changes in the cutaneous tissues produced by them, although not identical, are sufficiently analogous to have been placed in one group by pathologists, before the similar causative element of the same had been demonstrated. One of them has always been regarded as contagious, another was uniformly considered as such whilst it was most active in its destruction among civilized nations, and until overcome by the universally enforced practice of seggregation or isolation mankind outgrew its dread of it, and physicians in later times their knowledge of it. The other has only within the latest time come to be generally recognized to be infectious. All three have been held to be hereditary affections, but as their real nature has become at last understood, it may be said that heredity, although not improbable, is no longer essential to explain their continuance among mankind, for if a disease be proved to be contagious, its alleged hereditary character is certainly an unnecessary explanation of its endemic or epidemic occurrence, and contagion is a much more direct and easily understood method of transference from individual to individual than hereditary transmission. But if a disease be both hereditary and contagious, it is far more important to recognize the latter principle, because its effects are more preventable by State and professional control. All three affections are alike essentially of non-venereal nature, although one of them is so frequently transferred through venereal relations. Their strong resemblance to each other suggests an intimate relationship in etiology and pathology.

IV. ESTABLISHMENT OF A SATISFACTORY EXPLANATION OF ITS CONTAGIOUSNESS.

With the discovery by Hansen of the *bacillus lepræ*, the cause of its contagious nature was demonstrated as clearly as was that of tuberculosis earlier by the similar discovery of Koch. That of syphilis remains to be conclusively established. That this has not yet been accomplished in no measure invalidates the presumption that it will be. We simply await the requisite knowledge of reagents. This will surely come, and then we shall have completed the proof of the close analogy of these three great diseases in all points.

Leprosy is pre-eminently a bacillus disease, for this organism is found in rich abundance in human tissues — chorium, mucous membranes, nerves, blood-vessels, ovary, testicle, glands, and the great organs; in the blood, lymph, tears, saliva, nasal and intestinal mucus, milk, vaginal secretions, the discharges of ulcers, and all cutaneous lesions, excepting those secondary to nerve changes. Could any infectious material be more generally or favorably distributed for direct transference to other hosts? How can any one who admits the infectious properties of the tubercle bacillus reasonably deny the same quality to that of leprosy, or seek a more rational explanation of its extension among mankind? And although we have yet to learn how to make pure cultures of *bacillus lepræ*, as we can with that of tubercle, as well as to discover an animal as responsive to its action as is the guinea-pig to that of the latter, yet our ignorance upon these points with regard to the infective materies of that still more contagious third affection, syphilis, is still more profound as yet. Should we ask in these days more substantial proof of the infectious, or contagious, or inoculable character of any affection than the demonstration of its bacillus nature?

V. INFLUENCE OF CONTROL UPON ITS HISTORY AND COURSE.

Let us now consider what has been the effect of the opposing opinions held from time to time by our profession concerning its contagious character upon its course among civilized nations. You know as well as I the views with regard to its unclean and infectious nature among Biblical nations and in Mediæval Europe. How the leper was segregated, regarded as a moral monster, forbidden to pass through public ways without a special garb, or bell, or clapper, and how the monks in charge of lazarettos were obliged to wear upon their breast the red letter L. In later centuries when the disease had been thus controlled and confined to a few European districts, the belief grew up, chiefly through the conclusions of Boeck and Danielson in Norway, and the reports of physicians from various regions, mainly of negative character, collected by Virchow and the English College of Physicians — that it was not contagious, but was endemic because hereditary. Scarcely any one thought of questioning this dictum. At the meeting of the first International Medical Congress, held at Philadelphia in 1876, I called attention to the prevalence of the disease in the United States to a greater extent than was generally known, and again in 1882 I presented a paper upon the subject to the American Dermatological Association. My conclusions that the disease was increasing to an alarming extent in this country, and that it was contagious, found then but few supporters among my colleagues. Since then professional opinion has greatly changed. You have heard just now from Dr. Hyde how many important foci of the disease lie within and close around our borders. You know the story of Hawaii and Molokai, the conversion of the profession there largely to the belief in its contagious character, and the fatally tardy efforts of the Government to control it by isolation.

---

[2] American Journal of Medical Sciences, October, 1882.

In Norway and Sweden, that nursery of the modern doctrine of non-contagion, where the disease had increased in consequence to an alarming extent, a change of policy has taken place. In 1885 the Government passed laws authorizing the transfer and confinement within lazarettos of all lepers who are unwilling or unable to be isolated elsewhere in such manner as to prevent contagion in the family. It permits also the compulsory separation of married people. Since then the disease has been constantly diminishing. In 1870 the number of cases in Norway was 2,607 ; in 1893 it had been reduced to 800.[3]

In the Russian Eastern Maritime Provinces the disease has become so prevalent that lazarettos have been established in several places. In New South Wales it has increased so much of late among European residents that a law for compulsory isolation was adopted in 1890. In Trinidad there were three cases in 1805, 860 in 1878. In British Guiana there were 105 cases in 1860, last year there were 1,000 cases.

Thus the disease shows itself increasing rapidly wherever it is granted free license, and diminishing where properly controlled. The late Dr. Morrell Mackensie, in his essay on "The Dreadful Revival of Leprosy," said, "It is impossible to estimate the total number of lepers now dying by inches throughout the world, but it is certain that they must be counted by millions." This vast destruction of human life and the incalculable misery the disease is producing among mankind is, I believe, a direct consequence of the license which has been granted it by our profession and the nations under the mistaken faith in its non-contagious character.

But how is such unbelief explicable, how is any diversity of opinion as to the communicability of the affection possible in the face of the facts I have thus briefly laid before you? Why should leper commissions be still seeking some other explanation, and one of the most distinguished surgeons of the day still maintain that it is caused by one article of diet, and others cling to the doctrine of heredity as the all-sufficient cause of its continued existence? Partly, in my opinion, because of the prolonged incubative stage of the disease, and the wholly unwarranted reliance upon data of negative character. Just as strong evidence of the kind can be adduced against the contagious nature of tuberculosis and syphilis. X, a leper, lies in a hospital bed next to V, with syphilis. Their skins are abundantly occupied by the lesions of their respective affections in all stages of development. Ward-tenders, nurses, and physicians care for them with like indifference for months, and ordinarily with no ill results to themselves. The same patients have also lived for months, it may be, in the same condition with their families, and yet the latter have not contracted the disease. Do you not all know this to be true of syphilis in thousands of instances, and yet do you use them as evidence of its non-contagiousness? Why then apply such data to leprosy? On such negative evidence both affections should be equally pronounced non-infectious.

And what sounder evidence have we that leprosy is hereditary? No case of congenital leprosy has been observed, and the disease rarely affects children before the age of five. Leprous parents transmit no cachexia or constitutional degeneration to their offspring. We have no proof that a child born of leprous parents has become leprous, if removed immediately after birth to surroundings free from infection. Not one of the descendents of the one hundred and sixty leprous immigrants to the Northwestern States had become a leper at the time of Hansen's visit in 1887, and in but two of the children born at Molokai has the disease appeared. Without denying the possibility of the transmission of leprosy by descent, its apparent occurrence in any instance should not be accepted without the absolute demonstration of the impossibility of inoculation during or after birth. I believe the theory of heredity to be a very dangerous one, and that the sterner judgment of the Middle Ages, which made the leper individually the responsible agent rather than the progenitor, must again be adopted before the affection can be exterminated. We are dealing every day with infectious diseases, of the infecting properties of which we have no definite knowledge, and yet we should consider ourselves guilty of criminal conduct, if we should on this account refuse to acknowledge their contagious character. But in the case of leprosy we do know why it should be contagious, and the conditions which should be favorable to its inoculation. The burden of proof that it can be communicated in any other way is wholly with those of a contrary opinion.

THE PREVENTION AND CONTROL OF LEPROSY IN THE UNITED STATES.

If, then, we admit the contagious character of the disease, what measures should be taken for its exclusion from, and repression within our country? Is isolation effective, or necessary, or justifiable? Should immigration from infected nations be prohibited? I have already shown the favorable operation of such stringent measures in past times, the fatal error of their negligence, and the recognition of the necessity of their revival by other nations of the present day. What is our own duty in the matter? We have a considerable and ever-increasing number of lepers amongst us, distributed in numerous foci, which are known. We have individual cases also scattered over the whole country, a small proportion only of which, I believe, are known to physicians, and this is by far the most dangerous class, because they cannot be shunned. We have all met a few of them. They are free to come and go, and dwell where they like. We shall never control or eradicate the disease without resorting to strong measures, and the sooner they are enforced the better. If we wait until their necessity is more apparent, these results will be of far more difficult accomplishment.

---

[3] Prof. C. Boeck, of Christiania, under date April 30, 1894, wrote me as follows: "The chief contents of the actual law on lepra and lepers in Norway, of June 6th, 1885, is the following: 'Poor lepers, who are supported by the parish, ought, as a rule, to be isolated in the public hospitals for leprosy.' When such poor lepers are not isolated in the said hospitals, they should be lodged in separate rooms (in their homes) or cared for in such a manner as 'the sanitary commission' after the circumstances find to be safe. In the case of pauper lepers, however, the 'commissioners of paupers' should mind not to separate married couples who desire to live together. Nevertheless, the decision of the commissioners is valid, even if it involves such separation, where the decision is approved by the 'amtmand' (highest civil authority), after consulting the parish clergyman and district physician. Even other lepers (not paupers) may, by 'the sanitary commission,' be ordered to live in safe separation from their families and other people, which, however, must not interfere with married couples living together. If they do not obey this order they can be isolated in a hospital. The isolation, according to this law, may, if necessary, be carried out by the assistance of the police. Rooms, clothes and bedding, etc., which have been used by any leper, must not be used by or disposed of to others without previous disinfection, as decided by the (local) 'sanitary commission.'"

I recommend to the serious consideration of this Congress the following propositions:

(1) Every physician should be compelled by State law to report to the nearest board of health the existence of a case of the disease, and the neglect to do so on the part of a medical attendant, or a member of the leper's family, should be a penal offence.

(2) Immigrants affected by the disease should be arrested at ports of entry and along our borders, and turned back to their previous homes by the authority of the national board of health.

(3) Graded hospitals should be established by the National Government, in suitable insular localities where possible, within which both suspected and confirmed cases should be confined, and to which all access should be prevented excepting under proper restrictions.

Such compulsory isolation may be considered cruel to the few, but its longer neglect on our part is certainly a greater cruelty to the many, for in no other way shall we exterminate this most miserable disease. There can be no doubt that the advice of this body would have great influence in determining the action of State and National boards of health in the establishment of such measures for the public safety.

◆

A STUDY OF THE EYES OF 220 SCHOOL CHILDREN IN THE WORCESTER CITY SCHOOLS.

BY EDWARD SWASEY, M.D., WORCESTER, MASS.,

Oculist and Aurist to the City Hospital; Fellow of Massachusetts Medical Society; Fellow New York Academy of Medicine.

IN the *New York Medical Record*, for February 10, 1894, appears an editorial on "The Modern Eye," and the opening sentences are these: "An enormous amount of statistics is accumulating regarding the modern eye and its relation to disease. It has been abundantly proven that under the influence of civilization this organ is undergoing decided change, and that often it is not equal to the work which it is called upon to perform. Referring only to the subjects of refraction and accommodation, Roosa and Emerson have shown that only about one person in ten has an emmatropic eye; the remaining nine being hyperopic or myopic." When one reviews how much has already been done, and so well done, in the study of refraction of children's eyes, it may seem like thrashing old straw to still be compiling statistics on the subject. But still more perfected instruments whereby we can study the eye objectively rather than subjectively enable us to make finer distinctions than a few years ago. By the aggregation of atoms large masses are formed and statistics give us a proper basis from which broad and general conclusions should be drawn in this as in all other branches of medical science.

The first object of the writer, in studying these cases, was to ascertain how many children with apparently perfect eyes and vision yet had some defect when carefully examined. Several hundred printed circulars were placed in the hands of the principals of a number of the schools of this city to be distributed among the scholars from the ages of eight to fifteen years. Those with no defect in the vision, and without any eye trouble, were urged to submit to examination as well as those who had some trouble. The result was that 220 children were examined at my office in order to have exactly twenty feet for reading distance; to have a uniform light on the type at this distance, secured by a gas burner behind a white painted reflector; to have a perfectly dark room for the ophthalmological examination, and make use of Javal's ophthalmometer to ascertain the corneal astigmatism.

It may be well to state here that perfect sight is expressed by $\frac{20}{20}$; that is, a certain size of letter should be seen and read at twenty feet distance, another size should be seen fifteen feet, and another size ten feet. On the other hand, lines of letters are printed which should be seen thirty feet, again forty feet, fifty feet, and so on.

There were 140 girls; 80 boys; and with the exception of 14 in the lower grades at school they were found in the fourth to the ninth, inclusive. More than half the girls had perfect vision in each eye, and the same may be said of the boys.

Boys with vision $\frac{20}{20}$ to $\frac{20}{15}$ each eye,	44	
Girls with vision $\frac{20}{20}$ to $\frac{20}{15}$ each eye,	76	120

TABLE I.

Boy's vision perfect in one eye, imperfect in other,	7	
Girl's vision perfect in one eye, imperfect in other,	23	30
Right eye perfect, ...	10	
Left eye perfect, ...	20	
Right eye had hyperopic astigmatism, .	12	
Right eye had myopic astigmatism, . .	3	
Right eye had simple hypermetropia, .	4	
Right eye had simple myopia, . .	1	20
Left eye had hyperopic astigmatism, .	6	
Left eye had myopic astigmatism, . .	2	
Left eye had simple hypermetropia, . .	2	
Left eye had simple myopia, . . .	0	10

It appears from this table that the right eye was defective in vision twice as often as the left, and that the cause was found and measured in the right twice as often as in the left. I know of no reason for this, and am disposed to look upon it as only a coincidence.

There remain, therefore, 70 children (or 140 eyes out of 440) who have *both eyes defective* in vision, or fall short of $\frac{20}{20}$. These are tabulated as follows:

TABLE II.

Vision $\frac{20}{20}$ to $\frac{20}{40}$, ...	Boys, 8. Girls, 22.	30
Vision $\frac{20}{40}$ to $\frac{20}{70}$, ...	Boys, 3. Girls, 8.	11
Vision $\frac{20}{70}$ to $\frac{20}{200}$, ...	Boys, 4. Girls, 5.	9
Vision $\frac{20}{200}$ to $\frac{8}{200}$, ...	Boys, 4. Girls, 3.	7

The *causes* were found as follows:

$\frac{20}{20}$ TO $\frac{20}{40}$ CLASS.

Simple hypermetropia,	10	
Simple myopia,	2	
Hyperopic astigmatism,	5	
Myopic astigmatism,	7	
Compound hyperopic astigmatism,	3	
Mixed astigmatism,	3	30

$\frac{20}{40}$ TO $\frac{20}{70}$ CLASS.

Simple hypermetropia,	2	
Simple myopia,	2	
Hyperopic astigmatism,	0	
Myopic astigmatism,	3	
Compound hyperopic astigmatism,	2	
Compound myopic astigmatism,	1	
Old corneal blur,	1	11

$\frac{20}{70}$ TO $\frac{20}{200}$ CLASS.

Simple myopia,	2	
Myopic astigmatism,	2	
Hyperopic astigmatism,	5	9

$\frac{20}{200}$ TO $\frac{3}{200}$ CLASS.

Simple myopia,	1	
Myopic astigmatism,	1	
Compound myopic astigmatism,	3	
Old corneal blur,	1	
Nystagmus,	1	7

In a class by themselves I have tabulated the remaining 13 children, all of whom had *astigmatism against the rule.*

Hypermetropia. — That the great majority of children are farsighted (hypermetropic) has long been known, and even perfect distant vision is compatible with quite a degree of this error, if it be uncomplicated. In the 120 children with perfect vision in each eye, 33 had uncomplicated hypermetropia in each eye. Thus we have 66 eyes in this class, or one eye in 3.63 eyes, in which simple hypermetropia was easily detected with the ophthalmoscope and without the use of any mydriatic. There were 36 eyes in the various other classes in which simple hypermetropia was found, or 102 eyes in a total of 440, = 1 in 4.32. Moreover, in the *great majority* of children, of the 120 with perfect vision, they would accept a plus glass on each eye separately from .50 to .75 dioptrics, or on both together from 1. to 150 dioptrics, though the ophthalmoscope indicated very nearly emmatropia.

Hypermetropic Astigmatism. — If simple uncomplicated hypermetropia in mild degree be of very little concern, and in fact the rule, in the eyes of children, hyperopic astigmatism even in low degree cannot so easily be disregarded. This is especially true when the eyes are taxed over books, drawing, study of maps, etc. Its location is in the cornea, and is therefore a fixed error and beyond removal by the accommodative apparatus of the eye. But this same apparatus is in constant effort to secure a perfect retinal image through an imperfect medium. The eye is naturally satisfied with nothing short of a perfectly formed retinal image, and a close approximation to this brings on an effort to perfect it. A slight imperfection in the contour of the cornea for this reason not infrequently worries an eye quite as persistently as a larger error, which at best permits of but imperfect vision.

That hyperopic astigmatism of from 1. to 1.50 dioptrics may not seriously impair distant vision is well known. Among the 120 with both eyes perfect vision there were 11 boys and 22 girls who had in each eye astigmatism of 1. to 1.50 dioptrics, and were all hyperopic astigmatics. Thus, of 66 eyes in this class, and 10 of the 13 who had this same amount of astigmatism and yet had perfect vision, found in Table I, a total of 86 eyes in 280 which have *perfect vision* and yet a marked defect in structure. It indicates that perfect vision is not by any means equivalent to a faultless eye in a young person; and if we trust solely to a subjective examination in these patients, we shall be led astray frequently, unless we subject the eye to full mydriasis, which means a good deal of annoyance and time. Still it was only a few years ago that an ophthalmologist of large experience in New York regarded it as almost a waste of time to attempt to hunt down, or even regard, a possible astigmatism in a young person I was then examining who had vision of $\frac{20}{20}$ or $\frac{20}{20}+$. Possibly he was right if it meant the full effect of atropine, but he was not then aware of the simplicity and accuracy of the ophthalmometer of to-day. It was then just being introduced into the Manhattan Eye and Ear Hospital, and he, like many another who believed the old method good enough, was regarding it as a nine days' wonder that would soon be cast aside and go to the junk shop. But now he uses one constantly in his private office and at the clinic. But this same patient had quite a degree of astigmatism that was quickly detected by the ophthalmometer, and had to be reckoned with in fitting her with glasses. Each one of these children was examined with this instrument, and the full measure of corneal astigmatism detected at once.

Whether it be sufficient to regard only corneal astigmatism, and accurately measure that, I shall not here stop to discuss. Suffice it to say that our best authorities the world over are more and more coming to so regard it, in the vast majority of cases. Not only with these 86 eyes just mentioned, but in the various other cases recorded in these statistics, with almost no exceptions, an astigmatic glass was accepted by the eye to the full measure indicated by the ophthalmometer. I am on record elsewhere[1] as an admirer of the instrument to accomplish what it was designed to do, that is, to measure the amount and locate the axis of the corneal astigmatism. More than this it will not do, and more should not be expected of it. I have used one constantly from the time it was first introduced into the Manhattan Hospital, and procured one before they were manufactured in this country, so much did I feel the need of it in my private practice. It is for the quick and accurate detection of this corneal error, even in smallest degree, in these nearly perfect eyes, that it yields us one of its best aids. In the many thousand eyes that I have examined with it the story has always been told so truly and so well, that I now look upon it as a tried and trusted friend.

Some minor additions that I have made to my instrument, I am sure have been of service to me. I have for a long time used it without the covering shield that is placed before the unobserved eye. I cannot see that the instrument has lost anything in accuracy by this change, and it certainly expedites the examination very much if one is not obliged to leave his seat to move this from one eye to the other. This very change means also in most cases that the patient will remove his face from the opening and a readjustment of instrument is required.

---

[1] See Journal, March 10th, 1892.

The long pointer is not always readily seen, and the figures it indicates. To supplement both these I have duplicate figures placed at the edge of the opening on the back of the large plate. If the pointer is not seen, a glance at these figures at once tells me its location and the figures. Many times we wish to be as expeditious as possible in the examination, in case of young children, for example; and both these changes are of advantage. A "sight" placed over the distal end of the tube aids one not a little in "finding the eye," which is no small annoyance to beginners. A projecting visor of tin or brass, painted black on the inside, and two and a half inches deep at the centre, can be fitted to the top of the opening for the face. This shuts off overhead light, and letting it taper towards the sides it also shuts off the side lights. This puts the cornea in a dark space and so gives a sharper image of the white mires. The simpler we can make any instrument and yet lose nothing in accuracy the more acceptable will it become; and as it seems to be the order of the day to make suggestions regarding this one, every writer seems disposed to add his mite.

In Table II we find 10 children to add to the 86 eyes already discussed, who had simple hyperopic astigmatism, or a total of 106 eyes. These figures show how very common it is to find some degree of hyperopic astigmatism in young persons in good health doing a good deal of eye work, and the great majority of them not conscious of any defect, and none of them calling upon an oculist for relief, for one eye in 4.15 eyes is quite a large proportion for this one fault. It is greatly in excess of that shown by the cases noted in the next division, which is:

Myopic Astigmatism. — In only 13 children do we find this trouble in both eyes, and in five in one eye only, or a total of 31 eyes, or one eye in 14.2 eyes; and whereas there were 86 eyes with perfect vision and yet some hyperopic astigmatism, not one of these 31 eyes comes within this class. It would seem that this error even in small degree is hardly compatible with $\frac{20}{20}$ vision in an eye. And yet let two such eyes work in unison and a person may be able to reach this standard, but cover one eye and at once the other falls below the standard of perfection. Not so always with hyperopic astigmatism as we have seen.

Simple Myopia.— Although this class ranks lowest in the scale of frequency in these statistics, for there were but 8 children, or 16 eyes, in the whole number, yet its great importance, both by itself and associated with astigmatism, advances it to first place in our care and solicitude for such eyes. An eye once myopic remains myopic always. Any considerable degree renders the eye dependent on a glass to secure perfect distant vision. Not one with this fault was found in the class with perfect vision. Not only in adults is much of our happiness dependent on seeing perfectly, but in children the unfolding and development of the mind are greatly influenced by the way they see the world; whether they see it well and clearly or through a mist and maze; whether with a good broad expanse of horizon, or a small and contracted one. To be sure, one eye in 27.5 eyes is not a high percentage, but it should be remembered that myopia, except in cases of high degree, is an acquired fault in the majority of cases. What is to-day practically a perfect eye in a child, may, in a few years, pass over the line into a low grade of myopia, and this in time increase to a higher grade, and all come about by faults and mistakes in the use of the eyes; And what are these faults and mistakes? Close, confining study and work on small objects, and such work prolonged when the eye is tired and needs relaxation; too long hours at books under like conditions; poor light in study and reading, and reading at twilight is a common and pernicious practice; the habit of holding the book and work near the face; the study of imperfect maps and finding the names printed in very small type. These are some of the more common faults of school-children, and unfortunately, too, of many of the books placed in their hands for study. A certain percentage of these 120 children with perfect vision to-day, will become myopic before they are through their school and college days, provided they prolong their studies so far.

To quote again from the editorial at first referred to, it says: "In our colleges the percentage ranges from 35 in the Freshman to 47 in the Senior year. Among classes whose occupation does not tax the eyes the percentage of myopia is only two or three, and the average for a civilized community may be taken to be about eight per cent. Thus it seems that the population of a civilized country starts naturally with only about two per cent. of shortsightedness, and that this increases until among some classes every other man is myopic."

In the line of prevention of this trouble much depends in the care taken of the eyes, avoiding the harmful practises above referred to; much depends on keeping up the full physical powers of the body; much on a good share of healthful out-door exercise and using the eyes in seeing distant objects in place of prolonged close book-work.

Astigmatism against the Rule.— An eye that has myopic astigmatism requires the cylindric glass that corrects the error to stand horizontally before the eye; one with hyperopic astigmatism at right angles to this, or perpendicular. This is the rule, but when the myopic eye requires its glass to stand perpendicular, and the hyperopic takes it only horizontally, then we have "astigmatism against the rule." In proportion to the grade of trouble present this form of astigmatism produces more eye distress and constant discomfort than any other refraction fault, if I have observed correctly. I was not prepared to suppose that 1 eye in every 16.95 eyes among these children had this error, however. But there were 13 who had it in each eye, 8 girls and 5 boys. Of these 13 all but 2 gave a history of eye discomfort especially in their studies and all close work. Yet the grade of error was never more than 1.50 dioptrics, and nearly all from .50 to 1. dioptric. In 8 cases the vision was almost $\frac{20}{20}$, in 2 it was $\frac{20}{15}$, yet the ophthalmometer gave the key to the trouble at once, and in only two eyes was the glass indicated not accepted at once. Almost surely as these children grow older and begin to lose some of the great accommodative power of childhood will this error begin to become more troublesome, and relief and comfort can only be secured by wearing glasses constantly.

It was long ago determined that the axis of corneal astigmatism was either at 90° or 180°, in the vast majority of cases. I have noted but 7 departures in the right eye from this rule in the 440 eyes, 4 in the left, and 5 in both right and left, to the extent of 15° to 45°.

ASTHENOPIA.— How many of these 220 children confessed to some degree of eye trouble in their studies? This is an interesting and important question and 115 did confess to some of the various phases of asthenopia, while 105 said their eyes gave them no trouble, and of these latter no less than 30 had some astigmatism in one or both eyes, from 1 to 1.50 dioptrics. The statement of these children on such a question should be taken with due allowance, I feel sure, but still it is of some value.

◆

POSITION IN THE TREATMENT OF ELBOW-JOINT FRACTURES: AN EXPERIMENTAL STUDY.[1]

BY H. L. SMITH, M.D.

(Concluded from No. 16, p. 389.)

T-FRACTURES.

Experiment, August 27, 1892. Adult female. Left arm. Rigor mortis very slight. Vertical incision, two centimetres above the internal condyle. A small bone drill passed partially through the condyle towards the joint. It stuck in the bone, and was withdrawn. The condyle was then partially chiselled through in the same direction. The elbow was then raised upon the edge of the table, with the forearm vertical, and repeated blows were made with a wooden mallet, the hand being extended, so that the blows might be made upon the palm in the direction of the forearm axis. A slight crack was heard, but nothing definite was accomplished in this way. The forearm was then forcibly abducted over the edge of the table. Apparently the fibres of the posterior ligament attached to the olecranon were broken through. Attempts were now made to break the internal condyle by strong adduction, but they were not successful. It had been thought that a fracture brought about by direct or indirect force might present conditions nearer those found in the case of fresh breaks during life, but as it was so difficult to produce the fracture in the adult arm the chisel was resorted to again, and all the fractures of this series of experiments were produced in that way.

After being chiselled off, the internal condyle felt freely movable backward and forward, and seemed to be held firmly to the ulna. The olecranon could be partially displaced inward by flexion and abduction of the forearm.

In the extended position the fragment is pretty firmly locked, and seems to be in fairly good position. The "carrying angle" is normal, and the forearm cannot be brought into a straight line with the arm. A forcible attempt is made to bring the internal condyle far enough upward to make the angle an internal one, so as to produce the "gun-stock" deformity. This is accomplished by strongly adducting the forearm. As this act is performed, something is heard to break with a loud snap. The lateral mobility of the joint is now very free, and the elbow angle can be made a slightly internal one. The internal condyle still follows the ulna. When the joint is opened later, it is found that the first break went through the middle of the trochlea. The second line of fracture began in the centre of the first, ran across the bone at its thinnest part, and passed through the middle of the external condyle. It was observed that the outer fragment followed the head of the radius closely.

The bones of the forearm, with the fragments, can be displaced backward upon the shaft of the humerus. By reducing the dislocation, and then putting the forearm in the extended position, the second, transverse, fracture seems to be brought into good position. The internal condyle is in fair position, but is quite movable, and seems to project slightly forward. The forearm can be easily hyperextended. With a few degrees of flexion (140°) the fragments are all very loose, and could not be held in position easily, it would appear, by a simple anterior splint. The muscular masses which seemed before to aid in holding the parts firmly are now quite loose.

In the position of right angles, with the hand supine, if downward pressure is made upon the upper part of the forearm, the second fracture is held in good position, but can be easily moved. In this position it is easy to get the backward displacement at the elbow, unless constant pressure and counter-pressure are made upon the broken portion — backward upon the shaft of the humerus, and forward by pulling the forearm. Upward pressure upon the upper end of the ulna, with the arm at right angles, forces the innerside of the arm, together with the internal condyle, upward. The ulna and radius are then brought into nearly the same horizontal plane. This appears to be done by the rotation of the lower fragment of the humerus, as a whole, upon the antero-posterior axis. With the hand in the semi-prone position the two bones can be kept parallel, in their natural planes, and in their proper positions. In this case the fragments remain as before, being unaffected by the change in the position of the forearm.

If the dislocation is reduced, and then the forearm brought into the position of acute flexion, the fragments are kept in good position, and held more firmly than in any other position of the forearm; but if care is not taken, there is a tendency for the lower fragment of the humerus to rotate forward on its lateral axis. This tendency, however, is but slight.

The skin and fat are now removed, exposing the muscles. In the extended position, when the humero-ulnar angle is made as large as it is naturally, as shown by that of the sound arm, there is a separation of at least one centimetre between the upper edges of the line of fracture, due to the fact that the fragment is rotated outward, and prevented from coming into place by the structures which bind it to the ulna on the side. In order to bring the broken surfaces into position, the forearm must be adducted until it is in a straight line with the upper arm.

In the right-angled position, with the hand supine, pressure upward upon the ulna brings the surfaces in contact, since the structures which bind the internal condyle to the ulna are now relaxed, and offer no resistance. Apparently it is the muscular masses, acting through the dense fibrous band to which they are attached, which form the main factor in this steadying of the fragment. If the hand is semi-pronated and at the same time downward pressure is made upon the ulna, the fragments are kept in normal position, and the "carrying angle" is preserved, as is shown by holding the fragment fixed with one hand while the forearm is slowly extended. With the hand semi-prone, the bones can best be brought into the same plane, and therefore the danger of raising the ulna to the plane of the radius is not so great.

In the acute position the same conclusions are reached as before the removal of the skin. By constant downward pressure upon the ulna, the internal fragment is kept in position, and the normal angle between humerus and ulna is found to be preserved.

A small knife is now introduced vertically into the muscular mass over the internal condyle, and all the ligaments uniting the condyle with the ulna divided as far as possible, leaving the muscular bellies and the fibrous septa as nearly intact as possible. The fragment is still found to follow all the movements of the ulna, because the intermuscular septum is attached to the ulna, and the only way to free the fragment would be to rupture this entirely through.

In the extended position the outward rolling is still more marked, and the separation greater than it was before. The fragment is now very loose, but it can be almost exactly replaced by bringing the arm into the position of acute flexion, forcing the ulna downward at the same time, and pressing the condyle firmly downward and backward.

The muscles are divided down to the capsule. In the extended position it is almost impossible to get the fragment in place by manipulation with the fingers; it persists in rolling outward. In the acute position the replacement can be done very easily and well. To accomplish it best, downward pressure should be made upon the forearm while the movement of flexion is being performed.

---

[1] Read before the Surgical Section of the Suffolk District Medical Society, January 3, 1894.

Undoubtedly the most unfortunate results after elbow-joint fractures occur from T-fractures, or those of greater comminution; and these cases have been studied with the greatest care, in order to be perfectly sure that the conclusions drawn are warranted by the facts. The foregoing is a typical fracture of this sort, the results obtained in the other experiments being identical. If it were possible to treat the living arm in a position of forced extension, the fragments might be held fairly well in position by the muscular bellies passing over them in front. But this is clearly impossible. The advocates of the extended position in the treatment of these injuries are careful to place the forearm at a point slightly less than full extension, and it is in exactly this position that the fragments were found to be most loosely held.

It is here, too, that the value of semi-pronation of the forearm is seen, since it was found in some of the experiments that the mere act of supination would carry the outer fragment distinctly away from its place, and the pressure such as is caused by the ordinary form of anterior angular splint would make this separation very considerable.

INTERNAL EPICONDYLE.

These fractures are of small consequence, and result favorably no matter what the position chosen. In no case were they produced purposely, but in two cases where the fractures resulted accidentally when it was intended to chip off more of the condyle, it was found that the fixation was more complete with the arm flexed to less than a right angle.

SPECIAL PROBLEMS.

Experiment, November 7, 1893. A variety of "T"-fracture. To show whether, if the posterior ligament is divided, the tendon of the triceps alone is sufficient to bind the fragments in place.

Large left arm. Chiselled over internal epicondyle. The epicondyle alone is at first broken off, and then by continuing the chiselling the joint is apparently opened. This is afterward found to be true, the line of fracture running nearly to the centre of the trochlea below. Then the external condyle is chiselled into the joint. The line of this fracture is afterward found to enter the first one at about the centre of the trochlea in front. It is therefore a kind of T-fracture.

In complete flexion the fragments are now held in place pretty firmly, although the internal epicondyle can be moved slightly. In all other positions the fragments can be easily moved with the movements of the forearm.

A knife blade is introduced above and behind the external condyle, and all the ligamentous fibres behind and over it are cut through, leaving only the tendon of the triceps. The fibres of the anconeus are all cut through.

The results do not differ from those obtained before, the fragments being held in position just as well.

A window is cut through in front in order to see where the line of fracture runs. The same movements are again gone through with, with exactly the same results. Complete extension is now seen to separate the fragments in front a distance of at least half a centimetre. The locking force seems to be the coronoid process in front and the tendon of the triceps behind.

Experiment. To see if a fractured olecranon would allow of lateral mobility of the forearm, so as to modify the "carrying angle."

Large arm. Ligaments dry and stiff. Olecranon chiselled through at about the junction of the epiphysis. The aponeurosis covering the posterior surface is not entirely broken through, so that the fractured extremity does not separate from the body of the bone on flexing forearm. There is considerable lateral mobility of the fragment, and crepitus easily obtained. No amount of lateral prying of the forearm will cause any appreciable difference in the angle. To make a difference in the angle, one of the lateral ligaments would have to be broken.

This study has slight bearing on the points at issue in this paper, and is inserted because of its importance in a complete study of the value of the "carrying angle" and the cause and importance of its loss.

Experiment, November 13, 1893. Medical School. To discover whether, with posterior and lateral ligaments divided, the triceps tendon remaining, the extended position is best.

Arm with muscles remaining. Chisel introduced above internal epicondyle, and the lower end of the humerus cut across. The line of fracture runs a little downward, but apparently passes above the capitellum. Without cutting the ligaments the forearm is first placed in various degrees of flexion. In the extended position the upper end of the lower fragment rides forward and presses firmly against the muscles in front of the joint. The fragment can be moved somewhat, although it is partially held, of course, by the dense tissues in front. In the right-angled position the fragment is quite loose, and can be moved in all directions pretty freely. In this position it is very easy to turn the fragment upon its long axis (the axis of the humerus), and apparently this would be done by bringing the arm across the chest, with the forearm in a sling, in the usual way. When the fragment is rotated in this way and then the forearm extended, it is evident that the "carrying angle" is decreased, but it is not made an internal angle. In this position if upward pressure is made beneath the upper end of the ulna, there is a tendency for the fragment to be bent one way or another at the point of fracture, the direction of the bending depending upon the direction of the force. If extension in the line of the humerus could be kept up in this position, the fragment would be kept pretty well in place.

In the acute position the fragment is held firmly in place at its upper end, although there is a tendency for its direction to be changed so that it points forward more than the shaft of the bone above. This change in direction is not very great, and even if union were to take place in that position the deformity would not be noticeable. This forward tilting can be almost entirely corrected by going through the manœuvre already described, and making strong downward traction. Rotation of the fragment in the axis of the humerus now takes place only if considerable force is used, since the rough edges of the broken surfaces become interlocked.

A T-fracture is now made of this specimen, and then the same test is repeated, with the same result, although the two fractured condyles are not held quite so tightly as was the single piece.

In this case the same study was made before the posterior ligament was cut and afterward, and the results were essentially alike. The posterior ligament was cut by introducing a knife blade behind, as is done in tenotomy, and then cutting backward until there was left only the tendon of the triceps, without its fibres running laterally to the condyles.

Experiment, November 14, 1893. Division of the following structures, successively: Internal condyle, lateral ligament, anterior ligament, external condyle, external lateral ligament, posterior ligament. The tendon of the triceps only is left.

Arm from dissecting room. Muscles intact. Internal condyle chiselled. The fracture enters trochlea near its inner border. The fragment is best held in the acute position. Lateral ligament on that side divided. Now the fragment is very movable in the extended position, and also in the right-angled position, but in the acute position it is held apparently by the tenseness of the fibres running from the internal epicondyle. Just as soon as the ulna gets a little inside the right angle (at about 80°), the internal condyle commences to turn up into its place and become fixed.

Then the anterior ligament is cut, which leaves the condyle very free. In the extended position the fragment falls forward and outward, and will not remain in place. In the acute position it is brought up quite well into place, and is held pretty firmly.

The external condyle is now cut through, the line of fracture running across the joint, into the first fracture, making a T-fracture. In the extended position everything is loose, and nothing is held in position, while in acute flexion things are held better than in any other way. With so much tissue lost it is, of course, impossible for the fragments to be kept exactly in place, and in other than the acute position there is no attempt at it apparently.

The posterior ligament is now divided, and there remains only the tendon of the triceps. In the extended position the front of the joint is absolutely open, the fragments rolling in every direction, and showing no tendency to keep in place, even after having been put together. As the forearm is flexed and gradually brought to an acute angle with the upper arm the separated condyles, without further manipulation, come very nearly into place. After being pressed into position with the hand they are held there very firmly. This is a very striking performance, and is repeated over and over again, but uniformly with the same result.

Any conclusions drawn from the preceding experiments must be made with certain reservations, due chiefly to the difference in the conditions as met with in the cadaver and the recently injured arm. It is quite impossible to say, for instance, that the fracture caused by a chisel, where there is generally no comminution, where the line of fracture is comparatively a straight one, and where there is usually little or no rupture of ligaments or stripping up of the periosteum, will behave like a recent fracture in the living arm, where all these conditions may easily be quite the opposite, and where, moreover, there is synovial effusion, extravasation of blood, and spasm of torn and irritated muscles.

Such or similar limitations, however, are common to all purely experimental work, and if given proper weight, do not prevent us from making valuable deductions.

The following conclusions seem to be justified:

(1) When either condyle of the humerus is broken off into the joint, the fragment remains closely attached to the bone below, whose motions it follows.

(2) The fragment of a fractured condyle can be most surely replaced in its normal position by the following manœuvre: forcible extension followed by pressure on upper end of ulna, downward and forward, while the forearm is being pronated and flexed to an acute angle with the upper arm.

(3) The same manœuvre acts equally well in replacing the fragments if the fracture be of both condyles, a transverse fracture of the lower end of the humerus (probably it would be true also of the epiphyseal separation), or a T-fracture.

(4) In all these fractures involving the joint the fragments are held most firmly in place, that is, are least susceptible to displacement from forces acting from without, if the elbow is tightly flexed. The next best position, in this regard, is the position of forced extension (not loose extension), while the greatest mobility is met with in the position of 100° of flexion.

(5) Forced extension in all cases causes a rotation of the fragment forward. A less degree of extension, which will not do this, allows the fragment great freedom of motion.

(6) The essential factors in the locking of the fragments in the acute position, seem to be the coronoid process in front and the ligamentous and muscular structures behind. The tendon of the triceps is sufficient if the posterior ligament is divided, and the ligament is sufficient if the muscle is removed.

However pleasing these experiments may be in the simplicity and definiteness of their results, it is natural that some question should arise as to their application in practice. The treatment of elbow injuries by flexion to a point slightly less than a right angle is not new. But the present scheme contemplates a flexion which shall purposely make tense the structures behind the articulation, a position which it would seem, might easily be carried so far as to endanger the tissues in front of the joint and cut off the blood-supply of the forearm. Again, it might be thought that such a position would be exceedingly painful, or at least irksome, to the patient.

In the cases thus far observed, however, no unpleasant symptoms have been met with. In but one case was it necessary to change the angle, and that was for a single day only. Pain, or even discomfort, has not been complained of, nor has there been any kind of disturbance in the circulation of the forearm.

If the conditions of the experimental fracture are realized in actual practice, and the fragments are held in almost exact position, and kept there absolutely without motion, then it may reasonably be expected, from the general principles governing the repair of bones, that there will be a minimum of exudate, a minimum of callus-building, union practically by first intention, the least possible thickening of ligaments and formation of adhesions, and the smallest amount of extra bone-formation; or, in other words, the quickest possible repair, with the least impairment of function.

Next in importance to the preservation of the mobility of the joint is the desirability of maintaining the normal angle between the humerus and ulna. The exact value of this angle, in a practical way, may be a question worthy of separate consideration. It is certainly true that not a few surgeons deem it of sufficient importance to serve as a basis for a special method of treatment, preferring apparently, to run the risk of anchylosis with the forearm extended, than to run the chance of an unnatural inward angle.

Any position which restores the parts exactly to their proper places cannot fail to preserve the normal angularity. Aside from this assumption, however, there is reason to believe, on theoretical grounds, that as long as the ulna is closely flexed on the humerus it is impossible for such a displacement of the fragments to occur as to reverse the usual humero-ulnar angle. It is generally stated that this angle is due to the obliquity of the axis of the joint to the axis of the humerus. As a matter of fact, it is due in a larger degree to the obliquity of the axis of the ulna to the axis of the joint.[3]

---

[3] Strangely enough this fact seems to have escaped the attention of anatomists and surgeons. The writer has made careful measurements in a large number of bones and of freshly dissected arms, the results of which it is proposed to collate and publish later. It is the more curious that attention has not been directed to this point because a great deal of study has been devoted to the curious mechanism and motions of the joint, and this simple relation of the

If the humero-ulnar angle (the so-called "carrying angle") were due, as is usually stated, to the obliquity of the axis of the joint to the axis of the humerus, then in flexion of the forearm the latter would be carried to the inner side of the arm, as in the diagram. (Fig. 2.) But this is not the case. The obliquity existing in both bones, though not usually to an equal degree, the forearm when acutely flexed, lies nearly in the plane (antero-posterior) of the arm. (Fig. 3.) No matter, then, what the fracture may be, if, the forearm being acutely flexed, the humerus and ulna are kept in this same plane during treatment, when the forearm is extended, the ulna will be carried outward, reproducing very closely, at least, the normal angle.

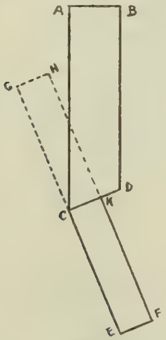


FIG. II.

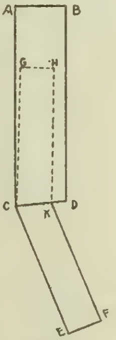


FIG. III.

As long as the lateral ligaments are untorn, it is not possible for either condyle to be so displaced upward as to change the direction of the axis of motion in the joint to such an extent as to overcome this natural inclination of the ulna outward. In the case of a transverse fracture across the lower end of the humerus, or of a T-fracture, it is perhaps possible for this to occur, but even then it would be unlikely unless the forearm bones were flexed to less than an acute angle, that is, to a point somewhere between 90° and 60°.

At the time the foregoing paper was read in January, 1894, there were reported ten cases in which elbow injuries of various kinds had been treated by acute flexion. The results obtained in these cases were so satisfactory, that since that time the majority of injuries of this class occurring at the City Hospital have been so treated, and the writer is not aware of any case in which the result has been other than satisfactory. As it is intended to collect and study all these cases more carefully in the future, they will not be printed here. Since some of them, however, were carefully manipulated under ether, with a view to test the correctness of the results obtained in the experimental fractures, the following notes, made at the time of the examination, and confirmed by other observers, are subjoined.

CASE. Fracture of internal condyle.

C. O'L., a large boy of sixteen, fell on the ice December 27, 1893, striking on the left elbow. A temporary dressing was applied at the New England Hospital, and he came to the City Hospital on the morning of the 28th. Under ether there was found to be a fracture of the internal condyle running well into the joint. There was slight swelling, and the detection and study of the fracture was exceptionally satisfactory. Crepitus was best obtained by alternately flexing and extending the forearm, at the same time making downward pressure upon the internal epicondyle. The humero-ulnar angle of the right arm was estimated to be eight degrees. By adduction of the forearm that of the left elbow could be reduced to nothing, while by abduction it could be increased to ten degrees or more. When adduction was made, the fragment was carried forward and upward. Reduction was accomplished in the manner heretofore described, and tracings taken before and after the manipulation showed conclusively that the position was improved. The forearm was held at 45° of flexion by adhesive plaster.

When the forearm was extended, the fragment could be felt to bulge forward beneath the skin, and it was noted that in this position, as well as when the elbow was at right angles, the fragment could be easily displaced.

CASE. Separation of epiphysis. Acute flexion. Slight internal angle.

M. D., a girl of twenty months, November 12, 1893, fell down a flight of stairs. She entered the service of Dr. M. F. Gavin, by whose kindness I am allowed to report the case. I saw her four hours after the injury, at which time there was great swelling of the left elbow region, with commencing ecchymosis on the outer aspect of the joint. Careful examination under ether disclosed a transverse fracture of the lower end of the humerus, the line of fracture seeming to be at the epiphyseal junction on the outer side, while on the inner side it ran higher up through the bony structure above the internal epicondyle. At first the forearm could be flexed only to a right angle, but after some manipulation full flexion was possible. On extending the forearm it was found to be adducted, in relation to the humerus, the two forming an inwardly open angle of about ten degrees. It was easy to increase the amount of adduction and with it, of course, this inward angle. In the normal arm the humero-ulnar angle was nothing, the arm and the forearm being in the same straight line. After going through the motion of reduction in the manner already explained, and then carefully extending the forearm, without disturbing the fragment, the inward angle was found to have disappeared, the arm and forearm being in one straight line.

By experimenting it was found that if the arm was fully extended, the fragment was easily moved out of position and tended to project forward. In the right-angled position the same thing was true, while in the acute position the fragment seemed locked, and in very fair position, although the internal epicondyle did not seem to be as prominent as upon the other side. By no amount of manipulation, however, and in no position could the epicondyle be made any more prominent.

The forearm was put up at about 60° with adhesive plaster. The radial artery could be felt to pulsate, and there was no lividity of the fingers. Tracings were taken before and after the reduction, and it was evident that the position had been improved.

December 7th, about four weeks after the injury, the strapping was omitted, and the arm left free, there having been no trouble whatever from pain or pressure in the mean time. December 28th, six and a half weeks after injury, flexion, rotation and extension were absolutely perfect. There was a very slight internal angle at the elbow (three to five degrees). The bony prominences were practically in their normal relative positions, and the child could use the arm almost perfectly.

This appears to have offered one of the severest tests possible. The writer is very firmly convinced from a series of studies which he hopes to publish later, that it is in exactly this class of fractures, namely, separation of the epiphysis, that the peculiar gun-stock deformity is most often met with. In the above case the deformity is trifling, and the return of function all that could be wished.

---

shaft of the ulna to its articular axis, really furnishes a key to the mechanism, rendering much more simple a matter which otherwise seems very obscure.

Clinical Department.

A CASE OF DIABETES INSIPIDUS.

BY SAMUEL A. FISK, A.M., M.D., DENVER, COL.

In the Journal for July 31, 1884, I reported a case of diabetes insipidus, somewhat in detail; and as the case has been under constant observation, and ten years have elapsed, it has occurred to me that it might be of interest to make a further report of the conditions and institute some comparisons.

The history, as given at the time, was that of a man twenty-eight years old, who had been fairly healthy, although he was never robust. At five years of age he was attacked with congestion of the lungs. At fourteen, he was taken with acute inflammatory rheumatism, which lasted ten days or two weeks. At twenty-two, he had a pneumonic process at the base of the right lung. At twenty-four, he was sick in bed for four weeks with lobular pneumonia, sweats, loss of flesh and strength, and accompanying symptoms. This trouble brought him to Colorado in 1880; and in the latter part of October, 1883, when he was twenty-eight years of age, he was attacked with acute inflammatory rheumatism, which, with a relapse, lasted six weeks, during the greater part of which time he was confined to his bed. The joints affected were the knees. The treatment was the salicylate of soda, five grains every three hours; later the acetate of potassium, twenty grains three times a day, was added; and still later he was given ten grains of salicin every three hours, and the knees were painted with cantharidal collodion.

Synchronously with the onset of rheumatism the patient suffered from excessive thirst and a craving for the alkaline waters, such as Vichy. The artesian water tasted as though it were sweetened with molasses. The total ingestion of fluid was about ten quarts a day, two of these being Vichy and the Iron Ute water. The daily secretion of urine was from nine to ten quarts. Analysis showed it to be pale in color, slightly acid it reaction, specific gravity 1.003, albumin and sugar absent.

Stress was laid, at the time of making the report, upon the extraordinary thirst. The tongue and fauces would be parched and dry immediately after drinking. The skin became furfuraceous, the fingers puckered and so horny that the epidermis could be cut off as though from a corn. The delicacy of the sense of touch was impaired, and for weeks there was no moisture apparent in the body; in fact, it was impossible to produce sweating. Every once in a while a prickling, itching sensation would be felt in the skin, especially in the small of the back and on the inner sides of the thighs. The emaciation produced by the rheumatism was marked, and there was, of course, great loss of strength. Convalescence was slow, and during it the polydipsia and hyduria continued. Water was the more palatable for being iced, and the urine had to be voided nearly every hour. If the time ran to an hour and a half the discomfort was extreme. The secretion during the sleeping hours was from 3,000 to 4,000 cubic centimetres, requiring the patient to get out of bed about six times during the night for the sake of emptying his bladder. It was also observed that intense mental application or any nervous excitement increased the activity of the secretion of urine.

Three of the patient's uncles, on his father's side, died of diabetes mellitus, and his own parents each died in middle life of valvular lesion of the heart.

Various remedies, like quinine and iron, fluid extract of ergot, valerianate of zinc, nitric acid, nux vomica, etc., were tried without affording any particular relief, though, since the report was made, no treatment has been used with special reference to the condition. The patient has been active, bearing his full share of the burdens of life, and has had several intercurrent affections. He has had three or four exacerbations of his pulmonary condition and one attack of croupous pneumonia; once since then he has been confined to bed for several weeks with acute inflammatory rheumatism; he suffered a spontaneous fracture of the rib, due to a severe, expulsive cough; but in the main he has enjoyed health and strength.

By way of comparison I introduce his condition, as tabulated in the last report and at the present time:

April 23, 1884. Age, 28. Weight, 147½ lbs. Amount, 9,000 c. c.; specific gravity, 1.003; pale; urea, 38.96 grms.; phosphates, 2.4 grms.; sulphates, 24.7 grms.

May 11, 1894. Age, 38. Weight, 168½ lbs. Amount, 7,560 c. c.; specific gravity, 1.004; pale; urea, 28.3 grms.; phosphates, 2.1 grms.; sulphates, 27.2.

Chlorides at present: NaCl 22.72 grms; albumin, a very slight trace; sugar absent; uropheine, considerably diminished; indican, much diminished, almost *nil;* a few bladder cells. Nothing else found in testing for albumin. Picric acid gave decided reaction. Precipitate increased on boiling. Acidulating the urine with acetic acid and boiling gave a good test, the precipitate persisting after adding more acetic acid. Boiling and then acidulating with nitric acid gave a good test, as also did ferrocyanide of potassium. Cold nitric acid gave no reaction. The amount of albumin was too small to quantitate. Sugar was sought by Trommer's, Fehling's, the picric-acid test and by Brücke's lead process. It is probable that the uropheine and indican would have been nearly normal if the amount excreted daily were contained in the amount of urine usually passed by other people.

For the above analysis I am indebted to Dr. C. D. Nelson, a recent graduate of the Harvard Medical School.

From the above report it will be seen that the amount of urea excreted is normal; the phosphates and sulphates somewhat diminished, while the chlorides are considerably increased, probably due to the fact that the patient is fond of salt and takes considerable of it in the twenty-four hours. I hardly think much emphasis should be put upon the trace of albumin, as it was only a trace and too small to quantitate.

It is interesting to note that the daily excretion of urine and ingestion of fluid remains about the same as at the time of making the earlier report. The patient's general condition has improved greatly, as indicated somewhat by his increase in weight. He has good endurance and, beyond the inconvenience experienced in consequence of his affliction, is unconscious of any physical defect consequent upon it. He still drinks a good deal of water, preferring the carbonated, Vichy and like waters, and still suffers great inconvenience from the necessity for emptying his bladder frequently, although, in this respect he is much improved. He is now aroused at night only three or four times as against six or eight times at the previous report, and, at present, he can go for three or four hours during the day. The condition of his skin is improved; it is not nearly so dry and horny, and he perspires much more easily and actively than he formerly did. The thirst is still annoying, but in every respect he is vastly improved, and in the eyes of most people is regarded as a picture of health.

With reference to medication, as has been remarked before, of late years nothing has been done. Tonic treatment has been found to be of more avail than any other line. He has not limited himself with reference to the ingestion of water and has drunk freely as inclination might prompt, especially of the carbonated waters. At the end of ten years I am able to report that the progress has been favorable and that little, if any, physical infirmity has been induced by the affection, although the inconvenience has been most annoying.

◆

A CASE OF MELENA NEONATORUM, AND A CASE OF HYSTERO-EPILEPSY IN A MAN.

BY JAMES B. THORNTON, M.D., BOSTON.

On April 24th, at 7 P. M. I was called to attend Mrs. J. F. B. in confinement. Labor was uneventful: at 1.30 A. M. mother was delivered of a well-formed, healthy female child, the third stage of labor presenting nothing out of the common. I returned to my office at 2.15, leaving mother and infant in good condition.

At 4.30 the same morning I was hastily summoned, the messenger saying that "the baby was bleeding to death." Presuming that in some way the ligature about the cord had slipped, I hastened to my patient's bedside and found a very frightened mother, and a healthy, rosy, kicking baby without any evidence of exsanguination. However, on the nurse's removing the napkins, I was surprised to find that that next to the skin was almost full of blood. In my opinion there were fully four ounces.

The nurse stated that she was attracted to the child by a sudden movement on its part not unlike a mild convulsive seizure and she found the blood pouring from the anus. On lifting the child up, the flow suddenly ceased and there had been no further hemorrhage up to the time of my arrival — or since.

As I stated above, on examination, one would not know that anything unusual had occurred to the child.

Melena neonatorum is a condition or variety of intestinal hemorrhage rarely met with and the etiology of the affection is involved in obscurity. In Whittaker's references to it he quotes as causes, ulceration of stomach or duodenum (Bohn), embolism (Landau), fatty degenerations (Steiner), premature ligation of cord (Kiwisch). Betz and Trousseau have both seen a case in a family subject to hemophilia. Klebs advances the opinion that micro-organisms due to concealed septic absorption may act as a cause, and the writer humbly agrees with the last-quoted authority, that it would be unfair not to give these pathological Brownies a hearing even in this obscure affection.

My case presents special interest, as it is exceedingly rare for the patient to emerge wholly unscathed from so severe an ordeal.

On July 20th at 4.45 P. M., I was called to see a man who, according to the statement of the messenger, "had fallen in a fit." On my arrival I found my patient was a fairly robust-looking fellow of about thirty-six or thirty-eight years of age. I had the man removed from the floor where he had fallen, to a table, and after a brief examination was able to elicit the following information from the bystanders: That my patient had been in the immediate neighborhood during most of the day, and had been feeling as well as usual so far as was known; had drank two or three glasses of beer since morning and in the afternoon attended a ball game; had returned to his friends later and after sitting awhile, suddenly complained of feeling dizzy and fell to the floor, where he had lain until I reached his side.

By careful examination with such aid as I could derive from the above-stated facts, I was able to eliminate heat-stroke, syncope, poisoning, uremic coma, alcoholism and epilepsy, such elimination leaving only cerebral hemorrhage and something else which at the time did not occur to me.

With intracranial hemorrhage, however, as a diagnosis, I was not satisfied, but after vainly trying to arouse my patient for more than an hour, I was obliged to rest upon this as a cause for his condition and made arrangements for his removal to the City Hospital.

Just before the arrival of the ambulance the patient suddenly partially aroused and muttered a few words incoherently, but as at that moment the stretcher was brought in, I had no opportunity to further watch the case at that time; Dr. Nichols afterwards telephoning me that on his arrival at the hospital he was clear-headed in a great measure and after thirty-six hours' stay was discharged at his own request, his discharge paper being marked "Relieved."

On July 25th I was hastily summoned, much in the same way as before, to another street, to see "a man in a fit." To my surprise and pleasure (professional), I found my patient to be the same man whom I had seen on the 20th, as detailed above, and in identically the same state.

I had no sooner entered the room than it flashed upon me that I had to deal with a case of hystero-epilepsy or catalepsy. I first satisfied myself that the man was completely unconscious, by rubbing my fingers over the staring eyeballs and thrusting a needle beneath the finger-nail to the approximal extremity of the matrix — all without any evidence of sensation. I then lifted one of the legs so that it pointed to the corner of the ceiling, and, on removing my hands, it placidly remained in that position; its fellow then was aimed in an opposite direction and it was equally obedient.

I then turned my attention to the upper extremities and found that whatever positions the joints were capable of, were maintained at my will.

Looking about to make some remark to the spectators of this strange condition, I found I was alone with my patient, they having regarded me as possessing some unheard of power which it would not be safe for them to come under the influence of, lest like Lot's wife and my patient, they might be obliged to assume such poses as might please my fancy.

Finally, however, I was able to reassure them that they were in no danger nor was the sick ("bewitched") man, and instructed them to have him remain in bed, after regaining consciousness, until my next visit — a thing he did not do by the way, as two hours afterward found him on the street.

Next morning I saw him before he was up and made a thorough and careful examination of his case and previous history and that of his family, and from it all could I gain but one significant point, and that was, that he had a brother a few years his senior who had had two "shocks" and was then lying in a semi-paralyzed condition.

His own health was good in every respect and he denied any venereal taint or the possession of any bad habits.

He stated that he never before had had any such illness nor had he been sick in any way with one exception — and that may be the key to the matter; some years ago while in bathing at Coney Island, he had attempted to take a header through a rapidly approaching wave and the force of the blow rendered him unconscious, so that he was removed to a hospital where he was ill some days, but since his discharge had never suffered any inconvenience from his injury. Certainly if this be an etiological factor in the attacks I have detailed, we shall hear from him in the future.

◆

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY.

Councillors' Meeting.

A stated meeting was held at the Medical Library, Boston, on Wednesday, October 3, 1894. The meeting was called to order at 11 a. m., the President, Dr. F. K. Paddock, in the chair. One hundred and eight Councillors were present.

The following were appointed delegates to other State Medical Societies:

Vermont. — Drs. C. Seymour, Northampton; O. J. Brown, North Adams. *New York.* — Drs. W. W. Leavitt, Pittsfield; W. W. Scofield, Dalton. *New York State Medical Association.* — Drs. J. B. Ayer, E. M. Buckingham, Boston.

The Chair announced that in accordance with the vote at the last meeting he had appointed the following to constitute, with the President, the Committee on State and National Legislation: Drs. H. P. Walcott, H. P. Bowditch, T. H. Gage, S. D. Presbrey.

In accordance with the recommendation of the Committee on Publications, it was voted that the hour of the annual meeting of the Councillors be changed to 7 p. m., and that of the Shattuck Lecture to 1 p. m., on the day preceding the annual meeting of the Society.

On motion of Dr. Forster, the following amendments to By-Laws VI and VII were adopted:

By-Law VI, strike out lines 11 to 13 on page 11, namely,

> Any Fellow removing out of the State may have liberty to retain his Fellowship so long, and only so long, as he punctually pays the annual assessment.

Also, in lines 14 and 15, strike out the words "lost his Fellowship by removal from the State," and substitute therefor the words, "been dropped from the Roll of Fellows by a vote of the Councillors," so that the By-Law shall read.

> VI. Any Fellow, whose dues have been paid or remitted, may, on written application and for satisfactory reasons, first examined and reported upon by a Committee, be allowed to resign Fellowship and to withdraw from the Society by a vote of the Councillors.
>
> Any one who has retired or resigned, or been dropped from the Roll of Fellows by a vote of the Councillors, may, on application in writing, be restored to full Fellowship by the vote of the Councillors at any Stated Meeting.

By-Law VII, strike out the word "five" in line 19, page 11, and substitute therefor the word "three." The first paragraph will then read.

> VII. Any Fellow who has not paid an assessment to the Society for three consecutive years, and who, after due notification of his delinquency, neglects, or declines, without sufficient excuse, to pay his dues, may, on report of the Committee on Membership and Resignations, be dropped from the Roll of Fellows by a vote of the Councillors.

Dr. Forster also offered the following amendment to By-Law XVII:

Strike out the word "eight" in line 30, page 14, and substitute therefor the word "twelve." The By-Law will then read.

> XVII. Councillors shall be chosen by the District Societies, as directed in By-Law XIII; each Society choosing, from among the Fellows residing within its District, in the proportion of one Councillor to every twelve Fellows, as nearly as may be.

After discussion, it was voted that a committee of one from each District Society be appointed by the Chair to consider the amendment to By-Law XVII, and to report thereon at the next meeting of the Council.

The following were appointed to constitute the committee: Barnstable, B. D. Gifford; Berkshire, L. D. Woodbridge; Bristol North, W. S. Robinson; Bristol South, F. A. Sawyer; Essex North, F. A. Howe; Essex South, J. G. Pinkham; Franklin, A. C. Deane; Hampden, G. S. Stebbins; Hampshire, Jas. Dunlap; Middlesex East, J. S. Clark; Middlesex North, F. W. Chadbourne; Middlesex South, Walter Ela; Norfolk, J. S. Greene; Norfolk South, J. W. Spooner; Plymouth, A. E. Paine; Suffolk, J. C. White (Chairman); Worcester, T. H. Gage; Worcester North, E. J. Cutter.

An adjourned meeting of the Society was held at the Medical Library, Boston, on Wednesday, October 3, 1894, at 1 o'clock p. m., the President, Dr. F. K. Paddock, in the chair.

Voted, That the Society concur with the Council in the following amendments to the By-Laws:

By-Law I to be changed by striking out part of line 21 on page 9, and the lines 22 and 26 inclusive, and substituting the following words, so that the By-Law shall read, "and by such further examination as the Censors shall deem expedient."

By-Law XIII to be changed by omitting the words "five Censors," in line 22, and adding in line 23 the words "five Censors, all of whom shall have been Fellows of the State Society for at least ten years, one of whom shall be also a Councillor, and be designated a Supervisor, and *ex-officio* Chairman of the Board of Censors."

By-Law XIX to be changed by adding after the word "held," in line 19, the words "they shall appoint the time and place of the annual meeting of the Supervisors."

After the title "Censors," commence By-Law XX with the following additional provisions relating to Supervisors:

The Censors, elected Supervisors, shall form a Board.

They shall elect their own Chairman.

The Recording Secretary of the State Society shall be their Secretary.

For the transaction of business ten Supervisors shall constitute a quorum.

They shall hold an annual meeting at such time and place as the Council shall direct; and may hold other meetings at such places and times as they may agree to appoint.

At their annual meeting, or adjournments thereof, the Supervisors shall formulate and adopt a uniform plan, consistent with the requirements of the By-Laws, to be pursued the ensuing year, by each District Board of Censors, in the examination of candidates.

They may authorize the Secretary to have printed, at the expense of the Society, all blanks and examination papers necessary to carry out their plans.

The Secretary shall furnish examination papers to Supervisors only, and in such number as each may, in writing, request.

It shall be the duty of each Supervisor to convey to the Board of Censors of the District Society to which he belongs, together with the necessary examination papers, a report of the method and spirit in which the Board of Supervisors have directed that their plan should be used, and to see that in all examinations the designated details are properly executed.

Should a candidate otherwise qualified, but without a diploma from one of the schools accredited by this Society, satisfy the Censors of the District Society where he resides, by examination, that he has received an education equivalent to that prescribed by the By-Laws of this Society, the Supervisor of said District Society shall present the name, standing and qualifications of said candidate, to the full Board of Supervisors at their next meeting, whereupon the assenting votes of two-thirds of the Supervisors present and voting, shall elect such a candidate to be a Fellow of this Society.

By-Law XX to be changed by adding after the word "By-Laws" in line 2, the following, so that the By-Law shall read: "The Censors shall examine, according to the rules and By-Laws, and in conformity with the directions of the Supervisors," such candidates, etc.; also after the word "day," in line 21, by adding the following, "but not at the same hour or hours."

By-Law XXI to be changed by substituting the word "supervising," for the word "senior," so that this By-Law shall read, "and the supervising Censor shall preside."

By-Law XIX to be amended by omitting the words: "And an Anniversary Chairman, whose duty it shall be to act as Chairman of the Committee of Arrangements and to preside at the annual dinner for said year"; and by the omission of the words: "the Anniversary Chairman, or of" in the second paragraph of the same By-Law.

Also in the amendments of By-Laws VI and VII reported above in the proceedings of the Councillors' meeting.

A COURSE OF TEN LECTURES ON THE HISTORY OF MEDICINE is being given in the Medical Department of the University of Buffalo by Dr. Rosewell Park. They are open to the public and touch upon the various political, religious, philosophical and social questions which have influenced medical progress.

NEW YORK COUNTY MEDICAL ASSOCIATION.

STATED MEETING, October 15, 1894, the President, DR. S. B. W. MCLEOD, in the chair.

PROF. H. A. HARE, of Philadelphia, read, by invitation, a paper on the three following topics:

POSTURE IN ANESTHESIA ACCIDENTS.

THE USE OF SEDATIVES IN HEART-DISEASE.

THE EFFICACY OF ICHTHYOL ON INFLAMED TISSUES.

IN regard to anesthesia accidents he said that it was universally conceded that, after administering circulating stimulants, artificial respiration should always be resorted to as the most efficient means of resuscitation. Artificial respiration, however, would prove of little service if the head and neck of the patient were not in the proper position. He then proceeded to give a *résumé* of the researches and conclusions of Howard, of London, and stated that he (Dr. Hare) differed from the latter on some points. Howard's teachings in reference to the epiglottis were: *first*, that the epiglottis is apt to fall backward and close the glottis; *second*, that traction upon the tongue cannot raise the epiglottis; and, *third*, that the epiglottis can only be raised by raising the head and neck. In regard to traction upon the tongue Dr. Hare said that this could be most efficiently made by means of a tenaculum inserted near the root of the tongue, and the latter should be pulled forward in the direction of the upper incisors. In these cases the tongue was more frequently at fault than anything else, and it was a very common practice to grasp it and pull it down over the lower incisors.

Having discussed Howard's method for raising the glottis, he stated that extension as advocated by him was not practically valuable and that by the constriction of the parts it prevented all ingress of air through the mouth, the nostrils being solely depended upon for this purpose. If, however, the head, after the neck had been extended with the hands of the operator under the angles of the jaws, were projected forward the epiglottis could always be made to rise. He then gave a demonstration of this fact on a cadaver which had been prepared by the removal of the upper part of the cranium and the brain, and by the clipping away of the basilar process. Through the opening thus made the epiglottis could be distinctly seen to rise whenever the manipulation described was made. In brief, then, the head should always be extended and tilted forward before proceeding to practise artificial respiration.

Having again emphasized the great value of this procedure, and having referred to the various methods of performing it, he said that he had made a series of experiments to determine the relative value of the Sylvester and Marshall Hall methods. In one series of experiments the volume of air entering the lungs by the Sylvester method was represented by the figure 62 and that by the Marshall Hall method by the figure 22.

In another series of experiments the figures were respectively 18 and 18. The very great superiority of the Sylvestor method, now so generally conceded, was thus demonstrated anew. In practising the Sylvester method there was one point of great practical importance that should never be lost sight of, namely, that the feet should always be held firmly in position by an assistant. Otherwise, a great part of the efficiency of the artificial respiration would be destroyed.

In speaking of chloroform narcosis, he said that this agent acts mainly on the respiratory centres and the medulla. Death was generally due to respiratory failure, and whenever chloroform was administered it was therefore of the utmost importance that the character of the respiration should be carefully watched. As long as the respiratory function was carried on satisfactorily the patient was ordinarily free from danger. Of course, where there was cardiac disease any powerful drug might produce a fatal result, and the heart that could perform its functions with comparative safety under ordinary conditions might suddenly fail if chloroform were given, and an unusual call be thus made upon its impaired powers. Williams had demonstrated the fact that in chloroform inhalation there is always cardiac dilatation from the very start. In conclusion, Dr. Hare said that a considerably greater amount of chloroform could be given if atropine were administered than if it were not; as this drug by its vaso-motor influence had the effect of stimulating the respiration.

THE USE OF SEDATIVES IN HEART DISEASE.

There were drugs, he said, which were entirely different from digitalis and the other ordinary cardiac stimulants which could often be used with very happy effect. He then stated that he was accustomed to depend upon aconite, veratrum viride, and gelsemium. It was the common belief that in almost all heart troubles a stimulant was required, but he believed that this opinion was erroneous. Many gave nitro-glycerine under the impression that it was a stimulant, while in reality its action was sedative. He could not doubt that the use of digitalis was greatly abused by the great mass of practitioners. He then related two illustrative cases in his practice. In the first, in which there was edema and marked digestive trouble he gave digitalis with nux vomica, and in the other, in which there was no edema but a good deal of palpitation, he gave aconite. In both instances the most complete relief was afforded. In the first the heart was weak and needed aid, and in the second the heart was strong, but with irregular action.

There was a third class of cases in which such a sedative as aconite, and not digitalis, was required. This was where there was excessive hypertrophy, and it was commonly met with in those who after engaging in a life where extreme muscular activity is called for devoted themselves to quieter avocations. The compensating hypertrophy then became excessive. He had frequently observed this condition of affairs in medical students who during their previous collegiate course had devoted themselves assiduously to athletics. In their less active life the heart became irregular in its action and palpitation was frequent on going up stairs, etc. In these cases the fluid extract of aconite in doses of one or two minims acted most satisfactorily. Rest in bed, however, was a necessary adjunct of the treatment. In cases of this kind the hearts were too large and with too powerful action for the work required of them in the changed conditions of life in which the patients were placed. Next to aconite as a heart sedative he ranked gelsemium, and in the third place esteemed veratrum viride.

THE EFFICACY OF ICHTHYOL ON INFLAMED TISSUES.

From a series of experiments, made by him, the details of which he narrated, Dr. Hare had arrived at the conclusion that the confidence now felt in this drug was well placed. In the experiments referred to it was applied in various combinations and ways, and it was shown that its efficacy was not increased by the addition of lanolin, but was materially augmented by rubbing.

An extended discussion followed the reading of the paper, opened by **Dr. E. K. Dunham**, who stated that since he learned the title of Professor Hare's third subject he had made a short series of experiments to determine the germicidal value of ichthyol. From these he found that while it had a slight inhibitory action on the growth of micro-organisms, it was not to be compared in this respect with a number of other agents. He presented several cultures for the inspection of the members.

Among those who took part in the discussion was **Dr. C. A. Leale**, who in the course of his remarks mentioned that in his hands artificial respiration had been the means of prolonging the life of President Lincoln for a number of hours after he had been shot.

Dr. T. H. Manley said that he had never met with but one fatal result from the use of anesthetics, and that in this instance it was caused by chloroform. Every precaution was taken in its administration, but death came in the most frightfully sudden manner. The respiration stopped all at once, although the heart kept beating for a time, and all efforts to resuscitate the patient proved fruitless. His impression was that any one who under ordinary circumstances made use of chloroform as an anesthetic undertook an unnecessary risk.

Dr. McKeeby stated that for three years he was in the hospital service of Professor Chisolm, of Baltimore, and that he had given chloroform, or seen it given, in thousand of cases, without a single fatal result. In only one instance was there any serious trouble, and in this Dr. Chisolm promptly directed that the table should be tilted so that the head was lowered and the feet elevated. The patient was quickly restored, and the administration of the chloroform was continued. Two or three times during the operation it became necessary to repeat this manœuvre, but the operation was satisfactorily completed and the patient made a good recovery. It was Dr. Chisolm's routine practice, he said, to give a dose of whiskey in all cases before commencing the inhalation of chloroform.

In closing the discussion, **Dr. Hare** spoke upon a number of points that were brought up by the various speakers. In regard to traction upon the tongue he said that it did not make very much difference whether the tongue touched the upper or lower incisors; but it was important that the traction should be made on the root of the tongue and that it should be pulled forward and upward. The use of a tenaculum was not essential, but it would generally be found most convenient. The case of President Lincoln, referred to by Dr. Leale, was of very great interest as showing failure of respiration in surgical shock. In his paper he said he had purposely avoided touching upon the controversy as to the relative safety of ether and chloroform. Before entering upon the investigations which he had made for the Hydrabad Commission he had been very much of the opinion expressed by Dr. Manley; but the results which he had observed in his experiments had led to a considerable modification of his views. There could be no question that chloroform was a more dangerous drug than ether; but, while during the operation itself ether was safe, it was apt to be followed by a number of serious consequences (from which chloroform was free), such as anuria, irritation of the kidneys, bronchitis, etc., which, if the facts were carefully collated, might bring the mortality from ether up to a much higher figure than was commonly supposed. At the time he commenced his experiments he was quite confident that in chloroform-poisoning death was ordinarily due to cardiac failure; but he found to his surprise that it was the respiration that always failed first and that it was practically impossible to kill a dog by cardiac failure under the use of chloroform. In other words, chloroform had not the lethal effect upon the heart that was generally supposed; and, in fact, in the case of animals chloroform was a drug less lethal to the cardiac muscle than quinine. He had repeatedly found that the heart's action continued after the respiration ceased. In conclusion, he called attention to a matter, which he thought had considerable influence in determining the mortality from chloroform, and that was the question of climate, though why this should be so he could not satisfactorily explain. In the Northern and Eastern States, as was well known, ether was almost universally used as an anesthetic, while in the Southern States chloroform was the agent commonly employed. In Texas, it was said, there had never been an accident from chloroform, and very few had occurred in India. It was also a fact, he had found, that American dogs were more susceptible to the action of chloroform than the Pariah dog of India.

◆

Recent Literature.

A Manual of Therapeutics. By A. A. Stevens, A.M., M.D., Lecturer on Terminology and Instructor in Physical Diagnosis in the University of Pennsylvania, etc. Philadelphia: W. B. Saunders. 1894.

The author touches briefly on the physiological action of drugs and then takes up each drug in its alphabetical order, giving an outline of the properties, action and uses of each. A few pages are devoted to remedial uses other than drugs; and under the heading of applied therapeutics, suggestions are given for the treatment of various diseases. The book closes with a chapter on "Incompatibility in Prescriptions, a Table of Doses, etc." The author's aim has been to prepare a manual for students which should present an outline of modern therapeutics, "to be filled in and extended by the systematic study of the larger works." And he has succeeded very well in his aim.

Diseases of the Chest, Throat, and Nasal Cavities. Including Physical Diagnosis and Diseases of the Lungs, Heart and Aorta, Laryngology and Diseases of the Pharynx, Larynx, Nose, Thyroid Gland and Œsophagus. Third Edition, revised. With 240 illustrations, 718 pages. By E. Fletcher Ingals, A.M., M.D., Professor of Laryngology and Practice of Medicine, Rush Medical College, Chicago, etc. New York: William Wood & Co. 1894.

The third edition of Dr. Ingals's justly popular book appears but little over a year since the second edition was published. It is a little larger than the last edition; the additions being mostly to bring the work up to date. The book is an admirable one, the arrangement of subjects good, their relative importance well brought out, and the descriptions clear and concise. In spite of the well deserved popularity of the book in its united form, our criticism of the second edition, that it would be more generally useful if bound in two volumes, would apply equally to this. On this subject the author says that he has "brought these two classes of disease, that is, chest and throat, together, because the parts are so closely related that when one is diseased it is generally necessary to interrogate the others before a correct diagnosis or proper plan of treatment can be reached." If this were carried to its logical conclusion, would it not be necessary to bind up a treatise on general medicine with most of our text-books on special subjects? But this minor point is easily overlooked in a book which is so good.

Emergency and Hygiene Notes for the Militia. By William H. Devine, M.D., Surgeon Ninth Regiment Massachusetts Volunteer Militia. Boston: Damrell & Upham. 1894.

This manual of 86 pages appears to be the notes, but considerably extended, which have been generally used by those who have given emergency lectures under the auspices of the Massachusetts Emergency and Hygiene Association. They would be of value to those who had listened to the lectures, when preparing for an examination. The writer is not quite clear regarding the use of the words aseptic and antiseptic. The statement that "In most of the States, the National Guard has a well-trained, efficient ambulance corps," is incorrect, the Military Information Division of the Adjutant-General's office of the U. S. Army, reports only seven States so equipped.

The writing of this manual is one of the evidences of the increased interest that is now taken in the medical department of the volunteer militia.

Lectures on Auto-Intoxication in Disease, or Self-Poisoning of the Individual. By Ch. Bouchard, Professor of Pathology and Therapeutics, Member of the Academy of Medicine, and Physician to the Hospitals, Paris. Translated, with a Preface, by Thomas Oliver, M.A., M.D., F.R.C.P., Professor of Physiology, University of Durham; Physician to the Royal Infirmary, Newcastle-upon-Tyne; and Examiner in Physiology, Conjoint Board of England. In one octavo volume; 302 pages. Philadelphia: The F. A. Davis Co. 1894.

Professor Bouchard's book gives to the general practitioner an excellent account of the important rôle of auto-intoxication in disease. The careful study of the various body poisons and their action is of more than scientific interest at the present time, and the suggestions as to the therapeutic management of disease are of no little value. The book will repay the reading.

The Statue to Dr. Sims. — The bronze statue to Dr. J. Marion Sims, the money for which was subscribed by members of the medical profession in various parts of the country, was unveiled in Bryant Park, New York City, with appropriate ceremonies on October 20th. Addresses were made by Drs. George F. Shrady and Paul F. Mundé, and the statue was accepted for the city by Mayor Gilroy.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, OCTOBER 25, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

REPORT OF THE DIRECTOR OF PHYSICAL TRAINING IN BOSTON'S PUBLIC SCHOOLS.

In his first report, presented December 31, 1891, Dr. E. M. Hartwell, the director of physical training in the Boston Public Schools, "endeavored to set forth the principal events which have signalized the history of physical education during the nineteenth century; to describe in a general way the attempts that have been made in this country, — and more particularly in our own Commonwealth and city, — during the past seventy years, to make physical training a genuine and effective department of public and private education; and to give a connected account, in a somewhat detailed way, of the measures taken in relation to physical education by the Boston School Committee since 1833 (the date of its first enactment on the subject), so far as those measures could be determined from a study of the Committee's records and reports, and its rules and regulations. Attention was called to some of the fundamental teachings of modern science with regard to the nature and effects of systematic bodily exercise." The practical bearing of such teachings upon the problem before the school authorities was likewise adverted to.

In the present, which constitutes his second report, Dr. Hartwell discusses more fully and particularly the principles of physical education in the light of physiological and psycho-physical science, in order to emphasize "the close — nay, vital — relations which exist between physical and all other forms of education, and in order to establish a standard of measure which shall enable one to estimate the worth and weight of the results of previous endeavors."

Dr. Hartwell sketches the athletic revival which followed the close of the War of the Rebellion, and the subsequent era of gymnasium building; the spread of school gymnastics in cities and its causes, the moving motive for which as one phase of the increasing agitation for hygienic reform in education he finds in the "widespread, half-unconscious but deeply seated and unappeasable yearning of the people for efficient means wherewith to counteract the destructive influences which threaten the health and vigor of the children fated to be born and bred in the great cities of the land"; he dwells upon the growth of great cities as one of the most striking and momentous phenomena of the present century; he points out that in the United States, Massachusetts is *par excellence* the Commonwealth of cities, the urban population of this State constituting in 1890, 69.90 per cent. of the total — there being then 47 towns and cities with a population of 8,000 or upwards, whereas in 1820, 89 per cent. of the population was in towns of less than 7,000 inhabitants, — and that should the urbanization of this population proceed at its present rate eleven-twelfths will be city-folk before ten years are past. The declaration that "the further progress of civilization is to depend mainly upon the influences by which men's minds and characters will be affected by living in large towns" is the key note to the rest of this valuable, suggestive and well digested report.

Dr. Hartwell very justly places education among the leading industries of Massachusetts; he shows by figures and tables that the economic worth of a healthy and vigorous race of school children is a calculable quantity, and that the control of public-school affairs in this State is already in the hands of *city* school boards. Whilst lamenting the absence of any data provided by school authorities or boards of health to show whether "schooling" as an occupation is beneficial or prejudicial to public health in the United States, and pointing to the fact that, under present conditions, it would be easier to estimate losses entailed by hog cholera and the cattle plague throughout the Union than to determine the number of children who succumb annually to school diseases in any State, Dr. Hartwell makes a gallant attempt with such materials as are at hand to estimate the losses due to deaths of Massachusetts school-children. His conclusion is that such losses are largely in excess of what is necessary and irremediable and also in excess of similar losses in so great and densely populated cities as London and Berlin.

The inevitable conclusion is that municipal and school limitation are better devised and more efficiently carried out in those cities than in Boston. Granting then the deteriorating influences of school and city life, Dr. Hartwell would have protection against these influences sought, not in the compulsory study in the public schools of the elementary principles of physiology and hygiene, but in the strengthening and development of the nervous system through the broad and intelligent cultivation of the "motor element in education."

In addition to the general discussion of physical training in its application to the public-school system as a hygienic and educational factor which we have thus very briefly summarized, the present report contains some interesting statements and suggestions in regard to stammering and stuttering among public school children; and also a very timely discussion of the seating of pupils in the public schools. The method of seating which now prevails is "so arbitrary, antiquated, and inadequate" that it needs amendment, and Dr. Hartwell is deeply and very properly impressed with the great importance of enlightening the public mind with regard to the essential principles involved in the construction and use of school-furniture. He considers it eminently desirable "that the whole problem of seating should be authoritatively pronounced upon by a commission of disinterested men, who are competent and willing to avail themselves of the best that has been attempted or accomplished by similar commissions in Europe during the past ten years. The conclusions and recommendations of such a commission, if it were appointed and supported by a representative organization such as the Massachusetts State Board of Health, the Massachusetts Medical Society, or the State Board of Education, or by the conjoint action of all three, could hardly fail to prove widely influential in promoting the public welfare. By hastening the settlement of vexed questions, and by obviating the necessity of costly and partial experiments, with all manner of "improved chairs and desks" on the part of the school boards of the Commonwealth, such a commission would save the cost of its investigations and publications many times over to the taxpayers of the State."

We are conscious of having done scant justice to this excellent and painstaking report which deals with a subject of vital interest to medical practitioners, but hope we have said enough to induce our readers to procure and consult the report for themselves.

◆

MEDICAL NOTES.

The Medical Society of Virginia. — The Virginia Medical Society held its annual meeting in Richmond on October 23, 24 and 25, 1894.

Appropriations for Immunized Serum for Diphtheria. — The municipal council of Paris has appropriated fifty thousand francs for the purchase of anti-diphtheritic serum for the various city hospitals. In Berlin six thousand marks have been voted for similar purposes.

Beauty and Professional Success. — The *New York Record* passes this judgment on *The Composite Physician* of Boston: "Prof. H. P. Bowditch has published in *McClure's Magazine* two series of pictures of twelve Boston physicians with their composite photographs. The second series and its composite represents the same gentlemen five years later. Dr. Bowditch's article is a contribution to science rather than to the beautiful. We say this after a really unbiased and sympathetic search for a handsome man among the twelve esteemed and eminent confrères. We do not find, to be sure, any striking type of the opposite kind; there are no features that are absolutely Socratic in their curves or their asymmetry. But it is evident that Boston's twelve have not won success through the meretricious aid of personal loveliness."

The Practice of Medicine by Women in 1572. — In an address before the Yorkshire Branch of the British Medical Association this summer, Mr. W. H. Jalland stated that York seems to have been ahead of most places in countenancing the practice of medicine by women. In closing his address (*Quarterly Medical Journal*) he says: "I find on reference to the Corporation Minutes dated 1572, Elizabeth XIV, the following entry: 'And for as much as it appeareth that Isabel Warrick hath skill in the science of surgery and hath done good therein, it is therefore agreed by these presents that she upon her good behaviour shall use the same science within this City without let of any of the surgeons of the same.'"

The Scarcity of Patients. — There may be some comfort to the many physicians who have felt the long continued "dulness" in their practice, in learning that it is not a local stagnation, but that the same conditions are being felt in other parts of the world. English medical journals speak of the "marvellous health of the country"; and the large numbers of physicians who have attended the many congresses without being missed, so few are the patients. An Edinburgh correspondent of the *Medical Press* writes recently, "that in that city it was a vacant vacation with a vengeance; there was absolutely nothing stirring, and he knew of one practitioner acting as *locum tenens* for seven others on their holiday, who, notwithstanding this weight of responsibility, yet found ample time to play golf every day."

A Mechanical Aid to Expectoration. — A correspondent writes to the *Lancet* describing a simple means which he found effective in aiding expectoration: "A few years ago, when suffering from a cold with the accompanying tracheal catarrh I found that I could greatly facilitate expectoration on coughing by compressing the trachea by the thumb placed in the suprasternal notch. By this means the expulsive force of the air on coughing is very much increased and any mucus in the trachea above the point of pressure is readily blown through the glottis. The pressure, though requiring to be firm, is not painful. I have never recommended this procedure to any patient advanced in years when the possibility of the rings of the trachea being ossified would render it dangerous."

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, October 24, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 97, scarlet fever 27, measles 10, typhoid fever 15.

The Davis School in West Newton Reopened. — The Davis Primary School at West Newton, Mass., which was closed on account of diphtheria some weeks ago, was reopened on October 22d, after a thorough disinfection and the relaying of new floors.

Boston Public Bath Statistics. — During the past summer over one million persons made use of the public baths of the city of Boston. The numbers were distributed as follows:

MALES	June	July	August	Sept.
Craigie's Bridge	35,480	41,100	23,100	8,000
Malden Bridge	12,390	29,154	13,139	1,664
Dover Street	14,173	18,728	9,620	2,064
L Street	58,067	142,600	61,395	21,403
Charles River Bridge	23,829	27,042	16,855	6,338
Maverick Street	17,429	15,399	13,858	5,411
Chelsea Bridge	6,253	17,142	16,800	5,306
Mt. Washington Avenue	14,435	22,285	17,691	9,500
Border Street	12,580	18,726	15,412	7,756
West Boston	25,875	20,335	12,430	6,620
Commercial Point	2,325	5,635	4,370	1,230
Total, Males,	222,836	358,146	204,670	75,292
FEMALES				
Commercial Point	2.684	8,393	6,758	2,304
Chelsea Bridge	2,250	6,580	5,815	1,580
Malden Bridge	1,305	2,838	1,493	273
Dover Street	5,130	9,174	5,427	2,060
M Street	9,282	21,100	19,401	9,255
Border Street	9,940	11,985	10,105	2,581
Charles River Bridge	15,839	26.610	17,005	4.564
Total, Females,	46,430	86,680	66,004	22,617
Total, Both Sexes,	269,266	444,826	270,674	97,909
Total for the Season, 1,082,675.				

NEW YORK.

Death of Dr. Stuart Douglas. — Dr. Stuart Douglas, who was widely known as an alienist, died October 14th of acute Bright's disease, at the age of thirty-four. Dr. Douglas, who was born at Culpepper, Va., was graduated from the University of Virginia and received the degree of M.D. from the College of Physicians and Surgeons, New York, in 1882. He became interested in the study of mental disease and for two or three years served as resident physician in the New York City Insane Asylums. For the last seven years he has been in charge of the insane wards at Bellevue Hospital.

The University of the City of New York. — On the occasion of the opening exercises of the new academic buildings of the University of the City of New York on the site recently purchased on the northern bank of the Harlem (to be designated in the future as "University Heights") Chancellor McCracken, in the course of his remarks, said, "We place our athletic field and gymnasium close by our halls, because we mean physical training to be college work as much as language or science. Give me ten men that will every one pass the severest tests of the medical examiner and never take an athletic prize, rather than five men that can take prizes and five men rejected by the medical examiner. 'Physical vigor first and second, intercollegiate record third,' is my motto for athletics."

The New York Hospital Department for the Insane. — The new buildings of the Department for the Insane of the New York Hospital were opened for public inspection on the afternoon of October 17th. A large number of invitations had been issued for the occasion, and the guests, among whom were many physicians from New York and the adjacent towns, were received by Dr. Samuel H. Lyon, the Medical Superintendent, who assigned them in groups to attendants who acted as ushers and escorted them through the various buildings. The inspection, which was very gratifying in every way, terminated in the chapel building, where a collation was served. The main features of this magnificent new institution have already been described in the Journal. The farm upon which the hospital is built contains about three hundred acres, and from the windows there is a fine view in all directions.

The Four Years' Course at the College of Physicians. — In the College of Physicians the new four years' course commences with the present season, but notwithstanding this fact the registration indicates that a larger class will enter this year than last year, when the highest number yet recorded was reached. In the session of 1893–4 the total enrolment of students numbered 766, a gain of 112 over the previous year. To the development of the four-year curriculum much attention has been devoted by the Faculty. Each student will be examined, each year, upon the work of that year, and each student of the four-year will be required to elect from a list of elective courses either one course or more, as may be hereafter determined.

◆

Miscellany.

MEDICAL TRIBUTES TO DR. HOLMES.

From among the many notices of Dr. Holmes, from medical sources, during the past fortnight we quote the following. The *Medical News* says:

> To say that in Dr. Holmes America has lost her greatest physician is not one of the exaggerations to which men are prompted in expressing their grief over a recent death. We have not in mind only his contributions to medical science and literature, which, although overshadowed by his work in general letters, were many and important, but we are thinking of that wider province of the physician that lies beyond the laboratory and the drug-shop, the hospital and the consulting-room.
>
> We doubt whether in the long period of Dr. Holmes's activity any other English writer has done so much for the health of the minds of his readers; and his readers embraced all classes. Rich and poor, old and young, learned and unlearned, found in his pages something that they could understand, and the understanding of which bettered them mentally and morally. And this highest praise that a writer can have, namely, that the best-equipped readers found the most profit and entertainment in his writings, is universally conceded to Holmes.
>
> We were about to say that his was a simple nature; and the statement would have been true in the one sense that the meretricious in literature or in life repelled him; but his intellect was subtle and complex as civilization. Science, art, nature, philosophy were all his, and all left their impress upon him. Cosmopolitan sympathy and experience modified and were modified by the effects of Puritan ancestry and old-time New England training. In his complex make-up there is no doubt that his medical studies and

> teaching exerted a dominant influence. In the felicitous poem read by Dr. Weir Mitchell to the College of Physicians of Philadelphia on the occasion of the presentation to that body of a portrait of Holmes, Minerva and Apollo are represented as contending for, and at last agreeing to divide, the lad. But, unless we concede that medicine as well as poetry belongs to Apollo, we must hold Minerva to have obtained the "biggest half" in the division.
>
> Dr. Holmes never lost sight of his profession, and never allowed the world to lose sight of it. Throughout his writings, from "The Fly in the Stethoscope" to the good-natured raillery at a too-exclusive specialism in "Over the Tea-cups," he did not hesitate to hit at its weaknesses and foibles; while, apart from the admirable characters in his novels, he has in many noble passages pictured the life and influence of the true, modest, self-sacrificing doctor in terms of the highest appreciation.

The *Medical Record* contains the following:

> Proud as we are to think of him as a member of our profession, and proud as we are of his achievements in it, we realize that his great work in life had more to do with making people better spiritually than making them well physically. Physician by education, he devoted himself to practice and the acquisition and imparting of scientific knowledge. Poet by nature, he spent his leisure time and declining years in those writings which have so endeared him wherever they have been read. Philosopher by thoughtful study and love of his fellow-man, he made for many life's path less rugged by kind and philanthropic words, and when his own long path brought him toward life's foot-hills he was content and said, "he should sorrow deeply if he had the idea he was to become helpless in body and mind." This was spared him. He reached the end, "eighty-five years young," as he has expressed it, and happily met death as a little child meets sleep, unconscious of fatigue, and only mindful of a day more full of pleasures than of pain.
>
> To his students of twenty or thirty years ago, as they recall the words of the genial professor in describing the arch of the female pelvis, "Gentlemen! this is the triumphal arch under which every candidate for immortality has to pass," the thought must occur how nearly has been attained that immortality of which he spoke, and how like a triumphal arch the whole modest life!

In the *New York Medical Journal* we find this paragraph:

> His greatest work was his essay on "The Contagiousness of Puerperal Fever," read before the Boston Society for Medical Improvement in 1842, of which he subsequently wrote: "When, by the permission of Providence, I held up to the professional public the damnable facts connected with the conveyance of poison from one young mother's chamber to another's — for doing which humble office I desire to be thankful that I have lived, though nothing else good should ever come out of my life — I had to bear the sneers of those whose position I had assailed, and, as I believe, have at last demolished, so that nothing but the ghosts of dead women stir among the ruins."

In a kindly notice in the *British Medical Journal* Mr. Ernest Hart concludes the account of a visit made by him to Dr. Holmes in September, 1893, with these words:

> And so I passed away from the presence of one of the most loveable and notable figures of modern medicine, a personality pregnant with the perfume of ripe and sweet old age, and leaving recollections of a rarely perspicuous and sympathetic insight, a playful and pungent, but not caustic humor, and a persuasive benevolence which was far-reaching, but discriminating.

From the obituary notice of the same journal headed "His Career as a Physician," we quote the following extract:

> The praise of Wendell Holmes, the writer, the charming poet, the inimitable *causeur*, the delightful humorist, whole wit *circum præcordia ludit*, is in the mouths of all men; his niche in the Temple of Letters needs no stone of our fashioning to complete it. The splendor of his literary fame, however, has somewhat dazzled the eyes of his more recent contemporaries to the excellence of the work which in his earlier days he did for his profession and for science. Any work done by Wendell Holmes was sure to be brilliant, but it is a striking proof of the versatility of his powers that his scientific work was as solid as if he had been the dullest Dryasdust that ever dissected the muscles of the back or counted the markings on the different members of the pediculus family. In a medical journal it is fitting that this aspect of Wendell Holmes's many-sided genius — which has, as was natural, received only imperfect recognition from most of our contemporaries — should be briefly dwelt upon.

Dr. Gairdner, of Glasgow, an occasional correspondent with Dr. Holmes during forty years, writes a friend in Boston:

> As a medical poet he is unique; and both in his poems and in his prose the medical training and intellectual bias stand for a good deal. I hope some one will do justice to this aspect of him. He sang the praises of Lowell in a noble poem. Who is to sing in a like manner his own?

The *Lancet* of October 13th has a very appreciative and discriminating editorial notice of Dr. Holmes and also a longer obituary. The editorial we reprint in full, for in it we detect the sentiments of Dr. Wilks quoted in the obituary notice, sentiments which accord with our own estimate of the wholesome influence of Dr. Holmes's professional training upon his contributions to literature:

> The death of Oliver Wendell Holmes must necessarily appeal with particular force to all who follow, as he followed, the profession of healing. While the purely literary world is lamenting the loss of the brilliant essayist, the delicate poet, the spontaneous humorist, the ever-sympathetic, ever-appreciative colleague, we are lamenting in him the medical man of letters. In so doing we are not debarred from admiring sincerely, even fervently, his great and fascinating qualities, but it is in his character of a physician that he makes special appeal to us. And this is the more right that it is in the character of physician that he himself makes many of his most intimate claims upon the attention and affection of his readers. The medical men of letters are a comparatively small band. The names of Smollett, Thomas Browne and John Brown at once occur to us; Keats and Goldsmith both served an apprenticeship to our art; and more than one living physician is a good as well as a popular novelist; but the union of medicine and letters is rare. Oliver Wendell Holmes was not only an example of this rare class, but in many respects he was a unique example; for in him the physician — now as anatomist or physiologist, now as psychologist, now as diagnostician — was ever present and ever speaking. He wrote no book without drawing largely upon his scientific experience; he displayed in all his literary workmanship, in thought as much as in expression, an accurate tolerance — a capability of taking the large view, with a resolve to be correct about small things — that we make bold to say, as he would often proudly say, had been largely developed by his particular training; and many of his wittiest little parables and paraphrases — many of the most characteristic sayings of those three charming rulers of the breakfast-table — were the direct outcome of his medical learning.
>
> *Si sic omnes!* For the public nowadays is suffering from a surfeit of medicine in its literature. Heredity and the transmission of physiological or psychological taints; sexual problems; problems in mental pathology form the essence of the work of a large school of writers. Some-

times the work is well done and sometimes extremely ill done. Now and again the great romancer will by a few illuminating words supply a real contribution to the scientific side of psychology; more often we are asked to solace ourselves after the day's work with long-drawn questions pruriently put and left unanswered by a string of pompous deductions. And so we say: Ah, if all were like the Autocrat of the Breakfast-table! Would that all our advanced novelists would recognize, first, that it is necessary to know before instructing and to see before leading, if the ditch is to be avoided; and, second, that there is wisdom in restraint and an art in remaining silent — that furibund descriptions of animalism, if accurate, are inappropriate in general literature, and that to display to common gaze a dissection of the morbid imaginings of the sick mind may be an act of positive indecency. Oliver Wendell Holmes was a man who knew. Whither he would lead, his readers might always be content to follow without fear of the ditch. His science was sound, his wisdom indubitable, and his powers of observation and introspection were of the acutest. And how did he use them? Not by shirking the responsibilities laid upon him by his possession of exceptional knowledge, as great men have before now done through fear of giving offence; on the contrary, his whole work is pervaded by his particular learning. And not by persistently presenting to the mental eye the dissected body or the sick soul, the charnel-house, the bordel, or the asylum; on the contrary, his multifarious writings are absolutely free from the taint of nastiness. Oliver Wendell Holmes used his beautiful endowments in the highest way for the good of all, neither burying his talents nor prostituting them. He was removed by a lovable, modest, sympathetic nature from all possibility of writing the harmful; he was removed by a true and highly cultivated artistic sense from the common error of spoiling a picture by overloading it with unnecessary details; lastly, and chiefly, he was removed by his assured place as a man of scientific education, undoubted learning, and equally undoubted literary genius from all temptation to medical or linguistic display. From this position, with the conscientiousness of the skilled workman and the unpremeditated charm of the poet, he poured out broad lessons of human sympathy and preached a genial, yet shrewd, gospel of kindliness.

◆

A BUG STORY.

Dr. C. F. DeMay, of Louisiana, is responsible for the following communication to the *Louisville Medical Monthly*:

"A few nights ago, while sitting on my veranda, admiring the myriads of fire-flies swarming around me, I saw a toad swallow an unfortunate *Elater noctilucus*, and, to my astonishment, observed that the insect had not been killed in its most perilous journey. The bug could be seen very plainly, now and then throwing its phosphorescent light. An electro-abdominal lamp could have given no better results. I captured the toad, and saw very plainly, at intervals, its stomach and the circulation, color of its blood, both arterial and venous. A finer sight I surely never beheld. It demonstrates the future uses of electricity for diagnostic purposes in abdominal diseases."

◆

JERSEY CITY WATER.

The water-supply of Jersey City has been the subject of much serious discussion for the past year, and there is little doubt that the sources of the supply are far from suitable. The diluted sewerage of large towns and cities is not the best of drinking-water, and the people of Jersey City have had little else to use for a long time, and the dilution has not been carried to the higher potencies. The death-rate from typhoid fever is exceedingly high; and during the past summer it is reported that such is the alarm of the people, that they not only purchase bottled and aerated waters to drink but for bathing purposes; so that, if the daily press is to be believed, the best regulated families bathe and wash in the foaming and sparkling carbonated waters. Ere long the Apollinaris Spring Company (limited) — the Company, not the spring — will announce that the water is "unexcelled for the table and the tub."

The scientifically-inclined residents of the city are kept informed of the character of their water by the daily papers, from one of which we clip the following sample of biological literature. After giving a list of the vegetable and animal organisms found by Mr. J. A. Hall in his examination of water from a city main, the paper thus elucidates its readers:

"For the benefit of those who are unfamiliar with the nomenclature of the animal organisms of ditch water, it may be stated that the cilliata are little creatures that go round and round with little hair-like oars, and manage to kick up a dreadful and incessant lashing and turbulence; that the anguilla is a wee eel, such as lives in the stenchy bilge water of ships' holds; that the rotifers are things resembling pin-wheels, and which revolve at a fabulous rate of speed; that the annelids are hideous and sickening jointed worms, which, enlarged by an oxyhydrogen or lime-light microscope, could be depended upon to throw an audience of adult spectators into paroxysms of alarm."

With such a vision before them, the terrified inhabitants could not be blamed if they drank only Hunyadi water and did not bathe at all.

The discussion has thus its amusing side; but the condition is indeed a serious one for the city, and the following analysis of the water by Mr. Hall is not a pleasant reading.

The figures represent parts per hundred thousand.

Water from the Passaic River, Jersey City Intake.

	Low tide	High tide
Chlorine	1.48	6.97
Nitrogen as free ammonia . . .	.086	.135
Nitrogen as organic ammonia . . .	.070	.113
Total solids	20.0	22.60
Organic solids	6.60	8.20

◆

KING HUMBERT AND THE CHOLERA EPIDEMIC AT NAPLES.

The Town Council of Naples has placed upon the façade of the Maddalena barracks a tablet commemorating the kindly and courageous visit of King Humbert to the city during the cholera epidemic of 1884. Of this visit and its dramatic Italian manner the *Lancet* says: "His Majesty had arranged to inaugurate a race-meeting at Pordenone in the Venetian territory, when the news reached him that, twenty-four hours previously, there had been an outbreak of cholera in Naples; that in one night two thousand people had been attacked; and that of these nearly one thousand had died. Without a moment's loss of time the King telegraphed to the Venetian Syndic: 'A Pordenone si fa festa. A Napoli si muore. Vado a Napoli.' (At Pordenone there is merry-making. At Naples they are dying. I go to Naples.) And to Naples he went; and from day to day visited the cholera-stricken in the most squalid, most repulsive dens, assisted the medical men and the nurses; came so near the patients that three times in the same twenty-four hours he would have to get his clothes burnt, and for a whole week continued his rounds from bedside to bedside till the epidemic was sensibly on the decline and the moral courage of the inhabitants was restored. His food and drink during those memorable seven days were supplied him regularly from Rome — supplied, however, without his knowledge."

The inscription on the tablet reads as follows: "Quì dove tanti soggiacquero — Al morbo crudele infestante Napoli — Umberto Re d'Italia — Gli ammorbati visitò tutti e all'origliere chinossi — E la parola della pietà disse a ciascuno — onde rinata la fiducia nella lealtà e nella provvidenzia dell'autorità pubblica — Nei corpi affranti rasserenaronsi gli animi — Chè tanto è più profonda la efficacia dell'esempio — Quando di più alto e più spontaneo scende — A memoria perenne di tanta virtù di sè emulata — Qui stesso dalla carità di sacerdote piissimo — il cardinale Sanfelice — questa lapide — il 10 settembre 1894 — Il Municipio pose. (Here, where so many succumbed to the cruel disease with which Naples was afflicted, Humbert, King of Italy, visited all the sick and bent over their pillows with a word of commiseration for each, whereby confidence in the devotion and providence of the public authority was restored, and the people's minds were calmed once more in their wasted bodies; for so much the more penetrating is the force of example, the more exalted and the more spontaneous the source from which it descends. To the perpetual commemoration of so great virtue, self-emulated in this very spot by the charity of the devout priest, Cardinal San Felice, the town council erected this tablet on the 10th September, 1894.)"

◆

Correspondence.

REMINISCENCES OF THE HARVARD MEDICAL SCHOOL IN THE YEAR 1846.

Boston, October 18, 1894.

Mr. Editor: — The (then) new Harvard Medical School building, at the foot of Grove Street, was opened for use in 1846. My pupilage at the school began at the same time, and that is how it happened that I was present at the opening exercises. Edward Everett, who was then President of Harvard University, made one of his characteristic addresses, and Dr. George Parkman gave a collation in the room intended for the Warren Anatomical Museum, where "Big Dick" and his companions afterwards made their home. When the company were assembled around the table, Dr. Parkman took a large knife, and with a flourish cut off the top of a column of ice-cream, saying, "I will now do an amputation." That was the signal to fall to. The piece of meadow land upon which the building stood was a gift from him to the University.

The first lecture in the morning was by Dr. John Ware, on "Theory and Practice." His lecture was written, and he confined himself wholly to his notes. He stood while delivering it with his watch on the table before him. He occupied the full hour, no more and no less. His lectures were beautifully written; his thoughts were clear, concise and logical; and his manner was pleasant, though dignified. His object was not to amuse, but to instruct.

Following Dr. Ware came Dr. Jacob Bigelow, Professor of Materia Medica. His old, white horse with his goggles on, generally appeared a little behind time. During his lecture, Dr. Bigelow sat in an arm-chair. He would take his seat, then slide forward until his head rested on the top of the chair-back, and with a few sample drugs before him, and looking upward at an angle of forty-five degrees, he would deliver his lecture (without notes) in a somewhat grave and dignified manner. He avoided minor details and gave only the important points of his subject, with occasional touches of mild humor. It generally happened that his lecture was finished a little before the end of the hour, so that it was cut short at both ends.

Dr. George Hayward, who was Professor of Surgery, is chiefly remembered for his lecture on "Jīnts." "When I was a dresser in the London hospital," he would say in his high-pitched voice, "it was my good fortune to serve under Sir Benjamin Brodie, who wrote the best work on this subject, namely, 'Brodie on the Jīnts.'"

Dr. J. B. S. Jackson was an enthusiast on his subject (pathology); typhlo-enteritis was a hobby with him and many an expert in appendicitis of the present day might learn much of him. In examining a morbid specimen he would always say, "*Most remarkable, very rare.*" The students called him "Morbid John."

Dr. Webster was considered dull, but I never found him so. His lectures were well written and his experiments generally successful, but when not so he always claimed that more was to be learned from the failure than from success.

This was the last year of Dr. J. C. Warren's service as Professor of Anatomy and Operative Surgery. He was dignified in his manner, thorough and forcible in his instruction.

He was followed by Dr. Holmes, in anatomy, who could not help making a dull subject attractive and enjoyable. As a student of the Tremont Street Medical School, I attended a quiz at his house in Montgomery Place, once a week. After the recitation was over, social converse was held that was delightful. His ordinary conversation, it seems to me, was bright, sparkling and interesting as anything that he has written. He stood in the centre of the room, the nucleus of a delighted and grinning crowd.

Each professor had one course of lectures that he repeated annually, *verbatim et literatim.* So far as I know, only three students took full notes of all the lectures. These were Calvin Ellis, James W. Stone and myself. Ellis and Stone were expert short-hand writers, but I was not; but by leaving out all unimportant words, abbreviating many others, and using a few signs of my own invention, and rewriting the lectures, I managed to get them entire, and have got them now. Dr. Ellis acquired the highest reputation in his profession, and died in 1883. Dr. Stone was a strong abolitionist, and intimate with Dr. H. I. Bowditch and others of that belief. Among other things, he furnished students with obstetric cases at three dollars apiece. My first case was on Dover Street, then the extreme limit of the city. Beyond that was a howling wilderness, so to speak. From that place hourly omnibuses, owned by a Mr. Hawthorne, ran to Dock Square. My case was a tedious one, and I spent most of the day on the driver's seat of one of the carriages, impatiently waiting for the conclusion of the case. Dr. Stone died in 1863.

Dr. Morton, a dentist who had an office on Tremont Street, opposite the Museum, announced that he had discovered a "compound" the inhalation of which would cause insensibility to pain, and had given to certain dentists the right to use it, among whom was Dr. Fisk, of Salem. The latter offered to administer it to the patients of Dr. A. L. Peirson, who was the principal surgeon for Salem and vicinity. This was done with complete success in several instances, one of which was a case of amputation of the breast. The late Dr. William H. Thorndike and myself were then pupils with Dr. Peirson, and assisted at these operations.

The secret "compound" was of a red color. Dr. Morton was anxious to try it at the Massachusetts General Hospital, but the surgeons there would not consent to use it unless its composition was first revealed to them. This

Dr. Morton was reluctant to do, but finally consented. Accordingly, on the 16th of October (1846), it was announced that a trial would be made. Other alleged anesthetics, including the nitrous oxide, had been tried and failed, and no one seemed to have any faith in this. Dr. Morton was not on hand at the appointed time, which gave rise to sneering remarks. However, he did appear later, and gave the ether from an inhaler with complete success. The operation (which was for the removal of a tumor from or near the face) was a bloody one. The patient (a woman) was seated in a chair, and blood soon ran down the trachea, nearly suffocating the patient. The operation was delayed by this, but was finally finished. Dr. Warren then turned to the students, and said, "Gentlemen, *this* is no humbug." Soon after, a more severe test was made on a patient suffering from disease of the spine. The actual cautery was passed zig-zag the length of the spine twice upon each side. The room was filled with the odor of burning flesh and smoke, but the patient did not wince. Dr. Warren said that this was the severest test possible, and showed the complete success of the ether as a destroyer of pain.

On a bed in a corner of a surgical ward was a young woman named Alice ——, suffering from disease of the knee, for which amputation had been advised but declined on account of dread of the operation, she preferring death. One morning Dr. Hayward told her that he could give her something that would put her to sleep and make the operation painless; when she readily consented to have it done, and this was the first amputation under ether. It was done, I think, by Dr. Hayward, but possibly it may have been Dr. Townsend. Dr. Warren substituted chloric for sulphuric ether, and seemed to prefer it.

These desultory remarks are jotted down from memory and may interest some of the students of the year '46.

Yours respectfully, **Isaac F. Galloupe, M.D.**

A MEMORIAL OF CHARCOT.

New York, October 16, 1894.

Mr. Editor: — The pupils and former associates of Charcot in Paris and throughout France are engaged in raising a fund for the erection of a bronze statue of him in the Salpêtrière. This movement is now receiving cordial and material support in Germany, in England and in Italy.

It has, therefore, seemed desirable to the New York Neurological Society that the profession in America join in this testimonial as an evidence of its appreciation of the eminent services of Charcot in neurology and medicine.

For this purpose, the Society has appointed the undersigned a committee to bring the matter to the attention of the profession and to receive contributions, which will be duly acknowledged and forwarded to the Central Committee in Paris.

Edward D. Fisher, M.D.
E. C. Seguin, M.D.
M. Allen Starr, M.D.
Chas. L. Dana, M.D.
C. A. Herter, M.D.

AN ABNORMALLY LOCATED CECUM.

Naval Hospital, New York, Oct. 22, 1894.

Mr. Editor: — While operating upon a cadaver at Bellevue Hospital Medical School last week, I found the following abnormality which I think worth publishing. The cecum was found in the right hypochondriac region in close proximity to the gall-bladder, the appendix vermiformis was normal in structure and pointed downwards. Both structures were held in their place by the mesentery. The sigmoid flexure occupied the usual position of the cecum on the right side. There were no peritoneal adhesions present. Yours truly,

Ammen Farenholt, *Assistant Surgeon U. S. Navy.*

METEOROLOGICAL RECORD,

For the week ending October 13th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Maximum.	Minimum.	Relative humidity. 8.00 A. M.	8.00 P. M.	Daily mean.	Direction of wind. 8.00 A. M.	8.00 P. M.	Velocity of wind. 8.00 A. M.	8.00 P. M.	We'th'r.* 8.00 A. M.	8.00 P. M.	Rainfall in inches.
S .. 7	30.25	54	64	45	64	53	58	W.	N.W.	7	4	C.	C.	
M .. 8	30.08	58	69	47	68	83	76	W.	S.	5	12	F.	O.	
T .. 9	29.80	60	65	56	80	55	68	W.	N.W.	8	8	F.	F.	.28
W .. 10	29.57	55	62	48	93	74	84	E.	W.	40	28	R.	C.	1.25
T .. 11	29.87	54	61	48	74	63	68	S.W.	W.	19	16	C.	C.	
F .. 12	30.26	52	62	42	59	50	54	W.	W.	7	3	C.	F.	
S ... 13	29.96	56	62	49	73	100	86	S.E.	S.E.	8	8	O.	R.	.70
☞	29.97		64	48			71							2.23

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatning; N., snow. † Indicates trace of rainfall ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, October 13, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,956,000	656	226	14.55	10.95	5.70	1.50	5.25
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,139.457	361	129	17.01	11.07	5.40	2.16	9.18
Brooklyn	1,043,000	391	182	21.25	10.50	8.00	2.00	8.75
St. Louis	540,800	—	—	—	—	—	—	—
Boston	501,107	188	55	29.86	6.36	8.48	6.89	14.31
Baltimore	500,000	—	—	—	—	—	—	—
Washington	285,000	—	—	—	—	—	—	—
Cincinnati	325,000	94	24	24.38	10.60	8.48	9.54	6.36
Cleveland	325,000	94	46	28.62	6.36	8.48	1.06	4.24
Pittsburg	272,000	78	41	32.00	21.76	21.76	5.12	3.84
Milwaukee	265,000	—	—	—	—	—	—	—
Nashville	87,754	25	10	20.00	12.00	8.00	8.00	4.00
Charleston	65,165	27	8	7.40	18.50	3.70	3.70	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	100,410	25	11	20.00	12.00	8.00	8.00	4.00
Fall River	92,233	42	23	35.70	9.52	26.18	4.76	2.38
Lowell	90,613	35	13	28.50	14.25	14.25	—	11.40
Cambridge	79,607	30	16	33.33	6.06	24.24	6.06	3.03
Lynn	65,123	—	—	—	—	—	—	—
Springfield	50,284	16	8	31.25	—	31.25	—	—
Lawrence	49,900	—	—	—	—	—	—	—
New Bedford	47,741	28	11	16.60	13.28	16.60	—	—
Holyoke	43,348	11	—	27.27	9.09	27.27	—	—
Brockton	33,939	9	1	33.33	—	11.11	—	11.11
Salem	33,155	9	1	22.22	—	22.22	—	—
Haverhill	32,925	10	6	40.00	—	20.00	10.00	—
Malden	30,209	10	4	10.00	—	10.00	—	—
Chelsea	29,806	15	1	20.00	13.33	6.66	—	6.66
Fitchburg	29,383	8	2	12.50	12.50	12.50	—	—
Newton	28,837	7	4	42.84	—	14.28	—	28.56
Gloucester	27,293	—	—	—	—	—	—	—
Taunton	26,955	12	7	50.00	8.33	8.33	—	41.66
Waltham	22,058	10	2	20.00	20.00	10.00	—	10.00
Quincy	19,642	—	—	—	—	—	—	—
Pittsfield	18,802	7	0	28.56	28.56	14.28	—	—
Everett	16,585	5	3	20.00	—	—	—	—
Northampton	16,331	6	2	50.00	—	16.66	—	33.33
Newburyport	14,073	3	1	—	33.33	—	—	—
Amesbury	10,920	0	0	—	—	—	—	—

Deaths reported 2,251: under five years of age 847; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 468, consumption 236, acute lung diseases 214, diarrheal diseases 195, diphtheria and croup 164, typhoid fever 62, scarlet fever 19, whooping-cough 12, cerebro-spinal meningitis and malarial fever 6 each, measles 4.

From scarlet fever Cleveland 9, New York 4, Philadelphia, Pittsburg, Nashville, Haverhill, Pittsfield and Woburn 1 each. From whooping-cough Brooklyn 7, New York 4, Fall River 1. From malarial fever Brooklyn 3, New York 2, Brockton 1. From measles New York 3, Cleveland 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442 for the week ending September 29th, the death-rate was 16.1. Deaths reported 3,223: acute diseases of the respiratory organs (London) 184, diarrhea

147, diphtheria 98, scarlet fever 49, fever 43, measles 40, whooping-cough 36, small-pox (Liverpool and Birmingham 2 each, London 1) 5.

The death-rates ranged from 8.0 in Leicester to 22.8 in Liverpool; Bradford 16.1, Brighton 13.2, Croydon 10.7, Huddersfield 14.3, Hull 18.1, Leeds 14.1, London 15.3, Manchester 17.9, Newcastle-on-Tyne 20.9, Nottingham 17.5, Portsmouth 12.5, Sheffield 19.1, West Ham 11.8.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending October 6th, the death-rate was 16.0. Deaths reported 3,201; acute diseases of the respiratory organs (London) 215, diarrhea 111, diphtheria 85, measles 48, scarlet fever 42, fever 35, whooping-cough 34, small-pox (Liverpool 4, Birmingham 2, London 1) 7.

The death-rate ranged from 10.1 in Plymouth to 23.7 in Liverpool; Birmingham 13.0, Bradford 14.2, Cardiff 11.9, Gateshead 13.4, Leeds 16.5, Leicester 10.8, London 15.4, Manchester 19.1, Newcastle-on-Tyne 19.9, Nottingham 14.9, Salford 18.7, Sheffield 17.4, Swansea 12.6.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 13, 1894, TO OCTOBER 19, 1894.

Leave of absence for one month, with permission to apply to the proper authority for an extension of one month, is granted CAPTAIN EUGENE L. SWIFT, assistant surgeon, Fort Yates, North Dakota.

By direction of the acting Secretary of War, so much of Par. 1, S. O. 233, A. G. O., October 4, 1894, as directs FIRST-LIEUT. ISAAC P. WANE, assistant surgeon, to report to the commanding officer, Camp Eagle Pass, Texas, after his relief from duty at Fort Supply, is so amended as to direct him to report in person to the commanding officer, Fort Clark, Texas, for duty at that post.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 20, 1894.

L. W. CURTIS, passed assistant surgeon, ordered to Chelsea Hospital.

M. H. CRAWFORD, surgeon, ordered to the U. S. S. "Constellation."

R. C. DEAN, medical director, President of Board of Medical Examiners, Navy Department.

N. L. BATES, medical director, member of Board of Medical Examiners, Navy Department.

MICHAEL BRADLEY, medical director, member of Board of Medical Examiners, Navy Department.

W. K. SCOFIELD, medical director, President of Board of Medical Examiners, League Island, Pa.

S. H. DICKSON, surgeon, ordered to temporary duty on U. S. Receiving-ship "Dale."

C. U. GRAVATT, surgeon, detached from U. S. Receiving-ship "Dale," home, and wait orders.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Thursday evening, November 1st, at 8 o'clock, by Dr. S. J. Mixter. Subject, "Modern Surgery in Private Practice." Physicians are cordially invited.

SOCIETY NOTICES.

NORFOLK DISTRICT MEDICAL SOCIETY. — The stated meeting will be held at Amory Hall, 67 Warren Street, Roxbury, Tuesday, October 30th, at 3 P. M.

The order of business is as follows: (1) Reading of Records. (2) Report of Committees. (3) Election of Nominating Committee. (4) Incidental Business. (5) Communication, "A Study of Hebephrenia," E. B. Lane, M.D.

The Censors will meet at the same time and place. Some special business is to be laid before the Board.

The Examination of Candidates will take place November 6th, at the office of the Secretary, 130 Warren Street, Roxbury. The written examination will begin at 7 P. M., the oral at 8 P. M.

J. C. D. PIGEON, M.D., *Secretary.*

MEDICO-LEGAL SOCIETY, SECTION ON MEDICO-LEGAL SURGERY.- There will be a joint session of the Medico-Legal Society and the Section of Medico-Legal Surgery, at the Academy of Medicine, New York City, on Thursday, November 15, 1894, at 8 o'clock P. M., precisely.

I. Session of the Medico-Legal Society, the President, H. W. Mitchell, M.D., in the Chair: Election of new members and miscellaneous business. Nomination of officers for the ensuing year.

II. Session of the Section on Medico-Legal Surgery, Chief Surgeon Granville P. Conn, M.D., Chairman, in the Chair: Opening address by Chief Surgeon Granville P. Conn, M.D., on "Hygienic Training of Men in Charge of Railway Trains." "Expert Examination of Plaintiff in Damage Cases, when Ordered by the Court." By George Chaffee, M.D., ex-President New York State Society of Railway Surgeons. Discussion, limited to five minutes, by Clark Bell, Esq., Judge Roger A. Pryor, Nelson Smith, Esq., Judge Abram H. Dailey, H. W. Mitchell, M.D., Professor Stillings, of New Hampshire, Chief Surgeon V. C. R. R., M. Cavana, M.D., and ex-Surrogate R. S. Ransom. "The True Line of Duty of the Railway Surgeon." By Clark Bell, Esq. Discussion, five minutes each, by Surgeon George Chaffee, M.D.; Surgeon A. M. Phelps, M.D.; R. S. Harnden, M.D.; C. M. Daniels, M.D.; S. S. Thorne, M.D.; J. B. Murdock, M.D.; Nicholas Senn, M.D.; W. B. Outten, M.D.; G. P. Conn, M.D., and others. "Medical Witnesses." By R. S. Harnden, M.D., ex-President Erie Railway Surgeons. Discussions, five minutes each, by H. W. Mitchell, M.D.; Chief Surgeon Estes, Lehigh Valley R. R.; M. Cavana, M.D.; C. M. Daniels, M.D., and others.

The New York State Association of Railway Surgeons holds its annual meeting at the Academy of Medicine on same day — morning and afternoon session — to which all our members have been invited, and the members of that Society are cordially invited to attend our meeting and take part in the discussion.

For Section on Medico-Legal Surgery,
GRANVILLE P. CONN, M.D., *Chairman.*
CLARK BELL, *Vice-Chairman and Secretary.*
GEORGE CHAFFEE, M.D., *Treasurer.*

For Medico-Legal Society,
H. W. MITCHELL, M.D., *President.*
CLARK BELL, *Secretary.*
F. B. DOWNS, M.D., *Assistant Secretary.*

NEW YORK STATE ASSOCIATION OF RAILWAY SURGEONS. — The fourth annual meeting will be held in the Academy of Medicine, 17 West Forty-third Street, New York City, Thursday, November 15, 1894.

Morning Session (9.30 A. M. sharp). — 1. President's Address, "Important and Unsettled Questions in Railway Surgery." 2. When Shall we Amputate? (*a*) "Arguments Favoring Early Amputations." By Dr. W. L. Estes, Chief Surgeon Lehigh Valley, R. R., South Bethlehem, Penn. Discussion by Prof. J. B. Murdoch, Pittsburgh; Prof. J. S. Wright, Brooklyn; Prof. A. P. Grinnell, Burlington, Vt. (*b*) "Arguments Favoring Delayed Amputations," By Dr. T. H. Manley, Surgeon Harlem Hospital, New York. Discussion by Dr. C. M. Daniels, Buffalo; Prof. J. S. Wright, Brooklyn; Prof. A. P. Grinnell, Burlington, Vt.; Prof. J. B. Murdoch, Pittsburgh. (*c*) "Technique of Amputation." By Prof. John A. Wyeth, New York. 3. "Asepsis and Antisepsis in Surgical Work." By Dr. F. A. Stillings, Concord, N. H. Discussion opened by Prof. A. P. Grinnell.

Afternoon Session. – Business Meeting, 2 P. M. Scientific Work, 3 P. M. 4. "Special Features in Railway Surgery." By Dr. C. B. Herrick, Troy. Discussion opened by Dr. G. P. Conn, N. H. 5. "The Immediate Care of Railway Injuries." By Prof. J. A. Van Duyn, Syracuse. Discussion opened by Dr. Geo. Chaffee. 6. "Important Factors in Unusual Results Following Traumatisms." By Dr. R. S. Harnden, Waverly. Discussion by Dr. P. A. Skiff, Frankfort; Dr. C. S. Parkhill, Hornellsville.

M. CAVANA, M.D., *President*, Oneida.
J. B. HEWLITT, M.D., *Secretary*, Middletown.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.— The twentieth annual meeting of the Mississippi Valley Medical Association will occur al Hot Springs, Ark., November 20, 21, 22 and 23, 1894.

X. C. SCOTT, M.D., *President*, Cleveland.
F. C. WOODBURN, M.D., *Secretary*, Indianapolis.

RECENT DEATH.

STUART DOUGLAS, M.D., died in New York on October 14, 1894, aged thirty-three years. He was a graduate of the University of Virginia and for seven years had had charge of the insane patients at Bellevue Hospital.

BOOKS AND PAMPHLETS RECEIVED.

Appendicitis: A Timely Operation. By Howard Crutcher, M.D., Chicago. Reprint. 1894.

Morphinism in Medical Men. The Modern and Humane Treatment of the Morphine Disease. By J. B. Mattison, M.D. Reprints. 1893-4.

Rational Medicine and Charlatanry. The Bubo Plague in China, with a Brief Account of the Great Plague of London. By Burnside Foster, M.D. Reprints. 1894.

Original Articles.

REMOVAL OF THE GASSERIAN GANGLION FOR FACIAL NEURALGIA: SUCCESSFUL CASE.

BY MAURICE H. RICHARDSON, M.D.,
Visiting Surgeon to the Massachusetts General Hospital,
AND GEORGE L. WALTON, M.D.,
Physician to the Neurological Department, Massachusetts General Hospital.

This branch of neurological surgery is of so recent date, and the number of reported cases so small (somewhat over forty, only) that each case is of sufficient importance to be reported. The dangers and difficulties of intra-cranial neurectomy are not yet fully understood, nor the results assured; nor, in fact, has the best method of operating on the ganglion in question been established, the advantages of entrance to the skull by the method of Rose (trephining at the base) being disputed by the advocates of the lateral operation (through the temporal bone), whether according to the so-called Krause-Hartley method or that of Horsley.

The latter method was adopted in the following case because a clear view of the ganglion and its branches was deemed by the operator the most important consideration for intelligent and safe removal. The operation of Rose certainly involves, as Keen has commented, working more or less in the dark through a very small opening, thus adding not only to the difficulty of removing the parts desired, but also to the dangers of injury to, if not destruction of, contiguous important structures, notably the internal carotid artery, the cavernous sinus, and the ocular nerves. The middle meningeal artery can hardly be expected to escape injury by either method.

The operation was even more difficult than was anticipated, principally on account of hemorrhage, both arterial and venous, which could be controlled only by temporary gauze packing. The procedure was thus much delayed at the outset; indeed, complete postponement seemed unavoidable at one time, as in the case reported by Keen and Mitchell in which packing was left for three days in the cranial cavity before the operation was resumed.

Case. Mrs. S. C., aged sixty-three years, has suffered from severe facial neuralgia for about fifteen years. The onset was gradual, the attacks being at first of short duration, and with considerable intervals. Of late years the pain has been almost continuous. Confined at first to the lower jaw on the left side, pains have spread at times into the temple. The infra- and supra-orbital regions have not been invaded. There has been no pain in the teeth, which are in remarkably good condition.

Three years before (June 26, 1891) Dr. Richardson had operated extra-cranially upon the second and third divisions of the fifth nerve on the left side by avulsion at their foramina of exit. A small elliptical incision was made in the left temporal region, with its convexity upwards. The zygoma was sawed through and turned down over the ascending ramus of the jaw with the origin of the masseter muscle. Without cutting the temporal muscle, the second and third divisions of the nerve were isolated, the one in front of and the other behind the temporal tendon. By alternately dissecting and packing, anteriorly and posteriorly, a clear view of the field was obtained for intelligent isolation and avulsion. Immediate healing followed, with complete relief from pain. In the course of a year and a half the pain returned, and, on entrance to St. Margaret's on August 13, 1894, the spasms were unbearable.

The second operation was performed August 15, 1894, Dr. Brewster assisting. The incision was made practically through the old scar. The squamous portion of the temporal bone was exposed, and a small trephine opening was made just posterior to the spheno-temporal suture. The skull proved to be very thin at this point, and in spite of every care the posterior branch of the middle meningeal artery was cut. The hemorrhage from this source was excessive, and could not be controlled; for some time after the removal of the trephine-button it seemed as if the operation must be temporarily abandoned. At last, after enlarging the opening, the vessel was secured. The dura mater was surprisingly thin; it was impossible, even with the greatest care, to save that portion situated directly under the trephine-button. In trying to separate it from the bone in the middle fossa the membrane was torn to shreds, though the slight force used was very carefully applied by means of blunt and smooth instruments. Such a result in trephining had never occurred in the experience of the operator. Indeed, in demonstrating the Gasserian ganglion in the dissecting room, it had been customary to expose the petrous bone and the middle fossa by tearing up roughly the dura mater. The strength of this membrane and the facility with which it may be separated from the bone was depended upon for easy and safe isolation of the ganglion.

The subsequent procedures, however, were much facilitated by going immediately into the sub-arachnoid space. The temporal lobe was lifted without difficulty by means of a spatula extemporized from a silver spoon, so that the whole length of the petrous bone could easily be seen and felt. The depression at the end of this bone, where the Gasserian ganglion is situated, could be clearly distinguished; and after the cessation of the hemorrhage the fifth nerve could be seen at the point where it leaves the dura mater to enter the ganglion. A good view could be obtained of the pons also. Having determined the exact situation of the ganglion, the dura mater was incised along the anterior edge of the petrous bone, and through this incision the membrane was carefully lifted by means of the blunt dissector. On going back very cautiously and very gradually, the mass of the ganglion was soon reached.

The situation of the Gasserian ganglion at this point rendered cutting extremely dangerous. Not that one would be apt to injure the carotid, as it winds from the canal at the tip of the petrous bone around the bases of the clinoid processes, for its position is indicated by its strong pulsations; but there is very great danger of wounding the cavernous and other sinuses. The thickness of the walls of these vessels, with the absence of pulsation, makes it impossible to distinguish them; hence one cannot cut in their vicinity without the greatest risk of wounding them. The safest way, therefore, of removing the ganglion is first to isolate it by means of blunt instruments, then to sever with scissors its proximal attachments, and finally to destroy it by avulsion between the jaws of powerful forceps. By this method the only cutting necessary is at the end towards the pons. In the sub-arachnoid operation the nerve can be seen distinctly, and there is no danger of wounding other structures by this cut. When performed entirely outside the dura the isolation of the proximal end can still be made so complete that cutting with the scissors is safe. For the purpose of avulsion, forceps without a tapering point are best, for the usual instruments, with conical ends, while being twisted allow the nerve to slip off the point.

In our case, after isolating the ganglion as well as possible by lifting the dura mater, the portion between the ganglion and the pons was cut with blunt-pointed scissors, and the main body was grasped by means of forceps and avulsed.

With regard to the motor branches of the third division contiguous to the ganglion we think it impossible by any operation yet devised to destroy the ganglion without at the same time destroying this motor trunk. It was only with the greatest difficulty that the ganglion itself was isolated; to find and protect the motor portion would have been impossible, except, perhaps, by the merest chance.

The amount of hemorrhage after avulsion was considerable, especially from a point near the anterior clinoid processes. By letting down into place the temporal lobe, this hemorrhage would cease; on lifting the brain again from the fossa, a rapid ooze would show itself. The exact source of this hemorrhage could not be made out, but it was permanently checked by letting the brain down into place. The veins injured were not those referred to by Horsley, which pass from the temporo-sphenoidal lobe to the superior petrosal sinus.

The temporo-sphenoidal lobe was considerably lacerated superficially, in spite of every precaution. There were numerous spots of hemorrhage by which the cortex was altered in gross appearances, and several tears were visible at the close of the manipulations. The probable effect of this injury was anticipated with much interest, with special reference to aphasia.

The hemorrhage was so extensive throughout the operation that it was not deemed safe to leave the wound without drainage, though at the close the parts were dry. A small strand of gauze was therefore left in one angle of the wound extending into the middle fossa.

History after Operation.— Convalescence was perfectly normal. The stitches were removed on the sixth day. There was solid primary union. The most noticeable symptom on coming out of ether was aphasia, of which the following will serve as examples: "My coffee is not wet." "Can't you soften that pill?" meaning "loosen that bandage." "My head is all well and gone home; why can't I go?" "Can't you whistle my head?"

She wanted her coffee "dry," and an apple "salt." She called her "back" her "Baptist," and called "egg-nogg" "cake-stuff." This symptom improved on the third day, and in five days it practically disappeared. There was no headache or other special symptom. The temperature did not rise at any time above 99.5°. Examination two weeks after operation showed the following condition:

Speech is practically perfect, patient only occasionally forgetting a name; not oftener perhaps than the average person: for example, she called Dr. Charles "Dr. Richardson"; then corrected herself. Patient thinks she does not remember quite as well, and that she is not quite as bright as before the operation; but this is not noticeable to the observer. There is numbness in the distribution of the branches of the fifth nerve, including the forehead and conjunctiva. The pupils are alike, but the left does not react quite as freely as the right. There is slight haziness of the left cornea (which existed before the operation) and moderate injection of conjunctival vessels of the left eye. The jaw opens fairly, nearly admitting two fingers. The forehead is smooth on the left (as before operation). The eye is closed partially; the lid is somewhat swollen and drooping. The wound is completely healed. The mouth is somewhat asymmetrical, but all movements of the lips are perfect. The movements of the eyes are unaffected.

The patient has had no pain since the operation.

Long-standing cases of trifacial neuralgia, especially in elderly people, prove so often intractable to other than operative therapeutics, that the tendency is growing to operate comparatively early in these cases rather than to prolong the suffering through years of unsuccessful attempts at subduing the affection by drugs.

The long course of this nerve through unyielding canals and around bony prominences, with the fact that it is exposed (through supplying the teeth) as no other nerve in the body, to external influences, adds materially to the usual causes of neuralgia, and renders this nerve peculiarly prone to irritation and disease. The second and third branches are those most liable to the intractable form of so-called epileptiform neuralgia. Internal and dental treatment failing in these cases, the final resort is removal.

Operations on the more accessible parts of these branches prove so often only temporary that it is a question if it be not justifiable to advise the deeper operations at once in cases sufficiently severe to justify operation at all; and thus avoid the discomfort of two attempts, and the suffering attendant upon long delay.

Yet when we consider the great ease with which an offending nerve may be removed at its peripheral point of exit — the infraorbital or the mental foramina, for example, with its usual complete relief, even though it be for a year only, it seems at times worth while to perform this operation first, especially in elderly or feeble patients, reserving the deep extra-cranial operations and the removal of the ganglion until they are absolutely the last resort. Peripheral operations upon these nerves in our experience have been followed almost invariably by recurrence of pain. We have then advised the deep operation upon the second and third divisions at the base of the skull; in many of these cases the pain has not returned, or its recurrence has been controlled by medical therapeutics. In others, thus far small in number, the neuralgia has recurred with its original violence. For such the avulsion of the Gasserian ganglion remains as a last resort.

In considering, therefore, what operation to choose in the beginning, we must bear in mind that the final operation of all — the one under discussion — has not as yet had time enough to show its results, though perhaps sufficient to give more brilliant promise than the others. If it should prove to be like the others, temporary only, it is evident that the greatest relief will be found in resorting successively to the peripheral, the deep, and the extra-cranial methods.

The objection to proceeding at once to the removal of the Gasserian ganglion, however, is obvious,— for, apart from the difficulties and dangers of this operation, involving entrance within the cranium and opening the dura mater, we have to consider the probable injury to, and even loss of, the eye, through destruction of the first branch of the nerve. In point of fact this operation, without previous pheripheral operations, has been resorted to a few times only (for example, by Tiffany in a noteworthy case on a woman of seventy-nine, and by Finney in an operation upon a male of sixty-nine). Keen's views on this point are that if we can lessen the mortality and if we can demonstrate that no recurrence takes place, operation upon the Gasserian ganglion should be the first recommended; otherwise the last. Up to this time recurrence has not been reported, as far as we have seen, and the chances are certainly in favor of lessening rather than increasing the death-rate.

With regard to ocular injury, a study of the literature shows far less involvement of this organ than would be expected, perhaps because the first branch and part of the ganglion are often left either intentionally or on account of difficulty of detachment from the cavernous sinus. Tiffany, who has had no ocular trouble in his cases, specially recommends leaving these portions intact. The only case of absolute loss of the eye seems to have been one of Rose, in which panophthalmitis followed operation. Less marked affections have occurred, as in Lanphear's case of suppurative conjunctivitis, allayed by mild bichloride solution.

In our case the patient was willing, on account of the extreme pain, to undertake the operation, though warned of the possibility of losing the sight in the eye on the affected side.

The operation advocated and successfully practised by Rose, has been that adopted in about half the cases reported — Rose (6), D'Antona, Andrews, Park, Lanphear, Doyen, Parkhill, Kerr, Novarro, Eskridge and Baker; and in about half, the so-called Krause-Hartley cut has been made — Krause, Hartley, Roberts, McBurney, Fowler, Tiffany, Finney, Mitchell and Keen. Mr. Horsley undertook in one case removal through a trephine opening in the temporal region, elevation of the brain, after cutting through the dura mater, and detachment of the root from the pons.[1] In this case the patient (already in poor condition) died of shock in seven hours, a fact which, with theoretical objections advanced by Rose, seems to have deterred surgeons from following Horsley's method, the Krause-Hartley method being preferred by those opening through the temporal region. The method followed in the operation here reported, however, was practically that of Horsley.

The steps of Rose's operation in brief are:

(1) Incision from over malar bone, half an inch below external angular process along the zygoma; down in front of the ear over the parotid region to the angle of the jaw; then along the lower border of the horizontal ramus to the facial artery; the flap sutured to the upper part of the chin by catgut.

(2) Section of zygoma and coronoid processes and detachment of masseter and temporal muscles.

(3) Exposure of the base of the skull and search for foramen ovale.

(4) Opening the base of the skull.

(5) Removal of the ganglion.

(6) Reposition of displaced structures.[2]

The Krause-Hartley operation is made through an omega-shaped incision from in front of the tragus to the external angular process of the frontal bone, the cut being carried to the bone, and continued through it by the chisel, the bone being broken off at the base just above the zygoma. The second and third branches are found and divided, and the ganglion destroyed as far as possible.[3]

Rose's objections to Horsley's operation in brief are: (1) The difficulty of the operation; (2) The double opening of the dura mater; (3) the removal of bone; (4) the disfigurement; (5) the injury to the brain; and (6) intra-cranial hemorrhage, for example, from the veins passing from the spheno-temporal lobes to the superior petrosal sinus (which Horsley himself states must be ruptured) and from probable injury to the sinus itself.

A consideration of these objections shows that the difficulty of operation and the danger of hemorrhage are by no means wanting in Rose's method. The removal of bone and the disfigurement are inconsiderable objections in comparison to the seriousness of the symptom for which the operation is undertaken (in point of fact, the disfigurement is by no means necessarily great). The danger of the double opening into the dura mater, under antiseptic precautions, and in a fair field of operation, would seem counterbalanced by the dangers from curetting and removing the ganglion in pieces without a clear view of a region filled with vital structures. The injury to the brain is hardly likely to extend beyond the speech centres, which experience has proved will bear a great amount of pressure, and even laceration, with only temporary impairment of function.

That contiguous structures may be injured in curetting is shown by the oculo-motor paralysis (temporary, it is true) in Andrews's case.

The danger of injury to the closely lying internal carotid is common to both operations, but probably lessened in the lateral operation on account of the better view of the parts. The danger of injuring the cavernous sinus through its attachments to the first branch is also common to both, and the suggestion of Rose might perhaps be followed with advantage, that is, to avoid removal of this branch, though Horsley states that he has been able to separate these structures in the cadaver.

Among the advantages of the lateral operation may be mentioned the fact that the mobility of the jaw is retained; that the zygoma need not be removed; that the ganglion can be perfectly exposed and removed, including its root on emerging from the pons; that the danger, however great, of injury to important contiguous structures is minimized; and lastly, that we avoid the danger of sepsis from the pharynx.

With regard to the prognosis, Keen's table, collected early in 1894, shows six deaths out of forty cases, nineteen of which were operated upon by Rose's, and nineteen by Hartley's method. Two deaths are credited to each method. One of the other deaths was Horsley's case, and one of unknown method. A death reported by Eskridge (a male of fifty-two, Rose's method) is not mentioned in Keen's table.

In persons of fairly good condition and without other disease, it would probably not be far out of the way to expect a mortality not exceeding ten per cent., though the actual death-rate has been higher.

---

[1] For details see Brit. Med. Journ., Dec. 5, 1891.

[2] Full details are found in the Lancet, 1892, page 29.

[3] The details will be found in Hartley's report in the Annals of Surgery, May, 1893, page 511.

Certain valuable measurements have been made by Taylor, which are worthy of inserting at length to show the variations to be expected in the situation of the foramina and the contiguity of the carotid artery. Distance from the middle of the foramen ovale to the middle of the foramen spinosum, 3 to 13 millimetres; ovale to rotundum, 9 to 18; spinosum to rotundum, 11 to 24; ovale is anterior to foramen spinosum by 3 to 9 millimetres; internal to it by 3 to 9 millimetres; the foramen rotundum is anterior to the foramen spinosum by 13 to 20 millimetres; internal to it by 6 to 16 millimetres. The foramen rotundum is distant from the fossa for the Gasserian ganglion by 11 to 23 millimetres; the foramen ovale is distant from the same by 3 to 13 millimetres. The distance from the foramen ovale to the carotid canal varies from 1 to 13 millimetres. The diameter of the foramen spinosum is 1 to 4 millimetres; of the foramen ovale, 4 to 9 millimetres; of the foramen rotundum, 1 to 4 millimetres.

An important point to be noted is the occasional contiguity of the carotid canal to the foramen ovale; also the fact that the middle meningeal artery is in some cases so placed as to render it impossible to remove the third branch without injuring it, on which account Taylor recommends tying the middle meningeal artery at once in case the nerve proves difficult of access.

A noteworthy peculiarity from the neurological point of view is the persistence of taste at the tip of the tongue after these operations, a fact hard to reconcile with our views of the course of the taste fibres through the trigeminus.

No trophic changes occur in the skin of the face, and the area of anesthesia becomes greatly narrowed in time. The paralysis of muscles of mastication affords some discomfort, though not material, compared with pain, and one who performs or sees this operation will appreciate the impossibility of isolating and sparing the motor root.

Temporary aphasia may be expected in lateral operations, and temporary injury to the ocular nerve may occur in all (perhaps less in the lateral), but if the patient survives the immediate effect of the shock and compression upon the respiratory centres, the chances are against any lasting injury to the brain.

LITERATURE.

Park. Transactions American Surgical Association, 1893, xi, 238.
Roberts. Proceedings Philadelphia County Medical Society, 1892, 460.
McBurney. Annals of Surgery, 1893, 1, 516–519.
Kerr. Journal American Medical Association, February 18, 1893, 181.
Novarro. Jour. de Méd. Clin. et Pharm., Bruxelles, September 20, 1891.
Rose. Transactions Medical Society, London, 1891–2, xv, 187–230.
Rose. Lancet (Abstract), 1892, 71, 182, 295.
Rose. British Medical Journal, February 6, 1892.
Horsley. British Medical Journal, December 5, 1891.
Fowler. New York Medical Review, June 16, 1894, 745.
Doyen. Assoc. franc. de Chir. Proc. verb, etc., Paris, 1893, vii, 531–4.
Doyen. Mercredi Méd., Paris, 1893, iv, 181.
Salmoni. Clin. chir., Milano, 1893, 1, 557–62
Taylor. Philadelphia Polyclinic, 1894, iii, 124–6.
Keen and Mitchell. Medical and Surgical Reporter, Philadelphia, 1894, lxx, 414–423.
Eskridge and Baker. American Journal Medical Sciences, Philadelphia, 1894, n. s., cvii, 291–295.
D'Antona. Atti, d. r. Acad. Med. Chir. di Napoli, 1893, xlvii, 6–10.
Lanphear. Pacific Medical Journal, 1892, xxxv, 647–651.
Andrews. Journal American Medical Association, Chicago, 1893, xx, 180.
Artieda. Siglo med., Madrid, 1892, xxxix, 804–819; 1893, xl, 4, 18–36.
Krause (F). Deutsche med. Woch., Leipsic and Berlin, 1893, xix, 341–344.
Stoker. Dublin Journal Medical Sciences, 1893, xcv, 177–186.
Parkhill. Medical News, Philadelphia, 1893, lxiii, 319.
Finney and Thomas. Johns Hopkins Hospital Bulletin, Baltimore, 1893, iv, 91–93.
O'Hara. Australasian Medical Journal, Melbourne, 1893, n. s., xv, 513–517.
Tiffany. Annals of Surgery, Philadelphia, 1894, xix, 47–57.
Hartley. New York Medical Journal, March 1, 1892, and Annals of Surgery, May, 1893.

◆

ACUTE INFANTILE ARTHRITIS IN THE HIP.[1]

BY AUGUSTUS THORNDIKE, M.D.

A CASE OF ACUTE ARTHRITIS.

J. C., age fourteen months, was brought to the Children's Hospital May 9, 1893, where he was seen by Dr. R. W. Lovett and myself. His condition was as follows:

Small child with pinched and wasted expression of countenance, much emaciated; the left thigh, semi-flexed, was fluctuant and swollen to twice its usual size from the knee to the crest of the ilium. The lower half of the abdomen was quite prominent and the skin reddened. The tenderness was so excessive that the least handling caused great pain. The mother said that two weeks before there had been some pains in the stomach, and a doctor had been summoned; that these had been partially relieved, but that three days ago the child was in pain and another physician had been called, who discovered a deep-seated swelling about the hip and advised immediate removal to the hospital, but that yesterday she was not able to come and the pain and swelling had grown rapidly worse; that for two days he had not nursed much, but there had been no vomiting and the napkins were of good color.

The child was at once sent to the West End Infant Hospital and Nursery where, at Dr. Lovett's request, I opened the abscess two hours later. The patient, wrapped in sterilized towels, was slightly etherized on the sterilized metal operating-table, which was warmed by hot-water tins. An incision three inches long behind the trochanter immediately opened a tense sac of milky, odorless pus. Exploring it with the finger, it was found to extend from the knee to the crest of the ilium behind, while in front I easily passed over the ramus of the pubis, one inch outside of the symphysis, into a cavity whose limits my finger was too short to explore, but a quantity of pus was pressed out by the hand on the abdomen. It was irrigated with warm corrosive-sublimate solution, 1 to 5,000, then with warm boiled water; and two rubber drainage-tubes were inserted, one running into the pelvis, the other down the outer side of the thigh. Sterilized gauze dressings were applied, together with a Cabot posterior wire frame from the ankle to the scapulæ. As the pulse was 160 and far from strong, the operation was done as quickly as possible, and two subcutaneous injections of brandy were given. The child slept fairly well. Mother and child went home six days after the operation, the patient's temperature never having passed above 99.5°; and three weeks later the resulting sinus had entirely closed and the child appeared to be perfectly healthy.

---

[1] Read before the Boston Society for Medical Improvement, April 23, 1894.

I have so far omitted saying anything of the condition of the hip. When the examining finger explored the abscess, the femur was lying in a sea of pus, and gave the sensation of being free from attachments at its upper extremity. Upon rapid examination the head and neck of the femur were found lying on the dorsum of the ilium, and a shallow cavity filled with soft granulations occupied the spot where the acetabulum ought to be. In the centre of these granulations I thought I could feel a perforation. I attempted to put the head of the bone back in place and thought I had succeeded, but at the next dressing it was out of joint. On the second day, under ether, Dr. Lovett and I endeavored in vain to reduce the dislocation for the second time. The head could be brought into the shallow acetabulum without difficulty, but it would not stay there, and after two or three attempts we again irrigated with hot corrosive-sublimate solution (1 to 5,000) followed by warm sterilized water, and applied dressings and splints as before, leaving the hip dislocated on the dorsum ilii. This, I believe, is not an uncommon result in acute arthritis of the hip.

On October 11th of the same year the parents had begged for an operation, and brought him to the same hospital by appointment. Since discharge, five months ago, the condition has been as follows :

The sinus had closed entirely in three weeks. In September he had been very ill for two weeks with gastro-intestinal catarrh, and he still had occasional spells of vomiting and diarrhea. He was still nursing. The condition of the affected limb was this: trochanter three-fourths of an inch above Nelaton's line, actual shortening one and a quarter inches; toes could not be everted; dislocation of left hip on the dorsum ilii; a depressed scar two and a half inches long was adherent to the posterior surface of the great trochanter.

Operation under ether, Dr. Lovett manipulating the leg; Drs. Munro and Dane present. An incision four inches long was made, following the old scar to the bone. The hip was thrown well out of the wound by flexing and adducting. The acetabulum was felt to be small, shallow, and filled with a tough elastic-feeling tissue and some bony spiculæ. The large, sharp-edged spoon-curette was used with considerable force until a fair-sized cavity was obtained. I could not get the head of the bone into it; and then found a finger-like spur of bone projecting from the lower border of the femoral neck, and curving upwards so as to cover the lower half of the articular surface of the head of the femur. This was easily cut off with bone-forceps, and the dislocation reduced. It was irrigated with bichloride solution (1 to 5,000), then with boiled water, and sewed with catgut, except at the lower angle where a small iodoform gauze wick was inserted. Steam-sterilized dressings and a long Cabot hip-frame, projecting five inches beyond the foot, were applied, with light traction to the leg, obtained by tying the traction webbings tightly under the projecting foot-piece and using two perineal straps for counter-extension. Before applying the dressings, Dr. Lovett drove a large wire nail into the pelvis, just above the head of the femur, the free end remaining in the dressing. On the second day the dressing was done because the temperature had slowly risen to 102°. The nail, although firmly driven in only two days before, was loose, and was removed. It was covered with a clear, sticky fluid like mucilage, and a few drops of clear serum followed from the nail-hole. The gauze wick was loosened with dressing-forceps, but not removed.

The temperature fell steadily (in forty-eight hours was 99°), and remained normal. The child was sent to its home in East Boston on the ninth day, and I continued to dress it twice a week for three weeks, after which the parents dressed a small granulating surface, bringing the child to see me every fortnight. The Cabot splint was worn four months; there was then some motion in the hip, and the legs were of equal length. Traction had been kept up. He then wore a light traction-splint made of steel tubing, and was allowed to play for a half-hour every day without his splint. The present condition of the hip, six months after my second operation, is this: Child stands with the left foot somewhat everted, and limps a little in walking. He is still unsteady in stepping, although now a little over two years old. No actual shortening is present. Motion in flexion is about 25°; abduction, adduction and rotation are slightly limited. Hyper-extension is also limited.

TREATMENT.

The treatment of acute arthritis resolves itself into two things: (1) that directed against the general septicemia; feeding and stimulating, including both alcohol and cardiac stimulants; and (2) the local treatment, rest, free incisions, disinfection, and drainage of any and all pus cavities.

The acute general sepsis is generally present before it is possible to know that there is pus in the joint. At this stage, feeding at absolutely regular and proper intervals must be insisted on, the mother's milk being, of course, the best food for small babies. I have given brandy, ten drops every two hours, and one drop of tinct. digitalis in the alternate doses, to babies as young as two months, after an operation; and there is every reason to push both the food and stimulant from the very beginning in these cases. The local treatment must include rest of the painful hip before as well as after the operation; the Cabot frame affords good fixation, and allows inspection of the limbs, which a plaster bandage does not do, although the latter method has been used, as also extension in bed on an inclined plane. The Cabot frame, if properly guarded with rubber tubing and rubber cloth or oiled silk, is also preferable after operation, on account of the frequent soaking of a plaster spica with urine. The limb should in the early days be put up in a comfortable position, usually semi-flexed. As soon as cellulitis or great tenderness in the tissues about the joint gives rise to a fair presumption that there is pus, a free incision should be made (preferably following one of the lines for excision of the hip) and the capsule opened; and should no pus be found, it does no harm to look for it by deep incisions into the cartilaginous epiphysis. If, however, large abscesses are found, the cavities, according to Gibney,[2] should be carefully curetted and disinfected; and this should always be done unless the baby's condition is bad enough to make great haste necessary.

After reducing a dislocation of the hip, the leg should be dressed on a straight Cabot frame, or a long plaster spica bandage may be applied. A moderate amount of extension is advisable, as it assists in keeping a baby's hip at rest.

---

[2] New York Medical Record, 1892, vol. xlii, p. 505.

Stimulants I believe are usually required, but no rule can be definitely laid down for their use. Every precaution should be taken during the operation to avoid shock.

This case is instructive in that it shows that if a child gets well with a dislocated hip, the dislocation may be reduced at least five months after evacuating the abscess, and, furthermore, that if after careful and persistent trial it cannot be reduced by the Bigelow method, operation may show some exostosis or deformity, and its removal enable the operator to effect the reduction.

GENERAL CONSIDERATIONS.

Acute infantile arthritis is fortunately an uncommon affection, judging from the number of reported cases. It has nevertheless met with the misfortune of being described by many writers under different names. To-day it represents a group of cases characterized by a very acute infectious inflammation of the end of one of the long bones with rapid suppuration of the joint. It occurs in infants with but few exceptions. It may be monoarticular or polyarticular. It is supposed to begin with a passive congestion of the vessels about the epiphyseal line, rapidly followed by inflammation and suppuration causing abscess of the epiphysis speedily breaking into the joint; or joint-suppuration may be found without the epiphyseal abscess.

Mr. Thomas Smith,[8] who gave us the first clear description of the infection, notes a small hole leading through the cavity in the epiphysis into the joint in many specimens. Such an abscess once started may lead to entire destruction of the articular end of the bone, or even to necrosis of most of the shaft as well. There may or may not be a sequestrum; grating in the joint may be present. Motion in the joint may be much increased owing to a flail-like condition or owing to pathological dislocation of the joint, but joint motion ... of course extremely painful at first if not prevented ... of the surrounding muscles. After the pus ...h the capsular ligament, the surrounding seat of a rapidly spreading abscess, ...ernally, or be opened, drained, and ...ate result is, however, rare. cases reported are fatal from ...tion, whether operated or grows up with a short- or a dislocated one.

...ne have attracted ...omyelitis; it is these cases infection, in ...th resulting ... used by 833, he days, ...us in the ...per

lating
Tempora
operations, an
may occur in all
the patient survives
and compression upon
chances are against any la

LITERAT

Park. Transactions American Surg
238.
Roberts. Proceedings Philadelphia Co
1892, 460.
McBurney. Annals of Surgery, 1893, 1, 51
Kerr. Journal American Medical Associa
1893, 181.
Novarro. Jour. de Méd. Clin. et Pharm., Brus
20, 1891.
Rose. Transactions Medical Society, London, 18
230.
Rose. Lancet (Abstract), 1892, 71, 182, 295.
Rose. British Medical Journal, February 6, 1892.
Horsley. British Medical Journal, December 5, 1891.
Fowler. New York Medical Review, June 16, 1894, 745.
Doyen. Assoc. franc. de Chir. Proc. verb, etc., Pari
vii, 531-4.
Doyen. Mercredi Méd., Paris, 1893, iv, 181.
Salmoni. Clin. chir., Milano, 1893, 1. 557-62
Taylor. Philadelphia Polyclinic, 1894, iii, 124-6.
Keen and Mitchell. Medical and Surgical Reporter, Phila-
phia, 1894, lxx, 414-423.
Eskridge and Baker. American Journal Medical Scien etc.
Philadelphia, 1894, n. s., cvii, 291-295.

already alluded to, reported twenty-one cases which had come under his own observation. Both of these writers made use of the term acute arthritis.

Among the earlier German writers, Klose,[6] because the suppuration generally occurred between the epiphysis and shaft, named it "epiphysentrenung" (separation of the epiphysis) and also osteomeningophlebitis. Chassaignac[6] called it acute sub-periosteal abscess; Demme,[6] of Berne, osteomyelitis; and recent French writers, like Lannelongue,[7] Achard,[7] Rodet,[8] Courmont and Jaboulet, continue to use this designation.

Krause[9] in 1884, in an article on "Acute Purulent Synovitis in Infants," describes the affection, and says that Volkmann has seen about fifty cases, and calls it catarrhal inflammation of the joints in infants. Krause found in the pus the staphylococcus pyogenes aureus which Rosenbach then considered causative of osteomyelitis and also a chain coccus.

Stromeyer[9] had already among the Germans christened it osteitis articularis peracuta; and Barwell ("Diseases of Joints," American edition, 1881) used his terms and definitions.

McNamara[9] at first called it acute epiphysitis, but in later editions terms it suppurative osteitis of growing bones, mentioning four or five cases. Thomas Jones, of London ("Diseases of Bones," 1887), dubs it acute osteomyelitis, or necrosis of the epiphysis and articular extremities of bones, as does also Sir William Morant Baker.[10] Among recent American writers and some English the name acute arthritis is usually retained — such as Howard Marsh, Owen,[11] Battles,[12] Townsend, Gibney, Judson,[13] Roswell Park, Bradford and Lovett;[14] but Koplik and Van Arsdale[15] of New York speak of the affection as a streptococcal osteomyelitis, and some prefer the term epiphysitis.

Owen[16] has recently called attention to the fact that all cases of acute arthritis are merely manifestations of acute osteomyelitis and claims that there is no need of such classification. "It is not a joint disease, nor is it an epiphysitis. Perhaps the best term is para-epiphysitis."

Townsend, of New York, compiled in tabular form, in 1890, all cases he could find, including his own. They numbered 71, and of these 37 (52 per cent.) involved the hip-joint, showing that it is infected more frequently than any of the other joints. The ages, recorded in all but five cases, may be grouped as follows: 15 (or 47 per cent.) occurred in infants under two months of age; 5 (15½ per cent.) between two and six months; 8 (25 per cent.) between six months and one year; and the 4 last (12½ per cent.) between one year and eighteen months. These figures, derived from the hip cases alone, do not differ materially from the summary of the entire table. A large proportion, 25 per cent., were under one month of age; and boys and girls were affected almost equally.

Mr. G. A. Wright,[17] of Manchester, England, says he has seen a case which originated in utero.

---

[6] Townsend: Acute Arthritis of Infants. American Journal of Medical Sciences, vol. xcix, p. 1.

[7] Bull. Méd. de Paris, 1890, vol. iv, p. 183.

[8] Lyon Médicale, 1890, vol. lxiii, p. 513.

[9] Townsend: Loc. cit., p. 2.

[10] British Medical Journal, September 1, 1883.

[11] Sir Edmund Owen: Surgical Diseases of Children.

[12] Battles: Lancet, 1891, vol. i, p. 1042.

[13] New York Medical Journal, December, 1878.

[14] Treatise on Orthopedic Surgery, Edition 1890.

[15] American Journal of Medical Sciences, 1892, vol. ciii, pp. 422, 534.

[16] Lancet, 1893.

[17] British Medical Journal, September 1, 1883, p. 422.

As these cases in young babies differ materially from the purulent joint diseases of later life, is it not probable that they may be due to anatomical conditions not existing at an older age?

(*To be continued.*)

SOME OBSERVATIONS ON CHRONIC VESICULITIS, WITH REPORT OF FOUR CASES.

BY J. M. THOMPSON, A.B., M.D., BOSTON.

Within the past few months a not inconsiderable amount of attention has been paid to inflammation of the seminal vesicles; and among the comparatively small number of writers upon the subject must be mentioned the name of Dr. Eugene Fuller of New York, whose recent contributions in this particular field of genito-urinary literature have undoubtedly proved of greatest interest.

It seems noticeably strange that in such commonly occurring lesions as those of the sexual organs, all the works pertaining to the subject should have either disregarded diseases of the vesicles as of minor importance, or, as it would appear, have been loth to pin faith on any form of treatment tending to an alleviation of their most self-evident symptoms and disastrous results.

In view of the facts, it is safe to assume that vesiculitis has been regarded in the light of a necessarily accompanying symptom of certain forms of posterior urethritis, or perhaps of prostatitis, and to separate it from the latter as a disease entirely distinct in itself is a matter of no grave concern. Yet, notwithstanding all this, we have come to look upon vesiculitis as something more than a symptom — as something more than a mere form of neurasthenia existing principally in the mind of the patient. It cannot be denied, however, that the nervous phenomena associated with diseases of the male generative organs are unreasonably prominent, more especially when the sexual vigor has begun to be impaired; but, inasmuch as this is the case (and perhaps always will be), we are the more obliged to seek some means afforded for the relief of such phenomena. To that end it is highly important that a positive diagnosis be made of what to my mind is the essential factor in causing impairment — and sometimes loss — of sexual vigor, namely, seminal vesiculitis; and, what is no less important, to find the proper and most efficient means at our disposal for checking and removing that cause.

The method that is now being suggested, and the one adopted by the writer in such cases is called "stripping," another name for massage (though not strictly speaking), a term that will serve admirably to convey a clearer notion of what is meant to the mind of the reader.

Thus far, unfortunately, my experience with the method has been somewhat limited; yet I feel safe in asserting that it is the treatment *par excellence* for all simple inflammations of the vesicles, except where there is a tubercular, or possibly syphilitic, element present, in which latter cases, of course, specific measures would be more appropriately indicated.

Before entering upon a description of the treatment, it will not be out of place to give a clinical picture of a fairly typical case of seminal vesiculitis:

First of all, the patient generally, though not always, gives a history of chronic urethral discharge lasting from a few months to several years, and for which every known remedy almost has been tried and found wanting. His neurasthenic symptoms are quite pronounced. He tells you that he notices an escape of semen during micturition, and very frequently while at stool. At times he experiences some difficulty in passing urine, and has a sensation of fulness and discomfort about the bladder and rectum. He is alarmed about losing his sexual vigor, and has frequent nocturnal emissions. In short, you find him a picture of mental depression and of general nervous impairment. Physical examination reveals a somewhat shrunken, anemic penis; there is a varying degree of prostatic hyperesthesia, with some or no enlargement, while one or both vesicles are enlarged, indurated and tender, and the peri-vesicular tissues in cases of long standing are flabby and redundant. The discharge is generally a gelatinous, semen-like fluid, and if examined microscopically, will be found to contain pus, mucus, deep urethral cells and dead spermatozoa.

During treatment the patient stands, and, bending forward, assumes a position similar to that taken in the game of "leap frog," while the operator, sitting on a chair behind him, passes into the rectum the forefinger of the hand corresponding to the vesicle that is to be stripped. At first, considerable difficulty may be experienced in reaching the vesicles; but if firm, steady pressure is used with the other three fingers against the buttock in the direction of the rectum, and at the same time the knee presses the elbow inward and upward, a vast amount of advantage can be gained. The arm not in use may be passed around the patient's thighs and thus — if nothing more — some support obtained.

By following these suggestions, the vesicles may be easily stroked for a few minutes without any discomfort to the patient. During this manœuvre, it is well to have a glass slide or other receptacle under the meatus in order to catch whatever escapes, and as a means of obtaining fresh material for examination.

This treatment is repeated every five to seven days according to the effect produced. It has been my custom in those cases where much relaxation of the parts is present to suggest copious rectal douches of cold water daily as an efficient adjuvant to the stripping. These can be taken either with a recurrent nozzle similar in construction to Kiefer's urethal nozzle, or with what serves the purpose equally well, the ordinary bulb syringe, in which case the patient retains in a recumbent position a few ounces of the water.

The treatment of stripping for inflammation of the seminal vesicles is as yet in its infancy, and naturally, one must be guarded in making statements too positive as to its general efficiency; however, my experience warrants me in stating that it will be difficult to find another method that is so cheerfully accepted by the patient, or one that is likely to have such a wholesome effect upon his mental condition — a factor of no trivial significance, and, undoubtedly, one of the most stubborn to relieve.

It is needless to add that the patient must abstain assiduously from alcoholic and venereal excesses, pay strict attention to diet and hygiene, and have firmly impressed in his mind the truth of that old adage, *Mens sana in corpore sano.*

The following are the only cases of which anything like a complete or satisfactory history can be given. It is hoped that in another paper more varied and interesting cases may be reported :

Case I. Thirty-two years old; had gonorrhea several years ago. Habits generally temperate, except that he has indulged excessively in sexual intercourse for the past two years. During the last nine months has noticed some increasing difficulty during micturition, accompanied by an uncomfortable feeling about the rectum and bladder. There has been a constant discharge from the urethra for the last four months, and an entire absence of erection. Patient's nervous system was extremely debilitated, mental depression markedly pronounced. His sleep has been generally disturbed and nocturnal emissions frequent. The discharge appeared muco-purulent and contained pus, mucus and dead spermatozoa; while the urine was heavily charged with amorphous urates. The urethra was explored, and nothing found sufficient to cause such a profuse discharge. The deep urethra, however, was very sensitive, even the passing of a flexible bougie being almost unbearable. On rectal examination, the vesicles proved to be the seat of the trouble. Both of them were slightly enlarged and tender to touch, while the prostate remained intact. Cold steel sounds were passed about every fifth day for a few weeks, but although they had a salutary effect upon the nervous system, they did not seem to affect the discharge. The prognosis looked unfavorable till gentle stripping was tried. After the first sitting, a diminution in the amount and character of the discharge was noticeable. After three months' treatment the discharge was absent, the urine normal in every way, and the nervous system remarkably improved. The patient was advised to spend the summer in the country, and when last heard from, considered himself in good vigorous condition.

Case II. Thirty-two years old, remarkably strong, muscular and well developed. First attack of gonorrhea was in 1879. Since that time has had several other attacks, two of which were complicated with double epididymitis. For the last fifteen years has indulged at times in alcoholic and venereal excesses, even to the extent of occasional debauches. Beside a progressive decline in sexual vigor for the past eight months, there has been present a thin, milky discharge — very profuse when at stool and after excesses. There was no disturbance during micturition. Strange to relate, in connection with these symptoms, the patient had all the characteristic symptoms of tapeworm, of which he was quite unawares. The penis was very small and shrunken. There was a balanic hypospadias, but nothing in the urethra to account for his condition. Examination per rectum showed the vesicles to be moderately enlarged and very slightly tender, while the peri-vesicular region was flabby. Pressure on the vesicles ejected about a teaspoonful of fluid, which contained pus, caudate epithelium, mucus, some live and many dead spermatozoa. It was thought advisable to get rid of the tenia before proceeding to the stripping. Accordingly the patient was ordered a vermifuge, which did its work in every way satisfactorily. In a week the patient came back relieved both in mind and body, but his discharge was still present and no change had been observed in his sexual vigor. Stripping was now begun, and continued every week for two months till the discharge had entirely ceased, and sexual vigor improved. No examination for spermatozoa has been made recently; but without doubt, if the patient continues to lead a temperate life, his quondam vigor will be partly restored. Despite his age and excellent physical condition, I question very seriously, in view of his history, whether he can ever possess potent sexual organs.

Case III. Forty-eight years old; married in 1878. During the first two years of married life two well-nourished children were born. For the last fourteen years has not lived with his wife, but has been during this period a victim of self-abuse. He had never had venereal disease. Eleven years ago noticed a decline in sexual vigor. At his first visit, four months ago, he complained of entire absence of erection and a constant urethral discharge. Great difficulty has been found recently in starting the flow of urine, which is always turbid and milky and accompanied with more or less pain and tenesmus. At times during the past seven years has been treated with various balsamic preparations, tonics and injections, but only to find himself no better, and sometimes worse, after using them. On physical examination the penis and scrotum appeared shrunken and anemic. Both vesicles, as well as the prostate, were found tender, enlarged and very sensitive. The urine was very cloudy and contained clumps and shreds, while the patient, though strong and robust, was extremely nervous. The first stripping resulted in forcing through the urethra a teaspoonful of a sticky, muco-purulent fluid containing pus, epithelial cells and countless dead spermatozoa. Stripping was continued every seven days for four months, till the discharge ceased and occasional erections took place. The urine is now clear and no difficulty is experienced in voiding it. When last seen the patient was satisfied that considerable improvement had taken place, in short, he stated that he was about well. Considering the patient's age and history, it seems doubtful if his potency will return permanently; yet extreme satisfaction is felt when he tells me that he is "cured."

Case IV. Forty-six years of age, contracted gonorrhea eleven years ago, of which he was entirely relieved. Up to within a short time has been a victim of self-abuse, although in other respects a man of good habits. At the time of his first visit — six months ago — he complained of "losing semen constantly," more especially when at stool and during micturition. Seminal emissions were frequent, and his occasional erections were never permanent enough to allow coitus. Nothing was found in the urethra except prostatic hyperesthesia, almost bordering on pain when an exploratory instrument was used. In this case the left vesicle was found to be enlarged and tender, the prostate was also slightly enlarged, while the entire peri-vesicular area was very sensitive, a little pressure giving rise to much pain. The urine was generally only slightly turbid, but at times very opaque. The discharge contained little pus, mucus, dead spermatozoa and deep urethral cells. The patient was much debilitated, and very frequently became unequal to his work, though not laborious, on account of nervous exhaustion. Very gentle stripping was given and carried out till the discharge was *nil.* Though considerable improvement has taken place in the patient's general condition, and he feels very much encouraged at the result, still I fear that a strumous diathesis may be lurking in the background and will manifest itself later.

From the foregoing can be briefly drawn the following conclusions:

(1) The common causes of vesiculitis are sexual excesses and indiscretions.

(2) Chronic urethral discharge in a certain number of cases can be traced to an inflammation of the seminal vesicles.

(3) When chronic urethral discharge is present, independent of a venereal history, it is usually the result of seminal vesiculitis.

(4) The diagnostic symptoms of seminal vesiculitis are impaired sexual function, intermittent or constant urethral discharge (and when not present can be ejected by stripping the vesicles) containing pus, mucus, deep urethral cells, and spermatozoa — usually lifeless.

(5) The disease yields very satisfactorily to the treatment of stripping, which should be employed about every five to seven days, and continued according to the effect produced till the symptoms have disappeared.

(6) In every case of persistent urethral discharge I would recommend examination of the patient per rectum, and especially in the cases of so-called "spermatorrhea and impotency of the sexual organs."

(7) In the vast majority of cases of simple inflammation of the vesicles, the prognosis appears to be favorable, provided the patient adheres strictly to treatment.

(8) At the present writing, nothing further can be stated concerning tubercular inflammation of the vesicles than that it is aggravated rather than relieved by stripping, and the prognosis appears unfavorable.

◆

SOME EXPERIENCES WITH ASIATIC CHOLERA IN ASIA.

BY M. A. JEWETT, M.D.,
United States Consul, Sivas, Turkey.

The epidemic of cholera at Sivas, Asia Minor, seems to me to offer some points of sufficient interest to be reported.

The special points to which I would call attention are: the altitude of the place where the epidemic occurred, the manner of its dissemination, and the comparative immunity of the people under conditions most favorable for the disease.

The city of Sivas is situated on a small plateau surrounded by mountains, on the northern border of the Anti-Taurus range. It is about 5,000 feet above the sea-level. According to the general statistics of the disease this altitude should be sufficient to make Sivas safe from an epidemic of cholera; and it is true that, while cholera has frequently visited Turkey in recent years, Sivas has escaped during the past half-century.

It is probable that during the months of February and March there were cases of cholera here; but the cases were few, scattered, and the diagnosis was somewhat uncertain.

I think that the disease was imported from Constantinople. At least the march of cholera from Constantinople towards Sivas can be traced from town to town up to eight hours' distance (caravan time) from here.

The water of Sivas is furnished almost entirely by of the city. Situated on the banks of this river, about a mile from the city, is the village of Tavra. It has a population of about 1,000 persons. All the sewage of the village flows into the river.

On the 12th of April about twenty women came from Tavra to a Turkish bath at Sivas. The next day a dozen of them were attacked with cholera, and on the 15th of April the malady burst out in epidemic form in all quarters of Sivas. I think that the women were all infected by the same source, perhaps at the bath; but however that may be, it is certain that after they were taken ill and the river was contaminated by their choleraic dejections, the disease appeared simultaneously in all parts of the city. During the first week of the epidemic there were about 500 cases, and all sections of the city seemed to be about equally infected.

The diagnosis of cholera was not made by post-mortem or microscopic examination; but the rapid dissemination of the disease, the violence of the attacks, often taking off persons of robust health in a few hours, the rice-water discharges, suppression of urine, the cramps, cyanosis and collapse, leave little doubt that the comma bacillus was present in all its glory.

The number of cases of cholera from the 15th of April, the day when the epidemic broke out, to the first of June, when it apparently disappeared, that is to say, during a period of forty-five days, was according to the best calculations about 5,000, and the number of deaths approximately 1,500. On account of an ignorant fear of the doctors and a desire to escape the surveillance of the police charged with the isolation and disinfection of infected houses, the people concealed a large proportion of the cases and deaths from the authorities, and consequently the official statistics are far from accurate.

The number of cases and deaths given above gives a mortality of thirty per cent. This relatively moderate mortality indicates that the number of mild cases was considerable, especially when one takes into consideration the conditions favorable for the disease and entirely unfavorable for the treatment of the sick, which exists in the cities of Asia Minor.

The proportion of the number of cases to the population is about twelve per cent., and that of the number of deaths about three and a half per cent. We have no statistics relative to the sex or age of the patients; but according to my opinion women were attacked in greater number than men, and the number of children affected was relatively small.

Few places are better conditioned to demonstrate that Asiatic cholera is not contagious than an Asiatic city like Sivas, and that to have the disease one must have some individual predisposition, some unknown factor. The houses are, as a rule, small, low, damp, crowded, little ventilated, poorly lighted, and for the most part built of mud. The most elementary principles of hygiene are unknown here, or when inculcated are generally disregarded. The Turk is a supreme fatalist, and he places more reliance upon a bit of the Koran pasted over his gate to keep away the disease than upon the most scientific prophylactic measures. The water which the people drink and use for all purposes about the house, flows in open ditches where the people also bathe, and wash their soiled clothing and carpets. That which has served one family for its various needs, flows with all its filth to a small river, which supplies the fountains of the houses and flows in small streams through the streets another. Ultimately it reaches the open sewer which flows in the streets. A quarter of the population defecate in the streets; and where there are water-closets connected with the houses, the excrement flows with the waste water of the fountains, into the gutters of the street and from thence into the streams which traverse the city. In these larger streams, which are really only the great sewers of the city, the people bathe, wash their clothes and kitchen utensils, and the children wade and play. During the epidemic I observed that this went on as usual. I have seen men building a house with the mud scraped up from the sewer which flowed slowly in the middle of the street and which received the dejections of two cholera patients at that point and of several others a little farther up the street.

But it is in the houses we find the conditions most favorable for contagion, if it exists, and for infection. The disinfection of the contaminated rooms, or of the soiled linen, or even of the dejections of the cholera patients was almost wholly neglected. On the contrary, the dejections and the vomitus were often spilled upon the floor or upon the moist earth which serves in place of a floor, and the soiled clothing was thrown here and there without the least precaution. I have seen a woman washing her hands in a basin from which she had just poured the vomitus of a cholera patient. Very few people boiled the water which they drank, being too poor to get the necessary fuel or too little convinced of the necessity of taking the precaution. Into the little rooms occupied by the patients everybody crowded, a host of children and the interested neighborhood; and I have seen the well occupying the same bed with the sick — sometimes three, husband, wife and child, in bed together, while one was purging and vomiting — and not take the disease.

In spite of the fact that the water was contaminated by the cases which continued to occur for thirty days at Tavra, and in spite of the fact that nearly every one was subjected to the unfavorable conditions mentioned above, nevertheless eighty-two per cent. of the population escaped having the cholera, and in forty-five days the epidemic subsided. Since then isolated cases have occurred from time to time, a certain proportion of whom were people who had just come to the city.

The decrease of the epidemic coincided with an increase of the temperature and a marked diminution of the humidity and rain-fall.

Apropos of treatment, it is of interest to note that *yoghourt*, a common article of diet here, made by the lactic acid fermentation of milk, was already regarded as good for the cholera. As we had no other lactic acid to use during the early part of the epidemic we strongly urged the use of *yoghourt* in all cases of premonitory diarrhea, also during convalescence, and generally with apparently favorable results.

WANT NO PHYSIOLOGY. — The Christian Scientists of Burlington, Ia., have petitioned the school-board to excuse their children from attendance when physiology is taught. The petitioners declare that there is no material body, and object to having their children taught to believe that there is anything so much in evidence as a stomach or a liver. — *Times and Register.*

Clinical Department.

A CASE OF SPINA BIFIDA.

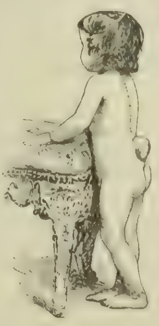
BY R. H. SEELYE, A.M., M.D., OF SPRINGFIELD, MASS.

CHARLIE L. was born three years ago of healthy parents. There are in the family three children older and one younger than he, all healthy and sound. There is no history of any deformity in the family.

At birth a tumor as large as an English walnut was noticed in the lumbar region, which after a few months began to enlarge, and continued to grow slowly up to the time of operation.

The patient is a strong, well developed, rugged-looking boy, with no paralysis or disturbance of function. The tumor was situated over the second lumbar vertebra, twenty-two centimetres in circumference, nearly spherical, tense, fluctuant and translucent. It was somewhat pedunculated, the pedicle being about five centimetres in diameter. True skin covered the base of the tumor. It was very adherent, and extended up from the pedicle two to four centimetres, merging into a thin, transparent membrane. The tumor was neither painful nor tender. Its tension increased when the child cried, and diminished after he had been lying down. This was noticed every morning by the parents.

In view of the increasing size of the tumor and the danger of rupture, it was thought best to remove it. In spite of the disfavor with which the operation of excision has been looked upon, it was selected as the operation which, if carefully done, would afford in such a favorable case the most radical as well as the most rational means of cure; one in which the dangers of sepsis and leakage could be combatted by proper precautions. The operation of injection of the sac was rejected on account of the uncertainty of cure even after repeated injections, and on account of the danger of the inflammatory process extending to the cord and brain.



The operation was done May 1, 1894, under ether anesthesia. The hips were elevated about a foot higher than the shoulders, to limit by gravitation the escape of cerebro-spinal fluid. The true skin surrounding the base of the tumor was dissected off and the pedicle laid bare. It diminished rapidly in size down to its point of exit, where it was about 175 milimetres in diameter. A heavy silk ligature was thrown around this, and tied close to the spine, and the tumor cut off. The bony canal admitted the tip of the finger. The deep tissues were brought together with deep silk, and the skin with superficial silk sutures. The wound was dressed with sterilized gauze held by a wide plaster swathe. The child was under ether thirty-five minutes, and reacted quickly.

Convalescence was uneventful, and, as near as could be judged by the feeling of the skin, non-febrile. The child would have nothing to do with a thermometer even in the axilla.

The wound was dressed on the eighth day and the stitches removed. It was clean and dry, and the edges were perfectly united. On the tenth day the child was playing about the house. The wound remained perfectly firm, and there has been no leakage or trouble of any sort.

Four months after the operation there is a firm scar, not painful or tender. The parents state that the child is much brighter than before, and that he is entirely free from headaches which he had nearly every morning before the operation. The headaches were due, it would seem, to a disturbance of intracranial pressure, occurring as they did when the child changed from the horizontal to the vertical position, which caused the partially collapsed sac to fill up with cerebro-spinal fluid.

Two points in the technique of the operation seem to me worth noticing. (1) The position of the patient with the hips elevated. This was of no particular importance in this case, but would have been of distinct advantage if it had been necessary to suture the edges of the dura instead of ligating the pedicle. (2) The use of heavy silk in ligating (or suturing) the pedicle. In the cases that I have been able to find, those in which leakage occurred were, I think, without exception, those in which catgut was used.

The tumor was examined by Dr. H. C. Emerson who made the following report:

> Received from Dr. Seelye a small tumor containing a clear fluid. The tumor consisted of a sac, the size of a small orange, composed of tough, white, unelastic fibrous tissue, covered on its lower outer third with skin. The remaining two-thirds consisted entirely of fibrous tissue, which in places was so thin as to be scarcely perceptible between the fingers. The inside of the sac was traversed by many fine fibrous bands and cords, the largest of which contained a jelly-like mass, and extended down into the pedicle.
>
> The pedicle was about 175 millimetres in diameter.
>
> No nerve elements were found in the tumor.
>
> The fluid was perfectly clear, odorless and colorless; faintly alkaline in reaction; specific gravity, 1.006. A slight trace of albumin was present, and urea, by quantitative analysis, was found to be not quite .5 per cent. It did not reduce Fehling's solution, either hot or cold. It was unchanged after standing twenty-four hours, leaving no sediment, and microscopic examination showed no histological elements.
>
> Bacteriologically it was sterile.

◆

New Instruments.

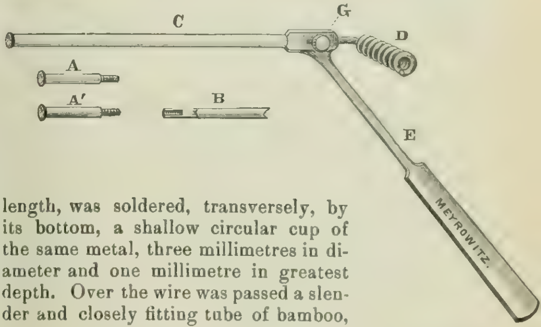
A NEW INSTRUMENT FOR THE EXTRACTION OF FOREIGN BODIES FROM THE EAR.

BY STUART ELDRIDGE, M.D., YOKOHAMA, JAPAN.

Almost every surgeon of experience has met with cases of foreign bodies in the auditory canal under circumstances that have taxed his skill and patience to the utmost. Pebbles, beads, hard globular seeds, and the like are especially difficult to extract, the more so if impacted or (what is even worse) if their sojourn in the ear has been of long duration, enabling them, as it were, to establish a cell for their accommodation, in which they may revolve at the slightest touch. Under these conditions the inflammation established by their mere presence or, far more frequently, by ill-judged or awkward attempts at their removal, often narrows the adjacent passage to such an extent as seriously to interfere with operative procedures.

The instrument described below was first extemporized by the writer for use in a case of the kind just alluded to, and after all ordinary, and some extraordinary, methods of extraction had failed, including an attempt to fix the offending substance against the end of a firm rubber tube by suction, an expedient that once served me well in a somewhat similar case. The foreign body was an almost spherical and polished quartz pebble, which had been lodged in the ear for several days, during which time its removal had been essayed by more than one surgeon. The pebble was apparently in contact with the membrana tympani, and had in all probability been firmly impacted at first, though now loosened by absorption so as to elude every effort to grasp it or to insert a hook behind it; while the more external part of the canal was so swollen and narrowed as to render any use of instruments a difficult matter.

To the end of a copper wire, one and one-half millimetres in thickness and sixteen centimetres in length, was soldered, transversely, by its bottom, a shallow circular cup of the same metal, three millimetres in diameter and one millimetre in greatest depth. Over the wire was passed a slender and closely fitting tube of bamboo, seven centimetres long, until its end rested against the cup. The free end of the wire was then coiled helically, and the cup, by the assistence of heat, thickly lined with ordinary sealing-wax.



The ear was now cleansed by syringing, first with warm water and then with alcohol, and thoroughly dried with a current of warm air. The cement-lined cup was then gently but firmly applied against the offending substance, and the helix heated by an alcohol lamp until slight yielding indicated the melting of the wax. The instrument was retained *in situ* for a short time, when, on being withdrawn against no little resistance, the pebble was found firmly attached to its extremity. I have since used this appliance with success on several very similar occasions. In its complete and more convenient form the Pebble Extractor is shown in the above sketch, which explains itself.

In using the instrument, thorough cleaning and drying of the foreign body and its surroundings is, of course, essential, and can readily be accomplished in the manner suggested above. Messrs. Meyrowitz, 104 East 23d Street, New York, who have undertaken the manufacture of the instrument, supply with it an improved cement, which I found more readily fusible and more adhesive than ordinary sealing-wax.

Congress has made the following appropriations for the hospitals of the District of Columbia: Emergency Hospital, $12,000; Columbia Hospital, $10,000; National Homeopathic Hospital, $8,000; and it has voted $4,000 to be used in enforcing the provisions of the act to prevent the spread of scarlet fever and diphtheria. — *Cincinnati Lancet-Clinic.*

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JOHN T. BOWEN, M.D., SECRETARY.

REGULAR Meeting, Monday, April 23, 1894, the President, Dr. C. F. FOLSOM, in the chair.

GALL-STONES.

DR. M. H. RICHARDSON showed seventy-five facetted gall-stones, removed from the gall-bladder of a woman of thirty-five. The method of treating the gall-bladder in this case was novel so far as I know, and suggested itself to me as the result of previous experience. Owing to the uncertainty of effectual permanent closure after drainage, especially to the occasional persistence of the biliary flow, it seems very desirable to close the wound in the fundus of the gall-bladder. This I regard as unsafe when there has been prolonged impaction in the common or cystic ducts on account of possible biliary extravasations. To sew up the wound and drop the gall-bladder back is the ideal operation, but it is seldom safe to perform it.

In the present instance I fastened the gall-bladder to the wound by a circular margin of stitches about an inch from the cut in the fundus. This left a free margin which can easily be inserted and stitched later if for any reason it should become necessary. The adhesions can easily be separated a few weeks hence, and the operation finished under cocaine anesthesia. This patient made a rapid and very gratifying convalescence. The wound closed in a very short time.

SARCOMA OF THE SCIATIC NERVE: RESECTION OF NERVE AND SUTURE.

times three, M. H. Richardson also presented a specimen
while one was p moved from the sciatic nerve midway
the disease. nd the popliteal space. The patient
In spite of the fact of thirty-three, who had suffered
by the cases which cont violent pain in the left lower
at Tavra, and in spite of t found which caused a very
was subjected to the unfavor erior femoral region. The
above, nevertheless eighty-two pressure upon the sciatic.
tion escaped having the cholera, it involved the nerve
the epidemic subsided. Since then
occurred from time to time, a certa und to be in the
whom were people who had just come at the nerve was
The decrease of the epidemic co ss. The gross
increase of the temperature and a mar rcoma. Micro-
f the humidity and rain-fall. d the tumor to
Apropos of treatment, it is of interes was the size of
yoghourt, a common article of diet here, ised by divid-
lactic acid fermentation of milk, was alrea id dissection.
as good for the cholera. As we had no c erable large
acid to use during the early part of the ep filaments
strongly urged the use of *yoghourt* in all case *suture à*
monitory diarrhea, also during convalescence,
erally with apparently favorable results. ich was
perature

WANT NO PHYSIOLOGY. — The Christian Sc and the
sepsis.
of Burlington, Ia., have petitioned the school-bc ffering
excuse their children from attendance when phys wound
is taught. The petitioners declare that there er of
material body, and object to having their chil less
taught to believe that there is anything so much in I
dence as a stomach or a liver. — *Times and Registe* om

the blood, but have not heard the results. It seems to me it is analogous to the rise of temperature in broken neck and injuries at the base of the brain, due possibly to some involvement of the heat centres.

[July 27, 1894. In the light of the subsequent history of this case the above explanation of the pulse and temperature is amusing. It was a case of sepsis pure and simple; yet the cultures taken on Monday were sterile. Later, the wound, which extended from the fold of the buttock to the popliteal space, was opened and a large amount of bloody pus was evacuated. This fluid was filled with staphylococcus pyogenes aureus. The operation was perfectly satisfactory in its details as regards asepsis. That these details were imperfect the history has shown. The discouraging fact is that a careful review of the case fails to show the error that existed. The element of fallibility, therefore, is again glaringly illustrated in this experience. Luckily the patient survived, and was soon doing well. Such an infection in the abdomen, however, would have been fatal.]

DR. COUNCILMAN: Those rises of temperature due to central injury are usually supposed to be due to direct irritation of the heat-producing centres, and I should not think that that same thing could apply in peripheral injury of nerves after stretching the sciatic nerve.

DR. A. THORNDIKE read a paper on

ACUTE ARTHRITIS OF INFANTS IN THE HIP-JOINT.[1]

DR. E. H. BRADFORD: The subject of acute arthritis is one to which few surgeons until recently have paid much attention. It is apt to be confounded with hip disease, although the whole prognosis and treatment is different. The pathology has been covered so thoroughly by Dr. Thorndike that there is nothing to be said.

DR. R. W. LOVETT: I have been particularly interested in this case. The condition was so desperate that the night it came to the Children's Hospital it did not seem to us that we could leave it until the next morning, and it certainly was in such bad condition after operation that I think we were justified in operating upon it as quickly as possible. I think it would have been impossible to reduce the dislocation at that time; it would have opened new channels for the absorption of pus, and the child's condition was unfavorable. I have seen at the Children's Hospital two or three cases of this deformity where this condition has gone on untreated. The limp and the disability I think are more than in congenital dislocation of the hip, and the joint is flail-like and loose. In the late cases I suppose there is no operation to be done. We see children of eight and ten with all the evidence of having had acute arthritis. Of course, that is a serious disability, and this operation Dr. Thorndike has done would have prevented it entirely.

DR. J. C. WARREN: I think cases of acute inflammation about the bone should be reported. We have been accustomed to regard most of these cases as tubercular in origin, or not to have had an opinion as to what the origin is; and I am glad to see that men are recognizing that there is something besides tubercular disease of the bone in children, and that we may have acute suppurations as in other parts of the body. The necessity for attacking them early is now recognized. This particular form of osteomyelitis seems to be especially interesting because it behaves differently from the ordinary forms in the adult, the abscess being on the epiphyseal side and not on the articular side of the epiphyseal line. A certain number of cases have been reported within a few years where this acute suppurative process is found in the epiphysis of the bone, and not in the diaphysis; that is, on the articular side of the epiphyseal line, the pus breaking early into the joint and causing an extensive suppurative arthritis. The cases reported recently in New York seem to indicate that this type of suppuration is not uncommon.

---

[1] See page 432 of the Journal.

Dr. Thorndike: There was no destruction of the epiphysis of the femur or of the cartilage as far as I could make out unless this spur of bone had grown to replace a piece of cartilage that had been destroyed. I suppose that during the first days the inflammation started in the diaphysis close to the epiphyseal line. There was no necrosis; but a small localized osteomyelitis may terminate in resolution, I believe, at least in infants. It is also possible that the inflammatory process began in or near the acetabulum as a localized osteomyelitis, or the inflammation may have begun as a pure septic synovitis.

Dr. Warren: It would be very interesting in these cases to be able to decide in what part of the bone such inflammations do arise. I remember one or two cases in which I found pus forming at the articular end of the shaft of the bone. In those cases you have fluctuation in the joint due to a temporary inflammatory process which is non-suppurative. I remember one such case where I made an incision above the joint and came down on denuded bone above the epiphyseal line. I saw the case a few weeks afterwards and found a sinus leading to bare bone. If in some of these cases there is a focus of suppuration in the interior of the bone, it is important to lay open the abscess thoroughly and also to explore the bone and get out any pus that might be there. If there is no pus of consequence in the bone, it is best not to do injury to the bone by such an operation.

Dr. Thorndike: The cases of acute arthritis that are reported seem to vary a great deal in severity. One of them I remember had an osteomyelitis which destroyed the entire shaft of the radius. It occurred in one of Von Arsdale's cases examined at the Carnegie Laboratory in New York last year. One abscess was opened at the wrist-joint; after two or three days of pain and tenderness, the elbow-joint became involved and the arm much swollen. The periosteum was found dissected up by pus and a sequestrum representing the entire shaft of the radius was removed. It seems to me that although it is assumed that most cases begin in this diaphysis close to the epiphyseal line, it has not been explained why in certain cases the pus should be directed into the loose cancellous bone of the shaft, while in others the inflammation is severe only in the joint. Some of the cases may be pathologically merely an acute suppurative synovitis.

A very serious epidemic of diphtheria is reported in Trieste. During last week 61 fresh cases occurred out of a population of 160,000. The Government has issued a decree closing all the schools, with a view to preventing the further spread of the disease. — *Medical Press.*

NEW YORK STATE MEDICAL ASSOCIATION.

Eleventh Annual Meeting.

The afternoon of the third day of the session, October 10th, was mainly devoted to

A DISCUSSION ON THE PREVENTION OF TUBERCULOSIS,

which was opened by **Dr. Hermann M. Biggs**, of New York. The propositions embraced were the following:

(1) The importance of tuberculosis from a sanitary standpoint, as shown by its prevalence.

(2) The factors in the causation of tuberculosis.

(3) The communicability of tuberculosis and the manner of its transmission.

(4) The early recognition of pulmonary tuberculosis through bacteriological examination, and its influence on prevention.

(5) The influence and value of special hospitals for the treatment of tuberculosis in the prevention of the disease.

(6) The influence of doctrine of communicability upon the diminished prevalence of tuberculosis.

(7) The importance of measures to be taken at health-resorts for tubercular patients for the prevention of this disease.

(8) The dangers of infection in the various means of transportation, that is, steamboats, surface and elevated cars, day coaches and sleeping-cars.

(9) The proper attitude of the State municipal and sanitary authorities toward tuberculosis, and the specific measures to be taken for the prevention of this disease.

On account of the great prevalence and mortality of the disease, Dr. Biggs said, there was no question, which from a sanitary point of view, compared in importance with that of the prevention of tuberculosis. Furthermore, there was no matter concerning the public health in which, as shown by experience, more satisfactory results could be obtained, notwithstanding the unfavorable conditions that had to be contended against in all great cities of population. It was not to be anticipated that he had any facts or phases of the subject to present; but it was certainly one of the great questions of the day how the evils of tuberculosis might be mitigated in the future. It was his purpose to call attention to some of the sanitary aspects of this question, and especially to the measures for the prevention of the disease which had been adopted by the New York City Board of Health.

As was well known, it was in 1882 that Koch announced his brilliant discovery of the microbic origin of tuberculosis, and the truth of his conclusions had soon been universally accepted by scientific authorities. From that time the study of the disease assumed new aspects. Its relative prevalence and mortality placed it first in importance. Judged purely from demonstrated facts, tuberculosis was as easily preventable as any other infectious disease. Moreover, the methods for its prevention could be applied more readily and with less harshness than in the case of any other infectious disease. It was to-day universally acknowledged that every case of it was the direct result of tubercle bacilli transmitted from some other individual suffering from the disease, and that these bacilli are conveyed in known discharges from the body. While the importance of inherited predisposition was fully admitted, the fact of acquired tuberculosis was of far greater importance. But up to the present time no efficient public measures for the prevention of the disease had been taken even in Berlin, where its infectious nature was first demonstrated. As regards sanitary surveillance of tuberculosis New York City was in advance of the world. Against such surveillance it had been urged that the disease was not readily transmitted, that for its communication long exposure was required, that physicians and many others who were exposed to it, as a rule, escaped contracting it, that consumptive patients would be regarded as plague stricken if tuberculosis was to be placed by the authorities on the footing of an infectious disease, and that the disease was often inherited. None of these objections had any real weight. The greatest encouragement for the adoption of preventive measures was found in the fact that the tubercle bacilli do not readily multiply outside the body, and that the disease is unquestionably produced solely from infection, being always transmitted.

As long ago as the year 1887, Dr. Joseph D. Bryant, then Health Commissioner, called for a report on tuberculosis from the pathologists of the New York Board of Health, and as the result of his activity in the matter certain measures were adopted. A large number of leaflets explaining the infectious nature of the disease and giving detailed instructions designed to prevent its spread were distributed throughout the city; but the medical profession had not at that time fully awakened to the importance of preventive measures. This was the first effort made towards the establishment of sanitary surveillance.

In the Autumn of 1893 Dr. Biggs, as Chief Inspector of Pathology, Bacteriology and Disinfection made an elaborate report on tuberculosis, in which he recommended the adoption of positive measures placing this disease on the basis of an infectious disease. [The main points of this report have already been published in the JOURNAL.] At a meeting of the Board of Health held November 13th, this report was referred to the Sanitary Committee of which Dr. Cyrus Edson was Chairman, and at a meeting held December 13th the report of the committee was received and adopted. That report was in part as follows:

The report of Dr. Biggs is timely and well advised. The subject is well summed up in the three facts relative to the disease set forth on page 2, to wit: (1) Tuberculosis is a communicable disease and is distinctly preventatable. (2) It is acquired by direct transmission of the tubercle bacilli from the sick to the well, usually by means of the dried and pulverized sputum floating as dust in the air. (3) It can be largely prevented by simple and easily applied measures of cleanliness and disinfection. The following recommendations, based upon the foregoing premises, are approved:

(1) That a circular be prepared for distribution among the people, setting forth the danger of transmission of tuberculosis, and the fact that the discharges from the lungs of tubercular patients are not only dangerous to others but also to the patient afflicted, and also setting forth the danger of expectorating in places where the sputum is liable to be dried and carried by the air in the form of dust.

(2) That physicians and other persons to whom the knowledge of the existence of a case of tuberculosis may come, be requested to report to this Department the name, sex, age and address of every such case within seven days of the time when such sick person came under observation.

(3) The medical sanitary inspectors shall, as part of their duty, investigate cases of the disease reported, and, if requested, take specimens of the sputa in doubtful cases for diagnostic purposes, the same as in diphtheria.

(4) That this Board urge upon hospital authorities of the city of New York the importance of separation, so far as possible, of persons suffering from pulmonary tuberculosis from those affected with other diseases, and urge that proper wards be set apart for the exclusive treatment of this disease. Furthermore, that the Commissioners of Charities and Correction be recommended to take such steps as will enable them to have and control a hospital, to be known as "The Consumptive Hospital," to be used for the exclusive treatment of this disease, and that, as far as practicable, all inmates of the institutions under their care suffering from tuberculosis be transferred to this hospital.

(5) It is recommended that the disinfecting corps disinfect places where evidence from tuberculosis exists, whenever in the opinion of the Chief Inspector of Contagious Diseases, it shall be necessary.

(6) It is recommended that suitable receptacles (cuspidores), be provided and properly cared for in all places where persons are brought together, or caused to congregate for any purpose, especially in factory buildings.

At a meeting of the Board of Health held January 24, 1894, Dr. Biggs presented a second report in which he recommended the employment of the following measures for the sanitary surveillance of pulmonary tuberculosis.

(1) That circulars of information should be forwarded to all practising physicians in the city.

(2) That the authorities of all public institutions be required to forward to the Department the name, last address, age and sex of every consumptive person coming under observation within seven days of such time.

(3) That medical sanitary inspectors detailed for this work visit the premises in all cases, unless otherwise ordered, when the Department obtains knowledge of the existence of cases of pulmonary tuberculosis, and distribute circulars and instruct the consumptive and the family as to the measures to be taken to prevent the dissemination of the disease, and, if required, give such directions and advice as shall seem necessary for the cleansing or renovation of the apartment to render it free from infectious material.

(4) That medical sanitary inspectors also visit all premises which have been occupied by consumptive patients and vacated either by death or removal, and shall direct as to the removal of infected articles for disinfection by the Department, and shall forward written recommendations as to the cleansing and renovation of the premises. On the basis of these recommendations an order shall be issued by the Board on the owner of the premises with directions as to their renovation, notifying him that the Board will not allow the premises to be occupied by any other persons than those living there at the time, until the order has been complied with. At the same time a placard shall be pasted on the door of the apartment stating that it has been occupied by a consumptive and thus become infected, and that it must not be

occupied by persons other than those at the time residing there until an order of the Board of Health, directing that it be cleansed and renovated, has been complied with.

(5) That suitable arrangements be made by the Department for the collection and microscopical examination of the sputa for diagnosis of persons thought to be suffering from pulmonary tuberculosis, where the name, address, age and sex of such person, and the name and address of the attending physician, accompany such record.

(6) That the Department issue circulars from time to time covering all the various phases of the question of tuberculosis and its prevention, for the education of the people in regard to these matters.

At a meeting of the Board of Health held February 13th, this report was approved and adopted.

The Board, Dr. Biggs went on to say, decided to adopt the plan stated rather than the practice of disinfection, because it was impossible to draw up any adequate scheme for the latter. Renovation was, in fact, far more satisfactory than disinfection. The measures referred to had already been carried out in about three thousand living cases, and in about three thousand eight hundred cases where death had occurred from consumption. The results obtained, he was happy to say, were exceedingly satisfactory. Among the better class of tenement-houses, in a large proportion of cases (about one-half), it was found that the preventive measures recommended in the circulars of the Board of Health were already being used at the time when the inspector made his first visit to the premises. This was very gratifying as showing how the knowledge of the infectious nature of tuberculosis was being disseminated among the people. The measures adopted by the City Board of Health had now been adopted by the State Board of Health and also by the Rhode Island Board of Health, as well as by several cities in other States.

The means for the prevention of tuberculosis might be summed up as follows:

(1) As regards the tubercular patient. First, notification; second, advice against marriage; third, disinfection of infected matters. The use of sputum cups or cloths which could be readily destroyed. Caution in the use of eating-utensils and especially of drinking-cups in public places. Avoidance of kissing. Renovation of living apartments. Exclusion from certain occupation where others would be liable to contract the disease. Special hospitals for the treatment of consumptives. The removal of the patient by force, if necessary, in tenement-house districts where the population is so impoverished or so ignorant that no precautionary measures are possible.

(2) Regulations regarding general sanitation, such as the prevention of overcrowding, good ventilation and drainage, the height and width of dwellings and the air-space between, etc.

(3) As regards children. The removal of delicate children from unhealthy surroundings, to a favorable climate, if possible. Measures to promote chest expansion. Sleeping in well-ventilated rooms. Proper clothing. Cold baths. Care against and prompt treatment of catarrhal affections. Avoidance of close rooms.

(4) Early diagnosis and treatment. A bacterial examination should at once be made in every suspected case and in cases where there are neither physical signs or tubercle bacilli in the expectoration tuberculin should be employed for diagnostic purposes.

(5) Governmental inspection of dairy cows and animals to be slaughtered for food.

(6) Preventive measures in public conveyances, railway cars, etc.

In New York, he said, in conclusion, we had notification of all cases in institutions, inspection in a considerable proportion of cases in private dwellings, bacterial examinations in all suspected cases reported, and inspection of milk and of meats in the markets and slaughter-houses. What was needed in addition was notification, special hospitals for the treatment of tuberculosis; and inspection of the meat and milk supply outside the city.

Dr. Lawrence Flick, of Philadelphia, was the next speaker, and his remarks were illustrated by a number of lantern slides thrown upon the screen. He said that the prevalence of consumption had been lamented ever since the days of Hippocrates. In America the disease was unknown, however, up to the time when Europeans came here. In the map of the United States showing the distribution of phthisis in 1870 there was very little to be found in California and so small an amount in Florida that it was not recorded. In the map of 1880 the disease was shown to be very prevalent in both these States, owing to the influx of consumptives in search of a favorable climate. Speaking of environment, he stated that small streets and alleys were especially apt to be centres of infection, and that unfavorable conditions in home life frequently resulted in the extinction of entire families. The home was the most prominent factor in the distribution of tuberculosis. In this connection he exhibited a survey of a certain district of the city of Philadelphia showing the deaths from the disease during twenty-five years. It was to be noticed that these deaths frequently occurred in adjoining houses. Similar maps, he said, had been made in New Haven, Springfield and other cities by Dr. Chapin and other physicians, and they all afforded strong proof of the infectious nature of the disease.

In England the establishment of special hospitals for consumptives alone, without any other general measures of prevention whatever, had already reduced the mortality from tuberculosis nearly fifty per cent. At the present time the capacity of these hospitals was about seven thousand beds. The gradual and persistent reduction in the mortality since their introduction offered an excellent incentive to the same kind of work elsewhere. The vital statistics of Philadelphia showed that since the year 1883 there had been a reduction of about 800 a year in the mortality previously recorded from tuberculosis, and this year, he was happy to state, the reduction would be over 1,000. In England the number of deaths from the disease was now about 1½ per thousand, and in Berlin the mortality had been reduced nearly one-third. In Paris, however, there had been no reduction during the last forty years, and the mortality still remained as four per thousand. In the preventive measures now adopted, New York was far in advance of any other city in the world, and it would lead all others in stamping out this dread destroyer. That the disease could be effectually stamped out he was thoroughly convinced. The history of tuberculosis in lower Italy was a very instructive one. A hundred years ago the annual mortality from the disease amounted to ten per thousand, and so great was the fear of it that travellers very generally refused to go there. In consequence, the Government adopted the most severe preventive measures, which, while not very scientific, certainly proved efficient. As a result, the number of deaths from tuberculosis became reduced to about one-tenth per thousand in the cities, and in the rural districts to practically nothing.

DR. JOSEPH D. BRYANT said that at the urgent request of Dr. Biggs he would say a few words in regard to the early history of the fight against tuberculosis in the city of New York. In 1887 it seemed to him that the time had come for the Board of Health to take some preventive measures, and with a view to finding out what the medical profession thought of the matter, he addressed a communication to twenty-four of the most prominent physicians in New York in which he put the questions, (1) Do you believe tuberculosis to be a contagious disease? (2) If so, would you advise that the Board of Health should take the same kind of measures in this as in other contagious diseases? In the great majority of instances no reply whatever was received from these gentlemen. The reason for this was, in Dr. Bryant's judgment, not because they did not believe in the infectious nature of the disease, but because at that time they feared to meddle with the question. But two replied in an unqualified manner, Yes. They were Dr. Austin Flint and Dr. Frank P. Foster, editor of the *New York Medical Journal.* Encouraging replies were received from Drs. E. G. Janeway, A. Jacobi, and one or two others, but there were not more than six responses in all. One of the most prominent physicians in the city wrote, "No, it is not contagious, and I do not think it concerns the Board of Health."

Dr. Bryant said he mentioned this episode to show the great progress that had been made between 1887 and 1894. He was not, however, discouraged by the meagre support received from the profession. He employed an agent to investigate every case of death from tuberculosis reported at the Bureau of Vital Statistics and find out, if possible, whether there had been previously, or were at the time of the death, any other cases of consumption in the family. His object was that in case he could obtain any reliable data on this subject he would urge the Board of Health to take steps for the sanitary surveillance of the disease. But after two years the gentleman having the matter in charge had not gathered sufficient facts to warrant him in taking this position. Circulars, however. were distributed throughout the city, setting forth the communicability of tuberculosis and describing the best means for preventing its dissemination. In conclusion, he said that the presence of epidemic diseases was often a blessing in disguise, and the threatened invasion of cholera two years ago, was one of the most fortunate things that had ever happened to the city of New York. By the awakening of public sentiment it had effected much sanitary improvement and it had directly led to the appropriation of funds for the carrying on of the great scientific work under the auspices of the Health Department in which Dr. Biggs was making himself famous.

DR. E. K. DUNHAM said that in tuberculosis the chief sources of infection were from animals and the sputa of consumptive patients; compared with these all others sank into insignificance. The State Sanitary authorities had taken cognizance of the former. Tuberculin was successfully employed for purposes of diagnosis and infected cattle were destroyed. It did not seem just that when cattle were thus condemned the entire burden of the loss should fall upon the owner. It would be equitable, he thought, that the expenses of a first inspection should in all cases be borne by the State, but if any subsequent inspections were required, the owner of the cattle should pay the expense. In the cases of tuberculosis in the human subject, the public regulations should be such as to best prevent the spread of the disease without any unnecessary inconveniences to the patient. The same methods were not required as in the case of such highly contagious diseases as diphtheria, small-pox and scarlet fever. In a large number of cases the appropriate preventive measures could be carried out through the agency of the family physician, and he thought a penalty should be exacted in cases where these were neglected. Among the pauper class the problem was an easier one, as the health authorities could then assume full control.

DR. WM. H. PARK spoke of the lack of appreciation of the infectiousness of tuberculosis which prevailed to a considerable extent even at the present day, and said that the reasons for notification were, *First*, To enlighten the public. The majority of cases in New York occurred in the tenement-houses, and the circulars of information issued by the Board of Health did much good. *Second*, To obtain a knowledge of the best means of prevention.

The matter of expense, or even the discomfort of the patient, sank into insignificance when the frightful mortality from tuberculosis was considered. Dr. Park then made a strong plea for special hospitals for consumptives, and said that with proper hospitals and proper precautionary measures tuberculosis could be entirely stamped out of the crowded districts of cities.

DR. EDWARD G. JANEWAY, who was prevented by indisposition from being present, sent a contribution to the discussion which was read by Dr. Biggs. In it he said that fully twenty years ago he wrote an article for Sequin's *Archives of Medicine* in which he argued in favor of the infectious nature of tuberculosis. It required Koch's work, however, to accomplish a general acceptation of this fact. Personally, in his practice, he had for a long time endeavored to use measures to protect others against the disease when attending a case of phthisis. In a paper read before the New York County Medical Association a year ago on the "Dangers of Overcrowding," he had called attention to the decrease in the number of deaths from this disease, in proportion to the population, in the cities of New York and Philadelphia within the last ten years. The results seemed very favorable, notwithstanding the imperfect preventive measures hitherto adopted. That the sputa of patients was the principal factor in the dissemination of tuberculosis there could be no doubt; but other circumstances were also to be taken into account, and we must never lose sight of the fact that it was of the utmost importance in all cases to endeavor to strengthen the resisting capacity of the individual. The overcrowding in tenement-houses unquestionably tended to increase the disease, and here civic sanitary measures were of the greater service.

In making a diagnosis based on the sputum a single negative examination should never be permitted to exclude tuberculosis. It was entirely possible for the disease to be present without any bacilli appearing in the expectoration. Thus, the bacilli might be numerous, but be swallowed, and he had met with cases of miliary tuberculosis in which no bacilli could be detected in the sputum. That health-resorts might become a source of danger are very evident. Many invalids devoted proper attention to the necessary precautions, but others were very careless. The danger was that some of the sputa should be allowed to remain on the carpets or the walls, and unless the landlord was unusually particular, the most serious consequences might result. It seemed to him that in hotels where consumptives are received it would be well to devote a certain portion of the house, or, better still, a detached building, to their apartments. These should be fitted up with hard walls and supplied with bedding and towels so marked that it would be impossible to use them in other parts of the hotel. Of course, the landlord should always notify guests before placing them in rooms that had been occupied by consumptives, but this was no doubt too much to expect.

Having spoken further of the precautions that should be taken at health-resorts, he went on to say that while fully recognizing the contagious nature of the disease the preventive measures employed should be such as to occasion as little hardship as possible. Such rules as had been adopted by the Board of Health seemed to be entirely reasonable. If all physicians would cordially co-operate with the Board, there could be no doubt that the most excellent results would follow; but unfortunately many in the hurry of practice neglected to enforce all the necessary precautions.

Dr. John G. Truax, referring to the suggestion of Dr. Biggs, that where there was doubt as to the diagnosis, after the sputum had been examined for bacilli, tuberculin should be employed, said that his experience with this agent had not been favorable. It seemed to him that while it was of assistence in diagnosis it had the undesirable effect of hastening the patient's death.

In closing the discussion, **Dr. Biggs** spoke of the gratification he felt at the presence on this occasion of Dr. Flick, who by his numerous contributions to medical literature had done more to place tuberculosis on the footing which it now holds than any other authority in this country. If Philadelphia had not been such a conservative city, it, and not New York, would have been the pioneer in establishing sanitary surveillance of the disease. In regard to the use of tuberculin, he said that last summer he had a long conversation with Dr. Koch in Berlin in which the latter assured him that it had been used in about a thousand cases in Berlin. It was employed for diagnostic purposes as a routine practice in all suspected cases of tuberculosis which were not well defined (no bacilli in the sputum, etc.), and it was never followed by any bad results. In the treatment of cases of *pure* tuberculosis (but in no other class) it had been found invaluable, and when used in minute doses and for a long time it almost always produced a cure. In mixed infections this agent was not desirable, and he thought that the bad results which had been noticed from its use had been in broncho-pneumonia and other mixed cases. Koch had expressed his opinion that in this class of cases it was not only valueless but distinctly unfavorable.

Recent Literature.

Essentials of Refraction and the Diseases of the Eye. By Edward Jackson, M.D., Professor of Diseases of the Eye in the Philadelphia Polyclinic, etc. *Essentials of Diseases of the Nose and Throat.* E. B. Gleason, M.D., Surgeon of the Nose, Throat and Ear Department of the Northern Dispensary of Philadelphia, etc. Second edition. Philadelphia: W. B. Saunders. 1894.

The fact that a second edition of this book is called for attests its popularity. There will always be a difference in opinion on the merits of small quiz-books, in the form of questions and short answers. The binding in one volume of two subjects so remote from each other as the eye and throat seems unnecessary.

The Parmacopœia of the Hospital for Diseases of the Throat, London. Edited by F. G. Harvy, F.R.C.S., Surgeon to the Hospital. Fifth edition. Philadelphia: P. Blakiston, Son & Co. 1894.

The fifth edition of this little formulary differs in many respects from the former editions, edited by the late Sir Morell Mackenzie, and so extensively used, especially in England. Several new drugs not in use at that time have been introduced, several formulæ of nasal douches, insufflations, mixtures, paints and pills and a few other preparations. The book contains only about a hundred pages, and has in it all possible preparations that any one could desire to apply to the upper respiratory tract. It is founded upon the British Pharmacopœia, but this fact is only confusing in the case of a small minority of prescriptions for the American physician.

Handbook of Obstetric Nursing. By Francis W. N. Haultain, M.D., F.R.C.P. Edin., and James Haig Ferguson, M.D., F.R.C.P. Edin., M.R.C.S. Eng. Second edition, revised and enlarged. Philadelphia: J. B. Lippincott & Co.

This little book needs only a very few words, so far as its interest for American readers is concerned. It may be admirably adapted for the conditions which surround the Training School for Nurses in connection with the Edinburgh School of Medicine; if so, these conditions are so entirely different from those among which American nurses work, that the book will be of little value to them. Almost its sole interest to physicians is in the side-light which it throws on Scottish practice.

Leçons de Thérapeutique. Par Georges Hayem, Professeur de Clinique Médicale à la Faculté de Médecine de Paris, Médecin de l'Hôpital Saint-Antoine, Membre de l'Academie de Médecine. Paris: G. Masson, Editeur. 1894.

This book makes the fifth of the excellent volumes by this author on the subject of therapeutics. The earlier volumes treat especially of drugs and their uses, but in this the writer presents the methods of using heat, electricity, modifications of atmospheric pressure, climate and mineral waters, in the treatment of disease. Professor Hayem disclaims any originality for this volume. It is well done; but being a compilation only, it lacks the strength which his enthusiasm imparted to such portions of his other works as were the result of his original investigations — investigations which have so frequently advanced our knowledge in the fields which he has chosen.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, NOVEMBER 1, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

THE SURGERY OF THE STOMACH.

The principal operations performed on the stomach are gastrostomy, gastrotomy, gastrectomy, and pylorectomy.

Gastrostomy consists in opening the stomach and suturing it to the abdominal wall, thus creating a permanent fistula through which the patient may be fed. It is indicated in cases of cicatricial contraction of the esophagus and cardiac orifice of the stomach, even when the stenosis is the result of malignant disease, the time for the operation being when the patient can no longer be sufficiently nourished by the mouth. In such cases, it is always irksome and difficult if not impossible, to dilate the stricture by passing bougies so as to feed the patient.

Gastrostomy was first performed by Sedillot in 1849, for stricture of the esophagus, though it had been previously performed on animals by Bassou and Blondlot for the purpose of studying the physiology of digestion. One of the earliest operations was that of Verneuil, on Marcelin, for fibrous stenosis; the patient lived for many years in good health, being nourished through his fistula.

The operation has now been performed several hundred times with, of course, a large mortality; it has been very successful in cases of cicatricial contraction from corrosive liquids (caustic potash, concentrated lye, mineral acids), while being generally fatal when performed for malignant disease, in which case, if the patient does not die from the operation, he dies shortly afterward from extension of the carcinoma.

In 1887, Zizar had reported 162 gastrostomies — 129 having beenper formed for cancer of the esophagus with only 18 recoveries; 31 operations were for syphilitic stenosis, with 11 recoveries. Meydl the same year published records of 40 gastrostomies in Albert's clinic in Vienna, with a mortality of 57 per cent.

We have not space for the now extensive bibliography of this operation, which has been performed in almost every city and large hospital throughout the world.

Dr. N. Senn's admirable monograph deserves mention in this connection. He believes gastrostomy to be indicated in all cases of cicatrical and malignant stenosis of the esophagus as soon as a sufficient quantity of food cannot be introduced into the stomach by simpler means *per viam naturalem.* The upper central part of the left rectus and the eighth intercostal space between the cartilages of the ribs are the most desirable points for the formation of the gastric fistula. If the patient's strength warrants it the operation should be done *à deux temps,* as it is safer to postpone opening of the stomach until firm adhesions have been formed between the stomach and the circumference of the external incision, than to establish the gastric fistula at once. Leakage from the fistula can be prevented most effectually by making the opening in the stomach small, by the use of an inflatable double rubber bulb through which the feeding tube reaches the stomach, or by making an oblique tunnel in the anterior wall of the stomach, as devised and practised with success by Witzel. Solid food should first be subjected to thorough mastication and insalivation by the patient before it is transferred to a small funnel connected with the distal end of the feeding tube.

Gastrotomy consists of opening the stomach, and this operation has been often performed for the removal of foreign bodies from the gastric cavity. The first operation of the kind on record was that of Florian Martis in 1602, who removed a knife nine inches in length from the stomach of an adult man, with perfect recovery. The operation has since then been very often performed for the removal of knives, forks, spoons, pebbles, pins and needles and pieces of wood from the stomach. In a case reported in the Journal several years ago by Dr. M. H. Richardson, a set of false teeth impacted at the cardia was removed by an ingenious operation.

Dr. Bernays in the *Medical News* gives a table of 13 operations with a mortality of only 10 per cent. He prefers the abdominal incision in the linea alba as affording more room for operative manipulation than an oblique incision parallel with the ribs. His table shows that the method of applying the sutures in closing the gastric incision varies very much. In two instances no sutures were employed, the patients recovering, and in others interrupted and Lembert sutures were used alone or conjoined. Very fine catgut was used by him for the first five interrupted sutures carried through the three coats; these sutures were cut very close. Eight Lembert sutures made with thin Chinese silk were applied over the catgut sutures and completely buried them.

Gastrectomy is a term which has been applied to excisions of portions of the stomach containing morbid growths or ulcers. One of the few successful cases was that of Czerny (recorded by Senn); a perforating ulcer of the stomach was treated by excision. Porges (*University Medical Magazine*, May, 1891) showed from Maydl's clinic a man who had a considerable portion of the stomach removed for carcinoma of the greater curvature. "The cut ends of the stomach were united by sutures in terraces." The operation lasted nearly two hours. The patient made a good recovery and gained forty pounds in weight. The resected piece was seven inches long by seven inches broad.

Kahler remarks that experiments on dogs show that they survive very well extirpation of the stomach, and observations on man have demonstrated that it is quite possible to live without this organ.[1] Certainly, gastrorrhaphy to reduce the size of a dilated stomach has been quite successfully performed by Weir, Bircher, and one or two others. In Weir's operation he "took a tuck in the stomach, sewing its peritoneal surface in such a way as to bring about a double fold which projected into the cavity of the stomach." Bircher reports three successful cases. The size of the stomach was diminished "by folding a portion of the stomach walls into the lumen of that organ, making more or less of a plait." Excellent representations of this operation are given in *Sajous' Annual* for 1893. Tricomii of Padua, exsected from the pyloric end a large ulcer, causing constriction, and sewed the raw surfaces together after Czerny's method. The patient made a good recovery. Similar successful exsections have been made by Lange, Allingham, N. Stone Scott, Barker, Weir, J. W. White, Markoe, and others.

Pylorectomy, or resection of the pylorus for stenosis due to caustics, cancer, ulcer, etc., was first done by Pean in 1879, since which time it or "gastroenterostomy" (an operation by which the cut stomach is joined to some part of the duodenum) has been performed more than a hundred times. Blum, in fact, in 1890 had collected 131 cases, of which 85 were fatal. E. Doyen, of Rheims, reports 32 pylorectomies, done for stenosis and cancer. Three pyloroplasties were performed for the cure of stenosis; the incision was made in the axis of the lesser curvature; the patient recovered.

Von Hacker has published 15 cases of resection of the pylorus for carcinoma; 7 recoveries. The mortality of Billroth's 124 cases (inclusive of gastro-enterostomies, resections of portions of the intestine, removal of scar tissue for chronic diseases) was about 50 per cent.

In cases of pylorectomy for malignant disease a permanent cure is of course not to be expected; the operation is a severe and dangerous one, and neither it nor divulsion of the pyloric orifice for stricture are to be lightly attempted; yet so much relief and improvment have followed these operations that they are always to be thought of in connection with carcinoma of the stomach.

---

[1] Sajous' Annual, 1892, c, page 5, vol. iii.

THE MORTALITY AMONG MASSACHUSETTS SCHOOL-CHILDREN.

In our last issue we had an editorial review of Dr. E. M. Hartwell's second report as director of physical training in the Boston public schools. In the course of that review, we quoted Dr. Hartwell's conclusion that, the losses due to deaths of Massachusetts school-children are largely in excess of what is necessary and irremediable and also in excess of similar losses in cities so great and so densely populated as London and Berlin; and then his corollary that municipal and school sanitation are better devised and better carried out in those cities than in Boston.

In making this statement it was evidently as far from Dr. Hartwell's intention, as it was from ours in accepting it, to suggest any dissatisfaction with the administration of municipal sanitation by the Boston Board of Health. One has only to refer to the last annual report of that board, its twenty-second, and to our review of that report (June 14, 1894, p. 602), to be convinced that the Boston Board of Health is fully alive to the defects in the sanitary control of public-school children, and to the necessary reforms for remedying the most flagrant, in a measure.

To show this it is only necessary that we should again quote the following paragraph taken from page 51 of that report:

"It is evident that the School Committee is without the means or authority by which it can protect the schools against contagious diseases and many impositions, and it is desirable that the Board of Health, the proper custodian of the public health, should be provided with the means by which it may protect the school-children, while endeavoring to control a common danger in the rest of the community."

The beneficent work of boards of health is limited by the powers and the means granted them. The increase of such powers and such means can only be obtained by emphasizing and reiterating the evils which their absence entails.

In Dr. Hartwell's report we find on page 30 the following query: "May it not come to pass that the continuance of the present *laissez faire* policy of school-boards as a class will provoke the boards of health to claim jurisdiction in regard to the prevention of school-diseases, even as they have taken over the control of school-children suffering from contagious and infectious disease?"

◆

MEDICAL NOTES.

An Outbreak of Small-Pox in Michigan. — A considerable outbreak of small-pox has occurred in Manchester, Mich., and neighboring towns and is causing some alarm.

Small-Pox at Washington, D. C. — Several cases of small-pox have occurred in Washington, D. C., during the last week which have been traced to a case occurring in the family of an employee of the pension department.

An Epidemic of Diphtheria in Caseyville, Ky. — An epidemic of diphtheria is reported from Caseyville, Ky., and the adjoining towns in Hardin County, Ill. Some forty deaths are said to have occurred already.

A Decision of the Toronto Courts has lately been reported, in which consumption is declared to be a contagious disease, and that a child affected with it can be excluded from the public schools.

Dr. Roux Decorated. — Dr. Roux has received from President Casmir-Perier the congratulations of the government and the Cross of Commander of the Legion of Honor, in recognition of his work upon the serum treatment of diphtheria.

The Mortality from Cancer at Lyons. — At the Eighth French Congress of Surgery held at Lyons last month a session was devoted to a discussion upon cancer. M. Febre, of Lyons, reported the mortality from this disease in Lyons since 1875. In 1875 the total number of deaths due to cancer was 444. In 1893 it was 605. The average yearly mortality by five-year periods was as follows: From 1875 to 1879, 485; from 1880 to 1884, 545; from 1885 to 1889, 563; from 1890 to 1893, 580; allowing for the increase of population during this time, and estimating the mortality per 100,000 inhabitants, the annual rates during each of the four periods of five years are found to be 136, 143, 137, 134, showing that the mortality from cancer has not really increased.

A Medical Library Association in Grand Rapids, Mich. — A Medical Library Association has been recently organized in Grand Rapids, Mich. The purpose of the Association is the formation of a reference library upon medicine and allied sciences. The new organization starts out with a membership of about fifty, composed not alone of physicians, but dentists and pharmacists as well. One of the features of the Association will be the admission of non-residents to membership, whereby for a small annual fee physicians outside of the city may avail themselves of the advantages of the library. A competent librarian will be secured and the most approved methods of cataloguing and indexing will be made use of. Books and journals are being liberally donated by those interested in the project, and the success of the enterprise is assured. The following officers have been elected: Dr. G. K. Johnson, President; Dr. S. G. Milner, Vice-President; Dr. W. A. Dorland, Treasurer; Dr. Reuben Peterson, Secretary.

A Novelist's Opinion of Doctors. — Mr. James Payn, in the course of some reminiscent articles in the *Cornhill Magazine*, says: "Upon the whole, and for a 'scratch' companion, I prefer a doctor to a man of any other calling. He may not be very good as a conversationalist, but he is rarely very bad, like a cheroot. He has had a genuine experience of life, and has seen down to the depths of it; a sick man does not attempt to deceive his doctor or put the best face on his character, as he does with a priest. Moreover, what is very unusual, your doctor knows more about you, professionally at all events, than you know about yourself. He does not tell you about it, it is true; not a word of that aneurism you carry about with you, and which will some day kill you in half a minute, but your consciousness that he may possess such knowledge makes him interesting. The best suggestions I have had made to me for plots for my novels have come to me from doctors, to whom I have also had cause to be grateful for many things."

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, October 31, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 139, scarlet fever 55, measles 24, typhoid fever 48.

Boston Medical Library Association, Holmes Memorial Meeting. — The Boston Medical Library Association held a special meeting Tuesday evening, October 30, 1894, at 19 Boylston Place, for the presentation of resolutions on the death of Dr. Oliver Wendell Holmes, and to consider the recommendation of the Executive Committee for some suitable memorial to its late President. It was voted that the main hall in the new building of the Association be called Holmes Hall. The Journal will publish later a report of the meeting.

The Boston School Board and Vaccination. — At its last meeting the Boston School Board passed the following order amending the section of the regulations referring to vaccination:

"Section 233. No pupil shall be admitted to the public schools without a certificate of a physician that such pupil has been vaccinated, or a certificate signed by a regular practising physician that such pupil is an unfit subject for vaccination; but these certificates shall not be required of pupils who are transferred from one public school to another. In the case of all admissions of pupils for the first time to the public schools, the principal shall make a record in some book, accessible for reference, of the fact that certificates of vaccination, or certificates that the pupils are unfit subjects for vaccination, have been presented, giving the name of each pupil, the date of admission and the name and residence of the physician by whom the certificate is signed, etc.," — the remainder of the section being the same as at present.

The Massachusetts Charitable Eye and Ear Infirmary. — During the past year 19,365 patients were treated at the Massachusetts Charitable Eye and Ear Infirmary, of whom 1,065 were house patients. At the annual meeting the previous board of management and the visiting staff were reappointed for the ensuing year.

Scarlet Fever in Woburn, Mass. — So many cases of scarlet fever have occurred in the city of Woburn, Mass., during the past week, that the School Board, acting under the advice of the Board of Health, has ordered all the schools in the centre district closed. This affects some eight schools. The Board of Health has advised a temporary suspension of distribution of books from the public library.

Miscellany.

DR. OLIVER WENDELL HOLMES.

The *Cincinnati Lancet-Clinic* in its notice of Dr. Holmes calls attention to the chivalrous character of his writings and his high estimate of women as one of his surest claims to remembrance. He says:

"To our mind his lyrics are his best poetic work. They are written in such simple English that they have become classics in the eyes of the masses, who, after all, are the best judges. Besides this, Dr. Holmes's lyrics and prose writings always brought him near to American women. Pure in his instincts and personal nature, he particularly attracted all the female readers in the country, and this, in the United States, means success. His faith, rightly grounded, in the goodness and intelligence of all womankind, made him adored by the sex that always appreciates the man who sees them at their best. This is the secret of his popularity among school-children as a poet. It can be safely said that no school-teacher of New England extraction, North or South, but was familiar with all the good doctor's pretty verses, and taught them to her classes. It was Dr. Oliver Wendell Holmes who said: 'There are at least three saints among the women to one among the men'; and it was the same author who wrote: 'The brain woman never interests us like the heart woman, white roses please us less than the red.'

"Dr. Holmes never put a silly woman into one of his novels; his heroes are never as strong as his heroines. The only kind of woman Dr. Holmes could not understand nor appreciate was the strong-minded type. The maternal type, filled with love of home and children, with all the original gentleness of the sex, unspoilt by nineteenth-century ideas, yet wonderfully bright and active-minded, was his continual admiration."

◆

INTESTINAL PARASITES IN BERI-BERI.

At the Eighth International Congress of Hygiene and Demography at Budapest, Mr. J. H. Walker reported[1] his observations in 927 cases of beri-beri treated during the last five years at Sandakaw in British North Borneo. A careful examination of the stools for intestinal parasites was made in 887 of the cases, with the following results: The ankylostoma duodenalis was found in 756 cases, or 85.5 per cent.; the trichocephalus in 284 cases, or 31.5 per cent.; ascarides lumbricoides in 155, or 17.4 per cent.; oxyures vermiculares in 123 cases, or 13.8 per cent.; the distoma in two cases, 0.2 per cent.; acari in three cases, or 0.3 per cent.; various other parasites in 24 cases, or 2.6 per cent.

As the ankylostoma is not generally common among the native population, its frequency in these cases of beri-beri would appear to have some importance. Although there are several reasons why this parasite cannot be considered the pathogenic agent essential to beri-beri, it still may be a predisposing cause of a malady which its presence always aggravates. Mr. Walker looks upon the two diseases as having a common cause, inasmuch as the same conditions of sanitation and water-supply which favor the development of the ankylostoma are exceedingly good for the germ of beri-beri.

These observations emphasize the importance of examining the stools of all persons ill with beri-beri, to detect the presence of entozoa, the expulsion of which is the first indication in the treatment of the disease.

◆

M. PAUL BOURGET AND AMERICAN HOSPITALS FOR THE INSANE.

M. Paul Bourget, in a recent chapter of his account of American life and manners,[1] relates his visit to the city institutions on Blackwell's and Ward's Islands, in New York Harbor. He was much impressed by the administration methods of the hospitals for the insane, and no less so by the method employed to control violent patients as told him by Mr. K——, apparently a guide well informed as to the therapeutics and ethics of asylum treatment. His official relation to the hospital, if any, does not appear, and even M. Bourget hesitates to believe literally his kindly explanations.

Of the administration, M. Bourget says:

> Both the houses are kept with that perfect understanding of comfortable material arrangements which distinguishes America and England. The principle is here — I had already noted it in visiting the hospitals of Boston — to assure the autonomy of each establishment. It must be able to sustain itself from beginning to end. It must have its bakery to bake its bread, its laundry to wash its linen and iron it by machine, its laboratory in order to make up its own remedies. With such an independence in all the houses, the initiative is necessarily stronger. If there be an experiment to be tried, an invention to be applied, it is not necessary to pass through the administrative hierarchy and to await the central order. Everything has its compensation, and this absence of control, so admired by our routine, might well have its weak points. We have that impression in the few words which one of the doctors says to us with triumph. We ask permission to see the raving lunatics.
>
> "We have none here," he replied.
>
> "How is that?" we persisted.
>
> "We have none," he repeated.
>
> "But when those who are not so become furious?"
>
> "Oh," said he, "we soon subdue them."
>
> "May we see the apparatus?"
>
> "We have no apparatus," said the doctor, proudly; "we reckon that physical restraint is degrading for the patient; we prefer to employ chemical restraint."
>
> "They drug them to death," said Mr. K——.
>
> Is he right? At any rate, after that phrase we always imagine to find in the pupils of those we meet the stupefying dulness of opium or morphine, although the doctor asserts that those two substances are prohibited from the treatment. In all this hospital of madmen there reigns a silent terror.

◆

THE CONTROL OF BOVINE TUBERCULOSIS.

The Board of Cattle Commissioners of Massachusetts has announced the following line of action in its attempt to maintain stringent control over bovine tuberculosis, in the hope of eradicating the disease:

> (1) Quarantine regulations upon cattle entering from without the borders of the Commonwealth.

---

[1] La Semaine Médicale, September 19, 1894.

[1] Outre Mer, chap. vi.

(2) Regulation of cattle traffic at Brighton, Watertown and Somerville, which shall include all animals from within and without the Commonwealth.

(3) Systematic inspection of all herds in the State, beginning at the Cape; followed by extermination of diseased animals, disinfection of contaminated premises, and fixed quarantine regulations.

The stock-yards in Brighton and Watertown and the premises of the New England Dressed Beef & Wool Company in Somerville are designated as quarantine stations. All neat cattle entered at any quarantine station shall be immediately placed in quarantine, and so remain, at the expense of the owner or consignee, for a period of not less than twenty-four hours, and shall be subjected to the tuberculin test. This test shall be made only by the board of cattle commissioners, or one of its members, or a duly authorized agent thereof, and without expense to the owner. All animals which upon such inspection shall be judged free from tuberculosis and other contagious disease shall be branded with the seal of the commission. This brand shall be placed upon the right horn and the outside of the right front hoof, on those animals having horns. Hornless cattle will be branded upon the right shoulder and upon the outside of the right front hoof.

All neat cattle brought within the Commonwealth, consigned directly to the Brighton abattoir for slaughter, shall be confined by themselves for identification, and shall not be released except after an examination as above provided, or except for immediate slaughter.

The Cape being the starting-point, the boards of health and all owners of neat cattle in the counties of Nantucket, Dukes and Barnstable will be immediately notified that from November until such time as they shall be released by the board or one of its members, all neat cattle are ordered quarantined upon the premises of their owners, and that boards of health will see that all orders of the board regarding the disinfection of premises are enforced within twenty-four hours after their receipt.

◆

THE MALICIOUS USE OF SNAKE POISON.

THE tales of India are replete with references to wonderful and subtle poisons which act swiftly, surely and secretly, leaving no trace but the fate of their victim. Such were the fabled poisons of the East. Modern research, while it is destructive of much that is romantic in our knowledge of the past, is in this respect coming to the support of fable; for recent investigations point to the fact that these poisons may have been and probably were real, and not the exaggerated fiction of the story-teller. The modern application is less thrilling, to be sure, than in the tales of rajahs and princesses; for it is cows that suffer, and from dead cattle that the secret has been won.

The *New York Medical Journal* gives the following abstract of an editorial in the *Indian Medico-Chirurgical Review* of last July upon this interesting subject. The editorial states that:

"It is not at all unusual for the various chemical analyzers' departments to receive pieces of rag removed from the rectums of dead cattle, and alleged to have been used for poisoning them. These rags have been received in Bombay and elsewhere, and on account of the non-detection of any of the known poisons the materials have been thrown away. The late Dr. Norman Chevers alludes to such cases, and quotes them as examples of the 'ignorant suspicions of the peasantry.' But it was reserved for Mr. Hankin to discover the fact that these suspicions were well grounded, and that the rags did contain one of the most virulent of animal poisons, for the extraction of which not a little ingenuity had been used by the ignorant and low-caste *Chamar* of India. In his late report, the article goes on to say, Mr. Hankin describes how, after failing to detect any poison in a rag sent to him, he boiled a piece of it in nitric acid, and, on the liquid turning yellow, it struck him that the change of color was an indication of the presence of proteids, and he thought that snake poison might be present. He then injected a watery extract of about a square inch of rag into a rabbit, and the animal died with all the symptoms of snake-poisoning within about five minutes. By other tests, chiefly of a negative kind, he came to the conclusion that the intensely active poison found to be present was proteid in its nature, and very probably identical with snake poison. Mr. Hankin subsequently communicated with Sir Joseph Fayrer, who stated that snake venom would be just as poisonous when placed in the rectum as when inserted under the skin, for it could be readily absorbed by any mucous membrane, and that it was only in the stomach that it became inert on account of the acidity destroying it. He also described a method of extracting snake poison as follows: A cobra is confined in a *chattie* underneath which a fire is lighted. A plantain is then put into the *chattie*, and the snake, being irritated by the heat, bites the plantain, which becomes thoroughly impregnated with cobra venom. But Sir Joseph Fayrer did not know for what purpose such a poisoned plantain could be used.

"Mr. Hankin found that the rags impregnated with snake poison were smeared over with a whitish, putty-like substance the nature of which he was not able to determine, but which, from experiments made by him, appeared to possess the same physical characters that crushed and dried plantains would have when spread on a dirty rag. Thus it seems that Mr. Hankin's original surmise was correct, and he has been able to discover this unique method of destroying cattle.

"The question naturally arises, whether snake venom has ever been used for poisoning man. Could any of the many mysterious deaths in India and elsewhere be thus accounted for? Could analogy lead to the solving of the problem of the poison employed to get rid of some hated enemy, who, it is said, used to succumb after a mere friendly hand-shake, or from a scratch of a nail conveniently placed on a window-sill? These are some of the thoughts suggested by Mr. Hankin's interesting report, and it might be well for him to follow up this discovery, and see whether human ingenuity would go so far as to utilize the poison on the human being."

◆

THE ORIGIN OF THE PLAGUE IN CHINA.

ACCORDING to the native Chinese authorities the following is the true origin of the plague at Canton, says *Le Progrès Medical:*

"In the private apartments of the dowager empress there are kept constantly burning eighteen lamps representing the eighteen provinces of the Empire. Some time before the outbreak of the plague one of these lamps burned unsteadily, and although cared for as were the others, was with difficulty kept lighted. The chief astrologer was at once summoned to investigate the phenomenon. After carefully studying the case and consulting his books, he announced that this particular lamp which burned so poorly represented the province of Canton which would soon be afflicted with an epidemic which would carry off eight-tenths of the population.

"The empress was much affected by this reply, and asked if there were no possible means of saving the people of Canton from such a calamity. On being told by the astrologer that the god of disease might be appeased by prayers and offerings, the empress gave orders that nothing in the way of pacification should be spared.

"After prayers and sacrifices had been made, the astrologer again carefully prognosticated the case and declared that the god had consented to a compromise, which was all he would do under any conditions. According to this generous compromise, he would content himself with taking four-tenths of the men and the rest in rats. And this is the reason that men and rats were especially stricken by the disease at Canton and Hong Kong."

◆

Correspondence.

ALMA MATER.

A Sonnet by Oliver Wendell Holmes.

"Yes, home is sweet! and yet we needs must sigh,
 Restless until our longing souls have found
 Some realm beyond the fireside's narrow bound
Where slippered ease and sleepy comfort lie, —
Some fair ideal form that cannot die,
 By age dismantled and by change uncrowned,
 Else life creeps circling in the self-same round,
And the low ceiling hides the lofty sky.
Ah, then to thee our truant hearts return,
 Dear Mother, Alma, Casta, — spotless, kind!
 Thy sacred walls a larger home we find,
And still for thee thy wandering children yearn,
While with undying fires thine altars burn
 Where all our holiest memories rest enshrined."

Boston, October 30, 1894.

Mr. Editor: Your readers will probably be interested in the enclosed sonnet to Alma Mater written by Dr. Holmes in 1882, but never, as far as I know, included in any edition of his published works.

Having been invited to attend a dinner of the Harvard Club of New York, and foreseeing that I might be called upon to speak for the Medical School, I ventured to ask Dr. Holmes to write a few words of greeting to the Club for me to read in connection with any remarks I might make. The doctor kindly consented, and then added, "You don't want anything in verse, do you?" "Why, doctor," I replied, "I had not ventured to hope for anything of that sort, but, of course, if you *could* let me have a few verses, nothing could possibly be more delightful." — "Well," said he, "I'll see what I can do." A day or two later he handed me half a sheet of note paper on which was the enclosed sonnet, saying, "There, that's what I have written; see how you like it." Having hastily glanced through it, I expressed my delight and assured him that, with such a literary gem to present, my speech would be the event of the evening. "Now," said the doctor, "I want to hear how it will sound. Let me hear you read it." I then had to submit to the ordeal of reading a poet's lines to an audience limited to the poet himself.

Fortunately, I was able to acquit myself to his satisfaction, and a few days later the little poem was received with great enthusiasm by the sons of Harvard assembled in New York.

Yours very truly,
H. P. Bowditch, M.D.

METEOROLOGICAL RECORD,

For the week ending October 20th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..14	29.65	54	62	46	91	60	76	S.W.	W.	6	18	C.	C.	.42
M..15	29.98	44	50	38	54	50	52	W.	W.	22	15	C.	C.	
T..16	29.80	49	60	38	59	68	64	S.W.	S.W.	10	16	F.	O.	
W..17	29.51	58	66	50	45	60	52	W.	W.	21	15	O.	C.	
T..18	29.96	51	59	43	66	47	56	W.	W.	16	9	C.	C.	
F..19	30.17	55	68	42	73	71	72	W.	S.W.	5	14	C.	C.	
S...20	30.11	64	76	53	72	82	77	N.E.	N.E.	10	8	C.	C.	
☞														

* O., cloudy: C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatning; N., snow. † Indicates trace of rainfall ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, October 20, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,956,000	680	261	16.35	13.50	5.85	1.20	7.65
Chicago . . .	1,438,000	—	—	—	—	—	—	—
Philadelphia .	1,139.457	385	124	23.76	13.50	2.97	2.70	17.28
Brooklyn . .	1,043,000	381	164	18.98	10.66	4.68	1.82	9.88
St. Louis . . .	540,800	—	—	—	—	—	—	—
Boston . . .	501,107	220	73	21.15	13.95	2.60	1.80	12.15
Baltimore . .	500,000	—	—	—	—	—	—	—
Washington .	285,000	124	45	18.40	10.40	2.40	7.20	6.40
Cincinnati . .	325,000	99	24	14.14	8.08	5.05	4.04	4.04
Cleveland . .	325,000	104	40	28.80	6.72	3.84	3.84	.96
Pittsburg . .	272,000	—	—	—	—	—	—	—
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	15	3	13.33	20.00	—	—	13.33
Charleston . .	65,165	—	—	—	—	—	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	100,410	37	12	18.90	16.20	10.80	2.70	5.40
Fall River . .	92,233	26	10	23.10	26.95	11.55	3.85	3.85
Lowell . . .	90,613	34	16	32.34	14.70	23.52	2.94	5.88
Cambridge . .	79,607	27	14	33.33	11.11	22.20	3.70	7.40
Lynn	65,123	11	4	54.54	9.09	27.27	—	18.18
Springfield . .	50,284	15	6	20.00	6.66	13.33	6.66	—
Lawrence . .	49,900	—	—	—	—	—	—	—
New Bedford .	47,741	8	5	—	—	—	—	—
Holyoke . . .	43,348	15	4	57.28	13.33	1 .11	—	—
Brockton . .	33,939	2	0	50.00	—	—	—	—
Salem	33,155	10	3	30.00	10.00	10.00	—	10.00
Haverhill . .	32,925	7	5	—	—	—	—	—
Malden . . .	30,209	4	1	25.00	—	—	—	25.00
Chelsea . . .	29,806	8	3	12.50	12.50	—	—	12.50
Fitchburg . .	29,383	5	1	—	20.00	—	—	—
Newton . . .	28,837	10	2	—	-	—	—	—
Gloucester . .	27,293	—	—	—	—	—	—	—
Taunton . . .	26,955	11	4	54.54	18.18	27.27	—	27.27
Waltham . .	22,058	8	2	37.50	—	—	—	37.50
Quincy . . .	19,642	—	—	—	—	—	—	—
Pittsfield . .	18,802	9	1	—	—	—	—	—
Everett . . .	16,585	7	1	—	—	—	—	—
Northampton .	16,331	3	2	—	—	—	—	—
Newburyport .	14,073	4	3	25.00	—	—	—	25.00
Amesbury . .	10,920	1	1	—	—	—	—	—

Deaths reported 2,294: under five years of age 844; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 451, consumption 276, acute lung diseases 225, diphtheria and croup 215, diarrheal diseases 120, typhoid fever 52, scarlet fever 24, whooping-cough 17, cerebro-spinal meningitis 14, malarial fever 6, measles 2, erysipelas 1.

From scarlet fever Cleveland 13, Boston 5, New York and Philadelphia 2 each, Fall River and Salem 1 each. From whooping-cough Brooklyn 7, New York 6, Washington 2, Philadelphia and Boston 1 each. From cerebro-spinal meningitis Cleveland 4, Holyoke 3, New York and Boston 2 each, Washington, Cincinnati and Lynn 1 each. From malarial fever Brooklyn 3, New York, Cleveland and Brockton 1 each. From measles Cleveland 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending October 13th, the death-rate was 16.7. Deaths reported 3,346; acute diseases of the respiratory organs (London) 241, diarrhea 117, diphtheria 92, measles 61, fever 61, scarlet fever 38, whooping-cough 32, small-pox (Liverpool 3, Birmingham 2) 5.

The death-rate ranged from 9.3 in Croydon to 26.2 in Preston; Birmingham 16.8, Bradford 17.7, Hull 16.9, Leeds 16.0, Leicester 12.7, Liverpool 23.1, London 15.5, Manchester 20.3, Newcastle-on-Tyne 17.3, Nottingham 16.3, Portsmouth 15.2, Sheffield 17.9, Swansea 18.6, West Ham 13.8, Wolverhampton 16.6.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 20, 1894, TO OCTOBER 26, 1894.

FIRST-LIEUT. CHARLES F. KIEFFER, assistant surgeon, will be relieved from duty at Fort Assinniboine, Montana, upon the return to that post of FIRST-LIEUT. EDWARD L. MUNSON, assistant surgeon, from duty in the field and will then report for duty at Fort Buford, North Dakota.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 27, 1894.

J. G. AYERS, surgeon, from Navy Yard and Hospital, Portsmouth, N. H., and to his home and wait orders.

F. L. DUBOIS, medical inspector, ordered to Navy Yard and Hospital, Portsmouth, N. H.

F. G. BRATHWAITE, assistant surgeon, ordered to temporary duty at Naval Hospital, New York.

S. G. EVANS, passed assistant surgeon, detached from Naval Hospital, New York, and to Naval Hospital, Mare Island, Cal., for temporary duty.

M. R. PIGOTT, assistant surgeon, ordered to appear before Naval Examining Board at Navy Department, for examination preliminary to promotion.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Thursday evening, November 8th, at 8 o'clock, by Dr. S. J. Mixter. Subject, "Surgery of the Intestine." Physicians are cordially invited.

MEDICAL EXCURSION TO BERMUDA.

Dr. J. B. Mattison, of Brooklyn, N. Y., is arranging another excursion of medical men to Bermuda, to sail Thursday, December 13th and return Thursday, January 3d. Specially low cost and other advantages offered for a delightful winter outing. Details, if desired.

SOCIETY NOTICES.

THE WARREN CLUB. — A regular meeting of the Club will be held at 28 Beacon Street, on Tuesday evening, November 6, 1894, at 8 o'clock.

Dr. E. M. Greene: "Some Genito-Urinary Problems."

Dr. N. F. Chandler: "Cases of Albuminuria of Pregnancy."

JAMES G. MUMFORD, M.D., *President.*
W. E. PAUL, M.D., *Secretary.*

BOSTON SOCIETY FOR MEDICAL OBSERVATION. — A regular meeting of the Society will be held at 19 Boylston Place on Monday evening, November 5th, at 8 P. M.

Dr. Henry Jackson will report "A Few Cases Illustrative of the Diagnostic Value of an Examination of the Blood."

Dr. George F. Jelly, "A Case of Mental Shock."

There will be a business meeting of unusual importance.

JAMES G. MUMFORD, *Secretary.*

THE SUFFOLK DISTRICT MEDICAL SOCIETY, SURGICAL SECTION. — The Surgical Section of the Suffolk District Medical Society will hold its regular monthly meeting at 19 Boylston Place, on Wednesday evening, November 7th, at 8 o'clock.

"Intestinal Gangrene due to Embolism or Thrombosis of the Mesenteric Arteries, with Reports of Cases," Francis S. Watson, M.D.

"Thrombosis of the Mesenteric Vessels; Successful Resection of Four Feet of Gangrenous Intestine." John W. Elliot, M.D.

C. L. SCUDDER, M.D., *Secretary.*

AMERICAN ACADEMY OF RAILWAY SURGEONS. - The first meeting of the American Academy of Railway Surgeons will be held in the parlors of the Grand Pacific Hotel, Chicago, Ill., on Friday and Saturday, November 9 and 10, 1894.

RECENT DEATH.

JOHN M. EVELETH, M.D., of Hallowell, Me., died in Augusta, Me., October 26th, aged sixty-six years. He graduated from Bowdoin College in 1849 and from the Maine Medical School in 1854.

BOOKS AND PAMPHLETS RECEIVED.

Charaka-Samhita. Part X. Translated into English and published by Avinash Chandra Kaviratna. Calcutta. 1894.

When All The Woods are Green. A Novel. By S. Weir Mitchell, M.D., LL.D., Harvard. New York: The Century Co. 1894.

Bloodless Vaginal Myomectomy. Massage in Gynecology. By Oscar J. Mayer, M.D., of San Francisco, Cal. Reprints. 1894.

Transactions of the American Surgical Association. Volume the twelfth. Edited by Dr. Forest Willard, M.D., Recorder of Association.

Report of Committee on Car Sanitation; American Public Health Association, Annual Meeting in Montreal, 1894. By G. P. Conn, M.D.

The Senile Heart: Its Symptoms, Sequelæ and Treatment. By George William Balfour, M.D , LL.D., F R.C.P.E., F.R.S.E. New York and London: Macmillan & Co. 1894.

Medical and Surgical Reports of the Boston City Hospital. Fifth series. Edited by David W. Cheever, M.D.. George B. Shattuck, M.D., and Abner Post, M.D. Boston: Published by the Trustees. 1894.

Text-book of Anatomy and Physiology for Nurses. Compiled by Diana Clifford Kimber, Graduate of Bellevue Training School, Assistant Superintendent New York City Training School. New York: Macmillan & Co. 1894.

Prescribing and Treatment in the Diseases of Infants and Children. By Philip E. Muskett, Late Surgeon to the Sidney Hospital, etc. Third edition, revised, enlarged and rearranged. Edinburgh and London: Young J. Pentlane. 1894.

A Treatise on Appendicitis. By George R. Fowler, M.D., Examiner in Surgery, Medical Examining Board of the Regents of the University of the State of New York; Surgeon to St. Mary's Hospital, etc. Philadelphia: J. B. Lippincott Co. 1894.

Essentials of the Diseases of the Ear, Questions and Answers Prepared Especially for Students and Post Graduate Students, By E. B. Gleason, S.B., M.D., Clinical Professor of Otology, Medico-Chirurgical College, Philadelphia. Philadelphia: W. B. Saunders. 1894.

A Manual of Human Physiology, Prepared with Special Reference to Students of Medicine. By Joseph H. Raymond, A.M., M.D., Professor of Physiology and Hygiene in the Long Island College Hospital. With 102 illustrations in text and four full-page colored plates. Philadelphia: W. B. Saunders. 1894.

Annual of the Universal Medical Sciences; a Yearly Report of the Progress of the General Sanitary Sciences throughout the World. Edited by Charles E. Sajous, M.D., and seventy associate editors, assisted by over two hundred corresponding editors, collaborators and correspondents. Illustrated with chromolithographs, engravings and maps. Philadelphia: The F. A. Davis Co. 1894.

Syllabus of Lectures on Human Embryology, an Introduction to the Study of Obstetrics and Gynecology; for Medical Students and Practitioners, with a Glossary of Embryological Terms. By Walter Porter Manton, M.D., Professor of Clinical Gynecology and Lecturer on Obstetrics in the Detroit College of Medicine. Illustrated with numerous outline drawings. Philadelphia: The F. A. Davis Co. 1894.

Recherches Cliniques et Thérapeutiques sur l'Epilepsie, l'Hystérie, l'Idiotie et l'Hydrocéphalie, Compte rendu du Service des Enfants, Idiots, Epileptiques et Arriérés de Bicêtre Pendant l'Année, 1893. Par Bourneville, avec la Collaboration de MM. Boncourt, Cornet, Lenior, T. Noir et P. Sollier, Tome xiv, un beau volume de lxiv, 384 pages, avec 88 figures et un plan. Paris: Publication du Progrès Médical. 1894.

Diseases of the Chest, Throat and Nasal Cavities, Including Physical Diagnosis and Diseases of the Lungs, Heart and Aorta, Laryngology and Diseases of the Pharynx, Larynx, Nose, Thyroid Gland and Osophagus. By E. Fletcher Ingalls, A.M., M.D., Professor of Laryngology and Practice of Medicine, Rush Medical College, etc. Third edition, revised, with 240 illustrations. New York: William Wood & Co. 1894.

Hare's Text-Book of Practical Therapeutics. With Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. With special chapters by Drs. G. E. de Schweinitz, Edward Martin and Barton C. Hirst. New (4th) edition, thoroughly revised and much enlarged. In one octavo volume of 740 pages. Philadelphia: Lea Brothers & Co. 1894.

Original Articles.

CHRONIC ARSENICAL POISONING.

An Analysis of 260 Examinations of Urine.[1]

BY WILLIAM B. HILLS, M.D.,
Associate Professor of Chemistry, Harvard Medical School.

Up to within a few years, the importance of an analysis of the urine as an aid in the diagnosis of chronic arsenical poisoning from wall-papers and other domestic sources, had not, apparently, been generally recognized. Sanger has recently given the record of all the cases of this kind that he has been able to find in which arsenic was detected in the urine previous to 1886.[2] These cases are twenty-four in number, and comprise four reported by Lorinzer in 1859,[3] in which the analytical work was done by Kletzinsky; three reported by Müller in 1860,[4] the analytical work being done by Fabian, who has also published the cases;[5] six published by Kirschgasser in 1868;[6] one by Clarke in 1873;[7] five, in one of which the result was "doubtful," by Mörner in 1876;[8] and one each by Jolin, in 1880,[9] Welander, in 1880,[10] Kjellberg, in 1881,[11] Reichardt, in 1883,[12] and Wood, in 1884.[13] In some of these cases the results of the analysis are, in a measure, untrustworthy, because no assurance is given that the reagents employed were free from accidental traces of arsenic. In those reported by Fabian, however, the absolute freedom of the reagents from arsenic was established by careful analysis, and the results are, Sanger believes, reliable. The case reported by Clarke is the only one in which a quantitative analysis was made. Clarke obtained 0.26 gr. of arsenic from 48 oz. of urine (9 2 mgr. per litre). The method of analysis is not given; but the conclusion can hardly be avoided, that a considerable error was made by the analysts, since recent investigations show that the urine, in the class of cases under discussion, seldom contains more than 0.1 mgr. of arsenic, calculated as arsenious oxide, per litre.

At the present time, the necessity of an examination of the urine for arsenic in cases of suspected chronic poisoning is universally admitted, and many cases in which arsenic has been found in the urine have already been reported. The most important contributions are those of Putnam (25 cases),[14] and of Sanger (20 cases).[15] Nine of Putnam's cases were contributed by Sanger, and are found in Sanger's paper also. The total number given in the two papers is, therefore, 36. A few additional cases have been published elsewhere, or reported orally at meetings of societies.

Since 1887, I have myself made 260 analyses of urine for arsenic. The object of this paper is to place on record the results of these analyses, and to call attention to such facts as they suggest relative to the wide distribution of arsenic, even at the present time, its elimination in cases in which small amounts have been taken into the system, and the action of such small amounts on the kidneys. I shall not introduce the clinical side of the cases represented by these analyses, since my knowledge of the history of most of the cases is more or less incomplete.

The method of analysis which I have employed, has been that first described by Sanger, by means of which the very minute amounts of arsenic that occur in the urine in this class of cases can be estimated quantitatively.[16] The purity of the reagents and apparatus used has been repeatedly proved by careful tests.

My 260 analyses represent 180 cases. Of these 180 cases, in 135, or 75 per cent., the urine contained arsenic. I have found a record of but one earlier investigation in which the frequency of the occurrence of arsenic in the system has been studied. Putnam collected more than 150 samples of urine, of which Worcester found over 30 per cent. arsenical.[17] There is a great difference in the percentage of arsenical urines in the two series. Putnam, however, selected, chiefly, cases in which there were no symptoms referable to arsenical poisoning; while a majority of my own cases were those in which there were symptoms which suggested to the attending physician the possibility of arsenic as a factor in their causation. Provided the cases in the two series were judiciously selected, we should expect this, perhaps even a greater difference, in the analytical results. No claim is made, however, that all the cases represented by my analyses were cases of arsenical poisoning. In many of them the arsenical origin of the symptoms was substantially proved. In certain cases the arsenic was apparently one, among other causes, operating to produce or prolong a state of ill health. In many cases the presence of arsenic in the system was, doubtless, a mere coincidence.

Nearly all of my analyses have been made within the past three years. The results show, therefore, that, notwithstanding the great improvement which has taken place within recent years in the character of wall-papers and fabrics, arsenic is still widely distributed under conditions favorable for its absorption into the system.

My observations in several cases which have come to my notice have convinced me that there are probable sources of chronic arsenical poisoning which have not yet been properly investigated. I have, for instance, records of eleven cases in each of which I have made analyses of the urine at short intervals for a period extending over one and one-half to two years. In no one of these cases has the urine ever been quite free from arsenic when it has come under my observation. Usually the quantity has been small: 0.01 mgm. per litre, or thereabouts. In one case, however, the quantity has invariably been 0.03 to 0.04 mgm. per litre; in another, 0.05 mgm. or over. In five of these eleven cases I have found, on a single occasion, a decidedly larger quantity of arsenic than is usually present; in one instance 0.1 mgm., in a second between 0.2 and 0.3 mgm. per litre. Yet, so far as I have been able to discover, the houses occupied by these patients have not contained any arsenical materials of the ordinary kinds for at least a year and a half. In all these cases no labor or expense has been spared in getting rid of arsenic in the first place, and in keeping it out of the house, so far as possible, subsequently. How then are we to explain: first, the constant presence of a minute quantity of arsenic in the urine; second, the occasional occurrence of a far greater quantity than is usually present? In one case the larger quantity present on a single occasion may have been the result of a fresh exposure to arsenical papers during the summer. A similar explanation does not apparently apply to any of the remaining cases.

---

[1] Read before the Boston Society for Medical Observation, May 7, 1894.

[2] Proceedings of the American Academy of Arts and Sciences, vol. xxix, p. 148.

[3] Wiener Med. Woch., 1859, Heften 43 and 44.

[4] Wiener Woch., 1860, H. 18, 19, 20, 21.

[5] Dingler, Polyt., Journ., clvii, 212.

[6] Vierteljahr f. gericht. Med., N. F., ix, 96.

[7] British Medical Journal, June 21, 1873.

[8] Virchow-Hirsch. Jahresb., xi, 405.

[9] Hygeia, Stockholm, xlii, 235.

[10] Ibid., xlii, 238.

[11] Ibid, xliii, 456; also ref. Virchow-Hirsch, Jahresb., xvii, 398.

[12] Archiv der Pharmacie., [3], xxi, 271.

[13] Massachusetts State Board of Health Report, 1883, p. 237.

[14] Boston Medical and Surgical Journal, cxx, 235 and 253.

[15] Loc. cit.

[16] Proceedings of the American Academy of Arts and Sciences, xxvi, 24.

[17] Boston Medical and Surgical Journal, cxxiv, p. 625.

A few weeks ago, a patient in whose urine I had always found a minute trace of arsenic, handed me a specimen which gave 0.2 to 0.3 mgm. per litre. The urine contained at the same time copper. Presumably, therefore, the arsenic had been taken into the system in the form of Paris-green, and probably in connection with some article of food.

I have not observed the presence of copper in the urine in any of the remaining cases in which I have found an exceptionally large amount of arsenic; but I have not looked for it. It is possible, however, that we may have, in the free use of Paris-green in the garden and field, one explanation of the frequent occurrence of arsenic in the system. The soil in many localities is doubtless quite highly impregnated with the poison. The question of its absorption by growing vegetables is, in my opinion, one which should be carefully investigated.

Among other possible sources is coal. This was first pointed out, I believe, by Prof. J. M. Crafts, who stated that the dust from chimney flues had been found to contain large quantities of arsenic.[18] Professor Crafts suggested the desirability of collecting statistics relative to the presence of arsenic in the urine of certain classes of persons exposed to arsenic in different degrees, instancing chimney-sweeps. This suggestion seems to me an important one, but it has not yet, I believe, received any attention. If arsenic is a constituent of coal, it must be liberated, during the process of combustion, in the form of arsenious oxide. The opportunities for the absorption of arsenic, under such conditions are obvious.

A few months ago Dr. H. H. A. Beach suggested to me the possibility that illuminating gas may be one of the sources of the arsenic so frequently present in the system. Dr. Beach is quite certain that illuminating gas has at times a distinct garlicky odor, and he suggested the desirability of an investigation relative to the presence of arsenic therein. I have since noticed this garlicky odor on at least three occasions. It is certainly not constant or even common. Within my observation, it is perceptible, for an instant only, when the gas is first let on and before it is ignited. I have made two tests of the gas supplied to Boston for arsenic but with a negative result in each case. I am not altogether convinced that the method employed was a suitable one, and I intend to continue the investigation. If arsenic is a constituent of the coal used in the manufacture of the gas, it probably exists in the gas, provided it escapes the purification process, in the form of arseniuretted hydrogen, which latter furnishes upon conbustion arsenious oxide.

ELIMINATION OF ARSENIC.

The elimination of arsenic in the class of cases under consideration is a subject which requires careful investigation. It is a matter of quite common observation that certain individuals are unaffected, to all appearances, by prolonged exposure to highly arsenical papers, while others suffer severely from comparatively slight exposures. Doubtless the form in which the arsenic is absorbed is a factor in determining such variations. It is not improbable, however, that some of these cases of unusual susceptibility are dependent in part, if not entirely, upon slow or irregular elimination and consequent accumulation of arsenic in the system. Inasmuch as arsenic escapes from the system in large part through the kidneys, we have in the examination of the urine the best, and in fact the only satisfactory means of studying elimination.

In the analyses which I have made the quantity of arsenic has varied (206 cases) from 0.003 to 0.3 mgm. per litre. In only eight instances, however, has it reached 0.1 mgm. per litre. In six of these the quantity was 0.1 to 0.15 mgm.; in one, 0.2 mgm, approximately; in one, 0.3 mgm, approximately. These results agree, substantially, with those obtained by other investigators. In Worcester's analyses, as given by Putnam, the quantity varied from 0.005 to 0.1 mgm. per litre.[19] In Sanger's analyses, 0.002 to 0.068 mgm. per litre.

We may safely conclude then that the quantity of arsenic eliminated daily by the kidneys in cases of this kind is usually very small, and, as a rule, less than 0.1 mgm. per litre, of urine. Occasionally the urine contains a distinctly larger amount. The significance of these relatively large amounts is uncertain. Presumably an unusually large quantity of arsenic has been absorbed from some source. In one of my own cases, for example, the association of copper with the arsenic in the urine, suggested Paris-green as the probable source. If such was the case, it was doubtless ingested with some article of food. The possibility of an accumulation of arsenic in the system, under conditions as yet unknown must, however, be admitted.

The time required for the elimination of arsenic has not been sufficiently studied. The opinion has been generally entertained, until recently, that elimination is usually completed within two or three weeks. The number of cases recorded in which the time of elimination was more protracted is very small. Ludwig, for instance, detected arsenic in the liver of a dog forty days after the administration of the poison.

In the case of chronic poisoning from Fowler's solution, reported by Gaillard, arsenic was detected in the urine six and one-half weeks after the last administration. Seven and one-half weeks after the administration of the drug no arsenic could be detected in the urine.[20] Gibb reported a case in which "traces" of arsenic were found in the liver and bones seven months after the cessation of a course of treatment with arsenic extending over several years. No arsenic was detected in any of the remaining organs or in the blood. The report of the analytical work in this case is brief and unsatisfactory.[21]

The methods of analysis employed in most of the cases hitherto reported have been such as are usually employed for the analysis of the tissues in cases of suspected poisoning. None of these processes are sufficiently delicate to permit the detection of such minute quantities of arsenic as the tissues and fluids of the body presumably contain towards the close of the period of elimination.

---

[18] Boston Medical and Surgical Journal, cxxiv, p. 638 and cxxv, p. 71.

[19] Loc. cit.

[20] Annales d'Hygiene, October, 1874.

[21] Transactions of the Pathological Society of London, vol. 9, p. 442.

Wood has recently reported a case of acute arsenious oxide poisoning in which, using the more delicate process, as described by Sanger, he detected arsenic in the urine for the last time 93 days after the drug was taken. He also reports two cases in which Fowler's solution was taken. In the first case twenty-seven minims were taken during three days; in the second, sixty-nine minims during seven days. The time required for complete elimination was 58 and 82 days respectively.[22] These cases are the only ones thus far recorded, so far as I know, in which the elimination of arsenic has been followed to actual completion. It remains for future investigation to determine whether such long periods are the exception or the rule.

There are but few cases on record in which the time of elimination in cases of domestic poisoning has been investigated. In Sanger's historical sketch, cases are given in which the urine was found free from arsenic after 37 and 62 days (Fabian), one month (Mörner), and two months (Kjellberg).[23] In one of Kirschgasser's cases, quoted by Sanger, the urine, collected six weeks after the removal of an arsenical paint to which the patient had been exposed, was found free from arsenic. Arsenic was, however, detected in the feces collected two weeks later. The methods of analysis employed in these cases lacked delicacy; and, in the absence of any assurance that the surroundings of the patients were free from arsenic during the whole period of investigation, it is doubtful if the cases have any value as bearing upon the time of elimination.

Sanger[24] has reported several cases of wall-paper poisoning in which the question of elimination was studied. The elimination was not examined to completion in any of his cases; but the time after which arsenic still appeared in the urine varied from 19 to 140 days. He concludes, therefore, that the elimination of arsenic by the kidneys in wall-paper poisoning is very slow. His cases are inconclusive, however, since there is no evidence of the freedom of the patients from exposure to arsenic while they were under observation.

Among my own cases are a few in which non-arsenical surroundings were presumably secured, inasmuch as the urine became free from arsenic, following the removal of the probable sources. These cases are as follows:

Cases I and II. A child and his nurse presented symptoms which suggested to the attending physician the probability of arsenical poisoning. The urine of both patients was analyzed, and a "trace" of arsenic (quantity not recorded) was found in each. Upon investigation, it was found that the paper in the room occupied by the child and nurse was arsenical. The remaining papers in the house were free from arsenic. The patients were transferred to another room, and the urine of both, analyzed twenty-three days later, was found to be free from arsenic.

Case III. September 3, 1890, the urine contained a "large trace" (quantity not recorded) of arsenic. Several papers in the country house occupied by the patient were found to be very arsenical. About a week after the detection of arsenic in the urine the patient returned to his city house which is believed to be free from arsenic. Arsenic was detected in the urine for the last time, December 8th. The urine was free from arsenic December 24th, and December 29th. The time required for its complete elimination was more than eighty days (between eighty and ninety-six).

Case IV. April 19, 1893, the urine contained approximately 0.3 mgm. of arsenic per litre. The source is uncertain. The dining-room paper was highly arsenical, and the paints in some of the rooms contained a little arsenic, otherwise no arsenic could be detected in the patient's surroundings. The patient left home about a week after the first analysis was made. May 10th, the urine contained 0.025 mgm. of arsenic per litre; June 1st, 0.02 mgm.; June 29th (sixty-four days), it was found to be free from arsenic.

Case V. December 11, 1892, the urine contained 0.03 mgm. of arsenic per litre. January 6, 1893 (twenty-six days), it was found to be absolutely free from arsenic, and remained free eight days later. The arsenic in this case could not be traced to any source. Papers, paints, upholsteries and dress materials were tested with a negative result. The urine of another member of the family was analyzed December 17th, and found to be free from arsenic. The source of the arsenic, and, consequently, the date of the last exposure, being unknown, I am not disposed to attach much importance to the case as one illustrating the time of elimination.

Case VI. December 27, 1887, the urine contained 0.02 mgm. of arsenic per litre; March 15, 1888 (seventy-nine days), the urine was free from arsenic.

Case VII. June 12, 1891, the urine contained a "large trace" (quantity not recorded) of arsenic; August 31st (eighty days), free from arsenic; September 14th, free from arsenic.

Case VIII. April 19, 1892, the urine contained 0.015 mgm. of arsenic per litre; June 20th (sixty-one days), free from arsenic. Several analyses of the urine have been made since with a negative result in each case.

Case IX. April 29, 1892, the urine contained 0.02 mgm. of arsenic per litre; June 20th (fifty-one days), free from arsenic.

Case X. December 26, 1893, the urine contained 0.03 mgm. of arsenic per litre; January 25, 1894 (thirty days), the quantity of arsenic present was less than 0.003 mgm. per litre; March 28th (ninety-one days), the urine was free from arsenic.

In Cases VI to X inclusive, the analyses are separated by such wide intervals in each case that the time actually required for complete elimination cannot be stated with exactness. The only conclusion which can be reached in these cases is that elimination was completed within the periods named.

The investigation of this subject is, in fact, attended with considerable difficulties in private practice. It is but seldom that specimens of urine can be obtained with sufficient frequency to enable one to draw any valuable conclusions from the results of the analyses; and it is very difficult apparently to secure absolutely non-arsenical surroundings for the patient. All questions relative to the elimination of arsenic can best be investigated, I believe, in the wards of hospitals, where the surroundings are presumably non-arsenical, the conditions known, and the patients and materials under control.

(*To be continued.*)

---

[22] Boston Medical and Surgical Journal, April 27, 1893.

[23] Loc. cit.

[24] Loc. cit.

ACUTE INFANTILE ARTHRITIS IN THE HIP.[1]

BY AUGUSTUS THORNDIKE, M.D.

(Concluded from No. 18, p. 435.)

ANATOMY OF INFANTILE HIP AND ITS INFLUENCE ON SUPPURATIVE INFLAMMATION.

The anatomy of the infantile hip-joint differs materially from that of the adult. On the side of the pelvis at birth the greater part of the acetabulum, the crest of the ilium, the tuberosities and ramus of the ischium, the body and inferior ramus of the pelvis are still cartilaginous. Ossification, however, from three primary centres has extended into the margin of the acetabulum. In the femur the entire upper part of the bone is at birth cartilaginous, only the extreme lower part of the neck being composed of bone. Quain gives the time for the appearance of the centre of ossification for the head of the femur during the first year of life. Rénault and Rambaud say it may show two small centres of ossification as early as twenty days after birth.

At birth the capsule is therefore inserted into a cartilaginous end of femur, except possibly over a small area on the lower surface of the neck. The epiphyseal cartilages increase in all directions by interstitial growth. The bones increase in length solely by means of ossification at that part of the epiphyseal cartilage which is in proximity with the diaphysis; just there the line of newly formed bone and the cartilage is extremely vascular; not only do numerous small vessels penetrate the cartilage through the layer of newly forming bone, but there is a rich venous plexus in the periosteum surrounding the junction of the shaft and the cartilaginous epiphysis.

The centre of ossification for the epiphysis of the femoral head is contained well within the insertion of the capsule of the joint: so that if this isolated portion of bone suppurates one can be fairly certain that a purulent synovitis will follow. Earlier writers regard acute arthritis as a pyemia of bone. Howard Marsh [18] says the pathology of the affection is obscure; it begins somewhere near the dividing line between epiphysis and shaft as an hyperemia, soon followed by inflammation and rapid pus formation. Suppose, for example, that inflammation begins in the line of newly formed bone at the upper end of the shaft of the femur. The epiphyseal cartilage, owing to the peculiar growth of the diaphysis, is cup-shaped during infancy and receives the end of the shaft of the femur within it. If pus is formed it must be directed through the cartilage, or else be deflected by it; in the latter case it will either separate the periosteum or extend downward and set up a general osteomyelitis of the shaft.

The great vascularity of the terminal cartilages of the long bones during infancy, appears to the writer to offer an easy route for the transmission of any infectious inflammatory process from the bone to the joint, whereas the almost non-vascular articular cartilages of adolescents and adults act for a long time as an efficient barrier and protection to the joint against invasion from this quarter. It is easy to see how suppuration between the shaft and epiphysis may produce a separation of the epiphysis, a condition not infrequently found. It is also easy to understand on purely anatomical grounds how a colony of pyogenic bacteria growing there may spread into the cartilage following the lymph and perivascular spaces of the vessels which nourish the ossific centre, giving rise either to an abscess which will ultimately break into the joint, or reaching and growing along the perivascular spaces of vessels which enter the head of the femur through its ligamentous attachments, may infect the joint without causing an abscess around the centre of ossification. Be it remembered that these same vessels may carry as emboli colonies of pyogenic bacteria ready to give rise to inflammation and suppuration wherever they may tarry. That is to say, any infectious juxta-epiphyseal inflammation may be expected to cause further infection through one or more of the following channels:

(1) By producing in the cartilage and ossific centre a new abscess ready to break into the joint; for example, the sub-articular abscesses described by Mr. Smith.

(2) By direct bacterial growth along lymphatic and perivascular spaces infecting the joint directly without epiphyseal abscess.

(3) Suppuration may extend downward along the shaft separating the periosteum and bone, producing secondary periostitis and necrosis, or

(4) It may extend down into the diaphysis producing a general osteomyelitis.

There is also a chance that a suppurative inflammation of the bone may find its way through the periosteum at some point outside of the capsule, and thus give rise to a suppurative peri-arthritis without synovitis. It would be hardly proper to speak of such a case as one of acute arthritis.

BACTERIOLOGY.

Considerable interest has lately been shown in the bacteria which have been found both in the bone-marrow in acute osteomyelitis and in the joint-pus of acute arthritis.

Krause in 1884 found the staphylococcus aureus in the bone-marrow, and both staphylococci and streptococci in the joint-pus, the latter resembling Löffler's diphtheria coccus. He corroborates Rosenbach's and Becker's experiments producing in animals suppurative fractures and joint lesions by injecting pure cultures of staphylococci, and sometimes producing osteomyelitis and joint abscess in animals without a previously inflicted trauma.

Littens[19] found cocci and bacilli in a suppurative synovitis following scarlet fever. L. Brieger [20] found in the joint-pus of acute arthritis both staphylococci and streptococci. Hocksinger [21] found streptococci in the joint-pus of scarlet fever. Lannelongue and Achard [22] found a streptococcus in acute arthritis which they were able to cultivate, and they finally produced with it in animals an osteomyelitis without trauma just as Krause had done with staphylococci. Together with Courmont, Jaboulet and Rodet they turned their attention to further animal experiments with the result that they believe an artificial osteomyelitis may be produced by injections of pure cultures of any of the following micro-organisms: streptococcus pyogenes, staphylococcus aureus, staphylococcus albus, Fränkel's pneumonia diplococcus, and that without inflicting any fracture of the bone, as in Becker's and most of Krause's experiments. More recently Henry Koplik[28] studied at the Carnegie Laboratory in New York the joint-pus from four cases of acute arthritis in infants, one of them beginning during the third week of an attack of scarlet fever. All had several joints affected. They were aspirated aseptically before making any incision, and the cultures were made from the aspirated pus. A form of streptococcus alone was found. Animal experiments were made on white mice and on rabbits. The mice died after a few days without joint inflammation. Streptococci could be distinguished in their blood. Rabbits reacted only to injections of pure cultures into the circulation. They usually died and most of them had pus in one or more joints together with osteomyelitis. English surgeons, like Owen and Battle, assert that staphylococcus aureus is almost invariably present and streptococcus only occasionally; Koplik's careful work on this subject would imply that the reverse may be nearer the truth.

---

[1] Read before the Boston Society for Medical Improvement, April 23, 1894.

[18] Diseases of Joints, American edition. 1886.

[19] Allg. Woch., 1884, vol. vii, No. 44.

[20] Zeitschrift für Klin. Med., 1886.

[21] Wiener Allg. Zeit., 1887.

[22] Comptes Rendus de L'Acad. de Sciences, 1890, vol. cx, p. 509.

In the case reported in this paper, Dr. C. A. Porter stained and examined two cover-glasses smeared with the pus. Numerous streptococci were found. I regret extremely that no cultures were made.

ETIOLOGY.

The etiology of the affection appears at first sight to have been very much simplified by this recent bacteriological work; one is tempted to say that whenever pyogenic organisms gain access to a baby's blood, an attack of acute arthritis must inevitably follow. There are, however, several predisposing factors to be considered. Traumatism plays a part in causing a few of the recorded cases; in one of Mr. Thomas Smith's a difficult version during the birth of the child was attributed as the cause of an acute arthritis of the hip. Another child was swung by the arm by its mother who was suffering from puerperal mania, and the shoulder-joint was affected. In another case arthritis of the knee was attributed to a fall from the cradle. There are still other traumatic cases on record, but as the hip is better protected than the knee traumatism is not so often mentioned as a cause.

Lovett[24] says, "Any injury may be enough to locate a destructive process in some one joint, or, on the other hand, so far as can be told, the disease may originate without traumatism."

Infection, of course, plays the chief rôle in the etiology, and the question of the port of entry for the micro-organisms is an interesting one. Wounds of all sorts or any lesion of continuity in the skin or mucous membranes may offer the necessary access for infection. Among the cases on record such lesions are rarely mentioned. Ulceration at the umbilicus occurred in one of Townsend's and two of Koplik's cases. It was also present in some of those at the Hospital for Sick Children in London. A pre-existing empyema also occurred twice. It is, of course, frequently impossible to ascertain the port of entry.

In the exanthemata and in all the acute infectious diseases pyemic infections are not unusual, and acute destructive joint-disease occurs both in older children and in babies. Acute arthritis of infants is one of the forms of this infection and several recorded cases are traced to chicken-pox, variola, measles and scarlatina, and finally parotitis and typhoid fever.

The definite etiological character of these joint affections is still obscure. Those of measles and scarlet fever are said to resemble each other. Roswell Park[25] reminds us that the common form of scarlatinal arthritis is not purulent. It appears as a simple synovitis, an over-secretion of synovial fluid. It is possible for the capsule to become so much distended that a chronic hydrops may result with more or less flail-joint. Gutterbock once saw in a seven-year-old girl a spontaneous dislocation of the hip from this cause, and Park also had a similar case, but this is rare.

Marie Raskin[26] has found streptococci in abscesses complicating scarlet fever in older children, also in cultures made of the pus from their joints, whereas in the pus from the discharge from the middle ear she found both staphylococci and streptococci mixed. She concludes that the chain-cocci are the active agents in secondary purulent infection after scarlatina, but that they have nothing to do with the fever itself, and their probable ports of entry are the inflamed tissues of the throat.

Roswell Park speaking of affections of the joints and bones occurring in typhoid fever, says: "Inasmuch as this topic has been of late carefully studied as to its biological aspects, we may now say that there is no such thing as post-typhoidal rheumatism of bone or joint, but all such cases are to be ranked either as primary or mixed infections whether occurring in bone or in joint cavities, and that while in a few instances the pus therefrom has been found to be almost a pure culture of typhoid bacilli, the majority of these cases are genuine mixed infections."

I have so far failed to find any bacteriological classifications of the arthritis of varicella, variola and parotitis.

The pathology of all of these joint diseases is still obscure, but it is probable that when purulent they are due to a secondary pyogenic infection, that the typhoid bacilli or the other specific micro-organism may produce some change which either facilitates the growth of the secondary pyogenic cocci, or else lessens the infant's capacity of elimitating and destroying them.

Two other diseases are said to cause acute arthritis in infants, or at any rate a joint affection so like to it that their clinical recognition may be very difficult — tuberculosis and inherited syphilis. Two suppositions are possible in regard to them; either the tuberculous or gummatous granulomata, may grow in the diaphysis close to the epiphyseal line, and there give rise to the same inflammations as in older children (only more acute owing to the great vascularity and rapid growth of the infant's bone), and lead eventually to a suppurative synovitis; or secondly, these diseases may act as a predisposing cause to render the infant less able to eliminate and destroy pyogenic micro-organisms in the blood. All that I have been able to find in regard to the co-existence of syphilis and tuberculosis with acute arthritis, is that a tubercular or syphilitic history has been obtained in several cases from the parents, and that once or twice skin affections, presumably due to syphilis, have been seen on the infant; also in regard to tuberculosis, empyema and a serous pleurisy have been known to precede or accompany infantile arthritis. Judging by the clinical records alone, in the absence of pathological data, tuberculosis and

---

[23] American Journal of Medical Sciences, April, 1892.

[24] Etiology, Pathology and Treatment of Diseases of the Hip, Boston, 1891.

[25] Mütter Lectures, Philadelphia, 1893.

[26] Centralblatt für Bact., 1889, 5, p. 286

syphilis must be considered to exert at times a predisposing influence in the production of some cases, but it is at present impossible to define more clearly in what proportion of cases this is true.

Finally, it must be remembered that an acute serous synovitis, changing rapidly into a suppurative one, may give rise to precisely the same symptoms and physical signs as a local osteomyelitis rapidly followed by suppuration of the neighboring joint, especially in little babies, and that the acute diseases just mentioned, — chicken-pox, measles, scarlet fever, small-pox and typhoid fever, — may cause a simple serous synovitis as well as an infectious one with or without osteomyelitis.

To recapitulate, the primary causative factor in acute arthritis is to-day believed to consist of an acute infection of pyogenic micro-organisms. This infectious matter may enter through any damaged surface of skin or mucous membrane or any subcutaneous phlegmon. Other predisposing causes may also exert an influence. Of these traumatism acts principally to determine in which joint the affection shall manifest itself. The injury may be a slight one, and traumatism acts less frequently in the hip than in the more exposed joints. The infectious diseases, scarlet fever, measles, chicken-pox, variola, typhoid fever and parotitis may accompany or precede an attack of acute arthritis; their rôle is still very imperfectly understood, and the same may be said of tuberculosis and syphilis. They may act either in making easy the entrance for the pyogenic germs, or in reducing the patient's capacity for destroying and eliminating them. Since specific germs of typhoid fever have been found during the fever, both in osteomyelitic marrow and joint pus, it is possible that the typhoid bacillus may occasionally be a pyogenic factor. Tuberculosis and syphilis may predispose to the affection. An acute infectious suppurative synovitis without lesion of bone may also simulate very closely what is usually regarded as the ordinary form of acute arthritis.

CHEMICAL IMPORTANCE OF THE PTOMAINES OR CADAVERIC ALKALOIDS IN MEDICO-LEGAL ANALYSIS.

WM. B. McVEY,

Pharmaceutical Chemist, Professor of Chemistry in the College of Physicians and Surgeons, Late of Chemical Department Boston Dental College.

THE great advancement that has been made in physiological chemistry of late years has materially affected some of the views formerly entertained by our older investigators, as the result of the actual experiments of the many workers in that important field of scientific research has added much to the work of the toxicologist. It is at present a well-known fact, that the excretions of all living things contain substances that are poisonous to the organism which secretes it. Thus, for example, a person may be carefully dieted, and allowed to drink only absolutely pure water, eat food of the very best quality, and breathe the purest air, yet in the excreta can be and has been found poison. Now where does this poison originate, and what are its effects on the system in its various transformations? Is the presence of such poison and its products not easily mistaken, in cases of medico-legal analysis, and liable to cause error on the chemist's part, by the use of certain tests, to ascertain the presence of the poisonous vegetable alkaloids? "Especially as the quantity operated on is usually small," by the presence of these he might be unconsciously led into error. There is abundant evidence that such has been the case; and possibly some innocent life may have been sacrificed by the finding of poison that was due to natural causes, and which already existed in the body or originated after death by the processes of putrefaction, which, by the delicate color-reaction tests, may have been mistaken for that of administered poison of the vegetable alkaloids. But, fortunately, the chemical analysis was generally regarded in former years as a link in the chain of evidence; and as the art of poisoning by organic alkaloids is of a comparative recent origin, it requires little or no comment as toxicologists have thoroughly proven themselves equal to the difficulty.

In the recent celebrated Dr. Meyer poisoning case, in which I was associated with Professor Witthaus as defence chemist, during the second trial, we found that Dr. Meyer and his vile associates were not familiar with the use of alkaloidal poisons. The dreadful vocation of poisoning in every other form was familiar to them; and Chicago Jack when on the witness stand surprised all by his cold-blooded testimony. "He said that he had suggested to Dr. Meyer, that he should use nitro-glycerine to accomplish his purpose, as it was in his experience the best drug to use, because a chemist could more easily be deceived by it. He stated that the way to work it was to engage a boat on a warm day, entice the victim to go for a row, give him a drink of whiskey dosed with nitro-glycerine, and then set him adrift; when discovered dead, they would pronounce it a case of death from sun-stroke. He had practised the use of different poisons on poor tramps in the slums of Chicago, and the nitro-glycerine was the surest and best." Yet by turning State's evidence, this wretch enjoys his freedom in this free land.

The microscope has revealed to us the size and shape of the various cells of which our bodies are composed; but in the study of these elements of life, we must not be forgetful of the fact that they have a chemistry as well. The life of the cells is influenced by their surroundings. They grow, and perform their allotted work, when supplied with the proper pabulum, and become injured when the product of their own activity collects around them. This poison, therefore, originates in the metabolic changes, which splits up the organic molecules into their simpler parts, the final result being urea, ammonia, water and carbon-dioxide. That during this process of change some of the intermediate products are highly poisonous, is already well established. The difference in quantity and quality depends on the nature of the proteid acted on, and the force with which the action takes place. The human body resembles a colony of fungi or cells, which, when their functions are not interrupted, are normal, so to speak. Each cell changes its environments into itself and the products of its secreta. Thus our whole body really lives by the joint ferments of its structure, each cell, or group of cells, supplying its special functions. Any cause by which the cells are prevented from doing their allotted work produces disease, the study as to the causes of which has of late assumed great importance. As the methods of many of the pathogenic bacteria are due to the production of this form of poison, and as it is found to exist in the dead body, it has received the name "Ptomaine." All putrefaction is now considered due to the action of bacteria. The results of the growth of these organisms form a very complex class of substances which are known as ptomaines, or cadaveric alkaloids. They are produced from albuminoid substances by the influence of putrefactive decay. Unfortunately, they bear a very marked resemblance in many ways to the class of substances known as the vegetable alkaloids, both in general character and chemical behavior. There has been separated up to the present time about sixty separate ptomaines. Each of these has been so thoroughly studied that its respective chemical formula is already known. Some are intensely poisonous, while others are inert. I will not attempt in this short paper to enter minutely into the special actions and the respective tests allotted to each, by which each can be recognized without doubt, but will present to you the method by which these ptomaines can be isolated, and arrange these into classes according to their behavior and solvents, and also give some of the individual tests whereby, in the same solvent, the identity between ptomaines and vegetable alkaloids can be established.

These ptomaines, or cadaveric alkaloids as they are sometimes called, possess all the characters of the vegetable alkaloids, are alkaline in reaction, and combine with the acids and form salts. Some are liquid, some solid, others crystalline. Some are very poisonous, while others are not. Their behavior towards the general reagents for alkaloids is similar to that of those used for the vegetable in many respects. From their very origin, there is great difficulty in the separation of these cadaveric alkaloids or ptomaines, on account of the complex nature of other substances and the great numbers associated in the decomposing mass. Many methods have been devised, but the one most commendable is as follows, which has been used with success by that famous Italian investigator, Professor Selmi, and others.

SEPARATION OF THE PTOMAINES.

The material is divided as finely as possible and placed in a suitable-sized flask, to which is added twice its volume of ninety-per-cent. alcohol. If not already acid, acidulate it with *tartaric acid*, and from time to time see that it is acid in reaction. This flask is now connected with a reflux condenser, placed on a water-bath, and kept at a constant temperature of 70° for twenty-four hours. The warm liquid is then transferred to a special apparatus for filtering by the aid of atmospheric pressure. The liquid is poured on a damp cloth, placed on a perforated porcelain funnel, which is connected below with a receiver, from which all air has been exhausted by an aspirator, thus securing rapid filtration; and by the repeated washings, the mass is thoroughly exhausted. This acid alcoholic liquid is now transferred to the following apparatus. A tubulated retort, of suitable size is connected to a tubulated receiver, by means of a suitable cork covered with membrane to exclude air. In the tubule of the retort a small perforated cork is placed, through which runs a glass tube extending near the bottom and finally drawn out at the lower end. The tubule of the receiver is connected with a Liebig bulb, containing dilute H_2SO_4 (1 to 10) and the bulbs are connected with an aspirator, by which means a fine current of air is drawn through the liquid and keeps it constantly agitated. The retort is kept on the water-bath at a temperature of 28° to 30°. The receiver is kept cool by a current of water passing over it. In this way the distillation of alcohol goes on rapidly, and decomposition is so far prevented that volatile bases are never found in the bulbs. The aqueous extract, after the removal of alcohol by the distillation, is filtered and extracted with ether as long as anything is dissolved. It is then mixed with powdered glass and evaporated to dryness *in vacuo*. This residue is repeatedly extracted with alcohol, and the alcohol is again distilled by the process above described. The residue is then taken up with distilled water, and filtered; then it is made alkaline with sodium bicarbonate, and repeatedly extracted with ether, benzine and chloroform. Now, in order to obtain the base extracted by these solvents, if bulky, the greater part may be evaporated on the water-bath, and the remainder allowed to spontaneously evaporate. By this process a great many ptomaines or cadaveric alkaloids have been separated, studied and identified.

The following is a tabulated statement of these ptomaines, which have been arranged according to their behavior to solvents; and the action of some of the respective tests as compared with those of vegetable alkaloids.

FIRST CLASS.

This includes ptomaines which pass from *acid* solution over to ether.

General Tests.

(1) Tannic acid.
(2) Iodo-iodide potass.
The action of the first two tests gives similar results to those obtained from natural vegetable alkaloids.
(3) Chloride of gold.— No precipitate.

On evaporating four or five drops of aqueous solution, the addition of three drops of Hcl and one drop of H_2SO_4 gives, on warming, a beautiful violet color. Nitric acid colors it yellow.

Ptomaines of this class might be mistaken for digitalin which is also taken up by ether from acid solutions.

Digitalin.

Evaporate to dryness and treat with H_2SO_4.— A rose color turning mauve with vapor or bromine.

SECOND CLASS.

Ptomaines which pass from an *alkaline* solution over to ether. This group gives various color reactions and forms crystalline products. The physiological test produces short dilation of the pupils and diminishes the frequency of respiration. With the following test may mistake morphia.

Ptomaines.

(1) Iodic acid.— Decomposes.
(2) Phospho-molybdic acid.— At first a violet changing to a blue color reaction.
(3) Plat. chloride.— A precipitate.

Morphia.

Iodic acid.— Decomposes.

THIRD CLASS.

Ptomaines not soluble in ether but soluble in chloroform as obtained from *alkaline solutions*. All the bases of this group are strongly acid and possess a pungent, bitter taste. They decompose very readily on evaporation of chloroform, even at a low temperature.

Tests.

(1) Iodic acid.— Reduces all the bases of this class.
(2) Iodo-iodide potass.— Produces crystaline products.
(3) Sulphuric acid.— A red color.
(4) Frohdes reagent.— A red color.

FOURTH CLASS.

Ptomaines insoluble in ether and chloroform, and which readily pass from *alkaline* solutions over to amylic alcohol tests.[1]

(1) Hydriodic acid.— Long needle crystals.
(2) Amylic alcohol.— A base which does not reduce iodic acid and gives no color with the usual tests, and which makes a mistake with plant bases impossible.

WARNING.

Morphine.— Can also be in this class.
The color tests and all known tests for it should be applied.

FIFTH CLASS.

Ptomaines which are not extracted by either ether, chloroform or amylic alcohol, but which are soluble in water and almost tasteless.

(1) With sulphuric acid.— No color reaction.
(2) Chloride of gold.— Gives no precipitate.
(3) Chloride of mercury.— Gives no precipitate.
(4) Hydriodic acid.— Gives no precipitate.

It is, of course, necessary that the solvents and all materials used in extracting, and the reagents, should be absolutely pure. In separating and isolating the ptomaines from the vegetable alkaloids a good microscope is indispensable, as the crystals formed by the latter are very marked. When one considers that in some cases not more than two or three drachms of fluid are available for chemical analysis to determine the presence of the different poisons, he will have some idea of the importance of the delicate nature of the work of the toxicologist.

◆

Medical Progress.

RECENT PROGRESS IN OTOLOGY.

BY CLARENCE J. BLAKE, M.D., BOSTON.

THE HEARING OF NEW-BORN CHILDREN.

ACCORDING to Preyer, who has made some of the more recent researches upon the hearing of new-born children, it is possible, during the first two hours following birth, to make loud sounds, such as the clapping of the hands close to the ear, shouting and the like, without producing any evident reaction in the child; in other words, there exists in the newly born a physiological deafness which lasts until about the fourth day.

For the purpose of exact comparison with these results, Dr. Poli [1] has made a series of investigations in twelve new-born children, one delivered at the seventh month and the others at full term. The examinations of the children were made during the first three days of life, and preferably during the first five hours. In one case the test was made at the moment of the expulsion of the child. The result showed that the children born at full term were fully capable of perceiving during the first moments of life all such auditory excitation as would be produced by whistling, tapping and similar high-pitched sounds. The reaction obtained varied from a simple contraction of the eyelids to slight muscular movement extending over the whole body. High-pitched sounds were those first perceived. In the case of the child born before the full term sounds made under the most favorable conditions produced no reaction whatever.

The difference in the results in degree in the individual cases depends probably upon the condition of the sound-transmitting apparatus the fact being that the gelatinous mass which fills the tympanic cavity does not change immediately after birth, but remains a greater or less length of time, and in the case above mentioned of the infant born before the full term it did not disappear until the twentieth day. If, therefore, the existence after birth of a period of physiological deafness is admitted, it is probably to be explained by an obstruction to the passage of sound waves through the middle ear, and not by an early deficiency in the sound-perceiving apparatus.

THE EXTRACTION OF FOREIGN BODIES FROM THE EXTERNAL AUDITORY CANAL.

The subject of the extraction of foreign inanimate bodies from the external auditory canal is one which occasionally becomes of considerable individual importance; and the following contribution by Dr. Ziem [2] is of interest, both because of the novelty of his methods and because of his confirmation of observations made in this country on the extraction of foreign bodies by rotation of the auricle. A boy eight years of age had put a pea into the ear, and previous attempts at extraction by means of a hook had been unsuccessful. On examination there was found to be a considerable swelling of the skin of the canal engaging the foreign body in such a manner as to make its immediate removal by syringing impossible. Under these circumstances, resort was had to the procedure recommended by Voltolini,[3] which consists in making, by means of the galvano-cautery an opening in the pea or bean for the purpose of decreasing its dimensions. Although the cauterization was very slightly made in Ziem's case it caused an amount of pain greater than that mentioned in any of Voltolini's observations, and the resultant heat in the canal was so strenuously objected to by the patient, although the cautery was confined entirely to the surface of the pea, the skin of the canal not being touched even, that it was necessary to suspend further attempts at extraction and the patient was ordered simply to use instillations of almond oil for the purpose of decreasing the swelling in the canal, and to report later. On the following day, the father of the patient, an intelligent man, reported that the foreign body had made a rotary movement in the canal, and the accuracy of this statement was evident when, upon examination under good illumination, it was found that the spot burned upon the pea showing as a black mark against the light surface, and made directly in the centre of the canal, had turned toward the posterior wall to such a degree that it would have been impossible to repeat cauterization of the pea at the same spot without burning the skin. The cautery was therefore applied at another point on the pea, and the instillations of almond oil were repeated. On the following morning the pea was found so near the orifice of the canal that it was easily removed by means of a hair-pin.

In reference to the mechanism of the rotation and spontaneous displacement of the pea as observed in this case, the following points should be considered:

(1) The cauterization caused a shrinking of the pea, which thus became in a measure disengaged from the swollen walls of the canal.

(2) The use of the oil caused a decrease in the

---

[1] L'ouie des nouveau-nés, par C. Poli. Arch. ital. di otol., etc., 1893, fasc. 4.

[2] Note sur corps étrangers du conduit auditif, par C. Ziem. Annales des Maladies de l'Oreille, du Larynx, tome xx, No. 6.

[3] Die Anwendung der Galvanokaustik, 1892, p. 297.

swelling of the canal walls and still further contributed to the ultimate liberation of the foreign body.

(3) The muscular tissue of the canal is principally developed in the tragus and antitragus, as shown by the anatomical investigations of Tataroff,[4] who says that the movement of these small muscles is one of retraction of the canal, and this being confirmed by the observation that on voluntary muscular contraction there is a rotation of the tragus on the frontal axis of such a character as to contribute an upward movement to the anterior superior portion of the canal, it is evident that this movement served to turn and extrude the pea after the swelling of the walls of the canal had subsided.

LIVING LARVÆ IN THE HUMAN EAR.

A further contribution to the subject of living larvæ in the human ear is made by Dr. D'Aguanno[5] in the report of two cases, both of which are here cited.

A boy, eleven years of age, had complained for four days previous to the examination of violent pain in the left ear accompanied by a bloody discharge. There was no history of injury which could account for these symptoms; the pain was almost continuous, desisting only at long intervals. The child was much agitated, and kept quiet only with effort. Under good illumination the bottom of the external auditory canal, the walls of which were covered with blood, presented to view two whitish bodies somewhat translucent, which by their color and their immobility suggested epidermal desquamation. Following a thorough syringing with warm water a second inspection showed the whitish body to be a moving larva, which was easily extracted by means of the forceps: the larva was fusiform in shape, about a centimetre and a half in length, and three millimetres in diameter, its head terminating in a black point. After still further syringing, a second larva was seen in motion at the bottom of the canal, and was also easily extracted. The membrana tympani was congested over its whole surface, as was also the inner end of the canal, which showed a number of small bleeding spots; there was neither cerumen nor pus in the canal. On examination, the larvæ were found to be those of the musca canaria sarcophaga.

The second case was that of a child, nine years of age, who had been complaining for about four days of considerable pain in the left ear, accompanied by a sanguineous discharge. On the day preceding his visit, the mother on looking at the ear had seen something white in the canal and had extracted it by means of a knitting needle, but the discharge of blood continuing and the pain increasing and being accompanied by fever, the child was brought for inspection. Examination showed at the bottom of the canal in the midst of the blood, which very nearly filled it, a whitish moving substance, which successfully resisted all attempts at its removal by means of syringing, and when an attempt was made at extraction by means of the forceps a quick movement on the part of the child disengaged the instrument and the larva disappeared into the niche formed by the inner end of the canal and the anterior inferior portion of the membrana tympani. Fumigations with tobacco which were immediately undertaken had no effect in dislodging the larva, and syringing through the Eustachian tube was impossible on account of the intolerance of the child. The patient, therefore, was placed upon the side with the affected ear downward, and the larva being unmolested for half an hour came out into the canal, was easily extracted, and was found to be of the same form and dimensions as those previously removed. On the following day the child was quiet, the fever had disappeared, both the pain and the bloody discharge were decreasing, the inflammation of the external auditory canal had subsided, and there was visible only, upon the surface of the membrana tympani, such abrasions of the epidermis as might have been caused by the hooks of the larvæ.

DISTURBANCE OF HEARING DUE TO HYSTERIA.[6]

Disturbances of hearing which may be referred to as hysteria have always been considered as rare manifestations of this neurosis. This is, however, an apparent rarity only, if one may judge by the number of cases collected by Grandenigo for a work now in course of publication. Of the two cases reported by Cartaz, the first is the more interesting. A young girl sixteen years of age had neither spoken nor apparently heard for the two days previous to the professional visit. She was well developed and had begun to menstruate three years previously; but this function was at first irregular, and she was occasionally at the time of the periods subject to attacks of torpidity with a tendency to weep without cause. Two days previously, in the evening, following an animated discussion with a school friend, she received on the left cheek, as a sequel of the argument, a vigorous blow. Stunned apparently for an instant, she quickly collected herself, and without a word went home, where, upon arriving, she burst into tears. Her mother spoke to her without obtaining a response, and the patient made movements of the lips as if to speak, but without uttering a sound. She also appeared not to hear what was said to her, went to bed and slept soundly during the night. On the following morning the deafmutism was as complete as on the previous evening. The patient made signs, and wrote on paper the following words: "I am deaf; I cannot speak. M. (giving the name of her school friend) struck me." The day passed without any disturbance or evidence of any special nervous symptoms; the patient had very little appetite and desired to be let alone; her attempts at speech were ineffectual, there being no emission of sound with the movement of the lips; but her intelligence remained unimpaired, and she responded normally to communications made in writing. Careful tests showed that she was absolutely deaf; she could hear neither the watch, the voice, nor the tuning-fork. Conversation was carried on in writing; and the patient stated that she suffered no pain, that she could not hear what was said, that she could not speak, and that she had a great deal of lassitude. The examination showed a total hemianesthesia of the left side. There was no evidence of injury to the ear, either in the auricle or in the external canal. The membranæ were of normal color and position. The left ear was as completely anesthetic as the skin of that side; the sensitiveness of the right ear was normal; there was very marked anesthesia of the pharynx and of the soft palate on both sides. The case was evidently a hysterical manifestation as the result of a shock and of the emotion which preceded and followed it. In answer to the written statement that she could be relieved, she wrote, "I will do anything that may be required of me in order to recover." The patient was very intelligent and responded readily, always in writing, to the questions which were asked her and to the directions which were given her, also in writing. An electric current of slight intensity was applied to the pharynx, the other pole being applied to the neck, when the patient immediately said in a clear voice, "You are hurting me." She was instructed in writing that it was necessary to be patient, and was again assured that she could be relieved. Either as the result of suggestion, or of the irritation of the galvanic current, the patient again exclaimed, and declared that she could hear, as an evidence of which she responded readily in conversation. The patient recovered rapidly and definitely. A hydrotherapeutic treatment was advised, and there was no recurrence of the hysterical attack.

---

[4] Archiv. fur Anatomie, 1887.

[5] Larves vivantes dans l'oreille. Annales des Maladies de l'Oreille, du Larynx, tome xx, No. 8.

[6] Deux cas de surdite hysterique, par M. Cartaz. Société Française d'Otologie, session de 1894.

DECREASE OF THE HEARING POWER IN OLD AGE.

The series of investigations which have been made by Richter[7] upon the hearing powers of individuals of different ages, and which includes an extensive series of tests, is summed up so far as the decrease of the hearing power with age is concerned, as follows: There is found in old age a decrease in the perception throughout the whole scale of hearing in an equal degree, and which is shown in tests by means of the whispered voice, Politzer's acoumeter and the watch, by a corresponding decrease of the hearing distance, in tests with the Galton's whistle by a sinking of the limit of perception, and in tests with tuning-forks of all tones by a shortening of the perception of time both by air and bone conduction. In attempting to determine the location of the changes in the ear which would tend to decrease the hearing in advancing years, attention would naturally first be directed to the interference to the passage of sound waves which might occur in the sound-transmitting apparatus; and while, as is well known many changes occur, not only in the membrana tympani but in the tympanic cavity, as an accompaniment of old age, that the mucous membrane undergoes various changes, that the muscles of accommodation lose something of their energy, that the ligaments become poorer in cell tissue and richer in connective tissue, and that the articulation of the ossicula becomes the seat of chalky deposits and of other structural changes; notwithstanding these facts, the physiological results of the hearing tests point, not to an interference with the passage of sound in the sound-transmitting apparatus, but to a deeper-seated cause for the presbycousis.

EFFECT OF FEVER UPON THE HEARING POWER.

An examination of the effect of fever upon the hearing power, which has been made by Schneider,[8] under the direction of Valentin, shows that in twenty-six cases, including phthisis, abdominal typhus, acute rheumatism, pneumonia, tubercular coxitis and caries of the cervical vertebræ, there was during the onset of the fever a decided decrease in the hearing power. This decrease was, however, a variable one, and was equally observable in patients with normal ears and in those whose hearing was already somewhat decreased by localizable auditory disease. The decrease of the hearing and its variations in reference to the fever bearing the same ratio in both classes of cases, the conclusion was that the impairment of the hearing in fevers in general is not alone the result of disturbances in the sound-transmitting apparatus of the ear.

THE USE OF MENTHOL IN OTITIS EXTERNA.

Cholewa,[9] who has published a number of observations upon the use of menthol in otitis externa and otitis externa furunculosa makes a still further contribution confirmatory of his previous statements. He has now reduced the strength of his solution to fifteen per cent. and ten per cent. with results equal to those obtained with stronger applications, the pain in cases of furuncular inflammation being relieved and the swelling of the canal disappearing usually within twenty-four hours, and to guard against relapse the application of wicks saturated with a stronger solution of menthol has been continued usually for a week. The same application has also been found useful after the boils have opened, and also in cases of secondary inflammation of the canal accompanying acute suppurative inflammation of the middle ear. In cases of acute purulent inflammation of the middle ear, after performing paracentesis, the writer syringes the middle ear through the Eustachian tube with a one-per-cent. saline solution, and then inflates the ear by means of the catheter, through which is introduced a few drops of a ten-per-cent. oil of menthol. The external auditory canal is then carefully dried and a dry menthol glycerine wick introduced as far as the membrana tympani, and changed once in twenty-four hours. The duration of disease in cases treated in this way averaged about eight days, and the good result is referred to the action of the menthol, not only upon the staphylococcus pyogenes aureus, but also according to Rönick and Tröie upon the streptococcus pyogenes.

NECROSIS AND SEQUESTRUM OF THE LABYRINTH.

Lannois[10] reports a case of necrosis and sequestrum of the labyrinth in a young man, twenty-three years of age, who had had a suppurative discharge from the right ear for twenty years, the original cause being an inflammation of the middle ear following scarlet fever. The discharge from the ear ceased spontaneously, and the ear remained dry for five years, at the end of which time the discharge returned, accompanied by slight pain, at which time he consulted a physician not so much on account of the ear as because of some difficulty in breathing; an examination of the chest, however, and the history of the case gave no evidence of tuberculosis. Three months later he applied for advice on account of his ear, in which he had for nine days previously severe pain, extending also over the right side of the head, and a sufficient degree of vertigo to incline him to remain in bed. On the third day of the attack he had almost incessant vomiting accompanied by fever with a variable temperature.

The discharge was found to consist of a mixture of pus and blood, and the bottom of the canal could not be seen because of the numerous granulations projecting from the middle ear; the watch was not heard on forcible contact with the bone, and he was not able to differentiate the sound of the tuning-fork, but the Rinne experiment was positive. The hearing in the left ear was normal. On the following days the pains continued as did also the fever, accompanied by chills, and the slightest movement increased the nausea and vomiting; antipyrin in concentrated solution served to diminish the pain; and, as there was absolutely no evidence of mastoid complication, the local treatment consisted in the removal of the polypoid granulations and their cauterization with chromic acid. At the end of the fifth day the patient was able to get up and to present himself in the clinic, but the improvement in the condition of the ear was slow because of the readiness with which the granulations recurred. The treatment consisted in the continuation of the installations of antipyrin, menthol, absolute alcohol and boric acid. Eight months after his first visit the patient was almost entirely relieved of the discharge from the ear, although the bottom of the tympanic cavity was slightly moist and was difficult of access because of the swelling of the canal. There was no trace either of membrana tympani or ossicles. Three weeks later the patient returned with a report of slight pain in the ear during the preceding week; after syringing, a small mass, apparently bony, was seen in the external auditory canal and carefully removed, it was found to consist of the osseous cochlea entire, including the columella and two and a half turns of the lamina spiralis terminating in the hamulus. One week later the patient returned for examination with the ear quite dry and a test of the hearing power showed that he heard both the watch and the Politzer acoumeter in contact with the bone in front of the ear and upon the mastoid. It was impossible for him to lateralize the tuning-fork placed upon the forehead or upon the right mastoid. Rinne's experiment was negative on that side.

---

[7] Richter: Vergleichende Horprufungen an Individuen verschiedener Alterklassen. Archiv für Ohrenheilkunde, Band 36, Heft 2.

[8] Schnieder: Ueber den Einfluss des Fiebers auf das Gehorvermögen. Inaug.-Diss., Bern, 1891.

[9] Cholewa: Monatschr. für Ohrenheilkunde, 1892, Nos. 3, 4.

[10] M. Lannois: Necrose et sequestre du labyrinthe. Société Française d'Otologie, session de 1894.

The interesting points in the case are, the absence of tuberculosis, the speedy recovery after the extrusion of the sequestrum, the limitation of the sequestrum to the cochlea, and, therefore, the subsequent absence of such symptoms as Meniere's vertigo and facial paralysis, and finally the apparent persistence of a certain degree of hearing power, a paradoxical phenomenon which has been observed in several other cases and has excited interested discussion. "May not," says the author, "the possibility be admitted in this case of the retention of certain portions of nervous structure pertaining to the cochlea and capable of perceiving certain sounds?" It has been supposed in some of these cases that the patient really heard with the sound ear and mentally referred the hearing power to the other side; but the patient, in this case, who was exceedingly intelligent and who had been informed of the possibility of such an error, positively affirmed that he heard both the watch and the acoumeter in the ear from which the cochlea had been removed.

PACHYMENINGITIS RELIEVED BY TREPHINING.

At the same meeting Guye [11] reported an interesting case of pachymeningitis relieved by trephining. The patient was a young man, sixteen years of age, with an acute otitis media following influenza, whose treatment included paracentesis of the membrana tympani, removal of hypertrophied tonsils, opening of the mastoid, removal by curetting of pus and granulations from the cells, and who was finally discharged with normal hearing. Four weeks later the patient had slight fever and occipital pain, accompanied by tenderness both on pressure and percussion in a spot about five centimetres above and behind the ear, both the ear and the mastoid remaining normal; this condition of things lasted for two and a half months with little or no change, at the end of which time the skull was trephined at the spot of greatest tenderness and only a somewhat hyperemic dura mater found; but from the day of the operation the abnormal symptoms entirely disappeared, and at the time of the report of the case the patient had been perfectly well for a year.

Guye concludes that after the relief of the mastoiditis, even with the middle ear perfectly free from suppurative process, it is perfectly possible that a pachymeningitis externa may develop, and that this may be arrested by timely operation, and compares this case with the results of operations on the mastoid process where no pus is found, but where the operation gives definite relief. Such cases as have been described by Schwartze, as *neuralgia mastoidea*, by Knapp as *congestive mastoiditis*, the author prefers to call *mastoiditis sicca*, and reports another case of this form of mastoid disease, in which after careful chiselling no pus was found, but the entire removal of the remainder of the mastoid two months later entirely relieved the painful symptoms, although in this second operation also, no pus was found; at the time of the report three years had elapsed without return of unfavorable symptoms.

At the third meeting of the German Otological Society, Kessel [12] read a paper on the subject of

ANTERIOR TENOTOMY OF THE MUSCULUS TENSOR TYMPANI AND MOBILIZATION AND EXTRACTION OF THE STAPES.

As a result of his investigations he presents the following conclusions: (1) Good results are to be expected from these operations only when the perceptive power of the ear remains unimpaired both for pitch and intensity. (2) By means of an anterior tenotomy in cases of intact nervous apparatus and movable stapes, there is no appreciable disturbance of accommodation and the hearing for the whispered voice was about twenty-five metres, the musculus stapedius regulating the tympano-labyrinthine resonance apparatus. (3) With excision of the membrana tympani, malleus and incus in cases where the tympanum was free from special pathological changes, the stapes movable and its muscle normal, the whispered voice was heard at a distance of ten metres on an average. (4) In the cases of extraction of the stapes, the whispered voice was heard at a distance of eight metres only under favorable conditions, and varied considerably with the changes in intra-labyrinthine pressure, it being necessary to provide an artificial substitute to reproduce mechanically a source of labyrinth pressure.

Miot,[13] in a paper on the mobilization of the stapes, gives the conclusions at which he has arrived as the result of his recent observations, and which still further confirm the statements made in his original paper on this subject: (1) Mobilization of the stapes is often the only means for modifying certain pathological conditions which resist all other treatment. (2) To obtain the best results it is necessary to observe carefully both the indications which made the operation apparently justifiable and the rules appropriate to the method of operation. (3) Under proper aseptic conditions no complication need be feared, occasionally the patients complain of a temporary increase of the subjective noises. (4) The mobilizing treatment following the operation and good hygienic conditions are necessary to the best ultimate results.

---

[11] Guye: Ein Fall von Pachymeningitis externa ex otitide durch Trepanation geheilt.

[12] Kessel: Referat uber die vordere Tenotomie, Mobilisirung und Extraction des Steigbugels.

[13] M. Miot: Quelques remarques sur la mobilisation de l'etrier.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

JAMES G. MUMFORD, M.D., SECRETARY.

Regular meeting, Monday, May 7, 1894, Dr. H. W. Williams in the chair.

Dr. William B. Hills read a paper on

CHRONIC ARSENICAL POISONING: ANALYSIS OF 260 SPECIMENS OF URINE.[1]

Dr. E. S. Wood: I am very glad Dr. Hills has put upon record his very interesting cases. In reference to the diagnosis of chronic arsenical poisoning by the examination of the urine, it is to be borne in mind that the examination of the urine is exceedingly valuable in many cases of acute poisoning, that the urine shows the presence of large quantities of arsenic very quickly after the ingestion of a poisonous, or of a therapeutic dose not poisonous, of arsenic. That was well illustrated in a case of mine that Dr. Hills referred to where Professor Shattuck gave the patient small therapeutic doses; during the first month following the last dose of arsenic the urine contained quantities which were larger than one-tenth of a milligramme in the litre, and it has been my experience in all cases after the ingestion of Fowler's solution, or of arsenic in other forms as a drug or as a poison, that it required just about one month to bring the quantity of arsenic in the urine down to one-tenth of a milligramme per litre. This I have had an opportunity to observe in a good many instances after taking Fowler's solution, and in some cases after the ingestion of white arsenic in toxic doses, and in one or two instances after the ingestion of toxic doses of Paris-green. After the lapse of one month after the last dose elimination goes on very slowly, and was complete in the only case of a poisonous dose that I have had the opportunity to follow out, in ninety-three days after the ingestion of the dose. I would like to confirm the statement Dr. Hills made in regard to the necessity of being able to control the surroundings of the patient. You cannot study the elimination of arsenic properly unless the patient can be controlled; and in all three of the cases of mine that Dr. Hills referred to, the patient was in the Massachusetts Hospital, under conditions which were free from arsenic, as was shown by the arsenic disappearing completely from the urine of all three. Since then I have followed the urine in cases of chronic poisoning in two other cases in the hospital. In one the analyses were not sufficiently frequent to have the record of any value. The other case, however, is one which is valuable to put upon record with the other cases of the exact time required for the complete elimination of the arsenic. I think Dr. Shattuck has already referred to this case in a paper read in Philadelphia. It is a case where the source was presumably wall-paper, but there may have been other sources; at all events the wall-paper upon the sleeping-room of this patient contained 0.03 mgm. of arsenic to the square inch of paper, which would make thirty-nine milligrammes to the square yard. The chances are there were other sources besides the wall-paper. The patient's urine contained, when he entered the hospital on January 31st, or rather a few days later, about 0.03 mgm. to the litre; it continued to contain arsenic until April 24th, exactly twelve weeks from the date of his entrance. This would seem to show, that in cases of chronic poisoning the time required for the elimination of arsenic is not so very different from that required after the ingestion of large doses. In the case of acute poisoning referred to, ninety-three days, and in this chronic case eighty-four days, were required for the complete elimination of the arsenic.

In regard to the various sources of arsenic, it is almost impossible to trace them, as Dr. Hills has said. I had a very good illustration of this in a recent case, the investigation of which is not quite completed, but probably the source has been detected. The urine of two members of the family was examined, and found to contain in each case about 0.03 mgm. per litre; later, an examination of the urine of two children in the same family showed the same quantity of arsenic. All of the sources of arsenic supposed to be possible were removed, and four weeks later an examination of the urine of both of the patients first examined, showed an increase from 0.03 mgm. to 0.05 or 0.06 mgm. per litre. This I could not explain at the time; but learning that a good deal of complaint had been made of the odor of coal-gas coming from the furnace, I examined some of the dust from the hot-air chamber and found it to be very arsenical indeed. The entire heating apparatus was then changed, but sufficient time has not yet elapsed to say whether or not the arsenic has entirely disappeared. Since then I have examined the dust in the hot-air chamber of a furnace in a house occupied by a person in whose urine arsenic had been constantly present for more than a year, and found a large quantity of arsenic in the dust in the hot-air pipe. This was presumably the source, since no arsenic could be detected in the house, wall-paper, carpets, etc.

Recently I have had occasion to examine the urine of two individuals of a family, husband and wife, the husband's urine having been found to contain 0.1 mgm. to the litre; and in order to find out whether the source of arsenic was probably in the house or at his place of business, he being engaged in a business where more or less arsenical materials were handled, although these were not in the room which he occupied, but in another part of the establishment, I requested to be allowed to examine the wife's urine for arsenic, although there were no symptoms in her case. I found to my astonishment that her urine contained also 0.1 mgm. of arsenic to the litre, which is an illustration of what Dr. Hills has said, that of two persons subjected to the same influences, one may show symptoms and the other not; though in both of the above cases there was evidence of marked renal irritation.

In connection with the subject of renal irritation, without having collected the records of my analyses, I am very sure that my records would bear out Dr. Hills's statement in regard to a large number of patients whose urine contains arsenic, and having an irritation of the kidney. That I have already referred to it in another paper read before this Society and already published, arsenic being mentioned as one of the sources of renal irritation; but there are so many other causes of that condition that it is impossible to infer that where we find renal irritation we must necessarily find arsenic also. My observations also confirm Dr. Hills in reference to the frequency with which we find in these cases of chronic arsenical poisoning a very decided tendency to a diminished quantity, high specific gravity, and concentration of the urine. These conditions tend to increase the renal irritation produced by the arsenic. I have known a few cases where arsenic is contained in the urine in which the urine was dilute and contained only a normal proportion of solids.

---

[1] See page 453 of the Journal.

Dr. Hills referred to the irritation of the kidneys continuing for a long time in one or two cases after the arsenic had disappeared. It occurred to me while he was speaking, that that might be placed in the same category, with cases of very prolonged convalescence from irritation of the kidneys due to other causes. For instance, recently I have had under observation a case which occurred in the practice of Dr. Rotch, where the renal irritation following scarlatina has taken a very long time in convalescing — much longer than we ordinarily see. The case has been going three or four months now, and there is still a remnant of the irritation of the kidneys left, shown by the presence of abnormal blood corpuscles and renal cells, and very rarely a cast with these elements adherent to the cast, in the urinary sediment.

Dr. Davenport: Considering the prevalence of arsenic, I think it is to be wondered at that any of us are free from it. We live so many of us in brick houses, all the bricks of which contain arsenic. All natural iron contains arsenic. Probably there is not one furnace in the city that does not emit arsenic. We know that coal almost always contains pyrites, and thus will generally contain some arsenic. Almost every chemical that is made from unpurified sulphuric acid contains arsenic. A teaspoonful of ordinary glycerine will often contain several tenths of a grain of arsenic. A square inch of ordinary silk coat-sleeve lining will generally blacken a whole tube. In preserving our sample of urine we must see to it that it is not allowed to become alkaline in a glass which itself contains arsenic. We examine our papers and carpets, but how many examine the carpet linings. In almost every sample of the ordinary brown paper carpet lining we usually find what is considered a dangerous quantity. In all the common black cambric furniture lining I have found an objectionable quantity. The sources of arsenic are almost innumerable.

Dr. Putnam: I have been very much interested in Dr. Hills's paper. The clinical history of arsenical poisoning has gone through several very interesting phases. When we first were made acquainted, many years ago, with the observations published in this country and abroad of arsenical poisoning, I think examinations of the urine were very rare indeed, and at the same time arsenic was much more common than now in large quantities in cambrics and gauze and wall-papers. Then the urine analyses began. At first the discovery of arsenic in the urine was taken as an indication that the symptoms observed were due to arsenic. It was eventually found, however, that these small quantities of arsenic were present in such frequency that that test would not be considered a safe one. Then came the various attempts to get legislation on this subject, but it was hard to persuade legislators that this was needed, in view of the great difficulty of showing that wall papers and fabrics were responsible even for the small quantities found in the urine. The recent observations with moulds, in Italy and America, may remove this difficulty in some measure. The clinical diagnosis, it seems to me, is often very difficult to make, in the more chronic cases. The most striking clinical symptom is perhaps neuritis, but the diagnosis of arsenical neuritis is now difficult to accept without criticism, because so many different causes of neuritis in general have been discovered. It seems to me certain that arsenic may act as a contributive cause of a variety of conditions of sickness, even when present in small quantities, but in many cases its action is to be suspected rather than proved.

In the two cases I will relate the symptoms seemed at first to be very characteristic, and they are both cases which I believe on the whole to be cases of poisoning, and yet this doubt as to the diagnosis makes itself felt. One of them came to me with signs and symptoms of acute progressing paralysis of all four extremities. I hoped it was neuritis, but he had such extreme loss of power, especially about the shoulders, which is an unusual place to be affected early in neuritis, and such great muscular atrophy, that I was afraid the case was an instance of extremely rapid progressive muscular atrophy. After a time he began to improve. It was a severe form of neuritis with high degree of paralysis and atrophy. The urine was examined and arsenic found. On inquiry it was found that he had been taking arsenic for a few weeks in moderate amounts under medical advice. Dr. Wood examined the urine, and I think most of us felt that the real cause of the sickness had been discovered. Later, however, when he was nearly well, he took arsenic again, by the advice of an irregular practitioner, for the cure of asthma, but there was no recurrence of poisoning. Of course, it is not at all certain, and the experience of many of us will bear out the fact, that because a person is poisoned once he would be poisoned a second time by the same quantity. I have sometimes thought that in certain stages when the patient was fairly convalescing from arsenical poisoning and suffering mainly from the effects of neuritis, a reasonable quantity of arsenic might be a proper treatment. The fact was that the patient did not relapse, and in fact continued to improve as regards both his paralysis and his asthma. The question of other possible causes of his neuritis came up. I was entirely unable to find any. The symptoms came on in June, when the weather was pleasant. He had been out of doors, and was living in the country, free from apparent sources of contagion, and had not had any infectious disease.

The other case was that of a lady who had for a long time pains in the epigastrium for which no cause could be found. Dr. Cutler saw her in consultation, and could not discover any digestive disorder. These pains came on day after day in the afternoon. The hands were tender, and it became difficult to write. Arsenic was found in the urine at intervals for one or two years, and was referred to various papers which were removed. The symptoms finally entirely disappeared. That seemed like a first-rate case, and I believe it was. For some reason or other, however, she has again exhibited the same symptoms, and now the urine is free from arsenic ; so that I think the question of the symptomatology of this very chronic form of arsenical poisoning is not in a very satisfactory state.

In connection with the irritations of the kidney it is interesting to bear in mind the cases of arsenical poisoning from therapeutic doses of arsenic. Quite a number are on record which seem to be quite satisfactory and I collected at one time quite a number of such cases. Some of them have been reported as occurring among children who have taken arsenic. One of my friends has seen two severe cases of neuritis occurring immediately after the taking of arsenic for chorea. Dr. Osler, who had been rather inclined to disbelieve in the poisonous action of arsenic given in therapeutic doses, even very large doses, has recently reported a case where it seems to him unquestionable that poisoning occurred.

Another point is this interesting question about the possibility of persons being poisoned from the gases set free by fungi. I presume Dr. Hills referred to that point and I therefore omit doing so. It would certainly seem to be a new phase of the possibilities of poisoning from wall-paper, and it is interesting to note that an advanced student of the Medical School, Mr. Jones, repeated those experiments last year and obtained similar results. He was able to eliminate arsenic in gaseous form from wall-paper with the aid of certain of these forms of mould and paste, and found that a mouse died instantly when exposed to it. It certainly seems as if the theory was plausible that some of these volatile compounds of arsenic were more poisonous than even the arsenical dust. Of course that is a point about which I am not qualified to speak with any positiveness.

Dr. Bolles: Dr. Hills and Dr. Wood have spoken of the subject from the standpoint of the consulting chemist, and Dr. Putnam has just spoken of it from the standpoint of the physician. I should like to speak of it from the standpoint of the patient. I have had the intimate acquaintance and responsibility of a little fellow whose case has been associated with arsenic over five years, and have had in connection with the case the advice of these gentlemen who are most eminent in their respective lines. I do not propose to take the case clinically; whether his symptoms are due to arsenic or not would be a long history and a good deal of discussion. It is five years since arsenic was first discovered in his urine and associated with a series of symptoms from which he suffered, and during those five years his parents and physician have been continuous in their attempts to remove him from the influence of arsenic. Of course the primary steps were taken at once, the paper examined and what was offensive removed. His clothing has been examined in the piece and made to order during all that time, linings and trimmings as well as materials. The carpets of the house were examined, and whatever was arsenical was removed at once; draperies and carpet-linings in the same way. The ceilings of the house, after the lapse of a year or so, were found to be arsenical, and they were changed. The dust of the rooms was examined, the bedding was gone over. Not only that, but the clothing of the whole family has been under surveillance, that of the servants as well. His playthings and books from his infancy up have been carefully watched with reference to it, and large numbers of them rejected before they came into his possession. His kindergarten toys and all that sort of thing have been long ago attended to. He has moved three times from one house to another in the hope of getting free from exposures to arsenic that could not be discovered or removed. He has been five summers away from home for the same purpose, and of those five summers three have proved disastrous and associated with arsenic. During all that time there has been but a little portion in which it has not been found in his urine. At first there was considerable diminution from the removal of the papers, which contained themselves a comparatively small amount. There were a number of Paris-green boxes in the house, and various wrappings and unimportant things of that sort, that is from the point of view of value. They were early eliminated, and apparently a good deal of improvement followed; but the ceiling of the house contained a larger amount of arsenic than all these other things, and yet the removal of that did not appear to ameliorate his symptoms or the amount in his urine. Whenever the house was to be stirred up by cleaning, he was taken away, and he was not brought back till after it was done; and there was always an increase of arsenic in his urine from that cause alone. He once visited Dr. Wood's laboratory, and while I was speaking with Dr. Wood played about in it for a while. Whether from that cause or not, the next day or two he was taken ill, and an increased amount of arsenic was found in his urine. The quantity found has varied from less than one-hundredth to more than one-tenth of a milligramme. During his earlier years I think the average ran between one and two hundredths of a milligramme. This last winter, after these years of persistent care, the urine at one time presented one-tenth of a milligramme, almost the largest quantity he has ever shown. That even represents a larger amount per diem, because in his earlier years his urine was very much diminished, while of late it has been forced by flushing with water to the normal amount, so that the litre of water which is taken for examination now represents about a day's elimination, while it used to take three days to get as much. This all seems to show that the papers, etc., about the house which have been examined and rejected on account of arsenic, at least in his case, were a comparatively unimportant factor. There was no diminution of arsenic in his urine after that following the first removal of the paper borders and the Paris-green boxes of which there were quite a number about the chamber in which he spent his time. The removal of various beds from the house, curtains and furniture, stuffing, and the ceiling with its large amount of arsenic, did not appear to have any effect upon the amount in his urine, which varied from one-fiftieth to three one-hundredths. He went once to the Hoosac Tunnel, and was sick there. I do not know how much there was in his urine. The papers were found to be moderately arsenical. He went once to Milton, and was free from arsenic. He went to the Isle of Shoals two years ago. There were three analyses of the urine by Dr. Hills at that time. One specimen contained a hundredth of a milligramme two weeks before he left home, one just before he left home containing a very minute trace; then he was taken ill at the Isle of Shoals, and an examination at that time represented four times as much as he had when he left home. That curiously happened at the same time with those cases of arsenical poisoning at Salisbury Beach, or within two days of it, and there were at the same time a number of attacks of what was supposed to be cholera morbus at the Ocean House. I saw one or two of those cases and there was a great amount of depression following them. I think it has been a question whether there might not have been some arsenical source at that hotel as well as at Salisbury Beach.

In his case there have been probably one hundred examinations of the urine during the last five years with these varying results. There have been at least one thousand examinations of accessories in connection with it aside from the materials in the house, which have extended to the most remote particulars, with a result, as a rule, which has been negative. I do not know whether Dr. Hills's experience and that of Dr. Wood have been the same in other cases as in this, but the ordinary woollen fabrics which have been bought for him have never shown any arsenic, neither have those bought for other members of the family; occasionally ginghams have shown it. Quite recently he has had apparently an increase of arsenic from a gingham or some sort of print dress which has been made in his presence.

Now, there has been in his case some source of arsenic ever present in varying degree of abundance for the last five years which has not been reached by this careful and very extensive examination, and it seems to me it must come either in food or in the atmosphere of the house, perhaps from coal or gas. I think we need very much to have a case examined, not once but frequently. I think not only the coal in general, but particular kinds of coal from different mines should be examined to find the different amounts in the different sorts of coal; and also it seems to me the air from our furnaces should be examined; that coal gas and the products of combustion should be also carefully examined. This boy had one outbreak with an increase of arsenic which apparently followed the use of some coal which was in the house that his family had moved into. The coal was a soft bituminous coal, producing a great deal of smoke; the chimneys could not carry the gas off fast enough, and once there was an explosion of gas in the chimney which filled the room with smoke. A few days after that there was an ill turn and an increased amount of arsenic in the urine. Whether there is arsenic in the cannel-coal which has been used in the house a great deal, or arsenic in the coal of the furnace, has not yet been determined. I think house-rubbish is another source from which arsenic may frequently be obtained, although in his case it has been pretty carefully eliminated. In the ordinary household there come on an average, one or two arsenical boxes or packages a week from dry-goods men, etc. If these are put into the furnace or kitchen-stove, or used for kindling, it seems to me there is a source of arsenical vapor which may be absorbed and give this small amount of arsenic. In his case it is not possible, because the family have thrown away those boxes. There are certain fruits and vegetables which in a somewhat indefinite way with him have appeared at times to give an increase of arsenic in the urine — fruits, string-beans, cabbage and cauliflower. The experiment was tried with him with potatoes, with negative result. The family was supplied for eight months with potatoes raised on a new field, thoroughly plowed and cultivated without the use of Paris-green. There was no special diminution of the arsenic in the case during that time, and I cannot say there was any increase if potatoes from other sources were used. But there have been several times when it has seemed to follow certain particular messes of string-beans used. So much has this been impressed upon the family that he has not been given string-beans for two years except those raised in his own garden. There are other vegetables which his mother and nurse have found occasionally upset him in this same way. He has also for several years had apparently ill turns in the month of June about the time that Paris-green is strewed about the gardens on potatoes and various other things. The arsenic increased in his urine while tenting one summer in an open field. The nearest point where there were potatoes was one hundred and fifty feet distant, and when the potatoes were to be treated he was taken away for two days and over a rain storm, and yet after that there was a slight increase of arsenic in his urine; and I understand that a neighbor living on the other side of the potato patch had an attack of severe arsenical poisoning during that time. This particular farmer was very reckless in the matter, and put eight pounds, as he said, of Paris-green, mixed with seventy pounds of plaster on a patch of potatoes measuring perhaps one acre. In that case everything was apparently eliminated but food. The paper bills-of-fare were examined, and some of them contained a trace of arsenic; but if he had eaten two or three of them every day he would not have had more than the amount he eliminated. Now the arsenic has appeared in large quantities after removing into a fresh house and one which has been overhauled from top to bottom in the most careful way in reference to this point. It has increased every time he has been away to a summer house or hotel except one. The point I wish to bring out is this, that our present method of hunting for this small amount of arsenic is not sufficient. Usually the consulting chemist gives one or two examinations of the patient, and then a few examinations of the house make up his whole connection with the case.

Here is a case where nearly one thousand examinations have been made, and yet the point is not settled; and whether these symptoms are due to arsenical poisoning or not, there is enough reason to fear so to make it important to know where this arsenic comes from and to get some method by which the person can be at least experimentally freed from it. It seems to me the only way in which this can be done is to establish an independent scientific examination into the sources of these small quantities of arsenic; that there should be some chemist paid or induced to spend a large amount of time, perhaps a year, in the examination of all the things that surround us as we live here in our civilized surroundings. He should examine foods, not once merely, but repeatedly. For instance, let him take string-beans, which I think will often be found to have arsenic thrown on them accidentally when planted with potatoes, and examine samples from perhaps twenty lots during the season. I think nineteen out of twenty will be free, but there may be one containing arsenic enough to produce a definite effect. Different kinds of coal should be examined, so that those who are susceptible may be able to make an intelligent choice in the kind they should use. Books have not been particularly looked into by any of these investigations, and yet some of the covers of his books were rejected. Furniture comes under the general head of furnishings, and that I think has been looked into. It ought not to be overlooked that a large amount of furniture in the last ten years is highly stained light wood made to imitate mahogany, or ebony, and that the stain contains a considerable amount of arsenic. The leather of furniture and oriental rugs has not been sufficiently examined. I mention these as instances showing how little the chemist who is applied to once or twice can really tell of the absolute surroundings of a patient supposed to be suffering from this disease, and to ask the opinion of the Society as to the feasibility of some such plan as this: that there should be appointed a committee — including a member from the State Board of Health, a member from the Medical School, a member from the School of Technology — who shall superintend for the space of a year or more an examination of this sort. This committee should be provided with sufficient money to carry on a continuous series of examinations, and those who are interested in the matter of arsenic poisoning, patients who believe themselves to be sufferers from it, should be asked in the interests of the general good to contribute a sum of money for this purpose. Fortunately many of the sufferers from arsenic are among the richer portion of the community, and I think there would be little difficulty in raising what is necessary for an investigation of that sort.

THE NEW YORK NEUROLOGICAL SOCIETY.

STATED meeting, Tuesday evening, June 5, 1894, DR. EDWARD E. FISHER, President, in the chair.

DR. FREDERICK PETERSON presented

A CASE OF TABES, WITH HOMONYMOUS HEMIANOPSIA.

The patient was a man aged fifty, married, a bricklayer, without hereditary taint. He had a chancre twenty-eight years ago. Four years ago he first began to notice that his vision was growing dim, although eighteen years ago he had a transient diplopia for three weeks. He has been under observation at the Vanderbilt Clinic for a year, during which time there has been little progress in the main features of the case. He has absent knee-jerks; the Romberg symptom; sharp, shooting pains in the legs, principally the right leg; dull pain in the back; impaired muscular sense; slowness of micturition; Argyll-Robertson pupils and some optic atrophy. He has never had crises; no trophic disturbances; no girdle sensation nor anesthesia. In April, 1893, he noticed for the first time his hemianopsia. He thought it came on suddenly, but there was no accompaniment in the way of headache, faintness, loss of consciousness, nor other disagreeable symptoms. The left visual field is limited to the upper nasal quadrant; the right, to the upper temporal quadrant. Dr. Peterson said that Gowers had described a case of locomotor ataxia with a double temporal hemianopsia; but in a cursory examination of the literature on the subject he has been unable to find another reference to a case of this kind.

DR. WILBUR B. MARPLE said that when he examined the patient's eyes in July, 1893, he found the condition described by Dr. Peterson, namely, the left field was limited to the upper nasal quadrant, and the right field to the upper temporal quadrant, excepting for form, which extended over the upper nasal side. Over this area the patient recognized motions of objects, but colors, including white, were limited to the temporal quadrant. At a second examination made on June 1, 1894, the same condition of affairs were found, but the field of the right eye was somewhat more contracted, so as to be more exactly quadrantic. Dr. Marple said he recently saw a man who while coming up from a cellar, struck the top of his head violently against a projecting beam. He was unconscious for some time, and afterwards there was atrophy of the optic nerve, with lateral hemianopsia, color defects, etc. His ocular symptoms were probably due to atrophy of the nerve, which had taken place in this peculiar manner. This same explanation will perhaps apply in the case shown by Dr. Peterson.

DR. PETERSON said these cases are so rarely seen that it is difficult to suggest any explanation of the phenomena. At times we can observe certain resemblances between tabes and general paresis. In the latter affection we may have temporary aphasic defects, hemiplegia or paraplegia, which pass away; and so in tabes we may also have these transient conditions. They are spoken of sometimes as being thrombotic in character; possibly they may be the result of changes in the vessel walls.

DR. WILLIAM M. LESZYNSKY said he had never seen a case of tabes with symptoms exactly similar to those in Dr. Peterson's patient. The fact that both eyes were affected made it rather difficult to locate the lesion. He was inclined to ascribe the conditions to a peculiar form of atrophy of the optic nerves.

The PRESIDENT said that, as suggested by Dr. Peterson, the peculiar conditions in this case might be due to changes in the vessel walls, probably a syphilitic endarteritis. He called attention to the fact that the optic atrophy has been progressing very slowly.

DR. PETERSON also presented

A CASE OF PARALYSIS AGITANS, WITH TREMOR.

The patient was a man aged sixty, a wheelwright. He first came under observation in May, 1894. He has the characteristic, mask-like rigidity of the face; the attitude of Parkinson's disease is marked — the stooping shoulders, bent back, crooked elbows and knees. The hands and fingers have the characteristic position, and there is no tremor anywhere in the extremities or head. His voice has the monotony and something of the festination of the speech of paralysis agitans. There is at times a sort of propulsion in his gait.

DR. LESZYNSKY said he had seen two cases similar to the one presented by Dr. Peterson. One of these he kept under observation for a long time, and in that instance the tremor developed late in the course of the disease. The speaker referred to the fact that recent investigations have shown that the pathological changes met with in paralysis agitans are identical with those found in senility.

DR. EDWARD B. ANGELL, of Rochester, called attention to the fact that typical cases of this disease are rarely met with.

DR. A. D. ROCKWELL presented

A CASE OF BRADYCARDIA.

The patient was a young man who had been under Dr. Rockwell's observation for some months, and during that time his pulse was never found to be above forty-nine beats per minute. The patient is in fairly good health, although he suffers from some digestive trouble and is very nervous. A strong galvanic current applied directly to the neck, reduced the pulse to forty-three.

The PRESIDENT said that during the past year he had a patient under his care whose pulse averaged about fifty; occasionally it rose as high as sixty. The man had a constant feeling of dread, and was somewhat neurasthenic.

DR. LESZYNSKY said that in one case of bradycardia coming under his observation, the pulse-rate was thirty-two per minute, and the patient suddenly went into collapse. He had seen a number of instances of slow pulse in patients who suffered from the grip; in these cases the slow pulse was accompanied by high temperature. During the past winter he saw a patient whose pulse was eighty-four, and temperature, in the mouth, 104.5°; the pulse never went above ninety. In a case of Basedow's disease recently under his care, the galvanic current (four or five milliampères) applied to the region of the cervical sympathetic, reduced the pulse from 120 to 100 per minute.

DR. ANGELL said that in gouty individuals, or in those suffering from lithemia or neurasthenia, there may be a slow pulse-rate. A number of such instances had come under his observation.

The **PRESIDENT** said he had seldom been able to moderate the heart-beat by the application of the galvanic current to the neck, either in ordinary cases or in Basedow's disease.

DR. ROCKWELL, in closing the discussion, said that while his patient presented no evidence of lithemia, he was certainly neurasthenic. He had never seen any good results follow such mild applications of electricity as those mentioned by Dr. Leszynsky. It was seldom that a patient was able to bear more than 35 or 40 milliampères, applied to the neck; this patient, however, could bear 75 milliampères, and it was only then that the pulse-rate was at all affected. In Basedow's disease he had frequently seen the pulse reduced very markedly by the application of the galvanic current; other cases again were not affected by it at all.

EXHIBITION OF MICROSCOPIC SECTIONS, SHOWING WEIGERT'S NEW NEUROGLIA STAIN.

These sections were prepared by **PROF. C. WEIGERT**, and were exhibited by **DR. WILLIAM J. MORTON**.

DR. A. D. ROCKWELL exhibited

THE IMPROVED HIGH-TENSION COIL.

The interesting feature of this electrical apparatus, which the speaker said he presented in a rather crude form about a year ago, is the fact that we have in a single coil all the various lengths and thicknesses of wire which are now found so essential in the electrical treatment of certain diseases, especially in gynecology and neurology. By means of this apparatus the current can be increased from absolute zero to the maximum required.

DR. LESZYNSKY said that the majority of faradic batteries were so made that we could not graduate the current from zero, and on that account it was too strong in certain instances, not only for the purpose of treatment, but also for diagnosis.

A VERY OLD MAN. — A Frenchman now living in Russia is said to have attained the age of one hundred and twenty-six years. He was born in Paris on April 17, 1768, and has a vivid recollection of the "Terror." He joined Napoleon's army in 1798. He fought in the battles of Austerlitz and Jena, in the campaigns of Egypt and Spain, and finally was one of the 100,000 men who followed Napoleon to Moscow. — *Sanitarian.*

Recent Literature.

A Practical Manual of Mental Medicine. By DR. E. RÉGIS, formerly Chief of Clinique of Mental Diseases, Faculty of Medicine, Paris, etc. Second edition, thoroughly revised and largely rewritten. Authorized translation by H. M. BANNISTER, A.M., M.D. Utica, N. Y.: Press of American Journal of Insanity. 1894.

This is the first modern standard French work on mental diseases and their treatment to be translated into English, in spite of the fact that France has been foremost in reforming the care of the insane and well in front in advancing the science of psychiatry. This volume, crowned by the faculty of medicine of Paris, is also a worthy representative of the work of that school. Its author is justly distinguished as an observer, teacher and writer in this department, and he has given us as might be expected a model handbook, remarkable in point of arrangement and clearness. His views also are sound and advanced; and we know of but one recent work of its kind which approaches this in conciseness and fulness. Its reception by alienists will be all the more cordial from the unique fact that it is written by an alienist, translated by an alienist and, under the direction of an alienist (Dr. Blumer), printed and bound by the insane (of the Utica Asylum).

The list of the subjects touched upon or more fully treated according to their importance is surprising and unusual in a manual for instruction, and not a large one at that. It is well translated and simple in style, although we find the usual crop of new terms which is apparently indispensable to works on insanity, and the equally familiar index poorly arranged and wofully defective.

The work is well worth more critical analysis, so many are its good points as a practical text-book; but lack of space and the wish to bring a decidedly useful book promptly to the notice of instructors and students at this season, leads us to postpone for the present any further consideration of its merits.

Text-Book of Nervous Diseases. By CHARLES L. DANA, A.M., M.D. Third edition, with 217 illustrations. Post octavo; pp. xvi, 549. New York: Wm. Wood & Co. 1894.

The demand for the third edition of this work within two years helps to confirm the favorable opinion which was expressed in these columns in regard to the first edition. Notwithstanding the numerous works which have since appeared, it remains the best brief manual of the subject. To the second edition was added a chapter on general and special neurological therapeutics in which hydrotherapy, electrotherapy, vibratory therapeutics, suspension, the rest cure, and various new drugs and new methods of treatment were discussed. Although much condensed, this chapter will be found of great value. The worth of the various new drugs and methods of treatment is given in a word; and, as a rule, sufficient directions are given for their use, although a little more space might have been given to a description of some of the douches, etc., with which the general practitioner is very seldom familiar.

In this third edition only a few verbal corrections have been made.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, NOVEMBER 8, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

GENERAL CONSIDERATIONS ON ALCOHOLIC CIRRHOSIS OF THE LIVER.

Hanot, who has contributed much to the elucidation of hypertrophic cirrhosis of the liver, has recently written a monograph on atrophic cirrhosis; and as the result of an exhaustive study based on very many clinical observations, he regards "arthritism" as a necessary predisposing factor in this disease. By arthritism he understands "a constitutional state, characterized by a vitiation ordinarily congenital and hereditary of the nutrition of the connective tissues and of their derivatives, which become tissues of less resistance." He refers in illustration to the congenital debility of the cardio-vascular system in chlorotic girls, of the nervous system in the hysterical and degenerate, of the lungs in persons predisposed to tuberculosis. "From a functional and anatomo-pathological point of view," he says, "arthritism is characterized by the exaggerated vulnerability of the connective tissue with tendency to hyperplasia, to fibrous transformation and retraction."

Hanot insists that clinical cases without number confirm his view, the "stigmata" of arthritism being everywhere apparent in the cirrhotic. We will enumerate the principal "stigmata," remarking that the French make quite as much of that monster *arthritism* as we Americans do of its congener, neurasthenia: "pseudo-lipomata, acne, obesity, varicose veins, hemorrhoids, enlargements of the second phalanges, early baldness, dry cracklings in the joints, rheumatic pains in loins and limbs, asthma and atheroma."

Among the signs of cirrhosis in process of evolution, Hanot enumerates dyspeptic troubles, meteorism, constipation, urobilinuria, urobilinic tint of the integument, sometimes a bronze tint from pigmentary deposit, glycosuria after ingestion of carbohydrates, pruritus, epistaxis, gingival hemorrhages, hemorrhoids, localized edemas, attacks of diarrhea.

"As for the dyspeptic troubles, it is," says Hanot, "difficult to define the part which the hepatic disease has in their production: the stomach is likely to be modified directly by the alcoholism, or by the arthritism. Hepatic patients have a strong dislike for fats and for meat. Hyperchlorhydria is a frequent condition of the stomach in the dyspepsia of hypertrophic cirrhosis, and hypopepsia or apepsia with lactic reaction in atrophic cirrhosis."

The constipation is generally ascribed to absence of bile in the intestines, and the meteorism indicates the same lack, the bile being antagonistic to putrescence. Meteorism is an early symptom, coming before the ascites, in accordance with Portal's *jeu d'esprit*, "Les vents précèdent la pluie."

Hanot has described, under the name of "pigmentary acholia," an alteration of the bile which is secreted without the ordinary coloring pigments. This gives rise to the decoloration of the feces, and is observed in almost all the diseases of the liver. In most cases of cirrhosis, the spectroscope shows the presence of urobiline in the urine, and thereby indicates in a general way the suffering of the hepatic organ and the disorder of the biliary secretion. The bronzed tint of the skin is also due to a trouble in the formation of the biliary pigments, and is seen at its maximum in "bronzed diabetes" associated with hypertrophic cirrhosis. The alimentary glycosuria is an early and persistent symptom. The pruritus is a troublesome affection, may exist apart from any eruption, and is not peculiar to cirrhosis, being observed in other hepatic affections with or without jaundice. It is one of the earliest symptoms. Hanot does not believe that impregnation of the skin by the coloring matter of the bile is the cause; this is not yet well understood. In a certain number of cases there will be frequent attacks of diarrhea alternating with constipation, which are explained by the hypertension in the portal system, as the hemorrhages and localized edema attest the profound disturbances in the circulatory system elsewhere. Hanot thinks that the epistaxes, the gingival hemorrhages, the purpura "testify to the cell-alteration, and the perversion of its hematopoiëtic rôle."

In the pre-cirrhotic period and at an early stage of the stationary period, the liver is enlarged, "owing to congestive processes which usher in the sclerosis and the final atrophy of the organ." Many cases of cirrhosis, however, according to Hanot, are atrophic from the onset. He believes also that there is a rare form (which he was the first to describe) which is alcoholic and hypertrophic throughout its entire course. Among the later symptoms are the ascites with increased development of the abdominal veins, a dry pleurisy at the base of the right lung, anorexia, a brick-red tint of the skin, emaciation and cachexia.

The complications belong to the group of infectious diseases. The liver in its state of physiological integrity is "an advance-guard of protection against infection"; when smitten in its vitality and its function, it leaves the way open to infections. Among these, grave icterus is "the last act in the period of infection and atrophic degeneration."

Among the intercurrent infections which frequently carry off the patient, are erysipelas, pneumonia or broncho-pneumonia, infectious endocarditis, suppurative peritonitis, suppurative cholecystitis, abscess of the liver, acute infectious nephritis and phlebitis. The patient sometimes dies of "a veritable cholera" — abundant watery diarrhea, algidity, coma; Hanot refers these choleriform attacks to an infection due to the colon bacillus. Cirrhosis sometimes prepares the way for tuberculosis, the latter grafting itself on the cirrhosis.

When the patient escapes or resists any of these intercurrent affections, he is very likely to die of grave icterus, which is in fact the natural and final term of the disease. These grave kinds of jaundice are classified according to the microbe that causes them; the symptomatology is somewhat different according as the icterus is the product of this or that microbe. There are grave icteri with hyperpyrexia; there are others with hypothermia. The infection in icterus with sub-normal temperature is believed to be the coli communis; at least, this is in accordance with some very exact observations.

The liver is the great arrester and destroyer of poisons — microbic and others — according to the modern physiological school. Therefore, when its functions are invaded the organism easily falls a prey to septic agents; and hence, in Hanot's estimation, the grand therapeutic indication becomes plain, to diminish the causes of infection by intestinal antiseptics, and thus to oppose by this indirect way the progress of the disease. Here he is in accord with Bouchard and his school, who teach that more good is accomplished in this disease by intestinal antiseptics judiciously administered than by any other means.

As an effort to throw new light upon hepatic cirrhosis through that popular and universal illuminator, bacteriology, this attempt of our French *confrère* is worthy of attention. The part played by his "arthriticism," and the inevitable "stigmata" by which its presence may invariably be recognized, is rather vague and misty theorizing to the Anglo-Saxon mind. Observation continues to convince, however, that excessive alcohol injures the hepatic cells; that the less resistant the organism the earlier the effect; that when the normal hepatic secretions are interfered with, intestinal digestion is deranged, and the general system falls a prey to poisons which are otherwise unformed or excluded.

◆

DEATH FROM HYDROPHOBIA, WITH UNUSUAL FEATURES.

Joseph Hinterscher, a young Illinois farmer, who came to the New York Pasteur Institute to be treated about ten days previously, died in the Institute on October 28th of hydrophobia. So violent were the symptoms of the disease when he was taken ill on Sunday, October 21st, while walking through Central Park on his way to the Institute, that he was taken in an ambulance to Bellevue Hospital. The physicians there diagnosticated the case as one of acute hysteria induced by constant dread of becoming a victim of hydrophobia. He recovered rapidly, and on the following Wednesday was discharged, when he returned to the Pasteur Institute to continue the treatment. The next day he showed symptoms of insanity, and on Friday was again seized with convulsions more violent than in the first attack. Early in March last the patient was bitten by a dog who also bit two colts on his farm. The wound was very slight, and he thought nothing of it until five weeks afterward, when both the colts died, apparently of rabies. He was then urged to come on to New York for treatment, but refused to do so until two weeks before his death, when he was taken with a convulsive seizure.

An uncommon feature of the disease in this case was the rapidity with which the patient recovered from the violent spasms, and his apparent good health between the attacks. It is evident that treatment was postponed too long, and no conclusions unfavorable to the Pasteurian inoculations can be legitimately drawn from such a case.

◆

MEDICAL NOTES.

Reappearance of the Cholera. — The cholera, which for several weeks has been quiescent, has broken out with considerable virulence in Broussa in Asia Minor, and several fatal cases have occurred at Constantinople.

A Systematic Study of Appendicitis. — Drs. William Pepper and J. William White of the University of Pennsylvania have undertaken a systematic study of appendicitis; and the University Hospital has set aside a number of beds for their use, so that all cases of appendicitis admitted may be studied from a medical and surgical point of view throughout their course.

The Chicago Academy of Sciences. — The new Academy of Sciences building in Lincoln Park, Chicago, which has cost $104,000 was formally opened on October 31st.

The National Academy of Science. — The National Academy of Science held its sessions at the Sheffield Scientific School at New Haven, Conn., on October 30th, 31st and November 1st.

A Fatal Fire in a Swedish Hospital for the Insane. — The hospital for insane patients at Joenkoping, in Sweden, was destroyed by fire on October 30th and fifteen of the inmates were burned to death.

Johns Hopkins Medical School. — The second year of the undergraduate department in medicine opened on October 1st. There were 31 entries, making in the two years 50 students in all. Of these, 13 are graduates of Johns Hopkins University, 8 of Yale, 5 of Harvard, and the others of the smaller colleges.

Chicago Gynecological Society. — At the sixteenth annual meeting of the Chicago Gynecological Society, held October 19, 1894, the following officers were elected to serve during the ensuing year: Dr. Franklin H. Martin, President; Dr. A. J. Foster, First Vice-President; Dr. J. C. Hoag, Second Vice-President; Dr. H. P. Newman, Secretary; and Dr. T. J. Watkins, Editor. The retiring president, Dr. Fernand Henrotin, delivered an interesting annual address, after which the Society adjourned to the annual banquet. Dr. John B. Hamilton, J. B. Murphy, Health Commissioner Arthur Reynolds, Alex. H. Ferguson and others were guests of the Society.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, November 7, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 135, scarlet fever 35, measles 32, typhoid fever 44.

Medical Inspectors for Boston Public Schools. — The Board of Health of Boston has put into operation a long-considered system of medical inspection of the public schools for the purpose of checking the spread of contagious diseases. Fifty physicians have been appointed for the various school districts, with a salary of two hundred dollars a year. Each morning they are to visit the schools of their district and examine any child who is feeling ill or whose appearance is such as to excite suspicion. If the child is ill or shows suspicious symptoms, the physician is to recommend the teacher to send the pupil home, with advice to see the family physician. The authority of dismissal rests at present with the teacher, the physician acting only as an adviser. A second duty consists in the supervision of cases of contagious disease in his district. Each morning the medical inspector will receive a list of the cases of contagious disease reported to the Board of Health in his district during the previous twenty-four hours. The inspector is then to go to the houses of these patients and see whether the sick persons are properly isolated, and whether suitable and sufficient means of disinfection are being used. The following are the physicians appointed and the districts to which they have been assigned:

Drs. W. H. Grainger, Chapman district; William H. Ensworth, Emerson; Edward F. O'Shea, Lyman and Adams; J. F. O'Brien, Bunker Hill; E. M. Holden, Prescott; A. S. Knight, Frothingham; W. J. McNally, Harvard; John Duff, Warren; E. M. Greene, Bowdoin and Phillips; W. S. Boardman, Eliot; George A. Craigin, Hancock; A. K. Stone, Wells; J. M. Thompson, Winthrop and Quincy; D. A. Collins, North End Parochial; William H. Prescott, Brimmer; J. B. Blake, Franklin; H. L. Smith, Prince, Horace Mann, Mechanic Arts; C. M. Whitney, Dwight and Everett; William E. Fay, Hyde and Sherwin; William B. Bancroft, Lawrence; G. P. Morris, John A. Andrew; J. R. Draper, Shurtleff; R. M. Coal, Bigelow; E. S. Boland, Hart; William H. Devine, Norcross; L. D. Packard, Gaston and Lincoln; Timothy J. Murphy, Hugh O'Brien; R. E. Darrah, Comins and Martin; John S. Brownrigg, Smith Street Parochial School; J. C. D. Pidgeon, Dudley and Dillaway; E. F. Dunbar, George Putnam; C. D. Fillebrown, Dearborn; H. D. Arnold, Lewis; A. H. Tompkins, Lowell; H. W. Broughton, Agassiz and Bowditch; James P. Broidrick, West Roxbury parochials; H. S. Rowen, Bennett; H. E. Marion, Washington, Allston; Pitts E. Howes, Charles Sumner; F. C. Jillson, R. G. Shaw; E. T. Twitchell, Minot and Harris; J. S. Greene, Tileston and Stoughton; Robert M. Merrick, H. L. Pierce; J. T. Sherman, Edward Everett; Samuel Crowell, Mather; H. V. Reynolds, Gibson; W. F. Temple, High, Latin and Normal schools.

Death at the Age of One Hundred and Four Years. — Mrs. William Dickey, of Stockton Springs, Me., died on November 3d, at the age of one hundred and four years.

A Bequest to the Massachusetts General Hospital. — Among the bequests of the late Miss Sophia Snow, of Bath, Me., is one of five thousand dollars to the Massachusetts General Hospital.

The Lyman Prize of the Boston City Hospital. — The Lyman Prize of one hundred and fifty dollars will be given next year to the writer of the best essay on any subject relating to medicine or surgery. The prize is open for competition to all graduates of the Boston City Hospital of not more than three years' standing. Essays must be typewritten, and sent, accompanied by a sealed envelope containing the writer's name, to the Secretary of the City Hospital Club before January 20th, 1895.

The Free Hospital for Women. — The annual meeting of the directors of the Free Hospital for Women was held November 1st. The number of patients admitted during the year has been 149; of these 112 were discharged cured or relieved; five not relieved; and six died. The longest stay of any one patient in the hospital was 129 days; the shortest stay one day; and the average stay 24.6 days. The whole number of patients treated in the out-patient department during the year was 6,073, and of these 680 were new cases. The largest gift the institution has received the past year has been through the generosity of Mrs. W. B. Potter, who has given the sum of $5,000 for the endowment of a bed.

Typhoid Fever at Wesleyan University. — An epidemic of typhoid fever has broken out among the students of Wesleyan University, and ten cases were reported on November 3d and 4th. One death has already occurred (a freshman), and one of the faculty is dangerously ill. The origin is thought to be the water from an old well which has been found to be contaminated.

Bequests to Medical Charities. — The will of the late Mr. H. C. Hutchins, of Boston, makes the following bequests to medical charities: to the Massachusetts General Hospital and the Boston Lying-in Hospital, each, two thousand dollars; to the House of the Good Samaritan, the Boston Dispensary, the Massachusetts Home for Intemperate Women, and the Washingtonian Home, one thousand dollars each.

The Autopsy on the Gorilla. — The autopsy on Gumbo, the gorilla, who died last week, was of considerable interest. The cause of death was an extensive tuberculosis of all the viscera. A curious feature of the gorilla anatomy was found in a large bag or pouch in the front of the chest extending across under the clavicles and opening into the larynx. Its purpose was evidently to furnish extra wind and pressure for roaring. The appendix vermiformis was about ten inches long.

The Massachusetts Cattle Commission. — Dr. F. H. Osgood, of Boston, has been appointed a member of the Massachusetts Cattle Commission to fill the vacancy caused by the resignation of Mr. Stockbridge. During October 437 cases of suspected tuberculosis were reported, and 121 of the animals have already been killed.

NEW YORK.

The New Chambers-Street Hospital. — On October 30th a private reception was given by the Board of Governors of the Society of the New York Hospital, from one to six p. m., at the new House of Relief on Hudson Street. The House of Relief, more popularly known as the Chambers-Street Hospital, was opened on July 5, 1875, in the building No. 160 Chambers Street, an old police-station, the use of which was given to the Society by the city authorities. It served the purpose of a branch hospital fairly well for a number of years, but for some time past it has been entirely inadequate for the demands made upon its resources; consequently the Board of Governors determined to erect a larger and more completely equipped building.

During the twenty years of its existence the growth of the work of this institution has been remarkable, and the records show that last year there were 367 general-ward patients, 1,972 reception-ward patients, 22,555 dispensary patients, and 2,844 ambulance calls. From July 5, 1875, to October 1, 1894, there were 6,751 general-ward patients, 30,917 reception-ward patients, and 276,333 dispensary patients, making a total of 314,301 patients; while no less than 42,983 ambulance calls were received.

The new House of Relief has a frontage of 50 feet on Hudson Street, a side façade of 95 feet on Jay Street, and a rear one of 50 feet on Staples Street. The building is substantially constructed, has four stories and a high basement. The operating-room is of large dimensions and very thoroughly equipped in every way, and the quarters for the hospital staff and the wards for patients are commodious and cheerful. A special room has been provided for the treatment of patients suffering from sunstroke, which so often occurs in the lower part of the city; and there is a lifting device by which the patients can be quickly transferred from place to place while passing through the different stages of treatment, and speedily conveyed to the roof when exposure to the open air becomes necessary. The heating of the building is supplied by steam, and electricity furnishes the motive power for running the elevators, pumps and heating and ventilating fans. In the cellar are two large rotary fans for distributing air throughout the building, and their arrangement is such that the atmosphere of any room can be changed to any desired temperature independent of all other rooms; and in the roof space are two other larger fans, which can draw all the air from every room at the same time, or from any single room desired without disturbing that of other rooms. The atmosphere of the operating-room, by means of these fans, can be completely changed every five minutes, and that of any or all other rooms every fifteen minutes.

◆

Miscellany.

RESOLUTIONS PASSED BY THE SUFFOLK DISTRICT MEDICAL SOCIETY COMMEMORATIVE OF DR. HOLMES.

"If the English-speaking world has lost a poet, a wit and a charming writer, no less cause has the wider circle of Medical Science to deplore the death of an anatomist and a humanitarian.

"Oliver Wendell Holmes loved anatomy, and taught it with accuracy, conscientious punctuality and painstaking skill. Those of us who have listened to his instructions can never forget his flow of descriptive language, his apt comparisons, his ready wit, and his fervent imagination, which clothed the dry details of his subject with the finest imagery, and enlivened our tired and flagging attention with kindly humor and illustrative anecdote.

"As a physician, too sympathetic for cold diagnosis, he wisely left the art for the science of medicine, and pursued anatomical and microscopic investigations which enriched our knowledge. His essay on 'The Contagiousness of Puerperal Fever'[1] was one of the earliest utterances and certainly the most forcible one on hygiene and on sepsis during the puerperal state.

"A not unkindly satire unveiled to the profession his estimate of those pseudo-sciences — as he termed them — of phrenology and homeopathy. But he was equally strenuous in condemning polypharmacy, and a meddlesome interference with the stately march of nature in disease.

"His cheerful and kindly soul doubly endeared to his associates all that he said, and will serve to keep alive the remembrance of his genial presence and his warm heart."

◆

AN APPEAL TO THE BRITISH MEDICAL JOURNAL AND THE LANCET.

The *Medical News* has come to the end of its long suffering, and makes the following appeal[2] to the pity and better nature of the editors of the two chief English medical journals for thicker paper:

"You know, gentlemen, that the paper upon which is printed the 'foreign edition' of your otherwise splendid journals, is simply inexpressibly vile. It is at once thicker, and yet more mushy and rotten than tissue-paper, and is, therefore, properly fit for no purpose whatsoever — absolutely none — of civilized or unregenerate man. We can only explain its use on the ground of a contempt of us, the reason for which dates back to Revolutionary times, or perhaps to Simian ages. You certainly would not, and could not, treat a resident of the British Islands thus. We beg of you to remember that, however remote the relationship, we are at least your Teutonic brethren, and that it is your duty to help on the cause of Anglo-Saxon civilization. Please do not forget that even an American can sometimes grumble, and even revolt, after prolonged indignity and injustice. We appeal to your compassion and to your sense of justice: In the name of your contributors, who write to be read of all men, not only of Englishmen; in the name of your foreign subscribers, who have paid for knowledge, not soiled paper; in the name of your type-setters and printers, whose good work is spoiled by your bad paper; in the name of your self-interest, as there are untold thousands of Americans waiting to subscribe when they shall be able to read what you and your contributors have written; in the name of medicine, whose cause you represent, but traitorously, because you spoil good eyes and brains by the unnecessary labor you thrust upon us; in the name of art, as the illustrations in the foreign editions of your journals become subjects of mirth to all outlandish men; in the name of human ethics and good character, because you are sadly wrecking both, and tremendously increasing the work of the future writer of a cursory history of swearing; and lastly, in the name of pure commiseration of your brother editors who, willy-nilly, are compelled to look through your columns to glean from them a knowledge of medical thought and progress. Misericordia! Misericordia!"

---

[1] Subsequently called, "Puerperal Fever as a Private Pestilence."

[2] October 27, 1894.

The request is a fair and timely one after the issue of the British Medical Journal containing the obituary notice of Dr. Holmes. An otherwise good likeness of the poet-physician was made disgraceful and absurd by the text on the other side of the sheet being perfectly legible across the face and shirt-front of the portrait.

◆

THE FIRST RECORDED DEATH IN HYPNOSIS.

The death of Ella Salamon, in Tuzer, Upper Hungary, at her home, on September 17, 1894, while in an hypnotic state, has attracted much attention abroad, owing to the fact that it is the first recorded instance of death of this kind. The *Journal of the American Medical Association* publishes[1] the following abridged statement from the pen of Dr. William von Vragassy, who was visiting at the home of Count Lászlo Forgách, an uncle of the unfortunate victim, and who was present during the hypnotic experiment, and witnessed her death and the subsequent autopsy:

"'Miss Salamon was hypnotized in the presence of her parents and several relatives and friends; the operator, Mr. Neukomm, with the permission of the family and a full understanding with Miss Salamon, wished to induce in her an hypnotic state to gain information concerning the illness of the operator's brother, about whose malady the attending physicians differed. As Miss Salamon passed into hypnosis she seemed to be fatigued. The operator explained that he would attempt a very interesting experiment. He stated that for some time his brother, in Werschetz, had been raising blood, and the physicians could not agree that it came from the lungs or the stomach. Calling upon Miss Salamon to exercise clairvoyance while hypnotized, she gave a wonderful description of the patient's lungs, with the topography, pathology, diagnosis and prognosis. The operator said to her: "We are now in Werschetz; do you see my brother?" — "I do not see him," she replied. He then explained to her the location of the house in which his brother lived, and said, "My brother is in the third room." "Yes, yes!" said the subject, in tones of conviction, "We are there." "How is my brother?" he questioned. She replied, "He is very ill." In answer to more questions, the subject then went on to explain the details of the patient's malady. She spoke of the lungs of the distant patient as though they were before her on a plate. She used technical language with the greatest exactness, though she had never had medical training. After this, the subject's face was very pale and she seemed exhausted. The operator asked her a final question: "What do you think of my brother's disease?" With difficulty she answered, "Be prepared for the worst." At that instant she fell from her chair with a hoarse cry; her tongue protruded from her mouth, and she became collapsed. Her head was lowered, clothing loosened, artificial respiration performed after Sylvester's method, and ether injections given; later she was wrapped in blankets, but she died almost in a few seconds in spite of all.

"'The autopsy was conducted by an assistant in the Pathologic Institute in Buda-Pesth in the presence of Dr. Jozsás and myself. The brain exhibited a high degree of anemia and consecutive malnutrition, with indications of edema; otherwise there was no abnormality. I consider the causes of death, acute anemia of the brain, incident to the hypnotic state, with syncope and heart failure.'

"Professor R. von Krafft-Ebing writes: 'According to reports, the case is so unheard-of that there must have been concurrence of quite extraordinary circumstances. In medical experience it is the first case of death in hypnosis. Inasmuch as there are thousands of hypnotic experiments performed daily by the laity without injury to health, one must regard this exception as inevitable.

"'There is doubt that Ella Salamon died in hypnosis, but that she died by hypnosis is questionable. In the absence of a history of her life and a detailed description of her mental and physical condition during the fatal hypnosis, the manner of death cannot be determined with certainty.

"'It appears that Miss Salamon was about twenty-three years old, very nervous, and that she had often been hypnotized. On this occasion she seemed weary. The hypnotizer, in accordance with an unscientific belief of the laity, induced in her an alleged capability of clairvoyance, which for a person so intelligent as Miss Salamon, was a new and very trying experiment, calculated to cause her great emotional excitement. Miss Salamon then exerted herself, according to report, to be agreeable and useful in the suggested capacity. While in the hallucinatory state she believed that she saw a diseased lung, and she gave a long description of the pathologic condition, in an excited and agitated manner. The final question of the operator had an intense emotional effect on her, and caused her collapse.

"'The brief report of the autopsy leaves no doubt that she died of cerebral anemia. It can be certainly stated that she did not die of suffocation (there was no spasm of the tongue); nor from cerebral hemorrhage; and not from auto- or imparted-suggestion — causes which might prove fatal under certain circumstances.

---

[1] October 27, 1894.

All the symptoms given point to the brain as the organ concerned in inducing death, but it is uncertain whether through serious apoplexy or so-called nervous apoplexy.

"'The question of the cause of death in this case probably permits this answer: The unskilful use of hypnotism by a layman and the unusually violent cerebral excitement stand as the causes of death; but it must also be considered that the victim was probably a morbidly constituted person, with a personality which reacted abnormally to stimulation, and whose death might have been hastened when awake by a violent psychic force.

"'This case teaches that the laity should not practice hypnotism; that one must not play with hypnosis. In Austria there is an enactment of October 26, 1845, which permits only authorized physicians the use of magnetism (hynotism), and makes its use by others punishable.'"

◆

Correspondence.

THE FIRST ADMINISTRATION OF ETHER IN PARIS, AND OTHER REMINISCENCES.

Dorchester, October 30, 1894.

Mr. Editor: Dr. Galloupe's "Reminiscences of the Harvard Medical School," brings very vividly to my mind the lectures which I attended in the old Mason-Street building; for I was graduated from the Medical School just three years before the doctor. I can see Dr. Ware lay his watch on the table, and Dr. Jacob Bigelow hold up to the view of the class a little bottle of the drug on which he was lecturing. No mention is made of the lecturer on obstetrics, Dr. Channing, who was certainly the most entertaining of all our teachers. I well recollect the effect remaining on my own mind after I had listened to his course of lectures, and seen him at the close of them, push and pull his well-worn rag-baby through a pelvis taken from a female skeleton. I was as much puzzled as was the old king when he saw the apple dumpling. He, good old man, wondered how the apple could ever have got in; while my wonder was how a baby could ever have got out.

Dr. Galloupe was present when the first trial of ether was made at the Massachusetts General Hospital. I was in Paris when the discovery of anesthesia was announced, and was present when the first attempt in that city was made to etherize a patient. It was made at the Hôtel Dieu by Roux, who was then surgeon-in-chief at that hospital. The case to be operated on was one of fistula in ano in a man. M. Roux prefaced his operation with this remark, which I can give almost verbatim, "Gentlemen, we will now try this new American invention, but I have no idea that it will succeed." And it did not (*with Roux*). The patient was given a few sniffs from the inhaler — not half enough to etherize him and of course he felt the knife. M. Roux, Frenchman like, shrugging his shoulders, said, "Just as I expected, gentlemen," and made no further attempt. The next day, with my friend and room-mate the late Dr. George H. Gay, who was also present at Roux's attempt, I attended at La Charité, to see Velpeau give "the new American invention a trial." The amphitheatre was full, most of the American students being present. One of them, Dr. Henry Williams (if I recollect rightly), knew that the trial was to be made and had taken pains to give the patient instructions beforehand as to how he should inhale. I do not recollect positively what was the case operated on, but I think that this was also a fistula in ano, but whatever the case was, the trial was a complete success, and shouts from the Frenchmen of "Vive l'Amérique" were loud and long.

There is a moral to be drawn from this little bit of history, namely, if you want to give a new idea a fair chance, let experiments be conducted by some one who believes in it, or at least, who has not committed himself in advance as against it. It would be well if this principle could be applied to the management of the Foxborough Institution for Inebriates. The experiment has never had a fair chance. It was opposed in the beginning in the Legislature, and by members of the medical profession; and since it has been established its friends have been persistently opposed in their efforts to carry out their ideas, until it now seems as if the whole attempt would be a failure. The facts, as I understand them, are as follows: It has long been the opinion of a very respectable number of those who have studied the subject, including some in and some out of the medical profession, that inebriety is, in a large number of cases, a disease — sometimes inherited, sometimes acquired; that its subjects drink, not because they enjoy the habit, but because they seek relief from suffering and they have not the will-power while under control of the habit to adopt the means of cure; that those means are prolonged abstinence, together with moral and physical tonics; that under such treatment a fair proportion can be cured and many relieved. This is all that a hospital for the insane can claim to do. Let any one visit Foxborough and then say whether the trustees have been furnished the means to carry out this plan. Nay, whether all the trustees themselves comprehend practically the idea of the first advocates of a *hospital* for the relief of inebriates. Until these conditions shall be fulfilled the experiment cannot be called a failure. You asked me, Mr. Editor, for some reminiscences; but of what use is it to stir the soil in which the past lies buried, unless to prepare it for the seed which shall produce a better harvest in the future?

I enclose a letter I have received from Dr. H. W. Williams, in answer to one in which I asked him whether I was right as to the part he took. I find that he was then, as now, an earnest seeker for progress. C.

Boston, October 29, 1894.

My Dear Dr. C. — In reply to your note, I can say that I distinctly remember the first operation performed under etherization by Velpeau at the Hôpital de la Charité, at Paris.

Our colony of young American medical men was duly excited over the news that in Boston operations were being performed without pain; and I that morning had inhaled ether in the presence of the staff of the Hôpital des Enfants Malades, as a demonstration of its harmlessness. These officials rested satisfied with sticking pins half an inch into my arm, and pinching me severely; without producing deep unconsciousness; and I soon recovered sufficiently to proceed to La Charité.

Velpeau was said to have previously made an unsuccessful attempt to employ anesthetics, and to have expressed his disbelief in their efficacy. The subject to be operated on was a man of middle age; the operation, the removal of a tumor of the size of the fist from the hinder part of the thigh. After a cautious administration of the anesthetic, by inhalation, the patient appeared to be asleep; and we looked on, in breathless suspense, as Velpeau's scalpel made an incision along the tumor, which was then wholly dissected off from the surrounding parts. The man then began to show signs of vitality, and sat up in bed. "Are you ready for us to begin?" said Velpeau. "Yes," replied the man, in half-asleep fashion. "Did you know it was all done?" asked Velpeau. "No!" said the patient, at once wide awake with astonishment. "Did you feel nothing?" asked the surgeon. "No," said the man. "Did you feel an operation you told me you had once before undergone?" said Velpeau. "Yes," said the patient; "it hurt me terribly."

Velpeau shrugged his shoulders, and walked out of the operating amphitheatre; and from that day anesthesia held its sway in the great hospitals of Paris.

Always cordially yours,

Henry Willard Williams.

METEOROLOGICAL RECORD,

For the week ending October 27th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S ..21	30 26	52	56	48	92	90	91	N.E.	E.	8	9	O.	O.	
M..22	30.58	50	53	48	89	83	86	N.E.	E.	7	8	O.	C.	
T 23	30.38	48	51	45	71	82	76	N.E.	N.E.	6	4	O.	O.	
W..24	30.50	50	52	47	83	85	84	S.E.	E.	7	16	O.	O.	
T ..25	30.14	48	50	46	81	85	88	N.E.	N.E.	15	24	O.	R.	.33
F ..26	29.88	50	52	48	88	97	92	N.E.	N.	32	16	O.	R.	1.13
S...27	30 00	52	61	42	89	78	84	N.	S.	5	7	F.	C.	
☞	30 19		53	46			86							1.46

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain, T., threatning; N., snow. † Indicates trace of rainfall ☞ Mean for week

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCTOBER 27, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,956,000	626	211	14.40	12.48	4.00	1.60	5.92
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,139.457	380	124	15.86	11.44	2.60	1.04	11.44
Brooklyn	1,043,000	353	141	17.92	10.64	4.76	1.96	6.44
St. Louis	540,800	—	—	—	—	—	—	—
Boston	501,107	210	73	22.09	7.52	4.23	2.82	12.22
Baltimore	500,000	—	—	—	—	—	—	—
Washington	285,000	98	24	15.45	16.48	3.09	6.18	5.15
Cincinnati	325,000	109	28	11.72	11.96	4.60	5.52	4.60
Cleveland	325,000	97	45	33.99	4.12	6.18	1.03	4.12
Pittsburg	272,000	—	—	—	—	—	—	—
Milwaukee	265,000	—	—	—	—	—	—	—
Nashville	87,754	27	9	11.10	3.70	3.70	3.70	—
Charleston	65,165	39	15	17.92	2.56	2.56	2.56	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	100,410	24	9	24.96	16.64	12.48	4.16	—
Fall River	92,233	41	27	43.92	4.88	39.04	2.44	2.44
Lowell	90,613	36	12	13.90	13.90	11.12	—	2.78
Cambridge	79,607	38	13	26.30	15.78	15.78	2.63	5.26
Lynn	65,123	13	—	—	—	—	—	—
Springfield	50,284	7	2	—	14.28	—	—	—
Lawrence	49,900	—	—	—	—	—	—	—
New Bedford	47,741	21	5	—	19.04	—	—	—
Holyoke	43,348	17	6	8.58	—	—	—	—
Brockton	33,939	6	4	16.66	—	—	—	—
Salem	33,155	7	0	14.28	—	—	—	14.28
Haverhill	32,925	7	3	—	—	—	—	—
Malden	30,209	11	2	9.09	18.18	9.09	—	—
Chelsea	29,806	12	7	8.33	8.33	—	—	8.33
Fitchburg	29,383	7	1	—	14.28	—	—	—
Newton	28,837	12	5	16.66	8.33	—	8.33	8.33
Gloucester	27,293	—	—	—	—	—	—	—
Taunton	26,955	9	3	44.44	11.11	11.11	11.11	22.22
Waltham	22,058	4	1	50.00	—	—	—	50.00
Quincy	19,642	—	—	—	—	—	—	—
Pittsfield	18,802	5	3	20.00	—	20.00	—	—
Everett	16,585	1	—	—	—	—	—	—
Northampton	16,331	—	—	—	—	—	—	—
Newburyport	14,073	3	1	-	—	—	—	—
Amesbury	10,920	3	1	33.33	—	—	—	—

Deaths reported 2,345: under five years of age 812; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 419, consumption 265, acute lung diseases 254, diphtheria and croup 167, diarrheal diseases 121, typhoid fever 53, scarlet fever 32, whooping-cough 20, malarial fever 10, cerebro-spinal meningitis 9, measles 5, small-pox 1.

From scarlet fever Cleveland 19, New York 3, Philadelphia and Boston 2 each, Nashville, Worcester, Cambridge, Lynn, Somerville and Amesbury 1 each. From whooping-cough Brooklyn 6, New York 4, Boston 3, Pittsburgh 2, Philadelphia, Cincinnati, Cleveland, Charleston and Brockton 1 each. From malarial fever Charleston 4, New York 3, Brooklyn 2, Cleveland 1. From cerebro-spinal meningitis New York 3, Cleveland, Worcester, Lynn, Somerville, Holyoke and Marlborough 1 each. From measles New York 5. From small-pox Washington 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending October 20th, the death-rate was 17.0. Deaths reported 3,405; acute diseases of the respiratory organs (London) 241, diphtheria 94, diarrhea 89, measles 69, scarlet fever 62, fever 42, whooping-cough 38, small-pox (Birmingham 4) 4.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 27, 1894, TO NOVEMBER 3, 1894.

So much of the Special Order as directs **CAPTAIN OGDEN RAFFERTY**, assistant surgeon, to report to the commanding officer, Presidio of San Francisco, Cal., for duty, is revoked.

Leave of absence for six months on surgeon's certificate of disability, is granted **MAJOR CLARENCE EWEN**, surgeon.

So much of the order as assigns **MAJOR WILLIAM H. GARDNER**, surgeon, to Fort Custer, Montana, is revoked.

So much of the order directing **CAPTAIN ALFRED E. BRADLEY**, assistant surgeon, to report for duty at Fort Keogh, Montana, is amended as to direct him, upon the abandonment of Fort Sully, South Dakota, to report for duty at Fort Custer, Montana.

Leave of absence for four months, to take effect upon the final abandonment of Fort Ontario, New York, is granted **MAJOR JOHN V. LAUDERDALE**, surgeon, U. S. A.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 3, 1894.

A. W. DUNBAR, assistant surgeon, ordered to Naval Laboratory and Department of Instruction.

ARMEN FARENHOLT, assistant surgeon, detached from Naval Laboratory and Department of Instruction and ordered to U. S. Receiving-ship "Vermont."

L. W. STONE, assistant surgeon, detached from U. S. Receiving-ship "Vermont" and placed on waiting orders.

J. S. HOPE, assistant surgeon, detached from Naval Hospital, Mare Island, Cal., and ordered home.

DWIGHT DICKINSON, surgeon, detached from the U. S. S. "Miantonomah" and ordered to the U. S. S. "Richmond."

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. – A regular meeting of the Society will be held on Monday, November 12, 1894, at the Medical Library, 19 Boylston Place, at eight o'clock, P. M.

Drs. H. C. Ernst and J. H. McCollom: "The Importance of a Bacteriological Investigation in Cases of Diphtheria."

JOHN T. BOWEN, M.D., *Secretary*.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Thursday evening, November 15th, at 8 o'clock, by Prof. D. W. Cheever. Subject, "Medical Ethics." Physicians are cordially invited.

RECENT DEATHS.

BARION CROWELL WATSON, M.D., M.M.S.S., died in Scituate, Mass., October 30, 1894, aged seventy years.

WILLIAM W. REESE, M.D., died in Brooklyn, October 20th, aged eighty-two years. He was at one time President of the Kings County Medical Society.

HENRY S. B. SMITH, M.D., M.M.S.S., died at Middleboro, Mass., October 30th, aged fifty-five years. He graduated from Bowdoin College in 1861 and after serving in the Union Army during the Rebellion, graduated from the Berkshire Medical College.

WILLIAM GOODELL, M.D., died in Philadelphia, October 27th, aged sixty-five years. He was born in Malta, his father, the Rev. William Goodell, D.D., being on his way to Turkey. He graduated from Williams College in 1852 and from the Jefferson Medical College in Philadelphia in 1854. He practised medicine in Constantinople from 1854 to 1861, when he returned to this country and began practice in Westchester. Being appointed physician-in-charge of the Preston Retreat he moved to Philadelphia in 1865, where he subsequently remained, confining his practice to obstetrics and gynecology. He was appointed lecturer on obstetrics and diseases of women in the University of Pennsylvania in 1870 and four years later was made clinical professor of the diseases of women and children. Upon his resignation from this chair about a year ago he was made professor emeritus.

Original Articles.

CHRONIC ARSENICAL POISONING.

An Analysis of 260 Examinations of Urine.[1]

BY WILLIAM B. HILLS, M.D.,
Associate Professor of Chemistry, Harvard Medical School.

(Concluded from No. 19, p. 455.)

ACTION ON THE KIDNEYS.

Among the symptoms which have been mentioned as likely to be present in cases of arsenical poisoning of domestic origin, one of the most important is albuminuria with the sediment of an active hyperemia of the kidneys. I regret that I neglected to utilize many of my early cases for the study of this question. I have, however, a complete record of the chemical and microscopical examination of the urine in seventy cases in which varying amounts of arsenic were present. In twenty-three there was no renal complication. These twenty-three cases comprise six, in which the amount of arsenic was relatively large (0.045 to 0.12 mgm. per litre); twelve in which the amount was relatively small (less than 0.02 mgm. per litre); three containing intermediate quantities; and two in which the record of amount is indefinite.

Nineteen of these twenty-three cases did not come under my observation a second time. In four I made a single analysis, later. In one of these the urine was found to be free from arsenic after the lapse of twenty-two days. In two, the second analysis made several weeks later showed a substantial diminution in the amount of arsenic; from 0.05 and 0.06 mgm., respectively, to less than 0.01 mgm. In the fourth case, the second analysis was made after an interval of nine and one-half months. The urine yielded, at the first examination, 0.03 mgm., at the second, 0.045 mgm. of arsenic per litre, but was otherwise normal on both occasions.

In forty-seven cases the urine contained the elements of renal hyperemia. In eleven of these there were other conditions, apparent from the examination of the urine, or suggested by the history, to which the hyperemia may have been secondary. In thirty-six, no other cause than arsenic was suggested. In twenty-three of the latter series, the quantity of arsenic was relatively large; over 0.03 mgm., and usually over 0.05 mgm. per litre. In six, my record is indefinite, although the presence of a "large trace" is noted in two of these.

Great caution should be observed in drawing conclusions from cases in which but a single analysis was made. It is a very suggestive fact, however, that of thirty-two cases in which the urine contained more than 0.03 mgm. of arsenic per litre, in twenty-three, or 75 per cent., there were evidences of a renal hyperemia.

Among the thirty-six cases in which the urine presented evidences of a hyperemia at the date of the first analysis, there are several in which I had an opportunity of making frequent examinations. In a majority of such cases the disappearance of the arsenic, or its diminution below a certain limit, has been followed by a return of the urine to its normal condition. These cases are as follows: —

Case I is one of the cases to which reference has already been made. A nurse, forty years of age, was found to have a severe active hyperemia of the kidneys. As some of the symptoms suggested arsenical poisoning, the urine was later examined for arsenic, and found to contain a "trace" (quantity not noted). The supposed source was an arsenical red paper in the room occupied by the nurse and a child. The urine was found to be free from arsenic, and otherwise normal, twenty-three days after removal from this room. The child, under the same exposure, escaped renal trouble, although the urine contained arsenic. An additional interesting fact is to be noted, that the child was attacked later with scarlet fever from which it recovered without renal complication.

Case II. I am not familiar with the full history of this case. It is one in which strenuous efforts have been made to protect the patient (a child) from exposure to arsenic. It is almost certain that there are no arsenical materials of the ordinary kinds in the patient's surroundings. The attending physician informs me that the urine is never quite free from arsenic. Usually the quantity is quite small, but occasionally it rises to nearly or quite 0.1 mgm. per litre. There is usually no evidence of renal disturbance. When, however, the quantity of arsenic is relatively large, there is, as a rule, a trace of albumin, and in the sediment the elements of renal hyperemia. I have made six analyses of the urine, and the results obtained confirm these statements. The urine has usually contained 0.003 to 0.03 mgm. of arsenic per litre, and at such times has been normal. On one occasion the urine yielded, approximately, 0.07 mgm., and presented the characteristics of renal hyperemia.

Case III. June 12, 1891, the urine contained a "large trace" of arsenic, which was attributed to a highly arsenical chamber paper, which was at once removed. Renal hyperemia present. August 31st, arsenic absent; still a renal hyperemia. September 14, 1891, and March 9, 1892, the urine was free from arsenic, and normal in other respects.

Case IV. April 19, 1892, the urine yielded 0.1 mgm. of arsenic per litre. Renal hyperemia present. Many of the wall-papers in the patient's house were found to be arsenical, and were at once removed. October 13th, 0.01 mgm. of arsenic; urine normal. May 6, 1893, 0.035 mgm. of arsenic; urine normal. June 16, 1893, 0.01 mgm. of arsenic; urine normal. October 13, 1893, the urine contained 0.05 mgm. of arsenic per litre, and again showed the evidences of renal hyperemia. This analysis was made a short time after the patient's removal to a new house. As before arsenical papers were found and removed. November 7, 1893, 0.01 mgm. of arsenic per litre; urine normal. November 28th, 0.03 mgm.; urine normal. December 26th, 0.034 mgm.; urine normal. This is one of the cases in which the urine is never quite free from arsenic, the source of which has not been discovered.

Case V. May 31, 1892, the urine contained 0.035 mgm. of arsenic per litre; renal hyperemia present. May 31, 1893, the urine was free from arsenic, and otherwise normal. The case is imperfect owing to the long interval between the two analyses.

Case VI. October 22, 1892, the urine contained 0.05 mgm. of arsenic per litre. Renal hyperemia present. The arsenic was attributed to certain arsenical papers which were subsequently removed. December 19, 1892, 0.055 mgm. of arsenic; renal hyperemia present. February 6, 1893, 0.015 mgm.; urine normal. April 10, 1893, 0.03 mgm.; urine normal. May 29, 1893, the date of the last analysis made in this case, 0.01 mgm. of arsenic; urine normal.

---

[1] Read before the Boston Society for Medical Observation, May 7, 1894.

Case VII. April 19, 1893, the urine contained 0.3 mgm. of arsenic per litre. Severe, active hyperemia present. May 10th, 0.025 mgm.; still a hyperemia. June 1st, 0.02 mgm.; urine normal. June 29th, arsenic absent; urine normal.

Case VIII. In this case I have analyzed the urine at intervals for a period of two years. The quantity of arsenic has varied between 0.05 and 0.1 mgm. per litre. Since the second analysis, the quantity has been invariably about 0.05 mgm. The source is unknown. All the specimens examined have contained a trace of albumin, and in the sediment a few hyaline and finely granular casts, an excess of renal cells and a few abnormal blood corpuscles, both free and upon the casts, with occasional minute oil drops within the renal cells and upon the casts. The quantity of urine is substantially normal, the tendency perhaps being towards diminution, color high, specific gravity 1.023 to 1.025.

Case IX. Patient a young lady, age about eighteen. March 17th, urine pale; specific gravity, 1.012; slight trace of albumin; sediment of an active hyperemia. March 21st, the urine contained 0.06 mgm. of arsenic per litre. Color normal, specific gravity 1.017, albumin and sediment as before. April 17th, arsenic 0.015 mgm. per litre; urine as before, but the quantity of albumin was noticeably less. This case is still under observation.

Case X. Patient a girl, twelve years of age. November 23, 1893, arsenic 0.03 mgm. per litre; renal hyperemia present. December 29, 1893, arsenic less than 0.005 mgm.; urine unchanged. January 13, 1894, arsenic 0.015 mgm.; urine as before. March 17, 1894, arsenic 0.02 mgm.; urine normal.

The number of cases which I have presented is probably too small to justify any positive conclusions relative to the action of arsenic on the kidneys. I desire to place them on record, however, as a contribution to the literature of the subject, and with the hope that further investigation will be stimulated.

So far as my own observations go, it appears: (1) That, when the system has absorbed such an amount of arsenic that the quantity eliminated with the urine daily is relatively large (0.03 to 0.05 mgm. or more per litre), there appear sooner or later evidences of renal hyperemia. (2) That the kidneys are not apparently susceptible, as a rule, to arsenic, when the latter is present in the urine in quantities below 0.02 mgm. per litre, or thereabouts. We have, apparently, a proof of this in the fact, that, in cases in which there is a renal hyperemia associated with a relatively large quantity of arsenic in the urine, the kidneys return to their normal condition while yet the urine contains a minute trace of arsenic. This fact was noticeable in nearly all my cases. A similar case is reported by Dr. F. Gordon Morrill.[25]

The effects of very minute doses of arsenic upon the quantity of urine and amount of solids eliminated daily have not, to my knowledge, been studied. If small doses act in a manner similar to large ones, causing a reduction in the force and frequency of the heart's action, we should expect to find the quantity of urine diminished. I have observed considerable variations in the physical characteristics of the urines which have been submitted to me in this class of cases. In the great majority of cases of well-established chronic poisoning, however, the tendency has been in the direction of diminished quantity and corresponding concentration.

---

[25] Boston Medical and Surgical Journal, cxxii, p. 398.

◆

THE TEMPERATURE AS A GUIDE IN THE ADMINISTRATION OF QUININE IN MALARIA.

BY FRANCIS H. WILLIAMS, M.D.

Malaria has recently been so prevalent in and around Boston that I desire again to call attention to the treatment of this disease by the intermittent administration of quinine with the temperature as a guide. What I have to present confirms my experience in a series of 18 cases treated at the Boston City Hospital in the summer of 1892.[1] The cases considered in this paper include those that came into my service at the hospital between June 1 and October 1, 1893, 21 in all: tertian 10, quotidian 9, irregular type 2.

In all these cases the diagnosis was established by finding the plasmodia in the blood; sometimes more than one examination was required to detect them. As a rule, fresh specimens of blood only were examined, but in some cases the dried blood was heated and stained. All suspected cases were examined, likewise a number of cases of typhoid fever, but no case of well marked typhoid fever with plasmodia was found. Before the patients were discharged from the hospital the blood was again examined for plasmodia, and hemoglobin determinations were made both after entrance and before discharge. Four-hour temperature charts were kept during most of the time that the patients were in the hospital.

The patients came chiefly from Boston or its neighborhood; but there was one each from Pennsylvania, New York, Virginia and South Carolina, and two from Central America (these two happened to be the only ones in which the cresentic forms of the plasmodia were found). The pigmented forms were those usually found, and in a few cases they were associated with hyaline or cresentic forms or both; in two cases hyaline forms occurred alone, and in one case roseate forms.

Two of these 21 cases were sent to the hospital with a diagnosis of typhoid fever, and one with that of spinal meningitis. The latter was of special interest. When C. E. entered the hospital he gave a history of illness for two weeks, with pain in the head, and was in a dazed, stupid condition, repeating questions over and over before answering them. He had no chill at any time while in the hospital, and gave no history of any chill. There was nothing in the morning or evening temperature chart during nine days to suggest malaria; but a four-hour chart showed a rise in temperature to nearly 100° every other day during four days. The spleen was somewhat enlarged and the patient anemic. The blood was examined, and the ordinary pigmented forms of the plasmodia were found, and also the cresentic forms. The case proved to be an irregular type of malaria. As we learned later, the patient had just arrived from Central America, and his illness began when three days out of port. Under the administration of quinine and iron the hemoglobin increased from 50 per cent. to 70 per cent. in eleven days.

---

[1] Boston Medical and Surgical Journal, March 9, 1893.

Following the rule devised by Dock, fifteen or twenty[2] grains of quinine in solution were given in the cases under consideration during the decline of the temperature, and repeated on the seventh, fifteenth and twenty-second days without reference to the temperature. If a rise in temperature occurred on the first or second day after the first dose was given, a second dose of ten to fifteen grains was administered when the temperature was falling. In six of these 21 cases a rise occurred on the second day, and in these the second dose was given in the manner described. These six cases were quotidians; in none of the tertians was there a rise of temperature after the first dose.

Anemia was usually marked; generally from 50 per cent. to 70 per cent. of hemoglobin was found in the blood, but in two cases it was as high as 90 per cent. It is well to give iron in these cases; my patients had five grains of citrate of iron three times a day.

In contrast to this case is that of J. G., who was sent to the hospital with a diagnosis of malaria. He gave a history of chills at a certain time daily. After his entrance to the hospital his temperature rose daily to 103° or 104°. No plasmodia were found in the blood, and quinine had no marked effect on the temperature. Malaria was excluded. This proved to be a case of pulmonary tuberculosis.

The essential thing in treating malaria is, of course, to give quinine, and to give it in solution or powdered in capsules; but the cases, 39 in number, which I have treated by Dock's method during the years 1892 and 1893 at the hospital, as well as those treated in private practice, have with one exception (quinine had been given to this patient by another method before I saw him) yielded more promptly with far less quinine than the cases in which the quinine was given in divided doses during the day for several successive days, or when it was given with reference to the chill. I have seen cases in which more than thirty grains of quinine were given per day for some days by the physician in charge before the chills were checked, and a number of cases in which the quinine had been given to the amount of sixteen grains a day for several days before the patient was relieved; similar cases were invariably relieved promptly when the quinine was given in the way here advocated.

Further, under the use of this method, there was a smaller percentage of cases in which the chills occurred again some time after treatment had ceased; there was less cinchonism, usually none at all. There is less chance of any deleterious effect upon the ears, less quinine is needed; and the patients are not obliged to remain so long in the hospital. Many cases treated by this method require to be in the hospital two or three days only; they might then be sent for blood examinations and for the doses that should be given on the seventh, fifteenth and twenty-second days, to the out-patient department. It would be well to have the quinine administered there as the patients have not always the money necessary to buy quinine, nor is it always put up in the right way. Malaria may, of course, return if the patients go back to a malarial district; in such cases weekly doses of fifteen grains of quinine are probably a better preventive than smaller and daily doses.

In using Dock's method of treating malaria, namely, the intermittent administration of quinine with the temperature as a guide, more care is required to administer the first dose at the proper time than by the ordinary methods; but, as already indicated, I have succeeded much better and with the use of much less quinine with this method than with any other. The best results are not obtained if quinine has first been given to the patient in the ordinary way when suffering from an attack, before this method is employed. It is a requisite to the best success of this method to begin with its use.

◆

THE BACILLUS COLI COMMUNIS.

BY EUGENE A. DARLING, A.M., M.D., CAMBRIDGE, MASS.,
Assistant in Bacteriology, Harvard Medical School.

THE bacillus coli communis, or, as the French bacteriologists more frequently call it, the bacterium coli commune, was first described and named in 1885, by Escherich, in his work on the bacteria occurring in the intestines of infants.[1] He regarded the micro-organism as a pure saprophyte with a feeble pathogenic power. This opinion was accepted without question, and for several years little attention was paid to the bacillus by bacteriologists. A few observations were made as to its occurrence in various pathological conditions, but no systematic study of the biological, chemical and pathogenic properties was undertaken until 1889, when a great deal of interest was aroused by the assertion of Rodet and Roux, of Lyons, that the bacillus of typhoid, as described by Eberth and Gaffky, was merely a variety of the bacillus coli communis.[2] The practical importance of this question in pathology and hygiene was seen immediately, and a most thorough study of both organisms was begun simultaneously by many bacteriologists in various parts of the world, and, though still far from complete, the investigation has already shown that the theory of Rodet and Roux was a mistaken one, but that in other ways the bacillus coli communis plays an important part in human pathology. Although ordinarily a harmless inhabitant of the intestinal canal, it is probably the cause of many disturbances in that canal and in adjacent regions, particularly in the peritoneum. It has to do, also, with certain fermentative processes which take place in the intestine; and the toxines which it produces are probably responsible for many clinical phenomena which have hitherto been unexplained. Hygienically it is of very great importance, since its presence in water is direct proof of fecal contamination. When found in milk it is evidence of uncleanliness in the dairy.

As there is no satisfactory account of the recent work on this bacillus, a summary of the observations made during the past four years, chiefly by French, Italian and German bacteriologists, may not be without value.

SYNONYMS.

The term "bacillus coli communis" is applied by most bacteriologists to a group of micro-organisms of which the form described by Escherich may be taken as the type. Other observers have described forms which are so like that of Escherich that they may be considered as identical, or at least very closely related. These forms are briefly :

---

[2] Dock also states that instead of one large dose three or four five grain doses may be given at intervals of two hours during the decline of the temperature.

(*a*) The bacillus of Emmerich, found in the dejections of cholera patients at Naples.

(*b*) The comma-bacillus of Buchner.

(*c*) The bacillus of Brieger.

(*d*) The bacillus pyogenes fœtidus of Passet.

(*e*) The bacterium pyogene urinarium of Clado and Albarran.

(*f*) The bacterium enteritidis of Gartner.

(*g*) The bacterium of dysentery of Chantemesse and Widal.

(*h*) The bacterium endocardiditis described by Gilbert, Lion and Weichselbaum.

OCCURRENCE.

The bacillus coli communis is one of the most widely distributed of bacteria. It is found normally throughout the entire length of the digestive tract in man and other mammals, appearing in the infant in the first dejection following the ingestion of milk. Under normal conditions it probably exists in the intestines as a saprophyte, though it may have some digestive function as yet unknown. It is found outside of the intestine in other parts of the body in many pathological conditions, which will be described later. Outside of the body it occurs abundantly in water contaminated by sewage, in the dust of streets, in the air of poorly ventilated rooms, everywhere, in brief, where there is any fecal contamination. Abba has found it frequently in milk.

MORPHOLOGY.

Shape, Size and Arrangement.— The bacillus coli communis is a short rod with rounded extremities, varying in length from 2 to 3 μ, and in breadth from 0.6 μ to 1.2 μ. Sometimes the prevailing shape is oval or elliptical. The bacillus is usually single; but occasionally pairs, more rarely filaments, are observed. In old cultures on potato the prevailing form is a long rod with small spots in the ends which stain less readily than the rest of the organism and which some observers have regarded as spores.

Motility.— The Escherich type of the bacillus coli communis is characterized by peculiar slow movements — "träge Eigenbewegung," as he puts it. In a hanging-drop preparation the whole field seems to be in a constant tremor. The individual bacilli, however, move but slightly, with a slow, tremulous oscillation. From time to time, a single organism may be seen making its way across the field with remarkable activity, elbowing its companions out of the way most unceremoniously. Besides this slightly motile variety there are others possessing greater motility. Some forms have been described which cannot be distinguished by their movements from the typhoid bacillus; that is, they dart rapidly across the field with a whirling or gyrating movement.

The maximum activity is shown in cultures on agar at 37° C., from eighteen to twenty-four hours old. The motility of this organism seems to be a fixed characteristic. Remy and Sugg[4] found that cultivation in media containing carbolic acid (one per cent.), bichromate of potash or antipyrine might diminish the activity temporarily, but when recultivated on agar the motility always returned.

Organs of Locomotion.— In regard to the presence of cilia or other organs of locomotion there is a divergence of opinion. Many have been unable to detect any cilia whatever, while others, notably Moore of Washington,[5] have found from six to ten cilia, very similar in form and arrangement to those of the typhoid bacillus. The prevailing opinion, however, seems to be that the common, slightly motile variety possesses from one to three very delicate, wavy cilia, springing either from the ends or sides of the organism. They are very difficult to stain and on most cover-glasses there are many individuals which seem to have no cilia. My own attempts to stain the cilia have not been very successful; but they have, in the main, corroborated this view.

CULTURE.

On Gelatine (plates).— Colonies developing in the depths of the gelatine are spherical at first, but after several weeks they often take on an appearance like a sphere surrounded by a band — like Saturn with his rings — a shape which some writers have rather inaccurately compared to a whetstone. These deep colonies vary in color from a pale yellowish-brown to a decided brown. They are opaque and either homogeneous or slightly granular. Their margins are clearly defined and regular.

Those colonies developing on the surface vary considerably in appearance; but they may be roughly divided into three groups, as follows :

Type A. Characterized by an opaque dot in the centre, very similar to a deep colony, surrounded by a translucent zone. The colony is circular with a sharply defined, regular margin. In the outer, translucent zone are one or more faint concentric circles, seen most clearly by transmitted light. The colony is brown by transmitted light, but against a dark background by reflected light it appears bluish-gray.

Type B. These resemble Type A in general structure, but are much larger and have irregular, scalloped outlines. The concentric striations are more numerous than in Type A and are parallel to the margin, so that by transmitted light a colony of this type has a remarkable resemblance in shape and markings to an oyster-shell.

Type C. The colonies of this group are stellate in shape, and are often very beautiful. They are sometimes nearly transparent and made out with difficulty except by reflected light. The concentric striations are present, but are not so well marked, and there are sometimes very faint striations radiating from the centre to the margin. The colonies of this type, more rarely those of types A and B often have a glistening, ground-glass appearance.

Tube Cultures.— Growth takes place on the surface of the gelatine and throughout the length of the puncture. The surface growth is white or pale-brown, slightly elevated, with somewhat irregular edges and occasionally with faint concentric striations. The growth along the needle track is opaque and granular. In old cultures feathery or hair-like projections grow out into the gelatine horizontally. In the depths of the gelatine one or more small gas-bubbles may appear.

On Agar-Agar (plates).— Colonies develop as grayish-white circular spots without characteristic appearances.

On Inclined Agar.— Growth is very rapid at 37° C., beginning as grayish-white dots, which coalesce and spread over the entire surface of the medium. A thick sediment forms in the water of condensation, but no pellicle forms on its surface. A few bubbles of gas may usually be seen in the depths of the agar or along the sides of the tube. After a few days the cultures give off a very offensive, fecal odor.

In Bouillon.— Medium becomes cloudy and opaque, and reaction is faintly acid.

On Blood Serum.— Growth is usually slight, but is not characteristic.

On Potato.— The most common appearance is that of a thick, moist, brownish-yellow elevated growth. In other cases it forms a thin, nearly colorless, flat, linear growth which can hardly be detected with the naked eye. Between these extremes all gradations are observed. These differences are dependent largely upon the peculiarities of the potatoes used — their age, dryness, acidity or alkalinity. To obviate these elements of uncertainty Petermann analyzed a number of potatoes, and devised a fluid which contains all the essential components of potato in certain definite proportions. It is composed as follows:

Water	1,000 parts
Glucose	1.10 parts
Asparagine	5.00 parts
Citric acid	.75 parts
Phosphate of potassium, neutral	5.00 parts
Magnesium sulphate	2.50 parts
Potassium sulphate	2.50 parts
Sodium chloride	1.25 parts
Sodium carbonate, to feeble alkalinity.	

To make artificial potato, take:

Petermann's fluid	70 c. c.
Rice powder	11.5 gms.
Potato starch	9.5 gms.
Calcined magnesia	2.0 gms.

Mix the powders thoroughly in a mortar, and add the fluid little by little to avoid lumps. Then turn into crystallizing boxes about 5 mm. deep and cook in steam for about half an hour. Then empty the boxes, cut the medium into strips and keep in test-tubes like ordinary potato. On this artificial potato Remy and Sugg tested a great many specimens of bacillus coli communis and found that all gave a yellowish-brown growth. It is therefore a convenient method of differentiation from the bacillus of typhoid, which gives a colorless growth.

In Milk.— Most varieties coagulate milk completely in from twenty-four to forty-eight hours at 37° C. A few varieties take longer, but these are usually of a more sluggish type in other respects as well. The bacillus attacks the lactose or milk-sugar, decomposes it into lactic acid and other substances to be described later. The acid then precipitates the caseine in a solid lump, with bubbles of gas entangled. The serum of the milk becomes strongly acid. The action on milk is another very easy method of differentiation between the bacillus coli communis and the bacillus of Eberth and Gaffky, since the latter does not coagulate milk even after being kept for months at a temperature of 37° C.

Effect of Temperature on Growth.— The bacillus grows rather slowly at ordinary room temperatures, but at the temperature of the body it grows very rapidly. The vitality of cultures kept at 45° C, rapidly diminishes, and a short exposure to a temperature of 60° C is sufficient to kill them.

Spore Formation.— This has not been definitely observed, although some bacteriologists believe that the clear spots seen in the ends of the bacillus when grown on potato are in reality spores. Isolated spores, however, have not been seen. The slight resistance to high temperature which this bacillus possesses, is evidence against its having a resting stage.

Need of Oxygen.— The bacillus coli communis grows abundantly in the presence of oxygen, but is also facultatively anaërobic. It grows freely in solutions of sugar and other reducible organic substances in the absence of air, that is, it is able to break up those substances in order to set free the oxygen which it requires for its sustenance.

Action on Gelatine.— Non-liquefying.

STAINING METHODS.

The micro-organism stains rather faintly in dilute solutions of the ordinary aniline dyes. Ziehl's carbol-fuchsine and Löffler's methylene-blue give very clear results. It does not stain by Gram's method.

CHEMICAL ACTIONS.

(*a*) *Indol Reaction.*— The presence of a body giving the reaction of indol in cultures of the bacillus coli communis and its absence in cultures of the bacillus of typhoid was first brought into prominence by Kitasato[6] in 1889. Since then most bacteriologists have accepted this test as one of the means of differentiation between the two organisms. A few observers have disputed this point. Rodet and Roux found the indol reaction very feeble in cultures of the bacillus coli communis and their opinion was sustained by Malvoz[7] and Vallet. Chantemesse[8] and Vallet[9] found a faint reaction like that of indol on applying the test to old cultures of the bacillus of typhoid. Dunbar[10] in his exhaustive table of the difference between the two organisms says that the reaction is negative with both. To settle this point Remy and Sugg[11] inaugurated an elaborate series of experiments and were able to show that the different results were caused in this as in other respects by the fact that the various experimenters used different specimens or varieties of the bacillus coli communis. Remy and Sugg employed Salkowski's and Neucki's tests for indol, and a culture medium composed of water, 100 c. c., peptone siccum (Witte's), 3 gms., sodium chloride, $\frac{1}{2}$ gm. To perform Salkowski's test, take 10 c. c. of a twenty-four-hour culture in this medium at 37° C., and add 1 c. c. of a solution of nitrite of potassium ($\frac{1}{5000}$). Then add slowly 1. c. c. of 25 per cent. sulphuric acid (C. P.). Neucki's test is performed by acidifying the culture with a few drops of acetic acid and shaking with 2–3 c. c. of alcohol and ether, equal parts. Decant the ether and evaporate it on porcelain. Then add a drop of solution of nitrite of potassium ($\frac{1}{5000}$) and a drop or two of sulphuric acid.

By either of these methods most varieties of bacillus coli communis give a pronounced red color after standing a short time. The variety called bacillus pyogenes fœtidus gives the deepest color. Other varieties give paler colors and a few give no color at all. Remy and Sugg found no trace of color in any of the specimens of the bacillus of typhoid which they tested in this way. The test is therefore of considerable value when positive but is not conclusive when negative.

(*b*) *Fermentative Action and Gas Production.*— One of the most important characteristics of the bacillus coli communis is its action on the sugars — glucose, lactose, maltose and saccharose — and on certain other organic compounds such as glycerine, formate of sodium or ammonium, citrate or lactate of calcium and tartrate of ammonium. All of these substances are rapidly decomposed, setting free certain gases in greater or less amount, the media at the same time becoming acid. This reaction is of great diagnostic importance, since it has been found that the bacillus of typhoid, although it decomposes some of these substances, never sets gases free. Van Ermengem and Van Laer[12] consider the bacillus coli communis to be a saprophytic or putrefactive organism, while the bacillus of typhoid is purely parasitic; that is, the former not only gets nutriment from these organic substances, but also carries the reduction still further, to the point of producing CO_2, H, methane, indol, phenol and the other products of putrefactive decomposition; while the latter is only able to use the sugars as food, without causing putrefaction. The bacillus pyogenes fœtidus seems to hold a middle ground between the bacillus coli communis and the bacillus of typhoid, since it gives rise to indol and some of the volatile products of putrefaction, but does not produce gas.

Methods of Testing Gas Production.— The simplest method consists in the employment of agar containing glycerine (five per cent.), or glucose (two per cent.), or lactose (two per cent.). A small amount of this medium is liquified in a test-tube, inoculated, rotated a few times and then allowed to harden. The bacteria are thus scattered throughout the medium. If gas production occurs, the agar becomes permeated with small bubbles which gradually make their way to the surface and burst.

A more elaborate method is that suggested by Theobald Smith,[18] consisting in the employment of small fermentation tubes, such as are used in urine analysis. The tubes are made of glass, bent in the shape of a U, one arm being longer than the other. The long arm is closed at the top and the short one is open. The latter has a bulbous expansion near the lower part. The long arm and part of the bulb are filled with nutrient bouillon or peptone solution containing two per cent. of glucose or lactose, and, after all the air held in suspension is driven out by repeated boiling, the fluid in the bulb is inoculated and the tube placed at 37° C. If gas is produced it accumulates in the long arm, driving the fluid into the bulb. The rate of production and the amount produced can be approximately measured by marking the level of the fluid on the glass at regular intervals. This method is at the same time a very good one for determining the anaërobic power of a micro-organism, since purely aërobic bacteria will develop only in the open arm. The chief objections to using these tubes are their fragility, their comparative expensiveness and the difficulty of cleaning them, owing to the narrowness of the bend.

The amount of gas formed, as measured by Smith's method, varies considerably with different varieties of bacillus coli communis and with the different sugars. Most varieties in solutions which are nearly neutral give about 45 per cent. of the tube length of gas. Others give less, some only a small bubble. The same organism may give more gas with glucose than with lactose or *vice versa*. It seems probable that the fermentation is checked as soon as the medium reaches a certain degree of acidity, and that the amount of gas produced depends in some degree upon the original alkalinity of the fluid.

According to most investigators the bacillus coli communis does not decompose all the different kinds of sugar with the same readiness. All the forms except the bacillus pyogenes fœtidus seem to form gas with glucose, lactose and maltose. On ordinary cane sugar or saccharose the typical bacillus coli communis does not produce gas. Some of the more motile forms, however, produce gas with saccharose, but the action is always a slower one and the total amount of gas produced is always smaller than in glucose and lactose solutions.

Products of Fermentation.— Baginsky[14], Scruel[15] and Ide[16] have analyzed the products of the fermentation set up by bacillus coli communis in the glucose solutions. They agree in regard to the substances which they find present, but differ considerably in their explanations of their formation. The products are hydrogen, carbon dioxide and methane — forming together the gas evolved,— lactic, acetic and formic acids and traces of propionic and butyric acids; also a volatile body giving the reaction of iodoform. Of the gases hydrogen forms about 75 per cent. and CO_2 about 25 per cent., methane forming only a trace. Baginsky supposed that the various acids are formed by successive oxidation, lactic acid being the primary product and giving rise to acetic acid, the latter in turn becoming in part formic acid and finally breaking up into H and CO_2. Scruel denies this, and asserts that the three acids, lactic, acetic and formic, are formed independently and that the formic acid alone is further decomposed into H and CO_2. Single molecules of these three acids added together are equal to one molecule of glucose plus one atom of oxygen.

$$CH_2O_2 \text{ (formic)} + C_2H_4O_2 \text{ (acetic)} + C_3H_6O_3 \text{ (lactic)} = C_6H_{12}O_6 \text{ (glucose)} + O.$$

Scruel therefore regards the whole process as one of oxidation. The objections to both of these explanations are very evident, because both disregard the fact that there are other products besides the acids and that the reaction is the same in the absence of oxygen as in its presence and therefore cannot be a simple oxidation.

Ide answers these objections by claiming that the reaction is a more complex one still. He holds that only part of each molecule of sugar goes to form the acids, the remainder being split up into methane, acetone and the volatile body giving the reaction of iodoform. The acids, moreover, are formed separately, not more than one or two being derived from a single molecule of sugar. This divergence of opinion only goes to prove that the process of acid fermentation is not yet thoroughly understood.

Bischler, Van Ermengem and Van Laer have studied the optical characters of the lactic acid produced by different varieties and find that that generated by the typical bacillus coli communis polarizes light to the right, while that produced by the more actively motile forms, polarizes light to the left. Intermediate forms produce an acid which is optically inactive.

(*c*) *Action on Albuminoid Substances.*— Escherich, Köhler and Scruel have observed that the bacillus coli communis attacks caseine and peptone very slowly and has, therefore, only a feeble proteolytic power. In solutions containing nitrogen in simple combination, such as the tartrate of ammonia, it grows abundantly, provided a small amount of glucose or lactose is present.

(*To be continued.*)

THE MEDICINE-MEN AMONG THE CROW INDIANS.

BY P. P. PRANDO,
Missionary to the Crows.

The medicine-men are a prominent feature among the Indians. They are men of power, and are looked upon with respect by the others. Their secrets, mysteries, incantations, etc., are imparted to no one outside of their sect.

I have been sixteen years among Indians, have studied carefully their ways of thinking and reasoning, their customs, laws and language, and in particular have given great attention to the medicine-men. Having won their confidence, I was admitted to their secret performances, while all others who happened to be present in the tepee were driven from it before the medicine began.

The Indians have great confidence in these men. They turn over the sick to them, and they pay them well, sometimes using two or three medicine-men, who alternately exercise their art until there is some result.

A woman was telling me that her child was sick, that she would send for an Indian doctor, pay him well, and her child would certainly recover. She added: "If we don't pay the medicine-men, there will be no cure; but when we pay them well, their medicine works like a charm. I will do so. I have plenty of horses."

The medicine-men accept very willingly whatever they are offered for their services; sometimes they impose on the sick, and take away what the patient does not want to give them. A poor woman came crying to me one day; a rattlesnake had bitten her horse, and the medicine-man after his performance on the horse had taken away all she possessed, namely, one dollar and a blanket. "I have no blanket," she said; "my horse is not cured, he cannot walk, I am on foot." And with a flash of indignation, stooping down she lifted up a handful of dust, saying, "There is my property; I am the owner of dust." I endeavored to calm the poor woman, and sent for the medicine-man. He came after a little while, and I had him give back her property because the horse was not cured. All that he did was to cut the horse in several places with his pocket-knife, and sprinkle the wounds with an infusion of peppermint.

To have a steam-bath the Indians take about a dozen willows and stick them in a circle in the ground, the circle having six or eight feet diameter. They lower and tie the top of one willow with the other of the opposite side forming the frame of the sweat-house, which now looks like a big basket upside down. They cover the frame with blankets, start a big fire outside, and put stones in the fire. The stones generally are boulders not quite as big as the head of a man. When the stones are hot they push them into the centre of the sweat-house with a stick and make a heap of them. Now, people strip themselves and go in with a bucket of water, lower the blanket at the door and are in perfect darkness. They put a few cups of water on the hot stones, and the steam rises up. The Indians lay flat on the ground, the steam condenses itself first on the upper part of the sweat-house descending gradually till it reaches their prostrate forms, that now begin to sweat. In from five to ten minutes they give the sign to the assistant outside, the blanket at the door is raised, the steam comes out like dense smoke, and the Indians fill their lungs with fresh air. After a few minutes the blanket at the door is lowered again, more water is poured on the stones, and the Indians get hot again. The blanket is now raised at the door, the Indians come out, the sweat pouring profusely from all the pores of their bodies. Some of them run and plunge themselves into the river, enjoying a fresh bath; others lay flat on the ground and let the wind wipe their sweat with a cooling evaporation.

The Crow women are fond of the sweat-house, just as well as the men, and generally they go in together. Beside the virtue of a diaphoretic, the Indians attach to the sweat-house their superstition, and while they sweat they turn it into a house of prayer. They pray very loud, so all people can hear them from the outside. When there is a question of undertaking anything of importance, they build the sweat-house, praying for themselves and cursing their enemies. Sometimes the sweat-house is used for some very bad purposes indeed.

The medicine-men make use of the sweat-house in some cases to advantage; yet it is oftener dangerous on account of their indiscretion in passing from extreme heat to extreme cold. I myself have seen people affected with acute pleurisy thrown out naked from the sweat-house right into the snow. The consequence was death.

Their materia medica embraces a few roots, used as cathartics or emetics. Outside of these there are few real remedies; the rest consists in singing, beating the drum, pretending to suck out pus or the evil spirit from the body of the patient, in using the pipe, curiously shaped stones, stuffed birds, little animals, with a variety of ceremonies that only an Indian brain can invent, in imitating the bellowing of a bull or the hissing of a snake, etc., finishing the ceremony by pressing the sick person's stomach with their fists, with sticks, sometimes even trampling with their feet the chest of the patient.

Beating the drum and singing different wild tunes is a great medicine. For an Indian very swollen up and in great pain, the medicine-man held his hand over the fire; and when he felt it warm, he raised it in the air above the body of the patient; moving it with great celerity just as if he had delirium tremens — meanwhile he may be either singing, imitating the hissing of a snake or the report of a gun.

The pipe takes a great part in the ceremonies of the medicine-men. They light the pipe, take two or three whiffs, then raise the stem towards the sun, then turn it towards the earth, smoking as it were in honor of the sun and of the earth, the medicine-man inhales a great deal of smoke, and then blows it all over the body of the patient. Some blow it with their mouth;

others take off the stem, and blow the smoke through the stem, enveloping the patient with the smoke from head to foot. Others cover the bowl of the pipe with a piece of cloth, and applying their lips to the cloth, they blow the smoke through the stem.

Little stuffed animals, or peculiar stones like petrified snails, or snakes made with rags, are used to touch the patient. All the objects are carefully wrapped up in cloth or buckskin, and put away in little bags ornamented with beads. When there is some particular dance, all the medicine-men bring sacks filled with these little bags of medicine, and set them in the centre of the dance, making quite a show.

There are many medicine-men among the Crows, though some are more prominent than others. However, when they take the notion, we can say that every Indian man or woman is a medicine-man.

Once I came to a lodge, and dismounting from my horse wanted to go in. Some people cried out, "They are making medicine." That meant, You can't go in. I spoke to the medicine-man inside, telling him that I was a medicine-man myself, that I wanted to get in and see his medicine. He answered, "Come in." There was a consumptive young man laying on the ground all but naked. The medicine-man was sitting near by; an old woman was sitting down at the feet of the patient. The medicine-man had a bucket of water, and was holding in his hand a stick on the top of which he had tied some buffalo hair. From time to time he dipped this aspersorium into the bucket and sprinkled the patient. The young man did not like the cold water, and showed his displeasure by grimaces. The old man then applied his lips to the ribs of the sick man and sucked, then with two fingers took out something from his mouth and put it carefully into the hand of the old squaw. He repeated the sucking in several parts of the body, each time putting in the hand of the woman what he sucked out from the patient. Seizing the opportunity when he was putting his fingers in his mouth, I stretched forth my hand to receive the things instead of the woman. The old man put it in my hand, and closed my fingers; having my hand free I opened it, and there I had — a little piece of finger-nail. He had that poor woman and the patient believing that he was sucking those things out of the body of the sick, and that was the ailment of the poor man, and he was relieving him of those formations in his body.

At another time I was in a house when a boy about ten years old was sick with malarial fever. A medicine-man came in with great solemnity, carrying a little bag with some herbs. He steeped the bag, and with two fingers pressed him in different places to find out his complaint. At last he pointed to the ribs below the right nipple, saying, "It is here." He put some wild herbs in his mouth, chewed them, and squirted them on the body of the boy. Then he began to roar and act as a mad bull, and applying his lips to the ribs he began to suck, and to move his head from one side to the other as if he were pulling out of the ground a root with his teeth. He got up and from his mouth let flow a stream of green saliva into his left hand. The boy's grandmother exclaimed in great wonder to me, "Look how he got out the pus." Instantly I jumped to my feet before the medicine-man, and as if I were about to fight I cried out, "You are a liar; that is not pus, it is the sap of the herb you were chewing just now." The medicine-man was not prepared for this sudden outbreak; he weakened, and said, "You are right, it is not pus, it is the juice of the herb."

To press the stomach of the sick person with both hands, just as bakers knead their dough, is another feature of the Indian medicine. Their object is either to move the bowels, or to drive away the evil spirit.

A young man was pressing in this way a dying relation. I asked the reason. The young man said that inside the stomach of his brother there was a snake going up by degrees towards the heart, so he was endeavoring to kill the snake, because it would be sure death for his brother as soon as the snake reached the heart.

A very sick Indian complained of a sore throat. The medicine-man sang a song, and putting his pipestem in his mouth, he blew all around the throat of the patient; then with his left hand he raised up the chin of the sick man, and with his pipe-stem struck gently several times the sick man's throat. The same man after a little while complained that he could not see. Another medicine-man went to try his skill. He sang a song; he put his left arm around the head of the patient who was sitting on his blanket on the ground, and with the palm of his hand struck him several times on the top of the head, asking, "Can you see?" The patient said, "No." "Can't you see me?" insisted the medicine-man. "Oh, yes," said the hopeless sick man; and the medicine was all right.

But the worst of all is when they trample the sick people with their feet. On the 14th day of August, 1891, I was camped at the foot of the Big Horn Mountains. An old Indian with his wife were camped near by. The woman — by name, "She-Strikes-the-Rider-of-the-Spotted-Horse" — after she had pressed her husband with her hands, stood on the chest of the man, and was trampling him. She wanted to make him vomit. I rushed at the woman; I pulled her off her victim. In the afternoon when the sick man was bathing in the creek, the woman came to me, saying that her husband wanted her to trample him. I told her that the Indians had iron ears, that they did not want to hear what was for their good; so they could do just as they pleased. The man came out of the creek, and lay down flat on his back. He had only his breech-cloth on. The woman jumped on his chest and began to trample him; standing on her left foot, she used her right foot to trample him with great force. The man gave a fearful moan just as a person shot. I ran over there and saw that the man was apparently dead; but what still more increased my astonishment was to see the woman standing on the body, and, under the impression that he was still breathing, continue to trample him. Another woman came; they then dragged the body inside of the lodge, and both of them pressed the body with their hands, looking at his face. After a few minutes life was extinct. They at once wrapped the dead body in a blanket, tied it with a rope, and carried it with great sighs of mourning to the burying-ground.

◆

Clinical Department.

A CASE OF FIBRO-CYSTIC DISEASE OF BOTH OVARIES; TOTAL EXTIRPATION OF THE TUMOR AND UTERUS; RECOVERY.

BY RICHARD HOGNER, M.D., BOSTON.

Mrs. Nanny O., twenty-nine years old, and married about eight years, has been without children or miscarriages. For several years she has suffered from excessive and long-continued menses of frequent occurrence, coming on about every two weeks and lasting for seven or eight days. This was accompanied with severe pain in the back and in the left groin.

My notes of an early examination are: Uterus enlarged as if in the fourth month of pregnancy, but hard and with some small eminences on the right and above; the right ovary and tube could not be distinguished; the left was in its normal place, hardened, uneven, and enlarged to the size of a hen's egg; the left tube was palpable and thickened; manipulation of the lumbo-dorsalis and glutei, especially the left, showed painful and tender myosites.

The family history shows that the patient had a sister about forty years old, who died in June, 1893, of sarcoma-cystica-ovariorum, leaving two children, aged ten and seven years. The patient was advised to undergo an operation, which, however, she declined.

Under the circumstances I promised to do something to relieve her suffering, and commenced with gynecological kinesitherapy, according to the method of Thure Brandt, and with Swedish medical gymnastics, on the 27th of last October. Massage was given bimanually to the left ovary and tube, because I believed there was a condition of oophoritis and paraoophoritis, and movements leading the blood from the pelvic organs. Hard massage was also given for the myosites of the glutei and lumbo-dorsalis muscles. I did not treat the tumor at all, regarding it as a movable, equally affected fibroid uterus which has not become very hard.

After six weeks' treatment the patient felt quite well, had increased in strength, both physically and mentally; and treatment was discontinued, as it could do no further good. The left ovary had decreased about one-third its former size, the tenderness had gone, and the myosites had disappeared. The menses were regulated to about twenty-seven days, and to a duration of but three days.

Since that time, one half-year, she has been regular except for two periods, when the menses returned in three weeks and lasted for five days. She was able to do all her household work without assistance until last May, when, after washing, she carried a heavy basket of clothes up and down stairs, at once experiencing abdominal pain which necessitated her going to bed, and in a few days calling for medical assistance. I then found her with distended abdomen, very tender to the touch; the so-called uterus enlarged as in the sixth month of pregnancy and painful to pressure; diffuse pelvic peritonitis, with exudation in the parametria; fever, and an abundant metrorrhagia, which continued for three or four days with imminent danger to the patient's life. She recovered, however, although, in consequence, a nephritis, endocarditis acuta, and a slight pneumonia embolica followed. At the end of eight weeks she was up and about again, and one month later surprised me by calling at my office. An examination at this time showed what was considered the uterus to be of the former shape and size as in July, 1893, and the left ovary just as it was at the close of the massage treatment nine months ago, but the left parametrium and ovarium were tender. The right ovary and tube were yet undiscovered. Her regular menstruation returned a month after her severe hemorrhage and was of normal duration.

Remembering the case of her sister and also the character of the hemorrhage, I insisted on an operation, which she consented to, being fully conscious of all its dangers. Consulting Dr. Albert H. Tuttle, he endorsed my opinions, and consented to operate for the total extirpation of the uterus and ovaries. The operation was performed by Dr. Tuttle, September 11th, after the combined method of vaginal and abdominal routes devised by this operator. The subsequent history of the patient to complete recovery is unmarked by any event of special interest; the course was afebrile, the temperature never reaching 100° F., and the abdominal and vaginal incisions healed by first intention; at no time was there any tympanites, and flatus passed spontaneously from the rectum on the second day.

The specimens removed proved to be a large fibrocystic ovarian tumor from the right side, the size of a five months' uterus, which pushed the uterus forward and to the left, and which undoubtedly was the mass supposed to be that organ; on the left side the tumor was smaller, about the size of a small hen's egg, and firmer; the uterus was somewhat enlarged and presented the conditions of a hyperplastic endometritis. There was firm adhesions everywhere about the tumors, and cicatricial evidence of former attacks of circumscribed peritonitis. It is not too much to infer that this case would have suffered the same fate as her sister but for timely surgical interference.

◆

Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

ANESTHESIA.

Geheimrath Gurlt[1] read the yearly report of the collective inquiry into the statistics of narcotization. It embraces 51,846 narcoses of the year 1893. Of these 32,723 were produced by chloroform; 11,617 by ether; 3,896 by chloroform and ether; 750 by chloroform, ether and alcohol (Billroth's mixture); and 2,769 by ethyl-bromide. A number of laughing-gas narcotizations are added. These 51,846 surgical narcoses count 20 deaths; and of these, again, 17 are after chloroform. Thus, the average proportion was one death to 2,587 narcoses, and one death to 1,924 chloroform narcoses. In the four years during which the inquiry has been carried on, only one death after ether has been noted; and accordingly, the use of ether has increased from 6,200 cases in 1892 to 11,600 in 1893. The chloroform-ether mixture was used 1,200 times in 1892 and 3,800 times in 1893. Pictet's chloroform (purified by exposure to extremely low temperature) was used 3,182 times, as against 708 in 1892. In spite, however, of this and other purified chloroforms at the present in use, death during chloroform narcosis has not proved preventable; and the general opinion now is that it is not caused by the chemical impurities contained in ordinary chloroform.

---

[1] British Medical Journal, May 5, 1894.

THE EFFECT OF CHLOROFORM AND ETHER ON THE KIDNEYS.

Wunderlich[2] has investigated the urine of 125 patients before and after anesthetization at Professor Brun's Clinic. Albumin was found in five cases before operation and in eighteen after it. In three of these five ether (which was used) increased the amount of albumin. In the other thirteen cases the albumin was only a trace. The conclusions of the writer are that albuminuria when present is increased by ether (chloroform was not tried in any of these cases); that albuminuria can be caused by ether or chloroform, but more frequently with the latter, in the ratio of 11.5 to 6.9 per cent.; that after chloroform, less frequently with ether, casts appear in the urine, in the ratio of 34.8 to 24.6; and that when casts were previously present, both anesthetics increased the number.

THE SURGICAL USE OF BLOOD SERUM.

At the April meeting of German Surgeons C. L. Schleich (Berlin)[3] reported the method of using blood serum in the treatment of wounds and skin diseases. Blood serum was used in three or four preparations:

(1) Pasta serosa. Fresh bovine-blood serum mixed with 25 per cent. powdered zinc oxide, dried in a thin layer on a glass plate, removed by scraping, finely pulverized, and sterilized at 70° C. in a thermostat. Used by mixing with water to a paste.

(2) Pulvis serosa, the pasta serosa heated to 100° C.

(3) Pulvis serosa, with iodoform.

(4) Pulvis serosa, with nuclein — pulvis serosa, to which two to three per cent. of nuclein has been added.

(5) Pasta serosa, with hydragyrum.

The pasta serosa is non-irritating, free from acids, and was used as a covering for eczema, gangrene blebs, or denuded surfaces. It was spread on the surface, where it dried in a few moments, and thus formed a covering which was similar to a natural serous crust. The pulvis serosa, with or without iodoform, Scheleich considers to act as well as the method of healing by organized blood-clot proposed by Leliede. The powder is sprinkled on the wound, dries it up quickly, and forms a dry crust. The pulvis serosa with nuclein is used for wounds not wholly aseptic. By a process similar to digestion all portions of necrotic tissue are removed without injury to healthy tissue. The wound surface is rapidly cleansed of coatings of fibrin and bits of connective tissue and fascia as if by a curette. The mercury paste is used by applying three to five grammes smoothly with a brush, and allowing it to dry. After three days it is washed off.

TREPHINING IN CEREBRAL INJURIES.

A. v. Bergmann,[4] divided cases in which trephining is demanded, as regards the time of operation, whether demanded primarily or secondarily. Among the primary he would include compound fractures where the brain is exposed or is apparently lacerated by bone-fragments. In these cases the indications are unquestioned, as are also those where there are present symptoms of acute compression or rupture of sinuses or veins. The author would also include cases in which foreign bodies are left in the wound. In gunshot wounds primary-trephining is indicated where the bone wound is extensive and bleeding persists. If, however, the ball remains within and there is no fever, it should be left alone; secondary trephining is, however, generally called for. Secondary trephining is indicated by febrile reaction, abscesses, softening, and the formation of cysts and brain-scars. The author reports two cases of gunshot wounds and two cases of localized areas of softening, which he defines as a region of reddened, compressed brain-substance, in which is found a varying amount of extravasated blood. Its demarcation from the sound brain-substance is more or less sharply defined. He believes that the localization of such an area is an indication for operation.

MUSCULAR MACROGLOSSUS.

K. Eickenbusch[5] reports two cases of macroglossus, one of which was of the more common lymphatic type (hematolymphangioma mixum), while the other, which on account of its rarity attracts especial attention, was found to be caused histologically by a hyperplasia and hypertrophy of muscular fibre with few vessels and a small amount of connective tissue. Eickenbusch has called this latter form "macroglossus musculäre." The characteristics of this affection are that the growth is a slow, regular, uninterrupted one; that the motion of the tongue is greater than in the other type; and that the surface is smooth, with no increase in size of the papillæ. The prognosis in this type is favorable, since multiple incisions have a very beneficial effect.

THE AFTER-TREATMENT OF TONGUE EXCISIONS.

Henry T. Butlin, F.R.C.S.,[6] states that the after-treatment of operations on the tongue should be chiefly directed to (1) maintaining the wound in the mouth as aseptic as possible, (2) diminishing the tendency of the wound-discharges to pass down the air-passages, (3) preventing food from passing down the trachea into the lungs.

The first indication is best fulfilled by the frequent use of powdered iodoform to the mouth wound. As soon as the operation is over, and before the patient is put back to bed, the surface of the fresh wound is dusted with powdered iodoform; and for a week or ten days iodoform is blown onto the surface of the wound by means of a proper insufflator. In addition, the patient may use a mouth-wash of Condy's fluid or weak carbolic solution to help to cleanse the interior of the mouth of the fluids which collect there.

The second indication requires that the patient's head should be kept low, and that he should lie on one side. Butlin only allows one small pillow, and insists that he should lie well over on the side from which the greatest amount of tongue has been removed. The discharges then have a tendency to sink into the cheek, and are frequently washed out or allowed to run out, and there is thus the least possible inclination of discharges to sink down towards the back of the mouth and larynx.

---

[2] Annals of Surgery, 1894, vol. xx, p. 630.

[3] Centbl. f. Chir., 1894, Bd. xxi, Beilage S. 11.

[4] St. Petersburger med. Woch., 1893, No. 51; American Journal of the Medical Sciences, October, 1894, No. 270, p. 486.

[5] Beitrag. z. Klin. Chir., 1894, xi, 2, p. 273.

[6] British Medical Journal, April 14, 1894; Annals of Surgery, August, 1894, vol. xx, p. 231.

The feeding of these patients needs very great attention. When only half of the tongue (whether a lateral half or the front half) or two-thirds has been removed, liquids can generally easily be taken on the day following the operation from a feeder with a spout, provided a piece of india-rubber tubing, three or four inches long, be fixed onto the spout. If the right half of the tongue has been removed, the patient should lie over on the left side during feeding, so that the food is kept as far as possible away from the wound, and passes over the parts which have been least interfered with.

When the whole of the tongue has been removed, the difficulty of swallowing is much greater, and many days may elapse before the patient acquires the knack of swallowing liquids without permitting a small quantity to pass down the air tubes. During the first forty-eight hours these patients are fed through the rectum with nutrient enemata. At the end of that period the patient may make a first attempt to swallow a little liquid, and water should be chosen for the experiment, because the entrance of a little water into the trachea is seldom followed by any serious consequences. Milk and beef-tea are more dangerous; they hang about the air tubes, are difficult to get rid of, and are very prone to undergo rapid decomposition, and occasion the much-dreaded swallowing pneumonia (Schluckpneumonie). If the experiment is successful other liquids may be tried, and the problem of feeding is really overcome. But, if there is any difficulty, the patient, as long as may be necessary, should be fed through a tube. No instrument is so good for this purpose as a black bulbous catheter, about No. 9 or 10, attached to a long piece of india-rubber tubing, to the other end of which a small glass funnel is fixed.

The throat is first sprayed with a three or four per cent. solution of cocaine; the tubing is clamped with forceps just above the attachment of the catheter, and the funnel and tubing are filled down to the clamp forceps with warm food. The catheter is very gently passed down the pharynx, and hitches at the posterior border of the larynx. The patient is directed to swallow, and as he does so the catheter is easily passed on into the esophagus. For the moment discomfort is created, and the patient often struggles. He is directed to close his mouth, and no attempt is made to pass the catheter farther down for half a minute or longer. Then it is slowly and gently passed down to a distance of about eleven inches from the teeth. When the annoyance from the presence of the catheter has ceased, the clamp is removed and the food is allowed to run slowly down into the stomach. If there is an inclination to regurgitation or to cough, the descent of liquid is instantly arrested by pressing on the tubing with the finger and thumb, and the nurse lowers the funnel until the dangerous moment has passed. By attention to these details a pint or a pint and a half of liquid may easily be introduced into the stomach without danger. Before removing the catheter the funnel is raised high up, so as to get rid of the contents of the tube; and during the actual removal of the catheter the tubing is kept tightly pressed between the finger and thumb in order to prevent the entrance of even a few drops into the larynx. Patients are often so satisfied with this method of feeding that they have sometimes insisted on being fed through a tube for a much longer period than was really necessary.

A NEW OPERATION FOR BONY ANCHYLOSIS OF THE JAW.

Helferich[7] has cured a patient (a girl, eight years old) suffering from a unilateral (left) anchylosis of the jaw of one year's duration by the following method. The result enabled the patient to open the mouth without any limitation of motion. The method consists of interposing a muscular flap between the bony resected ends of the jaw which prevented bony union. After resecting a moderately large piece of bone with its periosteum, Helferich cut a flap about two fingers wide, and including its whole thickness, from the temporal muscle, the base being below. The zygomatic arch was resected and the flap turned down so as to allow the end to be carefully "implanted" in the bony defect in the jaw. It was then fastened by two sutures.

OMPHALECTOMY IN THE TREATMENT OF UMBILICAL HERNIA.

Prof. P. Bruns[8] advocates a modification of Condamin's operation for the permanent cure of umbilical hernia. It consists in making the skin incision around one side of the hernial tumor, but commencing and ending in the median line. It is outside the ring, and exposes the peritoneum throughout its entire length. The inner edge, with the hernia, is drawn aside; and the ring thus exposed and the sac are divided transversely. This allows access to the interior of the sac, and enables the operator to easily examine and reduce its contents. After the above is accomplished, an incision similar to the skin incision completes the excision of the sac and ring, which are removed together. The abdominal wound thus left is sutured by deep sutures passed entirely through all layers, and the peritoneum reinforced by superficial skin sutures. The advantages claimed by Bruns for this method are that it enables the surgeon to more easily and rapidly reduce the contents of the sac. He can recognize more easily the contents of the sac, since he has access from the peritoneal side. The intestine is less liable to be injured than with the median incision commonly used. The wound unites more firmly, since the fibrous hernial ring is removed, and recurrence is less liable to recur.

A NEW METHOD FOR THE RADICAL TREATMENT OF FEMORAL HERNIÆ.

Fabricius,[9] describes the following operation: An incision four to five inches long is made from the insertion of Poupart's ligament, parallel to it, down through the superficial fascia, exposing the superficial epigastric vein. If the hernia passes under the lesser falciform process, the sac may now be seen; if, however, it has passed beneath the superficial layer of the fascia lata, that must be cut before it is exposed. The hernia should now be reduced, the sac ligated and removed, and the stump returned into the abdomen. If the constriction is too great, Poupart's ligament should be divided at its insertion on the inner edge of the horizontal ramus of the pubes, or, where it is possible, on Cooper's ligament. This relaxation of the ligament also permits the full exploration of the hernial canal and the removal of any lymphatic glands or tissue it may contain, and makes possible the suturing as described later.

---

[7] Centbl. f. Chir., 1894, Bd. xxi, Beilage 35

[8] Centbl. f. Chir., 1894, Bd. xxi.

[9] Centralblatt fur Chir., 1894, No. 6; American Journal of the Medical Sciences, October, 1894, No. 270, p 483

After the crural sheath has been freed, with the contained vessels, it should be displaced outwardly over the illio-pectineal eminence, where they should be held by a blunt hook, while Poupart's ligament is sutured to the horizontal ramus of the pubes. A sharply curved needle should be used, and the stitch should take in about three-eighths of an inch of tissue above Poupart's ligament, the horizontal portion of the pectineal fascia, the primary fascicles of the pectineal muscle and the periosteum. In inserting the first stitch next to the large vessels, care should be taken to avoid the inferior epigastric artery and vein. The ligament should be sutured from that point to the pubic spine, uniting it again to the inner border of the horizontal ramus. Care must be taken in all cases to include the periosteum. The superficial portion of the fascia lata may or may not be sutured to the pectineal fascia. To prevent inguinal hernia the pillars of the external ring should be sutured. There is no danger of obstructing the circulation by the displacement of the artery and vein, though there may be slight edema at first.

A NEW OPERATION FOR THE RADICAL CURE OF FEMORAL HERNIA.

The success attending his method of treating inguinal hernia has led Dr. Ed. Bassini, of Padua,[10] to publish his method for the radical cure of femoral hernia.

The operation is done by placing the patient on the back, with the pelvis elevated. An incision is made parallel to Poupart's ligament, with its centre over the centre of the tumor. The incision is carried down to the sac, which is isolated and opened. The bowel is replaced and the sac ligated and removed. Poupart's ligament, the pectineal fascia, the pectineal line, and the falciform fascia are now recognized. With a curved needle and fine silk Poupart's ligament is sewed to the pectineal fascia at its origin from the pectineal line. Three sutures are sufficient. The first perforates Poupart's ligament near the spine of the pubis; the second is placed one-half a centimetre externally; and the third is placed one centimetre internal to the femoral vein. These sutures are not tied until after the others are placed. Four other sutures are passed through the edge of the falciform fascia, and then through the pectineal fascia a little internal to the points of entrance in the falciform. The lower suture is placed just above the saphenous vein. The sutures are now tied. The upper ones draw Poupart's ligament backward to the pectineal line and close the mouth of the canal; the other sutures approximate the anterior and posterior walls of the canal. The skin is next sutured and no drainage used.

The author has done fifty-four operations on fifty-one individuals, all of whom were cured and left the clinic in from eight to twenty days. Forty-one cases have been kept under observation from two to nine years, and in no case has a recurrence occurred.

RECENT METHODS OF GASTROSTOMY FOR STRICTURE OF THE ESOPHAGUS.

Dr. Willy Meyer[11] considers this subject, and sums up as follows:

(1) There are now three useful and reliable methods of gastrostomy at the surgeon's disposal. Of these, one (Witzel's) prevents leakage with absolute certainty. The two others, if properly carried out, promise the same good result. Thus the patient who has been submitted to this operation will not starve from regurgitation of the food alongside the tube.

(2) In view of this fact, gastrostomy should be resorted to "early" in cases that will sooner or later need this operation.

(3) In cases of burn of the esophagus, primary gastrostomy and timely dilatation of the contracting scar will most probably prevent conditions which at present generally confront the surgeon in this class of cases, and are sometimes incurable. Witzel's method of gastrostomy deserves preference. The oblique canal produced by it will close spontaneously when the tube has been removed. Thus a secondary operation will not be needed.

(4) In cases of cancer of the esophagus a gastric fistula should be established as soon as the scales show a steady decrease of the patient's weight.

(5) Further experience is needed with reference to Ssabanejew-Frank's method before an attempt can be made at giving each of the three operations its proper place in the treatment of cancerous stenosis. If future observations be favorable, Ssabanejew-Frank's operation seems to be destined to become the standard one for malignant stricture of the esophagus. If unfavorable, Witzel's method should be done wherever it can be carried out.

(6) Van Hacker's method should then be reserved for far-gone cases, and should, if the patient be very weak, be done under cocaine-anesthesia, best at two sittings. If properly performed, the outlook for making the fistula close tightly around the tube is good.

GASTRO ENTEROSTOMIE.

F. Schröter has reviewed the work in this branch of surgery during the past twelve years, and has reported the facts relating to the indications, methods and results.[12]

The chief indication for operation is cancer of the pylorus, if marked cachexia is not present. Cases where the stomach wall is extensively involved, where lymph glands and adjacent organs are involved, or where extensive adhesions to surrounding structures are present, are especially suitable for operation.

Where gastrostomie is of value is in cases of non-malignant pylorus stenosis. It is found to give as permanent relief as extirpation. It has also been used to relieve patients with stenosis of the duodenum and dilated stomachs where dilitation was not due to stenosis.

Schröter discusses the different methods of technique, and especially describes Sonnenburg's recent method of suturing the stomach and intestine, which has left an opening easily patent for the index finger and has been quite satisfactory in two cases. It is thus described: The intestine is incised in the usual manner, and the mucous membrane stitched to the edge of the wound with an interrupted catgut suture so as to cover it. The sutures are cut short. The stomach is next incised and the edges of the incision sutured in a similar manner, except the ends are tied together in one knot instead of being cut off. A small incision is now made in the intestine, two centimetres distant from the anastomosis incision. The ends of the gastric suture are passed into the intestine through the first incision and out through the latter. By pulling these the stomach wound can be drawn into the lumen of the intestine so that it projects, funnel-like, in the direction of the fecal current. It is then sutured in this position. When the anastomosis is complete, the suture ends used to pull the stomach into place are cut off and drawn out of the intestine through the smaller opening, and the latter closed by sutures.

---

[10] Archiv. für Klin. Chir., Bd. 47; Annals of Surgery, October, 1894.

[11] American Journal of the Medical Sciences, October, 1894, No. 270, p. 426.

[12] Deutsch Zeitsch. f. Chir., 1894, xxx, 2 u. 3, p. 296.

TORSION FOR RECTAL INCONTINENCE.

A recent paper of Dr. Gerster on this subject [13] is interesting as furnishing additional information respecting the method reported by Gersuny, of Vienna, for the treatment of rectal incontinence described in detail in a previous report.[14] The incontinence may be due to congenital absence of the sphincter ani, to paralysis of the sphincter from spinal lesions, or surgical injuries due to traumatism or operation. Gerster has used torsion with success to relieve incontinence. He rotates the free end of the gut around its own axis so as to arrange the folds of mucous membrane in spirals. The twisted gut is then sutured to the edges of the external wound. The amount of torsion is gauged by the amount of resistance felt by the index finger on introduction. He did not in two cases make more than one complete twist, but more than one revolution might be required when the freed end of the rectum was long, that is, when five to six inches had been excised and the end drawn down. If not twisted at once, the operation of torsion must be delayed till the rectum is fixed in a mass of granulations to the surrounding soft parts. It is then dissected clear for two to three inches, and twisted till the necessary resistance is obtained. Which method is preferable is not yet known. Gerster has never performed torsion immediately after extirpation, only after dissecting out the rectum, the proximal end when the dissection ended being fixed firmly when torsion was made.

RADICAL CURE OF HYDROCELE.

Neumann [15] has cured six patients by allowing the canula through which the hydrocele fluid was evacuated to remain *in situ* in the sac of the tunica vaginalis for two to three days under an antiseptic dressing. In all cases adhesion of the parietal and visceral layers occurred without inflammation or suppuration.

THE FILLING OF BONE DEFECTS WITH FOREIGN MATERIAL.

Martin [16] in an interesting paper discusses the results which he obtained in following up the line of research originated by Dreesmann and Mayer.

He showed that in dogs aseptic plaster-of-Paris and base-plate gutta-percha can be used to fill up bone defects, and that the filling will be covered over by either primary or secondary union of the soft parts.

In the first case cited, the wound healed smoothly by primary union over a filling of plaster-of-Paris, and the dog made a complete recovery. In the second case plaster was also used, but the dog tore away the dressings and opened the wound; some of the plaster escaped, but the wound healed by granulation. The post-mortem examination, made twelve and one-half months after the operation, showed that the plaster had been absorbed and that the bone defect had been completely replaced by new bone tissue.

In the cases in which base-plate gutta-percha was used, primary union followed in the first case, and the post-mortem made five months after operation showed the gutta-percha fast and immovable in the medullary canal, completely surrounded by healthy bone. The second dog showed on post-mortem, eight and one-half months after operation, the gutta-percha all but surrounded by solid bone, only touching the soft parts in one small point; although the dog had torn away the dressings and opened the wound, it had healed by granulation. There had apparently been partial absorption of gutta-percha, since it had been replaced where it lay outside the medullary canal, by hard bone tissue in both cases. In contrasting it with the plaster-of-Paris it was noted that it was not so readily absorbed. The use of plaster-of-Paris is perhaps a little easier; it should, however, be reserved for large cavities, the use of gutta-percha being limited by the amount of bone defect. Plaster-of-Paris is more easily removed when it is necessary.

The gutta-percha has the advantage of being both resistant and elastic when it is hardened. It should, therefore, be used where considerable resistance is required, as where the bone-walls are thin; but in cases where considerable strength is required, as solutions of continuity and total loss of bone substance, nothing can be expected of this method, and ivory is to be preferred.

The good restoration of the form of the bone is noteworthy, as shown by the complete covering of the gutta-percha filling by the new bone-growth.

The author believes that it is more necessary, in order to make progress, to find a method that will make bone cavities aseptic, than to find, as some experimenters have tried to do, an antiseptic substance that may be used to fill the cavity in the bone. He does not, however, mean to imply that plaster-of-Paris and gutta-percha are the only substances that are non-irritating and yet suitable for the purpose.

An advance in the antisepsis in bone cavities has been made by Dreesmann, who employed boiling oil. But the practical results of this method are not what they might be, as there is produced a slough which separates the living tissue from the material used to fill the cavity, and this forms a culture medium for bacteria.

NEUDORFER'S METHOD OF AMPUTATING EXTREMITIES.

A. H. Meisenbach, M.D.,[17] Professor of Surgery in the Marion Sims College of Medicine, relates his experience with this new method of amputating. This method is presented, and may be tried in selected cases. It is certain that many stumps which are produced by the classical amputations are far from ideal.

---

[13] Annals of Surgery, 1894, vol. xx, p. 612.

[14] Boston Medical and Surgical Journal, 1894, vol. cxxx, p. 386.

[15] Wiener Medizinische Presse, 1893, No. 45.

[16] Cent. f. Chir., 1894, No. 9; American Journal of Medical Sciences, July, 1894, p. 99.

[17] Annals of Surgery, September, 1894, vol. 20, No. 3, p. 355.

"Neudorfer applies the principles of the technique involved in this method both to amputations in continuity and in contiguity. I shall deal in this paper only with amputations in continuity. The amputations in continuity are divided —

"(1) Through regions where there is only a single bone to be divided, as in the thigh and in the upper arm.

"(2) Through regions where there are two bones to be divided, as in the forearm and in the leg.

"*Technique where One Bone is divided.* — The first step in the operation is to determine the point at which the bone is to be divided. For example, we will assume that we wish to amputate the thigh at the junction of the lower with the middle third. If the bloodless operation of Esmarch is employed, the limb is first rendered bloodless by the application of a bandage and constrictor. If the bloodless method is not employed, the vessels are controlled either by a constrictor or by the fingers of an assistant. Having determined the point where we wish to divide the bone, an incision is made with a sharp pointed, strong resection knife, extending downward, in the long axis of the limb, through the soft parts and periosteum. The incision should be made on the lateral or anterior aspect of the limb, where the bone is more superficial, and where the larger vessels and nerves are avoided. In the thigh, the incision should be made about twelve centimetres in length, or about four and a half inches. With large-sized retractors the soft parts are held apart. The periosteum is now thoroughly loosened from the bone in the line of the incision with a raspatory. With the chisel the bone is cut through at the upper angle of the wound (line for division) as in an osteotomy. The lower fragment is luxated through the slit in the periosteum, and the membrane (periosteum) carefully stripped from the bone.

"The soft parts are now divided at the site of the lower angle of the wound, in one place cut transversely to the axis of the limb, with an amputating-knife, scalpel, or even with a large pair of scissors. The vessels are next secured by ligatures. Having secured the vessels, the periosteum is stitched together with a fine catgut, continuous, buried suture, both longitudinally and transversely, obliterating the cavity of the periosteum which was occupied by the bone. The muscles are now united by a continuous, buried, catgut suture, and finally, the skin in the same manner.

"In amputations of the upper arm the incision is made on the outer aspect of the limb, and is to be about six centimetres or two and a fourth or two and a half inches in length. The other steps in the operation are the same as described for amputations of the thigh.

"*Technique where Two Bones are to be divided.* — The same technique is carried out in amputations of the leg and forearm, with the exception that an osteotomy of two bones must first be made before the soft parts are cut through.

"In the forearm the incision is made over the middle of the ulna and radius on the dorsal side, six centimetres in length. Here the bones are very superficial. In making the incisions the arm should be kept midway between pronation and supination.

"For amputations of the leg the incision is made over the tibia, at the point selected, either on the inner or outer aspect of the crest, and about nine centimetres in length. Neudorfer prefers the outer aspect. The tibia is first cut through with a chisel, then the fibula is divided either on the same plane or a little higher up. All the other steps are the same as already described, the only difference being that in amputation of the leg and forearm we have two periosteal cavities to obliterate and two skin wounds, respectively, over ulna and radius, or over tibia and fibula."

TREATMENT FOR FRACTURE OF THE RADIUS.

F. Petersen, of Kiel,[18] has advocated for the treatment of fracture of the radius of the usual type the following: After the accurate reduction of the deformity the arm is simply supported by a cloth sling so arranged that the hand pronated hangs free over the anterior edge. The arm is supported by the sling to the site of the fracture.

BIBLOGRAPHY.

DeForest, H. P. Fischer on Suppurative Inflammation in the Sub-umbilical Space. Annals of Surgery, 1894, vol. xx, 108.

Treves, F. The Treatment of Tubercular Peritonitis. Editorial, Annals of Surgery, 1894, vol. xx, 619.

Warbasse, J. P. Stern on the Statistics and Prognosis of Herniotomy in Incarcerated Herniæ of Early Childhood. Annals of Surgery, 1894, vol. xx, 377.

Dreydorff, H. Casuistischer Beitrag zur Magenchirurgie nebst einer Uebersicht über 442 Falle von Pylorektomie, Gastroenterostomie und Pyloroplastik. Beitr. z. klin. Chir., 1894, vol. xi, 2, 333.

Fowler, George R. Observations upon Appendicitis. Annals of Surgery, 1894, vol. xx, 362, 475, 546.

Warbasse, J. P. Surgery and Physiology of the Spleen. Annals of Surgery, 1894, vol. xx, 205.

Keen, W. W. Shoulder Amputations. American Journal of the Medical Sciences, June, 1894, vol. cvii, 6, 680.

Fenger, Christian. Surgery of the Ureter. Annals of Surgery, September, 1894, vol. xx, 3, 257.

McBurney, Charles. Dislocations of the Humerus, Complicated by Fracture at or near the Surgical Neck, with a New Method of Reduction. Annals of Surgery, April, 1894, vol. xix, 4, 399.

Holden, F. C. Note on the Value of Maceration in Ether and in Ether Solution of Corrosive Sublimate for the Sterilization of Catgut. Annals of Surgery, 1894, vol. xx, 591.

Reports of Societies.

THE NEW YORK NEUROLOGICAL SOCIETY.

Stated meeting, held at the New York Academy of Medicine, May 1, 1894, **Dr. M. Allen Starr**, President, in the chair.

Dr. Effertz, of Vienna, presented

A CASE OF HYSTERIA.

The patient was a woman, aged thirty-five, who for the past sixteen years has had a contraction of the fingers and hands of both upper extremities, and complete anesthesia of the face and body. The patient is readily hypnotized, and while in the cataleptic state the contracted hands and fingers relax, on suggestion. While under the influence of hypnotism, the woman invariably presents a double convergent strabismus, which disappears when she is roused. On suggestion, the contractures may be made to disappear temporarily. The anesthesia is always present, but the patient never burns nor injures herself. There is no ataxia. The corneal reflex is present. The patient suffers from hystero-epilepsy, and sometimes goes into a condition of trance spontaneously. With the left eye she is totally blind. With the other eye the visual field is limited, and she does not see certain colors. There is loss of hearing on one side.

---

[18] Centbl. f. Chir., 1894, Bd. xxi, Beilage 93.

Dr. W. M. Leszynsky said he examined the patient a few days ago, and could corroborate Dr. Effertz's statements regarding the case. It was impossible to test the knee-jerk, as the leg immediately became rigid. She was readily hypnotized, but he had found it very difficult to awaken her.

INTRODUCTION OF THE NEW PRESIDENT.

Dr. M. Allen Starr, the retiring President of the Society, made a few remarks in which he referred to the success of the Society during the past two years, and its prosperous condition at the present time. Many of the papers presented showed a high grade of excellence and have been important additions to neurology; the discussions, too, brought out many points of great practical value. Dr. Starr then introduced the newly elected President, **Dr. E. D. Fisher**.

Dr. Fisher, after a few preliminary remarks in which he outlined the proposed work of the Society during the coming year, read a paper on the subject of

THROMBOSIS OF THE CEREBRAL ARTERIES.

He stated that the most common causes of thrombosis of the cerebral arteries are atheroma and syphilitic endarteritis. In atheroma the large vessels at the base are especially involved; but on close examination, the smaller vessels, if traced up beyond the Sylvian fissure, will be found to have rigid walls which have lost their elasticity and are therefore subject to temporary interference with the course of the blood through them. This is particularly seen when Bright's disease is a complication, or indeed, as in most cases, a cause of the degeneration of the arterial walls. In syphilitic endarteritis it is said that the smaller arteries or capillaries are involved to a greater degree than in atheroma. Dr. Fisher said he would confine himself more particularly to the latter condition, associated with Bright's disease, as of late much has been written on the subject of uremic hemiplegia.

The difficulty of diagnosing this condition lies in the attempts to explain the distinct localization, on the basis of uremia as the cause. One might expect a paraplegia from the general effect of the poison on the cerebrum, or a general compression from the edematous condition found in these cases, but not a localized paralysis. Autopsies have been reported, and several such have come under the author's observation, in which distinct hemiplegia has been present, and yet neither hemorrhage nor thrombosis was found to explain it. In most of the cases of uremic hemiplegia reported, disease of the vessels has also existed, although no other lesion, excepting in some cases serous effusion, has been found. Again, at times, no disease of the vessels has been found, but perhaps with no greater frequency than apparently healthy vessels are found in cases of hemorrhage or thrombosis. It is certainly not an uncommon experience, especially is syphilitic endarteritis, to see a hemiplegia entirely clear up, leaving little if any trace, by secondary changes of the previous interference with the cerebral circulation. We find the same condition not infrequently in atheromatous conditions in old people. The most rational explanation seems to be that there is a temporary occlusion or stasis, which in the diseased state of the vessel walls permits a localized serous exudation, so that we might feel justified in returning to the old term of a serous apoplexy.

The commonly accepted indication of thrombosis is a gradual onset of the paralysis, perhaps extending while the patient is still conscious and able to describe its course. The consciousness may not be affected at all, or it may be progressively affected, passing into complete coma, with stertorous respiration. This implies that a large artery has been involved. The temperature is not lowered at the onset, as a rule, as in hemorrhage; but within twenty-four or forty-eight hours there will probably be an increase of temperature from the softening which follows. The other later stages are not to be differentiated from those due to any other destructive lesion in the brain, excepting perhaps the fact that the paralyzed parts are more frequently the seat of spasmodic movements. The loss of consciousness is explained by the anemia of the brain, and also as a result of the compression. The compression is the result of three causes: There is stasis in the vessel occluded and the veins beyond, as the latter, not receiving the *vis à tergo*, remain filled; there is also an exudation from the vessels which now acts as a compressive agent. The collateral circulation can hardly be considered as exerting a compression on the affected part. The onset of the thrombosis is usually too gradual for us to consider the question of shock to the brain as a cause of unconsciousness. In later stages of cerebral softening, which is now accepted as non-inflammatory and entirely dependent upon the cutting off of the blood supply, aided by compression from the exuded serum, we not infrequently find hemorrhages in the course of thrombosis, as a result of the loss of the usual support of the healthy tissues to the already diseased vessels. This the author considered to be the explanation of some cases which commence with symptoms diagnostic of thrombosis, but which within one or two days pass into deeper coma, after having perhaps recovered consciousness soon after the initial lesion. Autopsy reveals a hemorrhage probably preceded by thrombosis.

Dr. Ira Van Gieson read a paper on

HEMORRHAGIC NECROSIS OF THE SPINAL CORD.

The author stated that the subject which he wished to present for consideration was what seemed to him to be an explanation of the nature and origin of certain long, slender columns of necrosis in the spinal cord, apparently associated usually with acute myelitis. These columns of necrosis are very remarkable in that they are narrow and circumscribed, and yet they may traverse long distances of the cord, above or below a circumscribed myelitis, while the surrounding structures of the cord are normal and show no traces of inflammation or other processes which would produce such a necrotic column. For instance, seven or eight spinal segments above or below a circumscribed focus of myelitis may be pierced by a continuous streak or narrow column of necrosis, running either through the gray or white matter, while the segments thus traversed by the necrotic columns are quite normal, with the exception of secondary degeneration in the various fibre tracts of the white matter. In addition, these necrotic columns in the spinal cord show a tendency toward the formation of cavities in them. These cavities are liable to become so much liquified or disintegrated by the necrotic process in places along the distribution of the column, that a cavity or tiny bulbular canal is produced, which is sharply circumscribed and quite variable in extent.

These cases are seemingly of exceedingly rare occurrence. The author said he knew of but two published cases, one of which was associated with an acute, circumscribed myelitis of very sudden onset, while the second case followed a myelitis of severe traumatic origin. Both of the cases lived for three or four months after the onset of the myelitis. The first case published was that of Dr. C. L. Dana, in the *Alienist and Neurologist*, April, 1889, under the title of "Acute Transverse Myelitis, with Perforating Necrosis of the whole Dorsal Cord; Ascending and Descending Degenerations." Dr. Dana excluded bacterial action in the formation of the perforating necrosis, and seemed to be at a loss to determine the origin of the process. The second case was that of the author, which was published in the "Transactions of the New York Pathological Society," 1891, under the title of "A Case of Traumatic Myelitis in the lower Dorsal Region, with a Central Column of Necrosis extending above the lesion throughout the whole Dorsal and Cervical Regions." In this case the necrotic column and canal had no pyogenic or other lining membrane; it was entirely distinct from syringo-myelia; there were absolutely no signs of inflammation in the surrounding cord structures; and Dr. Van Gieson said he was at a loss to understand the occurrence of so long a necrotic column in the midst of the normal portion of the cord.

Within the past two years, the author said he had had an opportunity of studying two cases of acute myelitis, with hemorrhage, which afforded a very simple explanation of the lesions of perforating necrosis. In brief, this peculiar process seems to be produced primarily by long slender columns of spinal cord hemorrhages, associated occasionally with cases of acute myelitis, chiefly those of violent traumatic origin, with fracture of the spine, so that there is a more or less severe crush or bruise of the cord occurring *intra vitam.* Then, after a period of several weeks, these columns of hemorrage above or below, or extending both ways from the damaged cord segment, break down, and we have the lesion of perforating necrosis.

DR. VAN GIESON then gave the histories of two cases of traumatic hæmatomyelia which recently came under his observation, and showed the close relationship which they bore to the production of these long columns of necrosis or partly necrotic canals in the spinal cord, which are thus far known as perforating necrosis. In both of these cases there was violent trauma, which fractured the spinal canal and produced a crushing bruise, with disintegration of one or more segments. Both of the patients died within forty-eight hours after the accident, thus allowing the lesions to be studied before the development of any extensive myelitis or necrosis. In the first case the lesion consisted of a disintegration of the cord at the eighth cervical segment, and a hemorrhage in the two segments above and below this, shown especially on the left side of the cord. In the second case there was a fracture of the eighth cervical vertebra, which produced a crushing bruise of the first and second dorsal segments of the cord. Columnar hemorrhages were found extending upward and downward from the crushed segments.

In the case of perforating necrosis reported by Dr. Dana, there was no history of trauma such as would give rise to these columns as the result of a crushing wound to the cord; but he distinctly states that the myelitis came on so suddenly as to give rise to suspicion of hemorrhage, and he concluded from the clinical history that there actually was a hemorrhage at first.

In concluding his paper, Dr. Van Gieson said he regarded the condition of perforating necrosis as a distinct and individual lesion of the cord, due to a definite series of changes beginning with hemorrhage. To indicate this condition, and to distinguish it from other spinal lesions, Dr. Van Gieson suggested the name hemato-myelo-porus.

DR. STARR said he regarded Dr. Van Gieson's paper as a very valuable contribution to the pathology of the cord. He felt no hesitancy in accepting the explanation given regarding the origin of the condition described as perforating necrosis. There is nothing in the physics of the subject which would militate against such an explanation. The connective tissue covering the cord and holding it in has a decided thickness and consistence; it offers some opposition to the knife in the fresh state; and no matter how extensive the crushing of the cord may be, it is rather rare at an early autopsy to find the connective tissue of the cord actually ruptured. That being the case, it is easy to understand that a hemorrhage in the cord, in taking the course described by Dr. Van Gieson, simply follows the direction of the least resistance to pressure.

Another point of interest was that in the old cases reported by the author of the paper, much of the hemorrhage had been absorbed, leaving cavities behind. Similar cavities are also met with in the brain. This fact, Dr. Starr said, he has seen demonstrated by Meynert. In those cases cavities existed in the lenticular nucleus; they were filled with thin serous fluid, but contained no blood. In one brain there were cavities in both lenticular nuclei. It seems, therefore, that we may have in the brain a condition homologous to that found by Dr. Van Gieson in the cord.

DR. G. M. HAMMOND said that while in the recent cases reported by Dr. Van Gieson, the evidence of hemorrhage was very apparent, he wished to ask whether the lesions in the older cases were hemorrhagic, and what the pathological changes were.

DR. FISHER said that in traumatic cases, the explanation given that the columns of hemorrhage were due to the fact that the blood followed the course of least resistance would hold good: in other cases, however, in which the patient survives perhaps for several months, the perforating columns of necrosis may be due, not to an extension of the hemorrhage at the time of the injury, but to slight capillary hemorrhage, leading to lack of nutrition and softening.

DR. VAN GIESON then closed the discussion. In reply to Dr. Hammond he stated that in the older cases he saw no traces of hemorrhage in the cord lesions; simply a mass of necrosis. After hemorrhage of the brain, the blood may entirely disappear within three or four months, leaving perhaps some pigmentation behind, or simply a small cavity filled with serous fluid.

Recent Literature.

Suicide and Insanity; A Physiological and Sociological Study. By S. A. K. STRAHAN, M.D., Barrister-at-Law. Pp. 227. London: Swan, Sonnenschien & Co., 1893.

Taken as a whole this may be called a standard work — the first on the subject of suicide to appear in many years, with the exception of Morselli's classic, and possibly O'Dea's work, both of which were published about fifteen years ago. This is rather surprising when we consider the interest which this subject has for the physician, lawyer, sociologist, theologian and moralist, and the array of recent works on insanity, jurisprudence, heredity, psychology and crime. Morselli's essay was based on a vast collection of statistics, a close and elaborate analysis of which enabled him to confirm and establish certain general laws as to appearance, causes and increase of suicide. Strahan embodies in his work many of these results, and in addition devotes the bulk of the volume to the consideration of the influence of disease and heredity upon the origin and extension of suicide. There are few statistical tables in this work; but barring a tendency to special pleading, the author's argument, whether based on pathological, clinical or historical facts, is interesting, impressive at times, and quite as conclusive as Morselli's. The two books are in a measure complements of each other; and taking them together, we may now obtain a comprehensive survey of the various aspects and relations of suicide, general and individual, and the many questions involved.

The author has made the unique attempt, and a fairly successful one it is, to classify self-destroyers. He divides them into *rational* or *quasi*, and *irrational* or *true* suicides. In the one class "the reason of the individual is called upon to choose between death and a continuance of life and he selects the former. In the other he is impelled to destroy his life by an innate craving or instinct, by an uncontrollable impulse; or by the unhealthy reasoning of a disordered intellect." Artificial as any such arrangement must be, from the fact of the large number of intermediate cases, and for other reasons, it certainly helps to facilitate study of the subject. He calculates that but ten per cent. of all modern suicides, can, after careful examination, be relegated to the rational class, the remaining ninety per cent. being irrational (not necessarily insane) suicides. In his support of his definition of true suicide lies much of the argument and moral of the book. It is shown that suicide is a product of civilization, is immediately hereditary and due to transmission of family degeneration, and that it is one of the many eliminative processes by which Nature rids herself of the unfit. Therefore to the list of degenerates from hereditary transmission, that is, the insane, idiotic, imbecile, criminal, deaf, dumb and blind, he would add, as almost a separate class, true suicides. He cites many illustrative cases and family trees in support of his views. One per cent. is given as the limit of persons of really sound stock who commit suicide; and he asserts "that suicidal impulse, whether the gradually developing or the instantaneous, is but rarely acquired"; it "is inherited from ancestors who have been cultivating it for a considerable time in one form or another."

Regarding the question of the insanity of suicides, the writer holds some rather extreme views. He exposes ably the fallacy of the opinion first held by Esquirol and his contemporaries, that no suicide could be sane, and considers it "*tolerably certain* that but a small minority of our annual total of suicides arises from madness, the greater number being abnormally constituted, but neither deficient nor disordered intellectually." When, however, he attempts to class cases of suicidal impulse among the true suicides who are not insane, and denies that in such the suicidal act is an insane one, he is at variance with the prevailing views of all writers of weight on insanity; and his dictum, if accepted, would necessitate a new explanation for all extreme acts due to irresistible impulse. His reasons on page 127, for example, why the individual who seeks pleasure in self-destruction should not be considered insane, apply with equal force to the homicidal sexual pervert. On this point, we think the author tries to prove too much, and in his endeavor to throw into relief this class of degenerates, and thus, perhaps, emphasize his argument, he draws a sharper boundary between insanity and certain suicides than actually exists. Possibly, also, as he is barrister as well as physician, a predilection lingers for the old views so long and tenaciously held by bench and bar, regarding the non-existence of true mental disease in which there is no obvious intellectual impairment, and is therefore sceptical as to the insanity of pure states of deficient control. In other respects it is impossible to criticise the chapter on suicidal impulse. His views, not merely as to the existence but comparative frequency of "pleasurable suicides," will be echoed by most alienists, whose experience of the unabated cheerfulness of certain patients of this impulsive class before suicide is not an uncommon one.

The prosperity and adversity of a country or community, as influencing the rate of suicide; cramming in schools; the greater risk of suicide among women from competition with man; the protection of the unfit; are among the chief remaining points considered. The book closes with a bold but forcible and discriminating argument in favor of the justifiability of suicide under certain circumstances.

If anything written or spoken can by any possibility succeed in inducing people "to use intelligently in the propagation of the human race some of the knowledge, care and forethought so successfully exercised in the breeding of the lower animals," some of the credit to follow should fall to the writer of "Suicide and Insanity."

Text-Book of Anatomy and Physiology for Nurses. Compiled by Diana Clifford Kimber, Assistant Superintendent of New York City Training School, etc. Pp. 268. New York: Macmillan & Co. 1894.

This is a compilation from the standard authors by one who should know just what and how much is best adapted to the needs of pupils of training schools for nurses. This is no easy task to perform without erring either by excess or by defect. Hence it always offers a fine field for the critic. We prefer not to discuss details but to say simply that the work seems to us well done.

Text-book of Medical and Pharmaceutical Chemistry. By Elias H. Bartley, B.S., M.D., Professor of Chemistry and Toxicology in Long Island College Hospital, etc. Third edition, revised and enlarged, with 84 illustrations. Philadelphia: P. Blakiston, Son & Co. 1894.

The most important addition to the present edition of this text-book is the chapter on Physiological and Clinical Chemistry, which deals with the chemistry of nutrition, foods, digestion, milk, and the urine.

The author has displayed good judgment in the selection and arrangement of his material; and we recommend the book with pleasure to all students.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, NOVEMBER 15, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

FLECHSIG'S OPIUM-BROMIDE TREATMENT OF EPILEPSY.

Every discovery which holds out a promise of new light on the treatment of epilepsy appeals to each member of the profession, for our list of efficient remedies is a short one.

The bromide salts, although they sometimes fail utterly to help, are still our best weapon against this dreadful malady. Of late years it has been found that antipyrine may intensify the action of the bromide, and that borax in large doses can occasionally be substituted for them to advantage, especially for night attacks, or given in combination with them. Zinc oxide, though one of the oldest remedies, deserves more attention than it generally receives; but it is often useless, and cannot always be borne in the large doses that are necessary to check the paroxysms. Nitroglycerine in full doses accomplishes something towards the arrest of the minor seizures, and the dietetic and hygenic management of the patient is of great importance. Much was hoped, yet not much has been realized, from the disinfection of the intestinal tract. Meantime our dispensaries are crowded, one might almost say, with patients who drag out a dulled and anxious existence, often losing color and appetite under the influence of large doses of the bromides, and gradually failing in mental power.

Opium has been used occasionally, and with more or less advantage, for many years; but the method of employing it recently suggested by Flechsig is based on a somewhat new principle, and gives better results than the methods which have preceded it. The value of the treatment does not rest on the power of opium to stop the paroxysms — although it sometimes does stop them — but on its tendency to increase the efficacy of the bromides. Sometimes, also, the mental condition improves when the plan to be detailed has been carefully followed out.

The literature of this subject is well presented in the preliminary communication by Professor Flechsig;[1] a later pamphlet by his assistant, Dr. Carl Salzburg;[2] and a recent paper by Dr. Joseph Collins,[3] of New York. We learn that the same method has been used with good results in the out-patient department for diseases of the nervous system at the Massachusetts General Hospital.

The treatment as originally described consists in giving opium in doses increased rapidly from two or three grains to fifteen grains, daily, in three portions. The maximum dose should be reached in one or two weeks and continued for six weeks. At the end of this time the opium is suddenly withdrawn, and either a potassium or sodium salt of bromide substituted for it. These are given, at first, in doses of two drachms daily, later in smaller doses, decreased gradually to about forty grains a day.

No great improvement is seen, as a rule, till the moment when the bromide is substituted for the opium, but having appeared, it persists for a number of months at least; furthermore, when the attacks recur, as is likely to happen eventually, they are apt to be much lighter in form than before, while the mental condition, as stated, is sometimes better than it had been.

Dr. Collins's experience covers some fifty cases, many of which were under careful observation at the Almshouse Hospital for more than a year.

Unfortunately, the treatment has its shady side, as might have been anticipated. The danger of inducing the opium habit has not as yet shown itself, to be sure, as a real one, and can be guarded against to a great extent. On the other hand, the large doses which are said to be necessary are sometimes ill borne, and the first few days after the opium is withdrawn are apt to be trying ones for both patient and doctor, though, as a rule, nothing serious happens, and the patients are able to continue their attendance at the dispensary or office. Sometimes a few doses of morphine have to be given at this period.

The unfavorable symptoms most commonly met with are loss of appetite, and vomiting, constipation or diarrhea, pains, extreme drowsiness or insomnia; but toxic hallucinations and delirium may occur, and sometimes even collapse, with feeble pulse. Yet who is there that has not seen cases where these and greater risks would gladly have been encountered for a fair chance of considerable gain?

Fortunately, it is the inveterate cases for which this method works best; and it is specifically advised that it should not be used in conditions of (1) status epilepticus, (2) plethora, or (3) where organic disease of the brain is present.

Finally, it is believed that the beneficial effects of the alternating opium-bromide method may be continued by an occasional repetition of the treatment; and, where the opium is not well borne these repetitions might, perhaps, be made more frequent, and the maximum dose of opium smaller than usual. It remains to be seen whether opium is capable of increasing the efficacy of other remedies beside bromide, such for instance as borax. On Salzburg's theory, which is that the opium exerts its favorable action simply by increasing the relative blood-supply and hence the relative bromide-supply to the brain, it would seem not impossible that this might occur.

---

[1] Neurologisches Centralblatt, 1893, No. 7.

[2] Uber die Behandlung der Epilepsie, insbesondere mit Opium Brom., Leipsig, May, 1894.

[3] New York Medical Record, September 22, 1894.

We shall look with interest for further reports, and need only remind our readers again that it is with the inveterate cases, where the other treatments have been tried without success, that they should make their experiments.

ON IMMEDIATE SURGICAL INTERFERENCE IN CASES OF PERFORATION OF THE STOMACH BY ULCER.

Under the above caption, Michaux, of Paris, reported to the Eighth French Congress of Surgery, October 10, 1894, the details of an operation performed by him September 23, 1894, whereby the life of a patient was rescued from peritonitis and death. The cause was perforative ulcer; the patient, a robust man, aged thirty-one years. The symptoms on admission to Beaujon hospital were those of peritonitis rapidly extending. The history was clearly that of round ulcer.

On opening the abdomen, Dr. Michaux discovered a small linear perforation high up on the anterior surface of the stomach, very near the cardia. At each respiratory movement a leakage of fluid from the stomach took place from this orifice.

The abdomen was washed out with boiled water, and large antiseptic sponges were placed, for protection, in the lower part of the abdomen. The surgeon endeavored to suture the borders of the perforation, but the silk threads tore through, on account of friability of the tissues. The high, inaccessible situation of the ulcer rendered excision impossible. As a somewhat desperate experiment, Michaux made a fold of the front wall of the stomach by which the perforation was completely buried; the ulcer was fixed in the bottom of this fold by a double row of Lembert silk sutures; the first row extended beyond the ulcer which could be seen, and which had the dimensions of a five franc piece. The wound was left open, an iodoform-gauze tent being inserted for drainage.

The patient was fed by the rectum for a long time; the gauze pledget was left in for eight days. A purulent fistula remained for six months; it then healed and the patient was reported as perfectly well and able to work.

Michaux remarks that perforation is a frequent complication of ulcer (thirteen per cent.), and often takes place when the ulcer is on the anterior wall, near the cardia. The signs by which perforation is recognized are: agonizing epigastric pain, a sensation of burning and of rending, increased by ingestion of food and drink; retraction of the belly; vomiting infrequent or *nil*; in fine, signs of peritonitis with elevation of temperature, or collapse with hypothermia, tympanitic distention, etc.

Mikulicz, in 1884, was the first to operate for peritonitis, caused by perforation of round ulcer. Since then the operation has been performed by Steinthal, Nissen, Körte, Czerny, Stelzner, Kriege, in Germany; by Hastings, Gilford, Howard, Lee, Dickenson, Morse and Maclaren, in England; by Roux, Poucet, Walther, LaDentu, Michaux and others, in France.

Michaux's statistics of the operation done under such circumstances comprise twenty-five cases in all; the first ten were fatal; of the following fifteen, there were five recoveries and ten deaths. Kriege, of Berlin, had the first successful case; those of Morse, Maclaren, Roux and Michaux were also successful. The operation should be done early to be of any effect. Michaux emphasizes the importance of a very early operation — certainly within the first fifteen hours — and of a very free incision, with subsequent free drainage.

RESURRECTION AFTER ELECTROCUTION.

It is announced from New York that Dr. P. J. Gibbons, of Syracuse, has received permission from Governor Flower to make the attempt to resuscitate a convicted murderer by the name of Wilson (who has been sentenced to execution at Auburn State-prison next week) after the electrical current has been applied.

Dr. Gibbons claims that electricity, as it is now employed in the State of New York for the execution of criminals, does not really produce death, but only a state of suspended animation, and that in most of those who have suffered capital punishment since the new law went into effect have in reality been killed by the autopsies which followed the application of electricity. He believes that artificial respiration, efficiently carried out, will cause the resuscitation of a subject who has undergone the electrical chair, and he has invented a special apparatus for producing artificial respiration, which he designs to use on this occasion.

It is understood that the Governor will commute the prisoner's sentence to life imprisonment at a moment which will entail the arrival of the papers after the electrocution has taken place. Then, if the man is restored to consciousness it will not be necessary to subject him again to the electrical chair; while if the attempt is unsuccessful the papers will have arrived too late to save his life.

Dr. Gibbons claims to have partially resuscitated murderer John Johnson after his electrocution at Auburn prison, when he was peremptorily ordered by the Warden to desist, and the body was sent to the autopsy table. This, he states, was no less than two hours after the current had been applied, and the experiment was made without the apparatus which he now proposes to try. Even if the man should be revived Dr Gibbons does not think it will be necessary to change the present law in regard to the death penalty, as he is of the opinion that the continuous current, if applied in sufficient quantity, will cause death.

Dr. Gibbons seems desirous of putting himself in the way of furnishing a veritable pendant to Conan Doyle's story of the "Los Amigos Fiasco."

◆

THE ANTITOXIN OF DIPHTHERIA.

As far as there is anything to add to the information recently given in the JOURNAL (September 20th and 27th) in regard to the antitoxin treatment of diphtheria, it is confirmatory of the value of that treatment. Scattered cases, as reported by a variety of observers, coincide with the hospital reports coming from Europe. The small available supplies of the antitoxin, the difficulty and expense in obtaining it, have been an impediment to its use in this country. At the Boston City Hospital, where there are always a large number of cases of diphtheria, many of them in an advanced and serious stage of the disease, it has been hitherto impossible for the above reasons to make use of this treatment to any extent.

There would seem to be no insuperable difficulty about the preparation of the antitoxic serum here at home, given the time and money. It could probably be best undertaken by State or municipal boards of health. In New York and Chicago a beginning has been made; and it is to be hoped that other cities will see their way to making this promising treatment available as promptly as possible.

◆

MEDICAL NOTES.

THE MOXON MEDAL OF THE ROYAL COLLEGE OF PHYSICIANS. — The Moxon Medal of the Royal College of Physicians, for distinguished services in clinical medicine, has been awarded to Sir William Jenner.

THE ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA. — The Alvarenga Prize for 1894 has been awarded to Dr. G. E. De-Schweinitz, for an essay entitled "The Toxic Amblyopias: their Pathology and Treatment."

BERI-BERI AT PERTH AMBOY, N. J. — The barkentine *Robert S. Patterson*, arrived at Perth Amboy, N. J., November 11th, and sent ashore for medical assistance, reporting several cases of beri-beri on board. Three cases had died on the voyage from Navassa, the disease having broken out soon after leaving that port.

DR. ZACHARIN'S FUTURE. — Dr. Zacharin, the eccentric Russian physician who attended the Czar Alexander III during the greater part of his illness, has not a very cheerful future to look forward to. The present Czar Nicholas is said to be so displeased with Dr. Zacharin's conduct that he has suggested that he confine his practice henceforth to Siberia.

INDIAN MEDICAL CONGRESS. — The First Indian Medical Congress will be held in Calcutta from the 24th to the 29th December, 1894. The objects of the Congress are to bring together medical men from all parts of the Indian Empire, to discuss medical subjects connected with Indian diseases, and to place on permanent record some of the work which is now lost to science for want of proper publication. This Congress will afford an opportunity, never before presented, for medical men, who are in isolated but important positions in the different Provinces of the Indian Empire, meeting and comparing notes with their fellow-workers on subjects of mutual interest. The work of the Congress will be divided into the following sections: Medicine and Pathology; Surgery, including Ophthalmology; Obstetrics, and Diseases of Women and Children; Public Health; Medico-Legal Medicine and Insanity; Pharmacology, specially Indigenous Drugs. Although the Congress is primarily an Indian one, a cordial invitation is extended to medical men in other countries.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, November 14, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 104, scarlet fever 31, measles 31, typhoid fever 30.

THE HORACE MANN SCHOOL FOR THE DEAF.— The Horace Mann School for the Deaf celebrated the twenty-fifth anniversary of its foundation on November 10th. There are at present one hundred and seventy pupils in the school.

THE WOBURN (MASS.) SCHOOLS REOPENED. — The Woburn, Mass., schools which have been closed on account of the prevalence of scarlet fever were reopened on November 12th, the Board of Health considering the epidemic to be sufficiently controlled.

A BEQUEST TO THE CAMBRIDGE (MASS.) HOSPITAL. — The will of the late Susan E. W. Brackett, of Cambridge, Mass., bequeaths ten thousand dollars to the Cambridge Hospital. The Cambridge Home for Aged People likewise receives ten thousand dollars and the Avon Home, Cambridge, five thousand dollars.

THE TYPHOID-FEVER EPIDEMIC AT WESLEYAN UNIVERSITY. — Oysters on the half-shell are now accused of causing the outbreak of typhoid fever at Wesleyan University, and the old college pump has been exonerated.

THE SPREADING OF SCARLET FEVER. — The State Board of Health of Maine gives an excellent example, in its October publication, of some of the causes for the spreading of scarlet fever which under proper control could be avoided. "In Columbia in 1892, there were eight cases of scarlet fever, 'too mild to report to the local board,' so the doctor said. In 1893 there were twenty-seven cases of the same disease in the same town."

VERMONT STATE MEDICAL SOCIETY. — The following officers for the ensuing year were elected at the meeting of the Vermont State Medical Society at

Montpelier October 11th. President, Dr. J. H. Linsley, of Burlington; Vice-President, Dr. F. F. Chaffee, of Stratford; Secretary, Dr. D. C. Hawley, of Burlington; Executive Committee: Drs. J. H. Lensley, D. C. Hawley, and F. R. Stoddard, of Shelburne.

The New England Dental Society. — The annual meeting of the New England Dental Society was held in Boston on November 15th and 16th. The following officers were elected for the ensuing year: President, James H. Daly, D.D.S., of Boston; First Vice-President, Dwight M. Clapp, D.M.D., of Boston; Second Vice-President, Cyrus H. Hayward, D.D.S., of Peterboro, N. H.; Secretary, Edgar O. Kinsman, D.D.S., of Cambridge; Assistant Secretary, Marion L. Woodward, D.D.S., of Boston; Treasurer, George R. Young, D.D.S., of Concord, N. H.; Librarian, Joseph King Knight, D.D.S., of Hyde Park; Executive Committee, W. E. Page, D.M.D., of Boston; George H. Maxfield, D.D.S., of Holyoke; Dr. C. H. Gerrish of Exeter, N. H.; Dr. H. F. Libby of Boston, and A. W. Howland, D.D.S., of Boston.

NEW YORK.

Dr. Timothy M. Ingraham, one of the best known physicians in the suburbs of Brooklyn, died at his home in Flatbush on November 4th, of cerebral apoplexy. He was born in Amenia, Dutchess County, in 1821. He received his collegiate education at Wesleyan University, Middletown, Conn., and the degree of M.D. from the Vermont Medical College, in 1847. After graduating he became assistant to Dr. J. L. Zabriskie, Superintendent of the Kings County Hospital, in Flatbush. In 1848 the latter died of typhus fever, and Dr. Ingraham succeeded to his private practice. During the war he served for a time as a surgeon in the army, but a long attack of illness compelled him to resign.

Miscellany.

A FATAL CASE OF LABORATORY CHOLERA.

On the 21st of September of this year, Dr. Karl Emil Oergel died in Hamburg of Asiatic cholera, contracted during laboratory investigation at the Hygienic Institute. The circumstances of his illness were such that careful observation of symptoms were possible throughout the course of the disease; Dr. Reincke has published[1] an account of the case which is interesting from clinical as well as personal reasons.

The exact manner of infection was not discovered, but it was beyond doubt some oversight in his laboratory work, as all other possible means were eliminated and several breaks in the chain of precaution were discovered.

On the 14th of September Dr. Oergel was at his work, and made no complaint, nor was his appearance different from usual, although it was subsequently learned that he had on that day diarrhea and some lassitude. In the evening the diarrhea became much worse and was accompanied by vomiting, cramps and great restlessness, and the patient fell into a state of collapse, with small, slightly quickened pulse, and presented the appearance of a much asphyxiated case of cholera. He was moved early on the morning of the 15th to the Eppendorfer Hospital, where he rallied after many injections of camphor and ether. His condition was recorded as follows:

> "Typical picture of severe cholera. Patient is hardly to be recognized. The eyes deeply sunken, and half covered by the lids. Moderate cyanosis. Hands and feet cold. Folds in the skin remain as made. Sensorium entirely free. Temperature 35.4° C. Pulse 100. Breathing irregular. A sense of heavy oppression. As far as the condition permitted examination, no evidence of change in internal organs was detected. There were many rice-water stools within short intervals, and all drinks and medicines were quickly vomited. Marked singultus. Restless tossing about in bed. Cramps in thighs, forearms and feet. Treatment ordered: Camphor injections and warm baths."

During the day the temperature rose to 36.9° C., and the pulse became very small, and was obtainable only at intervals. There was considerable vomiting and almost incessant singultus. By evening the cramps increased in severity and frequency, and were the cause of the chief complaint of the patient. During the day an injection of three and one-half litres of a warm one-per-cent. solution of tannin was given, and retained about twenty minutes. At night he was given an infusion of 900 c.cm of 0.66 per cent. solution of salt at a temperature of 40° C. After this the subjective condition was slightly improved and the cramps lessened. The pulse was obtainable throughout the night.

During the next five days the condition remained about the same, there being some vomiting, offensive stools and a gradually approaching state of coma. There was a constant tendency to collapse, and death occurred in deep coma on the afternoon of the 21st of September.

Daily bacteriological examination of the stools showed nearly pure culture of the cholera vibrio, with occasional admixtures of a few bacteria coli. The autopsy showed a fibrinous pneumonia of both lower lobes, especially of the right; old aortic endocarditis; "cholera kidney," second stage; cicatrices of the left kidney, a recently swollen liver; proctitis, and diphtheritic colitis.

Correspondence.

OLDTOWN GYNECOLOGICAL REMINISCENCES.

Oldtown, November 1, 1894.

Mr. Editor: — I send you an abstract, the *animum* of a paper which I read recently to the members of our Oldtown Medical Club. My fellow physicians expressed not a little interest in it, and I thought possibly some of your readers may find in it a germ for reflection.

I listened last winter to a paper and discussion on "Erosions of the Os Uteri." The paper was afterwards published. The most which I could learn was that, by some of the speakers, erosions were considered of but little consequence, while by others they were looked upon as cancers in disguise, to be dealt with by fire and steel (or steal?) The only idea which I brought away was, "May the Lord have mercy on the poor innocent victims of the lesion."

---

[1] Deutsche Med. Woch., No. 41, 1894.

Some recollections of what I have seen occur to me.

I saw my first cases of erosions of the os uteri, as a student, in Paris, I think at the Hôpital St. Louis. They were under the care of M. Jobert. Whatever one might think of the treatment, he could not but admire the dexterity of the operator. An interne stood on each side of the operating-table, ready to seize the patient by the ankle the instant she mounted. With a dexterous twist, such as Dr. Bigelow gave his patients in reducing a dislocation of the hip, the whole field of operation was exposed to the view of the students in the amphitheatre, a speculum introduced before the woman had time to draw a breath, and the hot iron having been applied to the os, she left to make room for another. About a dozen of these burnt offerings were laid on the altar of Science of a morning. What was the result I never knew.

I do not recollect in just what year the uterine epidemic broke out in Boston and vicinity, but I think somewhere about 1850. Some articles appeared about that time in the *Lancet*, written by Dr. Bennett, of London, which attracted a good deal of notice from some of our Boston physicians. I recollect one of them saying to me that it was reading these articles which induced him to look up some old obscure cases in his "best families," meaning by this his rich families, for I believe that the disease is rarely found among poor patients. This gentleman afterwards became quite celebrated as a specialist in uterine disease.

The form in which the uterine epidemic was first seen was as ulceration of the os, sometimes called erosion. One peculiarity was the great variety of symptoms to which it gave rise. In fact nearly everything not due to some obvious lesion elsewhere could be traced to this insidious disease. Amenorrhea, dysmenorrhea, leucorrhea, menorrhagia, headache, backache, constipation, diarrhea, dyspepsia, defective vision, nervous exhaustion, mental disorders, sore throat and many other symptoms too numerous to mention, all found here their explanation.

The treatment was quite simple: nitrate of silver locally applied, twice a week, to be continued indefinitely.

The diagnosis was so easily made and the treatment so simple that the general practitioner soon became a proficient, when this form of the epidemic disappeared and hypertrophy of the neck of the uterus took its place. For this a more energetic treatment was found to be necessary, namely, it was "melted down" with caustic potash. This soon gave way to intra-uterine inflammation and scarification.

Not much has been heard of these three forms of uterine disease for many years until lately, but the elders of the profession can recollect when nearly every obscure affection in a well-to-do woman (for it was observed that the laboring classes, who were obliged to work for a living and thus took sufficient exercise, were rarely affected) would be traced to one of these causes.

One great advantage of the prevailing epidemic was the ease with which a diagnosis could be made. I recollect that once at an annual meeting of the Massachusetts Medical Society I met an old friend, a former fellow-student. He told me that he had brought with him, from the country town where he was practising, a young lady who had obscure uterine symptoms, to consult Dr. —— (naming a distinguished gynecologist). I said, "I do not know what your patient's symptoms are, but I can tell you what will be the diagnosis." "What do you mean?" said he. "I mean what I say," I replied, "the diagnosis will be hypertrophy of the neck of the uterus, and the treatment, caustic potash." I met him the next day, when he said, "You were correct in your diagnosis." Now, since the abdominal cavity can be explored with comparative impunity the cause of obscure symptoms is looked for higher.

Some cases which I have seen come to my mind at this moment.

A middle-aged woman who had missed her catamenial periods for several months had hemorrhage. Under appropriate treatment it ceased, to reappear irregularly. A consultation with a distinguished gynecologist being called for, he showed me, through his speculum, an ulceration of the os uteri (which, by the way, I could not see), and advised me to apply nitrate of silver every fifth day. I applied it twice myself, when the ulceration disappeared (if, indeed, it had ever appeared). After a time the hemorrhage ceased, never to return; the woman is now living at an advanced age in the enjoyment of good health, thus confirming the diagnosis and the wisdom of the treatment.

I was called to a young lady, twenty-six years of age. I was told that she had been going some little distance from home, two or three times a week, to be treated for ulceration of the os, by the application of nitrate of silver by a specialist. As her general health was suffering, she had been advised to stay at home and be treated by her physician, until she was able to resume the visits to the specialist and have the ulceration cured. She was quite weak, being unable to leave her room for some little time. With rest and some simple general treatment, it was not a long time, so effectual had been the treatment of the ulcer before, it happened that when I examined her no trace of it could be found. She continued quite well as long as she was under my observation (something like fifteen years). I then lost sight of her, but heard that she was again under treatment for uterine disease; and the last I had heard of her when this paper was written was as a confirmed invalid. One part of her history I have not mentioned. This young lady had been disappointed in love, and took it very hardly. Had the patient been a man, other interests would have occupied the mind, but being a woman her resources for occupation were limited. A woman in her situation generally takes either to church affairs, some fad of the day, or the study of her health. This young lady happened to see a book called "Small's Medical Light-house," in which her symptoms were so accurately described and the diagnosis so confidently made, that she at once put herself under treatment.

A woman, the mother of several children, felt weight in the pubic region and had slight hemorrhage. Depth of uterine cavity, three inches. A distinguished gynecologist who saw her, diagnosed hypertrophy of the neck of the uterus, and was kind enough to show me, in the presence of the patient, how I could make myself sure of the correctness of his opinion. He then cauterized the os very freely. The next day there was free hemorrhage, and something that looked very much like a placenta was discharged from the vagina.

Another case of intra-uterine inflammation. Mrs. ——, middle-aged, has borne two children. First one died in birth. Has for some years past been the subject of strange nervous symptoms. Lately, catamenia having stopped, she believes herself to be pregnant, as she felt motion (she says). Refused examination at first; but later she allowed me to examine the abdomen externally, when I was convinced that she was mistaken. Being much perplexed, I sent her to a distinguished Boston gynecologist, who wrote to me that the diagnosis was intra-uterine inflammation, the pathognomonic symptom, a patulous os, having been found by him. Much to my relief, this lady left me to put herself under the care of a brother practitioner, who found himself as much in the dark as I had been. Soon after this a near friend, who often gives me wise counsel, said to me, "Did it ever occur to you to account for Mrs. ——'s symptoms on other than pathological grounds? Her father had his moral infirmities." I thought I saw daylight. I gave my brother physician the hint. He would never tell me whether he used it, but I *do* know that Mrs. —— was better, and I believe that her improvement was due to moral treatment.

I have cited these cases, not because they are of unusual interest, but because they illustrate how one is apt to find what he looks for. At one time it seemed as if the esthesiometer would take the place of the speculum in the investigation of obscure disease, but, for some reason, it did not seem to be so satisfactory.

In the *New York Medical Record* of January 14, 1888, I noticed the following: "The fact that certain women develop a kind of mania for uterine treatment is well known. These cases haunt the dispensaries or pursue the physician in his office. They are never content unless a vaginal examination is made, and the topical application of iodine to the cervix is to them what a 'nip' is to the confirmed toper. They possess a kind of inebriety for local treatment. The condition is sometimes due to a morbid sexual erethism, but oftener perhaps to a purely mental disorder and belongs to the 'habits.' The French call it *Folie gynecologique,* and the Germans *Mutterleibkrankheitwahnsinn.* It is evidently a disorder coextensive with, and also the product of, modern gynecology. In the West, these cases, as we learn from the *Medical Age,* go by the name of 'womb-cranks.' They are utilized by clinical teachers, and made victims of by dishonest physicians. What they need is isolation from the doctor."

I would not imply in what I have said, that uterine disease is a myth, or that gynecology is a humbug. But we all know that old story of the oculist who spoiled a hatful of eyes while learning to operate for cataract; and I am afraid that the gynecologist has not yet done slaughtering his innocents, and will not be until the subject is treated on broader grounds than at present. We know, indeed, what an important part the reproductive organs take in a woman's life; but it is to be remembered that the woman has a stomach and kidneys, a liver and a brain, as well as a uterus and ovaries, and also a moral and intellectual nature which is too often ignored by a sensual husband.

In discussing the subject of women's rights, the unjust relations of married life ought to come in for a large share of notice; but, unfortunately, it cannot, for obvious reasons, be treated of in works designed for general reading. It is considered a reproach to say of a man, that he makes a beast of himself; but if, in his sexual relations, he would take some lessons of the beasts, there would be less need of uterine treatment.

We sometimes pick up useful hints in therapeutics outside the professional circle. At a meeting of a certain sewing-society in a country town in the western part of the State, the case of a farmer's wife came up for consideration. She had for a long time been in feeble health, and the question arose what to do for her, when one wise old matron suggested that if her husband could be kept tied back of the barn with the other bull all would soon be right.

Fully realizing the advances which have been made in the study of uterine pathology, and the other work which has been done in that line by many illustrious men, a great deal of gynecological practice makes one think of the "Story of Chicken Little Illustrated," a very suggestive little book, which I recommend to the members of this club as worthy a place in their libraries.

Yours truly,

"1846."

◆

A BON-MOT OF DR. HOLMES.

Jamaica Plain, November 7, 1894.

Mr. Editor: — A *bon-mot* made by Dr. Holmes at the time one of his sons was born, was lately written out for me by a physician who was a student at the time; and, as it is as good as all Holmes's sayings were, and I think has never been in print, I thought it might appear in the Journal. I give it *verbatim,* as it was sent me.

"In the forties Dr. Holmes was one of the instructors in what was known as the Tremont Medical School, which gave instruction to quite a large number of students between the lecture terms of the Harvard Medical School. Usually prompt, we were one day surprised by his non-appearance at the beginning of the lecture-hour, but we waited. Finally, he entered the room hurriedly, glanced around with a smile, and said, 'Gentlemen, I know I am late, but there is a little stranger at my house.' And then with an expression such as only Holmes's face could assume, he continued, 'Now can any one of you tell me what well-known business firm in Boston he is like?' There was no answer: 'He is Little and Brown,' said the doctor, with a twinkle in his eye."

Sincerely yours,

Arthur P. Perry, M.D.

METEOROLOGICAL RECORD,

For the week ending November 3d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..28	30.13	52	57	46	76	80	78	W.	S.E.	3	6	C.	C.	
M..29	30.09	52	58	47	81	72	76	N.	N.E.	11	15	O.	C.	
T ..30	30.22	48	51	46	84	97	90	N.E.	E.	16	12	O.	R.	.04
W..31	29.81	56	63	48	100	91	95	N.E.	S.W.	11	15	G.	C.	.54
T .. 1	30.07	52	59	44	72	62	67	S.W.	S.W.	13	16	C.	O.	
F .. 2	30.26	54	64	45	69	73	71	W.	S.W.	7	12	C.	C.	.46
S... 3	29.75	58	66	49	80	69	74	S	W.	14	19	O.	C.	
☞	30.05		59	46			79							1.04

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky. R., rain; T., threatning; N., snow. † Indicates trace of rainfall ☞ Mean for week

RECORD OF MORTALITY

For the Week ending Saturday, November 3, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,956,000	636	208	12.90	13.95	3.00	2.10	5.10
Chicago . . .	1,600,000	—	—	—	—	—	—	—
Philadelphia .	1,139,457	367	113	14.85	7.83	1.62	1.08	11.34
Brooklyn . .	1,043,000	325	98	19.73	13.64	4.03	1.55	12.40
St. Louis . . .	540,800	—	—	—	—	—	—	—
Boston . . .	501,107	218	85	18.40	11.96	1.84	1.84	13.80
Baltimore . .	500,000	—	—	—	—	—	—	—
Washington .	285,000	125	44	32.00	13.60	2.40	4.80	3.20
Cincinnati . .	325,000	—	—	—	—	—	—	—
Cleveland . .	325,000	143	54	19.60	11.90	1.40	4.20	3.50
Pittsburg . .	272,000	72	28	15.29	1.39	5.56	4.17	5.56
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	32	7	16.66	3.13	—	3.13	9.39
Charleston . .	65,165	—	—	—	—	—	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	100,410	25	11	16.00	12.00	4.00	—	8.00
Fall River . .	92,233	31	9	9.69	22.61	3.23	3.23	3.23
Lowell . . .	90,613	21	10	4.76	4.76	4.76	—	—
Cambridge . .	79,607	28	11	17.85	7.14	3.57	3.57	10.51
Lynn	65,123	11	3	18.18	18.18	—	—	9.09
Springfield . .	50,284	13	3	30.76	15.38	—	7.69	7.69
Lawrence . .	49,900	—	—	—	—	—	—	—
New Bedford .	47,741	17	7	11.76	5.88	11.76	—	—
Holyoke . . .	43,348	12	6	—	16.66	—	—	—
Brockton . .	33,939	8	—	12.50	—	12.50	—	—
Salem	33,155	9	6	22.22	11.11	—	—	11.11
Haverhill . .	32,925	6	1	—	—	—	—	—
Malden . . .	30,209	4	1	—	—	—	—	—
Chelsea . . .	29,806	14	5	21.42	21.42	—	—	14.28
Fitchburg . .	29,383	3	1	—	—	—	—	—
Newton . . .	28,837	8	2	25.00	—	—	25.00	—
Gloucester . .	27,293	—	—	—	—	—	—	—
Taunton . . .	26,954	13	4	30.76	7.69	—	—	30.76
Waltham . .	22,058	4	1	25.00	25.00	—	—	25.00
Quincy . . .	19,642	4	0	—	25.00	—	—	—
Pittsfield . .	18,802	3	2	66.66	33.33	33.33	33.33	—
Everett . . .	16,585	2	0	—	—	—	—	—
Northampton .	16,331	3	0	33.33	33.33	—	—	33.33
Newburyport .	14,073	4	0	25.00	25.00	25.00	—	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 2,248: under five years of age 744; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 346, acute lung diseases 257, consumption 251, diphtheria and croup 184, diarrheal diseases 63, typhoid fever 54, scarlet fever 27, whooping-cough 11, cerebro-spinal meningitis 7, malarial fever 3, measles 3, small-pox 3.

From scarlet fever Cleveland 14, New York 7, Philadelphia, Boston, Washington, Providence, Somerville and Springfield 1 each. From whooping-cough New York, Philadelphia and Brooklyn 2 each, Washington, Cleveland, Nashville, Springfield and Salem 1 each. From cerebro-spinal meningitis New York 2, Washington, Worcester, Lynn, Somerville and Chelsea 1 each. From malarial fever New York 2. From measles New York 3. From small-pox New York 2, Washington 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending October 27th, the death-rate was 18.5. Deaths reported 3,714; acute diseases of the respiratory organs (London) 329, diarrhea 94, measles 90, diphtheria 79, fever 46, scarlet fever 41, whooping-cough 37, small-pox (Liverpool 3, Birmingham 2, Manchester 1) 6.

The death-rate ranged from 10.2 in Croydon to 26.8 in Sunderland; Birmingham 16.2, Bradford 15.1, Cardiff 13.7, Huddersfield 19.1, Leeds 20.7, Leicester 12.6, Liverpool 24.2, London 17.8, Manchester 23.4, Newcastle-on-Tyne 19.4, Nottingham 20.5, Plymouth 20.2, Sheffield 16.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 3, 1894, TO NOVEMBER 9, 1894.

Captain Walter W. R. Fisher, assistant surgeon, will be relieved from duty at Fort Columbus, New York Harbor, upon the expiration of present leave of absence and will report for duty at Fort Meade, South Dakota, to relieve Captain Norton Strong, assistant surgeon.

Captain Strong, on being relieved by Captain Fisher, is ordered to Fort Sheridan, Illinois, for duty at that post, relieving First-Lieut. George J. Newgarden, assistant surgeon.

First-Lieut. Newgarden, on being relieved by Captain Strong, is ordered to Fort Wayne, Michigan, for duty.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 10, 1894.

F. J. B. Cordeiro, passed assistant surgeon, from the U. S. S. "Adams," home, and granted two months' leave.

L. H. Stone, assistant surgeon, ordered for examination preliminary to promotion.

J. H. Clarke, medical director; C. H. White, medical inspector; T. H. Streets, surgeon; A. C. H. Russell, passed assistant surgeon, ordered as a Board at Naval Laboratory, Brooklyn, N. Y., to examine candidates for admission to the Medical Corps of the Navy and for promotion in the Corps.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SIX WEEKS ENDING NOVEMBER 3, 1894.

Bailhache, P. H., surgeon. To report at Bureau for special temporary duty. October 25, 1894.

Purviance, George, surgeon. Granted leave of absence for five days each. October 2 and 29, 1884.

Hutton, W. H. H., surgeon. To proceed to Gulf Quarantine Station for temporary duty. October 24, 1894.

Sawtelle, H. W., surgeon. When relieved from duty at Boston, Mass., to proceed to New Orleans, La., for duty. October 26, 1894.

Gassaway, J. M., surgeon. When relieved from duty at New Orleans, La., to proceed to Cairo, Ill. October 27, 1894.

Irwin, Fairfax, surgeon. To report at Bureau. October 19, 1894.

Mead, F. W., surgeon. To proceed to New York, N. Y., for temporary duty. September 24, 1894.

Banks, C. E., passed assistant surgeon. To proceed to Bath, Me., as inspector. October 20, 1894. Granted leave of absence for three days. November 3, 1894.

Peckham, C. T., passed assistant surgeon. Granted leave of absence for twenty-two days. October 16, 1894.

Glennan, A. H., passed assistant surgeon. Granted leave of absence for two days. September 29, 1894. Granted leave of absence for three days. October 21, 1894.

Brooks, S. D., passed assistant surgeon. To proceed to Saginaw, Mich., as inspector. October 26, 1894.

McIntosh, W. P., passed assistant surgeon. Granted leave of absence. October 9, 1894.

Geddings, H. D., passed assistant surgeon. Detailed for special duty to assist the health authorities, District of Columbia. October 27, 1894.

Gardner, C. H., assistant surgeon. To proceed to Angel Island Quarantine Station for temporary duty. October 13, 1894.

Nydegger, J. A., assistant surgeon. Granted leave of absence for eighteen days. September 24, 1894. Leave of absence extended three days. October 17, 1894.

Stewart, W. J. S., assistant surgeon. To proceed to Alexandria, Va., as inspector. October 10, 1894. To proceed to Glymont, Md., for special duty. October 29, 1894.

Strayer, Edgar, assistant surgeon. Granted leave of absence for fourteen days. October 24, 1894.

Blue, Rupert, assistant surgeon. Granted leave of absence for three days. November 3, 1894.

Norman, Seaton, assistant surgeon. To proceed to New York, N. Y., for temporary duty. October 25, 1894. To rejoin station, Baltimore, Md. November 2, 1894.

Sprague, E. K., assistant surgeon. Granted leave of absence for thirty days. October 10, 1894. When relieved from duty at Cairo, Ill., to proceed to Mobile, Ala., for duty. October 29, 1894.

Thomas, A. R., assistant surgeon. To proceed to Cairo, Ill., for temporary duty. October 5, 1894.

Greene, J. B., assistant surgeon. To proceed to New York, N. Y., for duty. October 27, 1894.

APPOINTMENT.

Joseph B. Greene, of Alabama. Commissioned by the President as an assistant surgeon. October 24, 1894.

SOCIETY NOTICE.

Suffolk District Medical Society. – The Section for Clinical Medicine, Pathology and Hygiene will hold its regular monthly meeting at 19 Boylston Place, on Wednesday evening, November 21st, at 7.45 o'clock.

Papers: Drs. S. Breck and C. G. Cumston, "Report of a Case of Purulent Pleurisy and Pericarditis in a Child aged Sixteen Days, with remarks."

Dr. Morton Prince, "Traumatism as a Cause of Locomotor Ataxia, Considered Especially from a Medico-Legal Aspect, with a Report of Three New Alleged Cases." Discussion by Drs. P. C. Knapp, J. J. Putnam, G. L. Walton, W. N. Bullard, E. H. Bradford and A. H. Nichols.

John L. Ames, M.D., *Secretary.*

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The next lecture will be given on Thursday evening, November 22d, at 8 o'clock, by Prof. W. T. Councilman. Subject, "Bright's Disease." Physicians are cordially invited.

RECENT DEATH.

Alexander Reed Holmes, M.D., died in Canton, Mass., November 11th, aged sixty-eight years. During the Rebellion he served as surgeon in the Third Massachusetts Volunteers and later on the U. S. S. *Nipsic.*

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the American Gynecological Society, Volume XIX, for the Year 1894.

The Story of Rodman Heath or Mugwumps. By one of them. Boston: Arena Co. 1894.

Functional Constipation. By W. Blair Stewart, A.M., M.D., Bryn Mawr., Pa. Reprint. 1894.

The Effects of Ethyl Alcohol on the Affinity of Hemoglobin for Oxygen. By John Davis Kales, M.D., Chicago.

A *Résumé* of Twelve Hundred Examinations for Life Insurance. By William H. Dukeman, M.D., of Los Angeles, Cal. Reprint. 1894.

Can Physicians Honorably Accept Commissions from Orthopedic Instrument Makers. By H. Augustus Wilson, A.M., M.D. Reprint. 1894.

Why Chronic Urethritis is Ordinarily Difficult of Cure and an Efficacious Method of Curing It. By Bransford Lewis, M.D., of St. Louis, Mo. Reprint. 1894.

Shipowners and Ships' Surgeons, Including *Truth's* Article "Doctors at Sea." On the Medical Department of the Mercantile Marine Service. By C. H. Leet, F.R.C.S. Reprints. 1893.

Observations on Bending of the Neck of the Femur in Adolescence, with Particular Reference to the Diagnosis and Significance of the Affection. By Royal Whitman, M.D., M.R.C.S. Reprint. 1894.

Fifteenth Annual Report of the State Board of Health of Illinois for the Year ending December 31, 1892, with an Appendix containing the Report on Medical Education and Medical Colleges, Revised to December 31, 1893.

Address to the "Honor Men" of the Barnes Medical College, St. Louis, Mo. The Medicinal Treatment of Peritonitis. Report of Two Cases of Second Infection with Syphilis. By James T. Jelks, M.D., Hot Springs, Ark. Reprints. 1894.

Original Articles.

THE COMMERCIALIZATION OF MEDICINE; OR, THE PHYSICIAN AS TRADESMAN.

A Sociological Study.

BY THEODORE W. SCHAEFER, M.D., KANSAS CITY, MO.

THE RULING IDEA OF OUR TIMES.

We are living in an epoch of theoretical as well as practical materialism. The dominant, central idea of most every one is the speedy attainment of riches. In the past aristocracy was the fad and great source of imitation; now money is the *primum mobile.* Never was there so much wealth massed together, and never did history record so many millionaires, as now.

In all the principal schools of learning — both in Europe and America — we have apostles making propaganda for the new faith, and in the every-day walks of life we see the spirit of the age manifesting its influence upon the various avocations. The materialistic or realistic tendency of the age, acting like a stimulus, sets the intellectual and physical powers of man in motion, influencing and moulding literature, the arts, the sciences, medicine, and, last not least, the governments in their activity of advancing the interests of commerce and industry. The history of civilization promulgates the fact that there is an onward drift of thought, an evolutionary progressive development of the various intellectual powers and capabilities, a continuous substituting of a higher for a lower kind of psychic influence, the social medium thereby being advanced in its industrial, moral, intellectual, esthetic, etc., phases — phenomena analogous to the history of evolution in the different departments of biology. The history of man is also the history of his thought, and the civilization of a people may be considered the reflex of its intellectual status. Each sociological period has its ruling or guiding idea, which produces its characteristic mental type or impress. The bent of thought in the past was idealism, now materialism is the chief intellectual momentum of our times. The fact that materialism admits the value of itself alone to the exclusion of idealism, demonstrates its exaggerated tendency, which it manifests in all the intellectual expressions of our times, being a kind of *idée fixe.*

Industrial man is, *κατ'ἐξοχήν,* the product of the present drift of thought, which gives him his characteristic physiognomy, recognizable in all the avocations. The industrial or mercantile spirit, being a phase of materialism, pervades most all the pursuits of life. It seeks to over-value the material, that is, the commodities and money, entirely disregarding the speculative or metaphysical, only recognizing ideas which it can materialize or realize, so to speak, subjecting them to a practical application.

THE INFLUENCE OF MATERIALISM OR REALISM UPON MEDICINE.

Realistic and materialistic doctrines have greatly influenced the tendency of medical thought in our day. The inductive method (the investigations by the senses) is now chiefly cultivated in our institutions of learning, whilst the study of ancient classics is considered as not at all necessary and a mere waste of time. On perusing the literature of the day one easily perceives the realistic trend of thought, for the notion is more and more manifesting itself that common-school education is as good as college education; that all the classical barriers should be broken down; that the sciences, and medicine especially, should be brought within the easy reach of every one — in other words, they should be *popularized;* and, lastly, that these studies should be divested, in some mysterious manner, of their intricacies or minutiæ, and made practical and comprehensible to both tradesman and student. The practical man, or *homme machine*, does not believe in any social or intellectual restrictions, but fosters free-trade ideas, so to speak, believing himself competent to hold any of the educational stations of life. Being a genius for business, he chiefly concerns himself with the realities of life, and considers those qualities, from his mode of thinking, which contribute to social efficiency and material prosperity, of far greater importance than those which are essentially cultural and humanistic. He divests medicine of its time-honored humanistic and classical embellishments and drags it out of its professional realm into the domain of commercialism.

THE COMMERCIALIZATION OF MEDICINE.

In these days of active competition, when the Darwinian motto, "the struggle for existence," finds its practical demonstration, there is not a single human avocation left untouched by the grasp of materialistic philosophy — not even theology!

Medicine, once a profession, is now a trade, and is making rapid strides towards its complete commercialization. The medical jobber has but one goal, and that is the acquisition of wealth. All higher ideals must give way to satisfy material desires. The physician of to-day must possess a mercantile mind and adapt himself to modern conditions of life if he hopes to make a success of his calling, otherwise he is a failure. The possession of a diploma, first of all, and a good social knowledge and how to use business methods with advantage, are factors of prime importance. A thorough medical knowledge is not essential, for it is a notorious fact that those who possess only a smattering of medical knowledge succeed best!

On walking along the streets of our large cities one is really amazed to see the enormous number of doctors' signs dangling in the air. Every little country town has more doctors than it can support. Almost on every country cross-road a doctor is waiting for patients. Why so many doctors? and can all of them make a living? During the preparation of this article, I find on my table the September number of *The Forum,* which contains the very erudite and elaborate article, "The Pay of Physicians and Surgeons," by Dr. George F. Shrady. On reading the article, I find a few discrepancies in regard to the income of the average physician. His estimates are inaccurate and misleading. I wish to state right here that a great deal of ignorance exists in the minds of those contemplating the study of medicine. *The supposed fabulous income of a great majority of physicians is a fiction!* The fact is that the young physician, in the first five years of his practice, hardly earns his board, and his income often does not amount to fifteen dollars a month in cash!

It is but natural to expect, by reason of the appalling number of struggling physicians, that pauperism is making itself felt in the overcrowded ranks of the medical profession in this country. Many physicians make their living in questionable ways. In the struggle for bread ethics are cast aside and the code remains a dead letter. The present socio-economic conditions are responsible for the existence of a *medical proletariat!* Every one of them wants to live, and in the struggle for self-assertion the conventional and disguised warfare of civilized life, called "competition," which is nothing else but individual antagonism, is brought into play. The saying, that "the forward dog gets the bone," finds its application even in medicine. This egotistic spirit has created the specialist, who is encroaching more and more upon the domain of the family physician, whose days are counted. A purely one-sided education of special branches in medicine has taken the place of a universal or humanistic education. When our so-called "medical colleges" (*medical combines!*) turn out men reared in inferior environments, with rudimentary ethics and who are sadly deficient in literary as well as scientific qualifications, what can we otherwise expect? These commercial medical colleges send out men equipped with didactic, not practical, knowledge. Physicians are not slow in adapting themselves to the changes of the social organism. They are becoming more and more gregarious, instead of remaining individualistic in their habits. Egotism must naturally give way to altruism. In congregating in large buildings, they imitate the sociality of bees, for they realize that concerted action (coöperative association) is far more remunerative in its results than antagonistic or competitive individualism. The conditions favoring the aggregation of physicians have greatly changed the socio-economic status of the medical practice. The social forces are working towards collectivism, which favors division of labor with differentiation of function and increased centralization.

Nowadays, especially in the cities, physicians are becoming more and more mercantile by imitating the industrialists or shopkeepers. Their offices gravitate toward the heart of the city, where medicine becomes centralized in large buildings. Here physicians are brought into intimate association; they learn to cultivate friendly sentiments and absorb knowledge from another, instead of pursuing an aggressive, individualistic existence in a state of segregation. Here is life and motion. The busy ring of the telephone, the familiar click-click of the typewriter and even of the telegraph instrument (by the railroad surgeon) strike one's ear. Amid this tumult of mercantile enterprise we find the specialist, the representative of medical mercantilism, busily engaged in sending out his pamphlets broadcast to physicians, soliciting their patronage, just like the merchant who sends out his circulars. Is this not advertising? In short, the modern doctor's office is transformed into a mercantile establishment.

Our native American is, *par excellence*, the *ζῶον ιατρικόν* of this country, and feels himself at home in medicine as the duck does in water. The mercantile spirit that dwells in his bosom is responsible for the present chaotic condition of medical practice. He has commercialized every branch of the medical art. The medical industrialist flourishes in greater numbers in this country than elsewhere. His mercenary mind creates medical combines or trusts (so-called "medical colleges," hospitals, dispensaries, etc.), which are a detriment to the medical profession at large. Through the instrumentality of these collective medical bodies, he is enabled to advertise and aggrandize himself and increase his practice and derive a revenue from students and doctors, depriving the latter of their proper *clientèle.*

Everything points towards centralization and nationalization in medicine. These medical combines are becoming more and more selfish and aggressive and their purpose is *to centralize medicine and to crush out the independent, general practitioner.* Most of our hospitals, clinics and dispensaries are *controlled by medical cliques who endeavor to monopolize all surgical and medical work, excluding the outside physician from participation.* Physicians are now doing less and less medical and surgical practice, and the day is not far distant when patients will be treated in institutions and the general practitioner will be dispensed with.

Medical practice is nowadays becoming so unremunerative that physicians are compelled, from sheer necessity, to seek for secondary avocations in order "to keep the wolf from the door." Most physicians are on the lookout for positions that are compatible with their calling. There is a lively scramble for positions that are remunerative. We have physicians who do contract labor for life-insurance companies, lodges, societies, railroads, street-car and cable lines, factories, mills, mines, smelters, packing-houses and other corporations too numerous to mention. Just as we have our corporation lawyers, so do we have our corporation physicians and surgeons. As every employé is assessed a certain sum monthly from which the corporation physician or surgeon receives his salary, it will be easily perceived that this contract labor of physicians does a great harm to the medical profession and contributes materially in lowering its dignity.

So much for medical institutionalism and contract labor. The changing social organism shows us conspicuously that the family physician is nearing his extinction, being supplanted by the specialist, who in turn is now suffering from institutional encroachment. The clamor for public medical positions, municipal, state and federal, is great. The student of socio-economic medicine can predict with a fair show of approximate certainty that we are rapidly approaching the times when all colleges, hospitals, clinics and physicians will be under the supervision of the general government.

THE TREATMENT OF THE SO-CALLED INCURABLE PURULENT PLEURISIES BY THE SIPHON.[1]

BY C. G. CUMSTON, B.M.S., M.D.

The incurability of a purulent pleurisy arises from two factors entirely different, namely, general cause, local cause.

(1) *General.* — Any pyemia, no matter of what origin, can show itself in the pleura, which will manifest this infection by the presence of pus in its cavity. In this case, the danger resides in the general condition and not in the pyothorax, which is only one of its complications. The cure of this pyothorax does not determine the cure of the patient.

(2) *Local Factors.* — Here the pyothorax is all the disease, which has fixed itself on the pleura at once or as a final act of its evolution. A local treatment constitutes the necessary and sufficient condition for the cure of the patient. But one must distinguish the conditions of the prognosis which are united to a thousand

---

[1] Read before the Clinical Section of the Suffolk District Medical Society, October 17, 1894.

varieties of pathological conditions of the lungs and pleura. Is there a chronic pneumonia, sclerosis, tuberculosis? Is there a pneumothorax? In a word, has the lung lost or retained more or less of its vitality and expansibility? And as to the pleura, are there any false membranes? and if so, are they soft, fibrous or connective, thick or rigid, organized or not? Lastly, and especially, is there chronicity, and has the respiratory apparatus contracted the habit of remaining inert?

In recent favorable cases, devoid of all complications, all methods, such as aspiration, incision, or resection, may bring about a cure. Each member of the profession will extol the method that he has employed and which has been successful. But if he fails, he will say: "My treatment did not succeed because the lung would no longer expand or because I did not resect a large enough number of ribs, etc. The trouble is in the patient, in his lung, in his pleura, and not in the treatment, which having been a success in such or such a case, must be the same in another." For myself, it is to these incomplete procedures as indications, consequently incomplete as results, that we owe all these invalids, going through their life with fistulæ, cachectic, and ending in early death. It is in these cases that Professor Revilliod's method should be brought forward; and it is on this special point that I have consecrated this memoir. In other words, I would like to demonstrate to you this evening that cases, incurable by the so-called classical methods, are curable by the siphon as employed by the distinguished clinician of Geneva.

The instrument is quite simple. It consists of a tube about one and a half centimetres in diameter. Block rubber is preferable. The end which is inserted into the thorax has a rubber bulb which aspirates in a sense from the thorax down. A simple rectal-injection pipe is on the same principle, only in Revilliod's tube the bulb is about two feet from the end of the tube inserted in the pleura, and there are about three feet more which drop into a receptacle. They use the ordinary wine flask, but any glass that will hold about a litre of water is quite sufficient. The tube once inserted in the pleura is held in place by adhesive plaster and allowed to remain there. The further end of the tube is placed in an antiseptic solution — usually carbolic acid or creoline — so as to prevent the air entering the tube. When there is no fistula the incision, which is five or six centimetres in length, is made near the posterior axillary line, that is, near the anterior border of the great dorsal muscle, whose fibres can be cut without inconvenience in the seventh or eighth intercostal space on the right, and in the eighth or ninth intercostal space on the left. The Davidson Company are making some of these tubes, and I hope they will shortly be ready.

I will not take your valuable time in giving you a *résumé* of other methods, but will be to the point and establish the principles of the method under question as it is actually practised. I admit that at the commencement and in cases considered as simple abscess of the pleura, thoracentesis can be sufficient, as is often observed in children and even in adults. If puncture does not suffice, if the collection reappears, an incision in the intercostal space must be performed, for I cannot admit that the siphon tube can be introduced through a trocar, no matter of what dimensions, nor that the pleural cavity can be properly irrigated by tubes of small diameter. Once the incision made, and large enough to allow the pus and membranes to escape, the siphon is introduced. At the end of this simple operation the lips of the incision soon close hermetically around the tube, and from that time all that is necessary to bring about the cure of the patient is a rigid watchfulness on the part of the surgeon. Any other method in which there is no aspiration is bad, for it allows stagnation of air in the pleural cavity; and no matter what is done, the result is that there is an immobilization of the lung and retention of gas and liquid.

Let me add and insist on the following advantages that I have been able to note by this method of treatment. Expansion of the lung is the immediate result of the suction of the valve of the siphon, as I have many times witnessed. Consequently, when the lung is free from adhesions, amphorisme and the metallic sound indicating a pneumothorax, may instantly be produced or stopped by the valve of the siphon, thus explaining why lungs that had been retracted for a long period could be expanded to the ribs. In cases of pulmonary perforation, this is also a precious means of ascertaining if the fistula is still open or if it has closed. If there be a pulmonary fistula, by playing on the valve of the siphon, one cannot evacuate the air contained in the pleurul cavity, while if it can be evacuated it is certain that no perforation exists. By drawing the lung towards the thorax, the salutary adhesions are not destroyed by the siphon, on the contrary, it favorizes their formation. Lastly, by the continuous aspiration that it produces on the liquid and gas as fast as they form *it renders washing out of the cavity less necessary.* The curetting of the false membranes and their withdrawal, conditions which are necessary for a cure, are produced by the permanent aspiration, which is so great that it has been known to draw blood and cause pain, so that the force has had to be lessened. In a word, the siphon cures without resection of the ribs and without fistula. According to Mouton in his thesis (Paris, 1883) the method of Estlander exposes the patient to fistula; Immermann states that Bülau's method is only successful when the empyema is recent and the pus not too thick; and Fraentzel, of Berlin, speaking on the same method, says that it should never be performed on tuberculous patients. Schede, of Hamburg, gives another objection to this method, namely, that the canula employed is easily obliterated, and that it requires immobility on the part of the patient which is difficult to realize. I have never seen Dr. Bülau's apparatus; but what I can say is, that by Professor Revilliod's method the patients can be up and about, and some have gone to the mountains.

To those gentlemen who are interested in this subject, I would refer them to the discussion which took place at the Academy of Medicine of Paris, March 29, 1892,[3] but which is too long to discuss here. However, it will be seen that irrigation of the pleural cavity has been thrown into discredit, and that it is no longer a question of antisepsis, an excellent thing in principle, but impossible to obtain in the cure of pyothorax, and is not a condition *sine qua non* of the cure. In fact, if the introduction of air into the pleural cavity is hurtful, it is by the pressure that it produces more than the micro-organisms that are introduced. The essence of the ideas emitted by Verneuil, Constantin Paul and Péan is that too many irrigations, too many

[3] See Bull. de l'Académie.

currettings and too many resections are done. If we can bring about the normal anatomo-physiological conditions by the most simple means, obtain the desired result with the least possible expense, and, in this particular case, leave the patient with his ribs intact, this is the ideal.

I will now enumerate a few cases treated by Professor Revilliod as examples of what may be obtained.

CASE I. Child, age nine. For four and a half years had had a purulent pleurisy, which was not discovered, and which opened spontaneously in the ninth intercostal space, from which a drop of pus was constantly dropping. The child was in the last degree of hectic cachexia. Professor Revilliod, called into consultation, simply introduced a rubber tube into this spontaneous opening, which evacuated the pus and which, when once emptied by the siphon, kept a vacuum in the pleural cavity, and brought the lung back to its normal dimensions and situation. The cure was complete in six weeks, and the fistula had cicatrized perfectly. This happened fifteen years ago, and the child is now a strong and healthy baker.

CASE II. Pleurisy, primatively serous, dating back seven years, but which had become purulent after the ninth aspiration. Empyema and drainage performed in Vienna in July, 1891. Siphon at Geneva in October, 1891. Cure in January, 1892, consequently in 109 days.

Dr. X., a Moscow physician, age forty-five. No pathological antecedents, hereditary or personal. Strong constitution. In July, 1884, the patient had a left-sided pleurisy, for which he had been aspirated four times up to April, 1885. After a short cure, the fluid reappeared, and two more aspirations were done during November of the same year. In 1886, Dr. X. left for Vienna to consult Professor Nothnagel, and at his advice took a cure of compressed air at Reichenhall. From here he went to St. Moritz, where he remained until 1890. In April of that year the fluid returned, and a seventh aspiration was done, withdrawing three litres of serous liquid. In September the eighth aspiration was performed. In January, 1891, the patient came to Geneva to consult Professor D'Espine, who sent him to Professor Reviloid, and he entered the Cantonal Hospital in a private room. His general health at this time was not bad; no fever, no cough and no dyspnea. An examination of the thorax showed a medium quantity of liquid in the pleural cavity, occupying the lower two-thirds on the left side. The perimeter gave 48 centimetres on the left, while on the right it was 49 centimetres, showing that there was a tendency towards retraction on the diseased side. There was no indication for making an aspiration, so the patient received a diuretic and resolutive treatment, which was followed by a satisfactory result. The 21st of May, 1891, the patient left for Vienna to consult Dr. Gersüny, who aspirated him (this was the ninth), and withdrew 1,550 grammes of a serous fluid tinged with blood. A few days after this, the patient was seized with shivering and his temperature was 40°. On June 5th the fluid reappeared, and an explorative aspiration gave pus. Dr. Gersüny made an incision in the sixth intercostal space in the anterior axillary line, which let out the pus, and a drainage-tube was inserted.

The patient left Vienna on September 30th, and returned to Geneva to consult Professor Reverdin, who made an irrigation with a solution of salicylate of soda, and told the patient to go back to Professor Revilliod, that he might undergo the treatment with the siphon. Dr. X. entered the Cantonal Hospital the 3d of October. At this time he was pale, weak and thin, as any man would be who has suppuration going on and its accompanying fever. He wore a drain in the former incision and a bandage bathed in pus. The drain was removed, and a soft-gum catheter was introduced, and by aspiration 140 grammes of pus were withdrawn. A sound of metal could be introduced 20 centimetres into the thoracic cavity. The circumference on the right and left sides was the same as in January. After washing out the pleura with aromatic wine, the siphon was put in. October 5th the bottle contained 105 grammes of pus and false membranes; on the 6th, 80 grammes. Amelioration was continuous, the patient was up all day. Apyrexia in the morning and occasionally the temperature reached 38° in the evening. The siphon was removed early on the morning of the 18th, and the following day 10 grammes of pus were found in the pleural cavity. The fistula was still long, and measured 17 centimetres; the siphon was left out until the next day, when the condition of the patient was worse. He had chills in the evening, and pus was forming, so the siphon was once more introduced. On the evening of November 23d there was fever produced by the retention of the pus, due to a clot in the tube. From November 27th to December 12th there was complete apyrexia; the false membranes diminished day by day, and the pus became clear and serous. By aspiration some drops of blood could be withdrawn, showing that granulations had commenced to form. The metallic sound still penetrated 13 centimetres. December 29th the serous liquid still contained some false membrane, but the fistula only measured 9½ centimetres. December 30th the patient was left without the siphon; the fistula was narrow and bleeding. The siphon was put in again on January 1st, as there was a retention of a dirty gray pus, mixed with blood-clots. January 16th there was only 20 grammes of serous liquid in the bottle, and in removing the tube from the wound a little blood ran out. A simple drain was introduced; but as the dressings were soiled daily by a disagreeable smelling pus, the siphon was put back for more aspiration for two days. At this time a No. 12 sound entered 10 centimetres into the fistula. On January 21st, the general condition being good, with complete apyrexia, the siphon was removed, and a simple dressing applied. January 24th a soft catheter could hardly penetrate into the fistula, which had retracted and only measured 5 centimetres in depth. The next day there was no fever, and the dressings were hardly soiled. This continued; the fistula closed; and on January 29th the following was noted: The circumference of the thorax was the same as on May 31, 1891, consequently there had been no retraction of the thorax since that date. On percussion, the lungs were normal; auscultation showed a normal superficial vesicular murmur, although less pronounced on the left than on the right; vocal fremitus normal. The patient left the hospital cured on February 4th, having regained his strength and flesh. When seen on June 5th he was still in the best of health.

Here is a patient who went about seven years with a collection in the pleural cavity, who had undergone nine aspirations; the last done by Dr. Gersüny, of Vienna, with all antiseptic precautions, was followed by a purulent change in the liquid, for two weeks later the doctor made an incision in the intercostal space, giving issue to pus, and drained. From June 5th to October 3d (120 days) the patient changed his dressings daily, but seeing that his general and local condition became no better, and that he was in interminable suppuration, he decided to come to Geneva. As soon as the siphon was established, there was a tendency towards cure, the pus was removed as fast as it formed and its quantity diminished progressively. The lung, which was 20 centimetres from the surface of the thorax gradually regained its place, thanks to the permanent aspiration of the siphon. Finally, there only remained a fistulous tract which obliterated and was completely cicatrized on the 109th day of treatment. This lung, which had been pressed upon for seven years by a collection of pus, when once *siphoned* and encircled by empty space, came back day by day to its anatomical relations and functions. The tendency towards retraction and deformity of the thorax was arrested as soon as this treatment was underway. The complete cure was effected in less than four months, and would have been more rapid if attempts had not been made to leave off the siphon, as when it was removed the lung contracted and took its old position.

Case III. (Notes of Dr. Maillart, assistant.) Chronic purulent pleurisy, drained; dating back seventeen months; cured by the siphon in two months. Girl, age nine years, ten months. Hereditary antecedents good; all relatives died at an old age. The patient had whooping-cough at seven, well cured, but remained susceptible to cold. On December 25, 1889, she came home from a Christmas-tree and went to bed. At this time, four of her sisters were sick with *la grippe.* A physician was consulted, who found a left-sided pneumonia, with congestion in the right lung. The patient could not lie on her right side. After several alternatives, fever recommenced, and the doctor found a left-sided pleurisy. In April, 1890, a tumefaction was found, low down on the anterior axillary line on the left side, which was painful when the patient moved, and prevented her from wearing corsets. This tumefaction became red, hard, painful and fluctuant. An incision was made in June, drawing off a great quantity of purulent liquid, and a drain was introduced. From this time, the wound had never closed, and a rather thick liquid kept running out on each side of the drain. At the same time the general health was on the decline, and the doctor advised the parents to take their child to the Hospital for Sick Children, from whence the patient was sent to Contonal Hospital in Professor Revilliod's service, on May 14th. Consequently, six months had elapsed between the *début* of the pleurisy and incision, and eleven months between the incision and her entrance to the hospital, making a total of seventeen months' sickness.

The child was very thin, the skin dry and withered. She was bent; her respiration was short and jerky; face denoted suffering, and the child feared being touched. On examination of the thorax, it was found to be completely deformed. The spinal column was inclined to the right, the maximum of inclination being at the level of the fourth and fifth dorsal vertebræ. It seemed to have undergone a torsion on its axis, the spinous apophyses were situated more to the right than the bodies of the vertebræ. The right half of the thorax formed a projecting arc and the intercostal spaces were distinctly marked. On the contrary, the left side was considerably retracted. The posterior aspect was flat and excavated from behind forwards. In front the entire sternal region presented a boat-shaped depression, the main axis of which was vertical. This depression was so deep that the patient could put both her closed fists into it. The sub- and superclavicular fossæ were more retracted on the left than on the right side. A fistula was seen on the left over the eighth intercostal space in the anterior axillary line, and all around the orifice there existed a zone of erythema due to the irritation of pus. By percussion the entire left side of the sternum was dull, and fremitus was greatly diminished. Auscultation showed that vesicular murmur was entirely abolished everywhere, but that in profound inspirations one could hear râles in front and back at the base. The heart was deviated completely to the right. Dulness extended horizontally from the sternum at the second intercostal space to the right anterior axillary line and descended vertically to the fifth space, where it was conformed with the liver. The point could be seen to beat under the fifth rib on the right, twenty-three centimetres on the inner side of the axillary line, and extended (though losing by degrees its intensity) to the entire anterior part of the thorax on the right, up to the third intercostal space. The circumference of the thorax was fifty-six and a half centimetres — twenty-five and a half centimetres on the left, thirty-one on the right.

From this examination, one could conclude, as in Case I, that the left pleural cavity was filled with pus, which, in spite of an orifice allowing an exit to the fluid, situated in a dependent part and with a drain inserted, only came away drop by drop. This production of pus dated back seventeen months, and the retention of the pus, which could not escape, explained the cachectic condition of the patient. The deformation of the thorax indicated a retraction of the ribs. This was another case in which, if it had been treated by the ordinary methods, a certain number of ribs would have been resected, and curetting and irrigation of the cavity performed. But Professor Revilliod simply introduced his siphon through the fistula. On May 16th, the drain was removed, and a metallic sound introduced into the pleural cavity could be made to go in all directions, even to the clavicle. As soon as the drain was removed, about one hundred grammes of thick, grumous, green pus ran out. The siphon was introduced, withdrawing more pus and then blood. Soon there was a real hemorrhage, necessitating the elevation of the bottle to nearly the level of the thorax. For twenty-four hours the blood would rush out each time that the bottle was lowered, but would cease immediately when raised again. May 17th, the bottle was lowered and the hemorrhage did not return; but the patient complained of an internal dragging sensation due to the expansion of the lung. On May 19th, a scarlatiniform fever appeared, but which did not disturb in any way the rapid progress towards the cure of the patient. The pus diminished in quantity and became serous, and false membranes came away in great quantity. On the 27th, the patient was up, carrying her bottle. The intra-pleural tube had still to be left quite long, as it appeared that there was a pocket in the pleural cavity. On June 10th, a vesicular murmur could be heard in the upper half of the lung in front and behind.

The general condition continued to improve, so that the patient left the hospital on July 11th, wearing the siphon, and came back from time to time to report. On July 23d there only remained a fistula, the siphon was removed, and three days later cicatrization was complete.

En résumé: A purulent pleurisy of seventeen months' duration, operated on six months after its appearance and a drain worn for eleven months, during which time, pus stagnated in the pleural cavity. The thorax was so deformed that the heart, which was pushed to the right, remained enclosed there by the depression of the sternum, and could only regain its normal situation after the cure of the pleurisy; the general condition became worse and worse. As soon as the siphon was inserted the pus was withdrawn as quickly as it was formed. The continual vacuum drew together the walls of the cavity, thus keeping the lung expanded and finally bringing it definitively against the ribs. The retraction of the ribs ceased, and two months of treatment by the siphon was sufficient to repair the ravages produced by seventeen months of suppuration.

Case IV. Pleurisy becoming purulent, dating back twelve months, cured by the siphon. Relapse; cure. A. J., age thirty-nine, type-setter, had had a pleurisy since 1889, for which two aspirations had been done. Patient entered the Prieuré Hospital, where Dr. Picot aspirated for the third time, withdrawing pus. The doctor immediately made an incision in the eighth intercostal space behind, and drained; much pus with a fetid odor escaped. On December 11th Dr. Picot sent the patient to the surgical service of the Cantonal Hospital, and from there he was sent to the medical service on March 26, 1890. The patient was formerly strong, but alcoholic and worn out by seven or eight months of suppuration. His lung capacity measured about 200 cubic centimetres. On March 26th the siphon was introduced in the opening where the drain had been. All went well. The pus diminished daily; and on April 5th an apparatus for the pocket was attached, so that the patient could go to town and attend to his business. He came to the hospital from time to time to show himself. By May 12th the quantity of fluid that came away in twenty-four hours was so insignificant that the siphon was removed. Three days later the patient felt a little distress without the siphon; he coughed and expectorated, and asked to have it put back. This was done. When the patient returned on May 26th, he was again well. As there was no liquid in the bottle, the siphon was removed and a simple dressing applied.

The patient was lost sight of until the month of August, when he came to show himself; the cicatrization was perfect. A year passed by, during which the patient travelled, and drank freely. He showed the characteristic symptoms of alcoholism; morning pituite, trembling, nightmare. He coughed and expectorated considerably, and complained of sore points over the former pleural focus. At last, on September 8th, he was taken with a coughing spell at midnight, and the cicatrix broke, allowing a stream of pus to escape. The patient was kept in the service, and a simple dressing applied; but as the pus flowed away slowly, the orifice being narrow and the sinus irregular, the patient was given ether on September 29th, the fistula [illegible] he siphon introduced. The good work was at once seen; the pus flowed out diminished in quantity daily; cough and expectoration ceased. The general condition became so good that on October 6th the patient was up and about; on the 8th he asked to go, and came back each day for the wound to be dressed. From this time the patient led an active and adventurous life, giving himself up to numerous libations, but always wearing the siphon, which he has pulled out and put back. In a word, he leads a life which does not positively favor a cure. Nevertheless, as he well understands the working of the apparatus, he inserted it himself, and brought us each day the pus collected during the twenty-four hours. This was at first very thick and full of false membranes, but became more and more serous and less abundant, so that on November 21st the siphon was removed, and six days later the fistula was completely closed.

This is a case whose *début* dated back one year before the treatment in question was applied. Still more, it was a pleurisy formed of a certain number of pockets whose walls were rigid, ragged and lined with false membrane. The patient was an alcoholic, and difficult to manage. These attacks ended, however, by cure. This man, who had been about with a drain for seven or eight months, was able to attend to his business ten days after the siphon had been applied. The fistula dried without treatment in a few weeks, and would have done so much quicker if the patient had allowed himself to be attended to. The second siphon succeeded equally well in draining the cavities, which would have remained eternally without this treatment.

Case V. (Notes from Dr. Maillart.) Purulent pleurisy during a scarlatinal nephritis. Great quantity of pus and false membranes, phlebitis, hectic fever, siphon, and cure. C. F., age sixteen, cook. Entered April 4, 1891. Has had measles, and the grip in 1890.

Present Disease. — The 5th of March, 1891, she contracted a disease which we considered as scarlet fever, according to the information that the patient gave, as well as by a nephritis from which she was suffering and a characteristic desquamation which appeared later. The patient remained in bed a few days, did not take care of herself, and went to work. Shortly afterwards, she commenced to swell, and complained of a violent oppression; and the physician summoned diagnosed an albuminuria, and sent her to the hospital.

Status. — April 4th, young girl, pale, anemic facies, feverish, swollen. Temperature 39.2° Anasarca noted in all the limbs. Great dyspnea. Dulness and diminution of the respiratory bruits at both bases. Cough without expectoration. Cyanosis. Irregular heart beats, allowing, however, the *bruit de galop* to be heard. Bilious vomiting. Cramps in the calves of the legs. Tongue dry. Urine rare, with a great brownish deposit containing 90 per cent. albumin, peptones, many leucocytes, degenerated red corpuscles and hyaline, granular and epithelial cylinders.

Treatment. —Wet cups and blisters over kidneys, cotton wool bandages, morphine, milk, diuretics. April 9th, phlebitis of the right femoral vein, mercurial ointment, wire splint. April 12th, *début* of acute febrile pleurisy. Temperature 39° and over. May 8th, thoracentesis, giving issue to 750 grammes of thick, sticky, greenish pus. May 13th, reproduction of pus; incision, giving issue to a large quantity of pus and false membranes; siphon lavage with aromatic wine. Fever fell to 36°. May 31st, after a lavage, there were symptoms of syncope. The patient, when she came to, remained in a feeble state, which lasted several days, and which reappeared when the bandages were changed or the patient moved. The left arm is atrophied a little, and there is paresis. June 10th, aspiration with the bulb shows that there is a perforation of the lung. The liquid of the irrigation, when slowly introduced into the pleura, appeared in the mouth with its characteristic taste, and produced cough with suffocation. From the next day, the siphon worked well, showing that the perforation had closed. June 22d, the lung is only seven centimetres from the thoracic wall. The little liquid furnished by the siphon is only limpid serum without membrane. June 24th, auscultation and percussion normal. The siphon is removed. June 30th, the fistula is closed.

The patient left on July 25th. The perimeter measured at the level of the cicatrix 35 centimetres on the right, 37 centimetres on the left. There was consequently an increased amplitude of the thorax on the diseased side. The left arm remained atrophied, its circumference being 18.3 centimetres at the upper end of the forearm (the right limb was 20 centimetres) and 19.5 over the biceps (right 21.5). The following table will serve to show the course of the disease.

PER CENT. OF ALBUMIN.

April 7	20.
April 10	1.6
April 18	3.50
April 25	1.25
May 7	.40
May 25	.60
June 1	.25
July 23	.00

PUS IN TWENTY-FOUR HOURS.

May 23	315	grammes
May 28	100	"
June 2	50	"
June 7	30	"
June 29	0	"

PER CENT. OF HEMOGLOBIN.

June 1	60
July 23	73
August 24	80
December 20	85

PATIENT'S WEIGHT.

June 10	34,400
June 20	33,100
June 30	35,30
July 15	41,600
July 30	42,200
August 25	43,800
December 25	49,200

En résumé. — Here is a case of intense febrile scarlatinal nephritis, which at the end of the fifth week ended in a vast pleural abscess. As one thoracentesis was not sufficient, the siphon was applied one month after its formation. The action of the siphon was hindered by divers complications, pulmonary perforation, and apoplectiform nervous symptoms, rendering the irrigations most difficult, but which were necessary in this case on account of the large quantity of false membranes. Nevertheless, six weeks after the siphon had been in use, cicatrization of the pleural cavity was perfect without any tendency to retraction of the costal arc. The last report of the patient was on May 28, 1892. The cure was still complete, and the general health perfect.

CASE VI. (Dr. Archavski's thesis.) A child was taken on February 14, 1891, with a suppurating pleuro-pneumonia following scarlet fever. On March 10th, he was brought to the hospital. On the same day the first thoracentesis gave issue to one litre of pus. A second thoracentesis, on March 16th, gave 400 grammes. The third thoracentesis, on the 22d of March, gave 580 grammes. The fourth, performed on April 1st, gave 400 grammes. On April 15th, incision and siphon. April 25th, the pleura was empty, and the lung came to the thoracic wall. The siphon was removed. A few days later an acute nephritis appeared, with a large quantity of albumin and general anasarca. Suppuration recommenced, and the siphon was put back for a few days. On May 13th, the cicatrization was complete, and cure definite. The patient was followed for some time afterwards, and always found in excellent health.

These six cases, which concern either chronic or complicated pleurisies which would have been considered as incurable, all ended in a complete recovery. This is a sufficient conclusion for justifying this memoir, and more eloquent than any commentaries that I could add. Tuberculous pyothorax, although not less interesting in our point of view, is a subject too special to find place here; but I hope at a future date to be able to give some personal experience on this question.

◆

ACUTE LEUKEMIA.[1]

BY R. C. CABOT, M.D.

THIS paper is an attempt to answer the question whether it is reasonably certain that cases of acute leukemia have occurred.

My attention was first drawn to this question by a remark of Rieder's.[2] "Certainly," he says, "some of the cases reported as acute leukemia, are properly to be considered as cases of inflammatory leucocytosis." In this opinion Rieder is supported by v. Limbeck,[3] who considered the evidence insufficient to establish a separate acute type of leukemia. On the other hand, such text-books as Pepper's (new edition) and Strümpell's speak of the occurrence of acute forms of the disease as an established fact.

My very recent observation of a case first diagnosed as acute leukemia, where only a differential count with Ehrlich's triple stain showed the true diagnosis to be leucocytosis due to new growth,[4] has further awakened my suspicion as to the value of diagnosis made without the assistance of some such method. Accordingly, it has seemed worth while to go over all the literature upon which the belief in the existence of acute leukemia is based, and scrutinize carefully the methods of diagnosis used in each case.

It is necessary to consider at the outset just what evidence should be held sufficient to establish a diagnosis of acute leukemia.

First, we note the element of time. The duration of the cases published as acute leukemia (34 in all) varies between three days and nine weeks, the latter being the longest case on record under this title. Now, without attempting to lay down any precise number of days or weeks as a limit beyond which no case may last and still be considered acute, it may be stated that, considering the average duration of ordinary chronic leukemia (with which these cases are contrasted), any case which runs its entire course within nine weeks may fairly be classed as acute. So that all the published cases of acute leukemia may, I think, be considered established as far as their *stated* duration is concerned.

---

[1] Read before the Clinical Section of the Suffolk District Medical Society, October 17, 1894.

[2] Grundriss einer klin. Path. d. Blutes, Jena, 1892, p. 162.

[3] Beitrage z. Kentniss der Leucocytose, Leipsig, 1892, p. 31.

[4] Boston Medical and Surgical Journal, March, 1894.

I say their *stated* duration; but we have next to consider by what evidence we can settle the dates of start and finish in any case. Now, as all the published cases ended in death, it is very easy to settle the boundary on that side; but the date of the beginning of the disease is much harder to settle, and for the following reasons:

(1) In the first place, the sudden onset of severe symptoms in a person previously considered well, is of no importance whatever as evidence of the beginning of a case of leukemia. Cases which show evidence of having existed for a considerable period are sometimes first discovered by an oculist, or the patient may consult a physician for some slight gastric or respiratory disorder, and in the course of routine physical examination the discovery of an enlargement of the spleen or lymph-glands leads to a blood examination, and so to the diagnosis — the patient's general condition being and remaining excellent.

As an example of this, I will cite the case of Winnie S., twenty-two years old, who came to the Massachusetts General Hospital in December, 1892, for shortness of breath. Routine physical examination leading to the diagnosis of leukemia, the patient was after some difficulty persuaded to stay a few weeks in the hospital, in spite of the slightness of her symptoms. The blood current showed: red corpuscles, 2,921,600; white corpuscles, 492,000; a proportion of one to six. A differential count showed a large percentage of myelocytes. The spleen reached nearly to the navel; yet she felt so well that after a day or two it was difficult to keep her in the hospital. Eighteen months later she came to the hospital again to report that she felt entirely well, and had been so since leaving the hospital. She was married, had a healthy child, did her own housework, and was by no means an invalid. The blood and spleen were practically as before.

Another case of very marked leukemia which I kept track of after her discharge from the hospital was able to be about and do some work until about three weeks before her death, when there was a sudden onset of symptoms resembling those reported in cases of acute leukemia (so called). Any one seeing her for the first time in this attack, and following the case to the time of her death, three weeks after, might have supposed it to be an acute case.

Dr. Hubbard, of Taunton. was kind enough to write to me not long ago about a case of leukemia who was under observation at the Massachusetts General Hospital in July, 1892, and who has since been under his care. He tells me that she had been at work a good deal of the time since leaving the hospital, and of late has safely passed through a severe attack of lobar pneumonia. The blood is still leukemic.

Such cases as these show how largely latent a case of marked leukemia may be, and how easy it would be for any one seeing the case for the first time during the last weeks to suppose it an acute case.

In order to fix with any certainty the time of the beginning of a case of leukemia, one must have examined the blood before the date supposed to mark the beginning of the disease, and be able to state that no changes characteristic of leukemia were present before that date. Now, it is obvious that a physician would rarely have opportunity for such examination previous to the beginning of the disease. Clearly, therefore, it must always be difficult to be sure of a diagnosis of acute leukemia. That acute, severe symptoms occurred with a leukemic condition of the blood, and that death followed within a few weeks, is only what occurs in cases of leukemia known to have existed for a considerable time.

(3) But now, supposing that we settled that it is really an *acute* case of some kind, what further evidence is needed to show that this acute disease is really acute *leukemia*.

It has been supposed until within a few years that leukemia was one of the easiest of diseases to diagnose; and although no one would now consider it a very hard one, it requires something more than a glance at the blood and the detection of an enormous number of white cells in the field to make the diagnosis. Yet upon no greater evidence than this, several of the writers whose reported cases I have studied, rest *their* diagnosis. In a single field of an immersion lens (one-twelfth) with a No. 4 eye-piece, which of course is very small, I counted 65 leucocytes in the blood of a case of cancer of the kidney a few weeks ago. The field was simply crowded with them, yet from other evidence it was clear that the case was not leukemia. I shall speak more in detail of this case later on. It is mentioned here only to show how fallacious conclusions based on the appearance of an unstained blood slide may be.

But further than this, even a careful count of the red and white corpuscles and the detection of an enormous increase in the latter by *actual count*, is not sufficient without further data to prove that the blood is leukemic.

It would seem unnecessary to repeat at this time a fact so widely known and so firmly established as this; but that it still needs to be repeated is shown by the fact that such a Journal as *Sajous' Annual*,[5] on which I suppose many of us have to base our ideas, quoted last year as established 19 cases of leukemia, in most of which the diagnosis was based on a simple increase in the count of white cells and in some of which no count at all was made. In fact, some of these cases were guessed at from the appearance of the blood-slides, and in a few, no blood examination of any kind was made.

Now, in fact, leukemia not only does not depend on a simple increase of the white cells, but in rare cases may exist without *any* notable increase of the white cells[6] at all. And in the lymphatic form it is not uncommon to find a ratio of white and red no greater than that found in a variety of other conditions, such as cancer and the anemias of children. On the other hand, an enormous increase of white cells is occasionally found in cases demonstrably not leukemic.

Reinert[7] quoted a case where a patient with abscess of one hand and multiple abscesses about the ankle showed a leucocytosis of 1 to 16, and a case of cancer of the stomach with a ratio of 1 to 12. Welsh, in "Pepper's System of Medicine," speaks of a cancer of the stomach with a blood count of 1 to 25. In the case of C. W., which I have previously reported,[8] the proportion was 1 to 24, and in a case of cancer of the kidney Maggie B., who entered the Massachusetts General Hospital the 7th of last July, under the service of Dr. W. L. Richardson, who has kindly permitted me to mention it, the proportion was 1 to 21. Dr. T. M. Rotch permits me to mention two blood-counts made for him by Dr. A. Wentworth in leukemic children, in which the ratio was 1 to 10 and 1 to 20 respectively.

---

[5] 1893, vol. i, p. L 14.

[6] See case of Mrs. S., quoted in Boston Med. and Surg. Jour., March, 1894.

[7] Die Zählung der Blutköperchen, etc. Liepsig, 191, p. 165.

[8] Boston Med. and Surg. Journal, loc. cit.

Cases could easily be multiplied; but those mentioned seem to me sufficient to show that an increase in the count of leucocytosis, even very large, is not sufficient to show leukemia. In all the cases above mentioned the increase of white was due wholly to a multiplication of the polymorphonuclear cells and none of the characteristic myelocytes were present.

We need to know not only the number but the kind of white cells with which we are dealing, before we can be sure of our diagnosis. It is very striking to note how much the clinical picture of certain cases of malignant disease resemble those of a case of leukemia in every respect except in the one all-important detail of the kind of leucocytes to which the increase in white is due. I have seen in two cases of cancer with anemia, an enormous increase in the white cells and a large tumor in the splenic region. In both of these cases the subsequent growth of the tumor gave it a shape and a feel very different from that of an enlarged spleen, but for a time the resemblance was striking.

(4) Lastly, even the findings of the autopsy, which generally clear up questions of diagnosis in difficult cases, and which are appealed to in several of the cases published as acute leukemia, do not always give us any help in leukemia.

A diagnosis of leukemia cannot be made from post-mortem appearances alone. Certainly, Hodgkins's disease, and possibly other conditions, may give rise to appearances identical with those of true leukemia; and as a marked increase of the polynuclear neutrophilic leucocytes may occur towards the end of a case of Hodgkins's disease, the observer who had made sure of an enlarged spleen and lymph-glands — possibly tender long bones, with a marked increase in the white cells, and finally with post-mortem appearances of leukemia — would probably reject with indignation the suggestion that his case may not have been leukemia after all. Yet such a doubt is inevitable.

From what has been said it may seem that I am maintaining that the diagnosis of any leukemia, acute or chronic, is a matter of great difficulty; but this is not my meaning. The diagnosis of ordinary chronic leukemia is very simple, provided the observer makes a differential count of the leucocytes in addition to the ordinary blood count. It is not the diagnosis of leukemia in general that it is hard to establish, but of *acute* leukemia; for here, for reasons given above, it is rare for the physician to have access to the facts necessary to settle even roughly the date at which the disease began.

Putting together the conclusions arrived at so far, it appears that in order to make a diagnosis of acute leukemia, we need to establish:

(1) The previously normal condition of the blood.

(2) The presence in the blood of such numbers *and varieties* of white cells as occur, so far as is known, only in leukemia.

(3) A reasonably short course to the symptoms.

The negative results arrived at are:

(1) Increase in the white cells (even very large), does not constitute the disease leukemia, even when accompanied by enlargement of the spleen and lymph-glands.

(2) The acute onset of severe general symptoms is of no value as an indication of the beginning of a case of leukemia, for such is often seen in course of a case of chronic leukemia.

(3) There are no post-mortem appearances, and no physical signs (exclusive of the blood examination) peculiar to leukemia, acute or chronic.

In the light of these principles let us now examine the literature of acute leukemia with special attention, first, to the nature of the evidence submitted for their being acute; and second, of their being leukemic.

A glance at the accompanying table will show that out of the 34 cases reported, only three comply with the requirements. These are No. 27 (Senator's) and Nos. 31 and 32 (Obrastow's two remarkable cases). Every one of the others lack one or more of the proofs necessary to establish a diagnosis of acute leukemia. Most of the cases we may suppose to have been leukemia, and possibly acute leukemia; but there is nothing in the histories as given to prove that the disease had not been latent for some time before the onset of severe symptoms. In only six cases was any examination of the blood made previous to the stated beginning of the disease, and in three of these there was no differential count, nor any description of the individual characteristics of the leucocytes.

We are reduced then to three cases, as material from which to form our ideas of the type of acute leukemia. These three cases present some points of interest, and seem worth quoting in more detail.

Senator's case, published in 1890, was in a woman of forty-nine. She had had amenorrhea for a year, and had felt weak and feverish for three months. Such symptoms make us suspect that the disease may have been latent for some time, but an examination of the blood pronounced negative by such an observer as Senator must, I suppose, be accepted as correct, even though no actual count was made. His statement is that on June 2, 1890, he examined the woman's blood, and found "no increase of white cells — only seven or eight in a field of a No. 7 Hartnack lens." If the number of red corpuscles had been low, this number of white cells would, I think, have represented a considerable leucocytosis. But the author makes no statements on this point; and we have to be satisfied with his assertion that the blood was negative, even though he made no actual count of red and white, and no differential count. At any rate, eight days later he did make a count, and found *six white to every two red corpuscles.* As to the characteristics of the individual leucocytes, he merely observes that they consisted mostly of the "small forms," and that he could not make out the nuclei. Presumably, it was a case of lymphatic leukemia with large increase of lymphocytes. During these eight days the spleen had become much enlarged and the patient had lost strength very rapidly. She died June 11th, nine days after the first (negative) examination of the blood. At the autopsy there was found ulcerative endocarditis, besides the large spleen and hyperemic bone marrow. This case, then, although defective in several particulars, seems to me to belong under the category of acute leukemia.

Obrastow's two cases are much more satisfactory, and present several extraordinary features. They were reported in 1892.

Case I. The patient was a boy of seventeen, previously healthy, who for two weeks had been partially disabled from work by weakness and had been troubled by frequent nose-bleeds and cutaneous ecchymoses for the same period. He entered the hospital March 1st, with high fever and a pulse of 126. Physical examination showed that the liver and spleen were enlarged and projected six fingers' breadth below the ribs. The blood was examined, and found to be negative, both as to number and varieties of white cells. On this account a diagnosis of Werehof's disease was made. The patient continued to run a high fever and grew rapidly weaker. After four days in the hospital the spleen projected three fingers' breadth, and after a week a whole hand's breadth below the ribs; the liver, two fingers' breadth. The lymphatic glands were everywhere enlarged. March 10th, nine days after entrance, the spleen reached the navel. This day the blood was again examined, and a ratio of one white to every seven red was found, with a large percentage of myelocytes — in short, the typical blood of spleno-myelogenous leukemia. Two days later the spleen reached an inch beyond the navel, the liver was a hand's breadth below the ribs, and the inguinal and axillary glands were of the size of hazelnuts. The blood-count showed 3,044,000 red, 434,000 white, myelocytes as before. The fever continued between 100° and 104° F. throughout the disease, which lasted just sixteen days from the time of his entering the hospital. Two days before his death the

No.	Author.	Date.	Sex.	Age.	Stated Duration.	Blood-count previous to onset of disease.	Differential Count.	Remarks.
1	Friedreich	1857	F	46	6 weeks	....	....	Gangrenous stomatitis.
2	Isambert	1869	M	54	5 weeks	Yes. Normal	....	One to fifty at death, and never higher ratio. No autopsy.
3	Paterson	1870	F	20	11 days	....	....	Following confinement. Symptoms like septicemia with inflammatory leucocytosis.
4	Paterson	1870	F	?	14 days	....	....	Like No. 3 in all respects.
5	Immerman	1874	F	17	6 weeks	....	....	Large abscess of lower jaw.
6	Kelsch	1875	M	26	7 weeks	....	....	Leukemic retinitis. Lymphoid tumors in various organs at autopsy.
7	Lauenstein	1876	M	59	3 weeks	....	...	
8	Küssner	1876	F	46	2½ weeks	....	....	Severe stomatitis.
9	Ponfick	1876	M	19	5 weeks	....	....	
10	Litten	1877	F	24	5 weeks	Yes. "Minimal leucocytosis"	....	Following "pernicious anemia." Autopsy showed "malignant osteomyelitis."
11	English	1877	M	24	12 days	....	....	Meningitis, endocarditis and pericarditis.
12	Zumpe	1878	M	15	7 weeks	....	....	
13	Fränkel	1881	M	18	20 days	....	Most leucocytes smaller than the red	
14	Gaucher	1881	M	38	9 weeks	....	....	Severe stomatitis.
15	Leube *et al.*	1881	F	30	7 weeks	....	....	Leukemic retinitis.
16	Waldstein	1883	M	44	44 days	....	....	
17	Wadham	1884	?	5	8 weeks	....	....	
18	Masius *et al.*	1885	M	22	9 weeks	....	....	
19	Gläser	1887	M	37	?	...	....	
20	Musser	1887	M	11	5 weeks	....	....	Ratio rapidly increased from 1 to 40 up to 1 to 18.
21	Ebstein	1887	M	23	6 weeks	....	....	
22	Hinterberger	1889	F	30	5 weeks	....	Yes	Leucocytes mostly *polynuclear*. Pus cocci found in glands and liver.
23	Westphal	1889	M	16	6 weeks	....	Yes	Blood is that of pernicious anemia with lymphocytosis. Red cells, 816,000; white, 24,000.
24	Fränkel	1890	F	14	9 weeks	No count. Moderate increase in white.	Relatively few polynuclear cells	No blood-count. Diagnosis based on a "considerable increase in the white cells a few days before death."
25	Guttmann	1890	M	10	3½ weeks	....	Relatively few polynuclear cells	
26	Senator	1890	F	49	3 weeks	Yes. Previously normal	Small forms of leucocytes predominate	No actual *count* before the beginning of symptoms. Saw "only 7 to 9 leucocytes in the field of a No. 7 Hartnack lens."
27	Greiwe	1892	M	28	2 weeks	....	Yes. 35% of polynuclear cells	Had had cutaneous hemorrhages for several months.
28	Eichhorst	1892	M	8	2 weeks	....	Leucocytes 88,000, mostly polynuclear	Leucocytes only 7 to 8 u in diameter.
29	Litten	1892	?	?	1 week	....	Yes	Followed "grippe."
30	Obrastow	1892	M	17	4 weeks	Yes	Yes	Diagnosis satisfactorily established.
31	Obrastow	1892	M	32	2 weeks	Yes	Yes	Diagnosis satisfactorily established. Apparently caught by contagion from No. 30.
32	Nobel	1892	M	40	10 days	No	?	Gangrenous stomatitis. Blood 1 to 10.
33	Dansac	1892	M	17	5 days	....	....	No blood-count at all.
34	Nobel	1893	F	30	3 weeks	....	?	Stomatitis. Blood 1 to 50.

glands and spleen grew very soft — so soft that it was difficult to feel the edges of the spleen at all. At autopsy there was found, besides the enormously enlarged liver and spleen with the ordinary diffuse lymphoid infiltration, a diphtheritic ulceration of the soft palate and a diphtheritic colitis, and pus cocci were found in the swollen lymphatic glands.

Case II. Forty days after the death of this patient, the ward-tender who had taken care of him was taken sick with exactly the same symptoms — epistaxis, purpura, fever; and in three days his spleen was one finger's breadth below the ribs. The blood, as before, was negative at this stage of the case, but a week later showed a ratio of one to nine with a large percentage of myelocytes — typical leukemic blood. The spleen during this week had been growing fast, and now reached the navel, with the liver two fingers' breadth below the ribs. The lymphatic glands were also enlarged in the groins and under the jaws. A few days before his death, which occurred eleven days after his giving up his work, he developed a bloody and gangrenous stomatitis, and the spleen, as in the other case, grew so soft that it was very difficult to feel its edge. Now this man had, as above mentioned, been ward-tender in the ward where the first case was sick. He had taken the temperature, looked after the feces and urine, and helped in the examination of the blood and in the plugging of the nares (which had had to be done on account of the persistent nose-bleeds). The exact similarity of the two cases, and the likeness to an acute infectious disease, is certainly very striking. The cases are, so far as I know, unique, but the suggestion of contagion is certainly plausible.

I will not take up your time with any further details of these cases, except to call attention to the occurrence of severe stomatitis in both the last two cases and colitis in one, as particular attention has been called to these symptoms by Hinterberger[9] in the cases published as acute leukemia. In three-quarters of all the cases published up to the time of Hinterberger's paper (1891) severe ulceration, either of the mouth or of the large intestine, had been noted. Nobel[10] states that stomatitis is present in 70 per cent. of all acute cases.

In conclusion, it need only be said that if what I have been maintaining is true, namely, that there are only two or three satisfactory cases of acute leukemia in literature, it is very important that any one who has seen such cases should report them at once, so that the foundations on which our ideas of the disease are built may be strengthened. I leave it to you to decide how far our confidence in the existence of the disease can reasonably extend on the basis of at most three complete and genuine cases. I do not know how many swallows *do* make a summer, nor how many cases constitute a disease.

BIBLIOGRAPHY.

Friedreich. Virchow's Arch., vol. xii, p. 37, 1857.
Isambert. Gazette Hebdom, p. 505, 1869.
Paterson. Edinburgh Medical Journal, p. 1073, 1870.
Immerman. Deut. Arch. f. klin. Med., vol. xiii, p. 236, 1874.
Kelsch. Arch. de Physiol. norm. et Pathol., Paris, vol. vii, p. 492, 1875.
Lauenstein. Deut. Arch. f. klin. Med., vol. xviii, p. 120, 1876.
Kussner. Berl. klin. Woch., p. 109, 1876.
Ponfick. Virchow's Arch., vol. lxvii, p. 269, 1876.
English. Virchow's Jahrbuch, p. 255, 1877.
Litten. Berl. klin. Woch., No. 19, 1877.
Zumpe. Arch. f. Heilkunde, Leipsig, vol. xix, p. 473, 1873.
Grawitz. Virchow's Arch., vol. lxxvi, p. 353, 1879.
Fränkel. Zeit. f. klin. Med., vol. iii, p. 405, 1881.
Leube and Fleischer. Virchow's Arch., vol. lxxxiii, p. 124, 1881.
Gaucher. Prog. Méd., Paris, p. 445, 1881.
Waldstein. Virchow's Arch., vol. xci, p. 12, 1883.
Wadham. Lancet, p. 158, January 26, 1884.
Masius and Francotte. Ext. du Bull. de l'Academie Royal de Med. de Belgique, vol. xxix, p. 3, 1885.
Gläser. Deut. Med. Woch., vol. xxix, p. 641, 1887.
Musser. Transactions of the Philadelphia County Medical Society, September 28, 1887.
Ebstein. Deut. Arch. f. klin. Med., p. 343, 1889.
Hinterberger. Deut. Arch. f. klin. Med., vol. xlviii, p. 338, 1891.
Westphal. Münchener Med. Woch., p. 4, 1890.
Fränkel. Deut. Med. Woch., November 13, 1890.
Guttmann. Berl. klin Woch., November 29, 1891.
Senator.
Greiwe. Berl. klin. Woch., August 15, 1892.
Eichhorst. Virchow's Arch., vol. cxxx, part 3, 1892.
Litten. Deut. Med. Woch., May 5, 1892.
Palma. Deut. Med. Woch., September 1, 1892.
Obrastow. Deut. Med. Woch., p. 641, 1892.
Nobel. Deut. Med. Zeitung., No. 100, p. 1176, 1892.
Dansac. La Médecine Moderne, October 20, 1892.
Romberg. Deut. Arch. f. klin. Med., vol. xxxiii, p. 629, 1883.
Grawitz. Virchow's Arch., vol. lxxvi.
Mosler. Virchow's Arch., vol. lvi, p. 14.
Mosler. Virchow's Arch., vol. cxiv, p. 461, 1888.
Fleischer and Penzolat. Deut. Arch. f. klin. Med., vol. xxvi, p. 368, 1880.
V. Jaksch. Zeit. f. klin. Med., vol. vi, p. 423, 1883.
Troye. Deut. Med. Woch., vol. xviii, p. 360, 1892.
Westphal. Inaug. Dissert., Greifswald, 1887.
Sadler. Fortschrit. de Med. Supplementhelf, 1892.

---

[9] Hinterberger: Deut. Arch. f. klin. Med., vol. xlviii, p. 338, 1891.
[10] Nobel: Deut. Med. Zeit., p. 1176, 1892.

THE BACILLUS COLI COMMUNIS.

BY EUGENE A. DARLING, A.M., M.D., CAMBRIDGE, MASS.,
Assistant in Bacteriology, Harvard Medical School.

(Concluded from No. 20, p. 482.)

PATHOGENESIS.

Escherich found that the bacillus coli communis from normal feces was fatal to rabbits and guinea-pigs. According to Macaigne[17] and Lesage,[18] however, a dose of 1 to 2 c. c. of a bouillon culture is rarely fatal to these animals, and hence the bacillus under normal circumstances ought not to be considered virulent. When large amounts (4–5 c. c.) of a bouillon culture are inoculated intravenously the animals become drowsy and stupid and show diarrheal symptoms. After a day or two they become paralyzed, comatose, and finally die. Post-mortem appearances vary. When death is quick from septicemia, the subcutaneous cellular tissue is edematous, the lymphatic glands are enlarged and the pleural and peritoneal cavities often contain a fluid or fibrinous exudation. The intestinal walls are usually injected but no macroscopic changes are to be made out. The solid viscera are hyperemic and contain the bacilli in large numbers.

Gilbert and Lion[19] observed that sometimes inoculation of rabbits with bacillus coli communis is followed by a slow progressive paralysis, resulting fatally in from twelve to forty-nine days. On post-mortem examination of these cases numerous microscopic changes are found in the spinal cord, especially in the lumbar region. Numerous cells of the gray matter are granular and stain very feebly with the ordinary dyes, the nuclei being atrophied or invisible. Other cells are wholly atrophied and their prolongations shrunken. In other words, a real poliomyelitis is found.

When the bacillus coli communis is isolated in pathological conditions of the intestine it is more virulent than when taken from normal feces, a dose of 1 c. c. of a bouillon culture producing a septicemia of rapid progress. The most virulent cultures, according to Lesage, Gilbert and Girode,[20] are obtained from the intestine in cases of cholera infantum. These are always fatal in from one to three days.

The bacillus coli communis obtained from suppurative processes, such as ischio-rectal abscesses, suppurative angiocholitis and cholecystitis, is less virulent and usually causes a suppurative inflammation on inoculation into guinea-pigs. The lesion may be a localized abscess or a spreading phlegmonous inflammation, from which the animal may die in a few days or recover after a long illness.

Like many other pathogenic bacteria this micro-organism seems to lose its virulence on artificial culture media. The most virulent forms, producing septicemia when first tested, may become pyogenic, after a few generations, and finally non-virulent.

Gilbert's [21] careful study of the effects on rabbits of repeated intravenous injections of small doses of bouillon cultures of the bacillus coli communis has brought out some very interesting facts. By this method he produces a gradually increasing intoxication, marked by three stages: first, paralysis, secondly, clonic spasms, and finally, tetanic convulsions. The first stage is characterized by paralysis of the voluntary muscles. The heart and diaphragm are not affected. The animals become stupid and drowsy and cutaneous sensibility is diminished. The eyes protrude, the pupils are dilated and there are fibrillary twitchings of the voluntary muscle fibres. In the second stage the paralysis is succeeded by clonic convulsions, affecting all the extremities. There is nystagmus and marked increase of the reflex excitability of the skin and organs of special sense. The spasms are quick, short, violent and irregular, at first occurring at intervals, then becoming more frequent. They come on spontaneously, but they may also be provoked by noises or by touching the skin. In the third stage the convulsions become tonic and myosis succeeds the mydriasis. The body is curved in opisthotonos, the limbs extended, the claws spread out, the jaws clenched and the eyes closed. Death soon supervenes. During the whole period the heart is but little affected and it continues beating long after respiration ceases. The respiration is at first quickened and later becomes deep and sighing. During the tetanic convulsions it is suspended.

When the injection is stopped during the first stage the animals usually recover in a few hours, with abundant micturition, diarrhea and a fall of temperature of several degrees. If the injection is stopped during the second stage the animals may even then survive, but when the stage of tetanic convulsions has supervened, death always follows.

Roger,[22] of Paris, has obtained some very interesting results in his experiments on the effects of the soluble toxic products on frogs. He found the successive stages of paresis and hyperexcitability as in rabbits but observed in addition a final paralytic stage. In the second stage of the intoxication the reflex excitability of the spinal and medullary centres is greatly increased. At the end of this period the muscular contractility is weakened and the electrical irritability is diminished. Myographic tracings, showing the response of the gastrocnemius to electrical stimulation, resemble those of fatigued muscles. The contractions of the heart are slowed and in late stages they become decidedly irregular and feeble, though the pulsations continue after the respiration ceases and the animal is apparently dead.

These toxic products must be formed normally inside the intestine and absorbed along with the other soluble constituents of the chyle and it is an important matter to decide what becomes of them and how the system is protected against their evil effects. Gilbert thinks that in health part of them are decomposed by the liver and the remainder excreted, practically unchanged, by the kidneys. The intravenous injection of fresh urine causes symptoms very similar to those described above. Furthermore the toxicity of urine is diminished after the administration of intestinal antiseptics, such as salol or naphthol, which undoubtedly interfere with the growth of the bacillus coli communis, and is increased in certain diseases which interfere with the functions of the liver.

The question is of great practical importance in its relation to the causation of uremia and similar conditions. That the toxic agent in uremia is a constituent of the urine is undisputed, but the origin and nature of the substance has been the source of much debate. The most recent authorities have given up the old ideas that urea or carbonate of ammonium is the cause of the trouble and merely refer vaguely to certain products of tissue metamorphosis as the mischievous substances. No chemical analyses have been made of any of these substances but the symptoms produced by the inoculation of the toxic products of the bacillus coli communis are so similar to those caused by the intravenous injection of urine and to the clinical phenomena of uremia, that it is very easy to believe that they may all be caused by the same factor. The theory is a plausible one and deserves more careful elaboration than it has yet received. It seems probable also that certain functional nervous disorders, such as convulsions, paralysis, vertigo, headaches, etc., occurring in the course of intestinal or hepatic diseases, may be traced to the same cause, namely, an excessive formation or a diminished elimination of the toxic products of the bacillus coli communis.

THE RELATIONS OF BACILLUS COLI COMMUNIS TO DISEASE.

During the past five years the bacillus coli communis has been found associated with many different pathological processes and many diseases have been attributed to its action. Before discussing briefly the conditions in which it has been claimed to have an etiological relation, it is important to emphasize the fact that the bacillus coli communis is very often found a few hours after death scattered throughout the body. This post-mortem invasion of the organs, as it has been called, occurs almost invariably when there is any grave lesion of the mucous membrane of the intestines, such as tubercular or dysenteric ulcers, etc., and is also frequently observed after diarrheal diseases even when no macroscoscopic lesion of the mucous membrane can be made out. It is more rapid after death from exhaustive diseases, such as tuberculosis and diabetes, especially when the death agony has been a prolonged one. It is quicker in summer than in winter.

(*a*) *Bacillus coli communis in Enteritis.*— Hueppe [23] and Wyss in 1887 found the bacillus coli communis in pure culture in cases of cholera nostras and thought that it was probably the cause of the trouble. Since then Gilbert, Girode, Netter, Lesage and many others have repeatedly found this bacillus alone in cholera nostras, cholera infantum and other forms of enteritis. Sometimes it is associated with other organisms of known pathogenic power, such as the bacillus of Friedlander, the staphylococcus pyogenes aureus, etc. Clinically the cases in which it has been observed have ranged from ordinary summer diarrhea to the severest forms of cholera. It cannot be claimed, however, simply because the bacillus coli communis is present in the feces, that it has necessarily any specific action in these cases, like that of the spirillum of Asiatic cholera. The bacillus coli communis is found in the feces throughout life and its simple presence in diarrheal feces proves nothing. Two observers, Gilbert and Girode, caused choleraic symptoms in guinea-pigs by passing into the stomach 2½ c. c. of a 24-hour bouillon culture of a specimen of bacillus coli communis from cholera nostras. This is also inconclusive since we know that the bacillus coli communis from normal feces when injected intravenously in guinea-pigs will cause the same symptoms, and in this instance the diarrhea is only one of the means of elimination of the toxine and is not due to a local action of the bacillus coli communis itself.

Several explanations of the relation of the bacillus coli communis are possible.

(1) It may be changed by certain unknown conditions so that it takes on a virulence not possessed by the normal bacillus coli communis.

(2) The normal bacillus coli communis may possess a limited virulence which enables it to set up an inflammation of the intestinal mucous membrane when aided by the irritation of decomposing matter inside the intestine.

(3) The growth of the bacillus coli communis may be favored by the presence of certain kinds of food and the increased amount of toxines formed may irritate the mucous membrane of the intestine.

(4) There may be other bacilli, not ordinarily inhabitants of the intestine, which resemble the bacillus coli communis in general character but are more virulent, and which may set up an enteritis when accidentally ingested.

(5) Finally, there may be virulent organisms present in the intestine and feces which do not grow on the ordinary nutrient media and are overlooked in the examination.

So far as I know, no detailed experiments have been tried to determine which, if any, of these theories is the true explanation. From the results of the work of Gilbert and Roger on the toxines of the bacillus coli communis and of Barbacci on perforation peritonitis (v. infra), one is rather inclined to favor the second and third.

(*b*) *Bacillus coli communis in Appendicitis.*— The rôle played by the bacillus coli communis in the inflammations of the vermiform appendix is still very doubtful. The peritonitis which is so often a sequela of this disease does not differ materially from other peritonitides of intestinal origin and will be considered more fully below. As to the bacteriology of the primary inflammation inside the appendix, very few observations have been made. Hodenpyl[24] mentions four cases of acute appendicitis in which the process was confined to the lumen of the appendix, in all of which he found only the bacillus coli communis. To these I may add four more cases which I have examined. In all of the cases the appendix was gangrenous but not perforated. Cultures made from the lumen of the appendices showed only the bacillus coli communis in three of the cases. In the fourth case there was a pure culture of a curious bacillus, resembling the bacterium Zopfii in some respects, which was not pathogenic for guinea-pigs. On the whole the observations are too few and incomplete to draw any conclusions from, but it is probable that the bacillus coli communis, if it has any action at all in these cases, is a secondary factor, the primary factor being a fecal impaction or some other cause of irritation.

(*c*) *Bacillus coli communis in Perforation Peritonitis.*— Many bacteriological examinations have been made in cases of peritonitis following perforation of the intestines or stomach and in nearly every instance the result has been a pure culture of the bacillus coli communis. So uniform has been this experience that it has been accepted almost without question that this organism is the cause of the disease in the vast majority of cases. The recent investigations of Laruelle[25] and Barbacci,[26] however, have shown that this is true in only a limited sense, and that other factors must not be disregarded. Barbacci's work is the most complete and throws so much light on the pathogenic action of the bacillus coli communis, that it will be well worth while to summarize his most recent article. He studied 14 cases of perforation peritonitis, of which

1 followed aspiration of a cecal abscess.
7 " perforation of typhoid ulcers.
1 " " of appendix.
1 " " of strangulated hernia.
1 " " of ulcer of the cecum.
1 " " of gangrenous volvulus.
2 " " of round ulcers of stomach.

In these 14 cases by the ordinary culture-method of examination he found the bacillus coli communis, 13 times in pure culture, once associated with the diplococcus of Fraenkel. In 13 of the cases he inoculated rabbits and white mice with young bouillon cultures made directly from the exudate and by this method found the diplococcus of Fraenkel in eight cases or about 60 per cent. This difference in results by the two methods is very instructive and illustrates the incompleteness of the ordinary method. It is due, no doubt, to the great readiness with which the bacillus coli communis grows on ordinary media and the great difficulty of cultivating the diplococcus of Fraenkel. To study the subject more carefully he then produced artificial intestinal perforation in seven dogs, by means of the actual cautery, after laparotomy. All died of peritonitis within forty hours and in all only the bacillus coli communis was found at autopsy. By repeating the experiment on five dogs, but killing them at varying intervals after the operation, he found that other organisms are present in the early stages of the inflammation but all gradually die out with the exception of the bacillus coli communis. He was unsuccessful in trying to show that the bacillus coli communis could stamp out other organisms in mixed cultures on artificial media. He never found the diplococcus of Fraenkel in the exudate in dogs. On this ground and also because it cannot always be demonstrated in the exudate in man, he thinks that the diplococcus can be excluded as a factor of much importance.

The bacillus coli communis also cannot be regarded as the sole factor since intraperitoneal injection of pure cultures in non-irritating fluids, such as normal salt solution or bouillon, have no effect unless in large enough quantities to produce septicemia. If, however, it be cultivated in sterilized feces or ox-gall and then injected, a peritonitis invariably results. The sterilized feces alone have no effect but seem to cause enough irritation of the peritoneum to allow the bacillus coli communis to do its mischief, besides furnishing a favorable medium for the growth of the bacilli inside the peritoneal cavity. Barbacci found also that the continued patency of the perforation is an important element. If the perforation is allowed to close, recovery follows in a certain proportion of the cases. The feces and intestinal gases, which are constantly poured into the peritoneal cavity, irritate the peritoneum as well by distention as by the chemical substances which they contain.

Barbacci concludes that the causal factors of perforation peritonitis are three in number: (1) The entrance into the peritoneal cavity of feces and intestinal gases. (2) The multiplication in the peritoneal cavity of the bacillus coli communis and possibly other micro-organisms contained in the feces. (3) The constant irritation caused by the continued out-pouring of feces and gas into the peritoneal cavity. The general symptoms, moreover, are not those of a true septicemia but are due to a toxemia resulting from absorption of fecal products, especially the toxic proteids of the bacteria.

These observations of Barbacci are of great value, but it hardly seems justifiable to rule out the diplococcus of Fraenkel without more evidence than he presents. This micro-organism is possessed of far greater virulence than the bacillus coli communis, and its presence in 8 out of 13 cases is certainly not to be explained away by saying that it is accidental, without a much more elaborate study. Be this as it may, Barbacci's work is sufficient to show that the bacillus coli communis is the great bacterial element in peritonitis of intestinal origin, but that its pathogenic power is largely dependent upon the circumstances under which it gains entrance to the peritoneal cavity.

(*d*) *Bacillus coli communis in Suppurative Processes in the Biliary Passages and Liver.*— Under normal circumstances the gall-bladder and ducts are sterile; but here, as elsewhere, under conditions of irritation the bacillus coli communis is capable of setting up a severe inflammation. The bacillus is found in pure culture in many cases of suppurative cholecystitis and angiocholitis. The primary source of irritation is usually gall-stones, but in many cases the primary irritant is not evident. In these instances it seems as though the bacillus may be originally of a more virulent form. Charrin and Roger[27] injected a culture of bacillus coli communis, taken from a case of angiocholitis, into the gall-duct of a rabbit, and produced an inflammation very similar to the original one.

This bacillus is also found frequently in pure culture in hepatic abscesses, following either dysentery or gall-stones. In the former instance it reaches the liver through the portal circulation, but an observation of Veillon and Jayle[28] shows that it may not be the cause of the trouble. In one case they found no bacteria at the first examination, but a month later found the bacillus coli communis in pure culture. In the reports of these cases no mention is made of the amœba coli, and probably, in some of the cases, at least, this organism was present but was overlooked. In abscesses following gall-stones the infection must take place along the biliary ducts.

(*e*) *Bacillus coli communis in Diseases of the Urinary Tract.*— Among the various diseases in which the bacillus coli communis is claimed to have an etiological importance, the acute affections of the urinary tract form a group. Achard and Renault[29] have found the bacillus coli communis, or its near relative, the bacillus pyogenes fœtidus, in acute nephritis. Reblaud[30] has observed the same organisms in acute cystitis in women. Fordyce[31] found the bacillus coli communis in pure culture in two cases of urinary infection following operations on the male urethra, and finally, Fordyce, Achard and Hartmann[32] have obtained it in pure culture in the urine in cases of urethral fever following the passage of the catheter. These observations are interesting and further investigation may develop the subject considerably. In the cases of urethral fever, however, it must be admitted that the trouble is quite as likely to be caused by the absorption of the urinary poisons by the abraded mucous membrane of the urethra as by the direct action of the bacilli. As has been repeatedly said, the mere presence of the bacilli proves very little.

(*f*) *The bacillus coli communis in Miscellaneous Diseases.*— These may be passed over without much comment, since in most instances the connection between the disease and the bacillus is very doubtful, and in some cases, at least, the presence of the bacillus is to be explained in all probability by the post-mortem invasion which occurs so frequently.

Lesage and Macaigne[33] have found the bacillus coli communis associated with the diplococcus of Fraenkel and streptococci in several cases of lobar- and broncho-pneumonia occurring in typhoid. The infection probably takes place in these cases from the mouth, where the bacillus coli communis is habitually present.

The bacillus coli communis has been found repeatedly in acute and chronic abscesses of the anal region. Muscatello[34] found it in an ischio-rectal abscess following an ulcerative proctitis and produced a similar abscess by inoculation in a guinea-pig. Hartmann and Lieffring,[35] who have studied the subject most carefully, are inclined to the opinion that the presence of this bacillus is due, as a rule, to a secondary infection, the primary lesion being caused by the bacillus of tuberculosis or the ordinary suppurative micrococci.

Chiari[36] found the bacillus coli communis in pure culture in the blood and organs of a case of general septic emphysema, following amputation of the leg for gangrene in a patient suffering from diabetes mellitus. Inoculation into guinea-pigs caused septicemia without emphysema. Chiari thought that the emphysema was caused by the gas-producing action of the bacillus coli communis on the sugar in the blood of his patient.

Besides these instances the bacillus coli communis has been found on the valves of the heart in endocarditis, in the cerebro-spinal fluid in cases of meningitis, in the exudate in cases of salpingitis and endometritis and in various other circumstances, in most of which its etiological significance is not yet proved.

BIBLIOGRAPHY.

1. Escherich. Fortschr. der Med., 1885, iii, 515.
2. Roux et Rodet. Soc des Sciences méd. de Lyon, November, 1889.
3. Abba. Ann. dell'Instituto d'Igiene sper. d'R. Univ. di Roma, i. iii, 1892.
4. Remy et Sugg. Trav. du Lab. d'Hygiene et de Bacteriologie de l'Univ. de Gand., 1893, T. i.
5. Moore. Wilder Quarter Centennial Book, Ithaca, N. Y., 1893.
6. Kitasato. Zeitschrift f. Hygiene, vii, 1889.

7. Malvoz. Memoire couronné de l'Acad. de Méd. de Bruxelles, xi, 1892, F. 5.
8. Chantemesse. La Semaine Méd., 1891, pp. 415, 451 and 492.
9. Vallet. Le Bacterium Coli Commune dans ses rapports avec le Bacille d'Eberth, Paris, 1892.
10. Dunbar. Zeitschrift f. Hygiene, 1892, xii, p. 485.
11. Remy and Sugg. Loc. cit.
12. Van Ermengem et Van Laer. Bul. de la Soc. de Méd. de Gand., 8, 1892.
13. Smith. Centralblatt f. Bakteriologie, xi, p. 367, 1892.
14. Baginsky. Zeitsch. f. Physiolog. Chemie, 1889, xii, p, 352.
15. Scruel. La Cellule, vii, 1889.
16. Ide. La Cellule, vii, 1891.
17. Macaigne. Le Bacterium Coli Commune, son rôle dans la Pathologie, Paris, 1892.
18. Macaigne et Lesage. Arch. de Méd. Exper. et d'Anat. Path., 1892, No. 3.
19. Gilbert et Lion. La Semaine Méd., 1892, p. 65.
20. Gilbert et Girode. La Semaine Méd., 1890, 1891, pp. 112 and 48.
21. Gilbert. La Semaine Méd., 1893, p. 97.
22. Roger. Arch. de Physiol., Juli, 1893.
23. Hueppe. Berl. klin. Woch., 1887, 591.
24. Hodenpyl. Studies from the Department of Pathology, C. P. & S., New York, iii, 1892–93.
25. Laruelle. La Cellule, v, F. i.
26. Barbacci. Centralbl. f. allg. Path. und Path. Anat., October 12, 1893.
27. Charrin et Roger. La Semaine Méd., 1891, p. 71.
28. Veillon et Jayle. La Semaine Méd., 1891, p 13.
29. Achard et Renault. La Semaine Méd., 1891, No. 60; 1892, p. 512.
30. Reblaud. La Semaine Méd., 1891, p. 60.
31. Fordyce. Report of Meeting of American Association of Genito-Urinary Surgeons, June 20, 1893.
32. Achard et Hartmann. La Semaine Méd, 1892, No. 2.
33. Lesage et Macaigne. Loc. cit.; also Ann. de l'Inst. Pasteur, 1893, No. 1.
34. Muscatello. Centralblatt f. allg. Path., etc., 1892, p. 130.
35. Hartmann et Lieffring. Société Anatomique, March 10, 1893.
36. Chiari. Prager méd. Woch., 1893, No. 1.

Clinical Department.

TWO CASES OF GONORRHEAL RHEUMATISM WITH SPECIFIC BACTERIAL ORGANISMS IN THE BLOOD.

BY H. F. HEWES,
Medical Interne, Massachusetts General Hospital.

In March, 1894, I made bacteriological examinations of the blood of four patients with gonorrheal rheumatism. In all the cases the affection was polyarticular, accompanied by some fever; and an urethral discharge containing gonococci was present. Repeated cultures were taken from the blood, with careful aseptic precautions. The culture media used was a preparation compounded by Dr. J. H. Wright, assistant in pathology at the Harvard Medical School, upon which he had succeeded in growing the gonococcus. In three cases the result was negative; no colonies were obtained from the blood upon repeated cultures. In one case bacterial organisms of a specific nature were found to be present in the blood in repeated examinations. This case, with the permission of Dr. F. C. Shattuck, I report.

Case I. M. D. entered Ward 31 of the Massachusetts General Hospital March 14th. He gave the following history:

One month ago he caught a severe cold. Four days later his left knee and ankle became painful, swollen and red; some edema of leg. Next day his right thumb and ankle were affected. The trouble in the joints increased; he felt prostrated and feverish, and sweated considerably.

September 23. Entered Ward 29, surgical, at the Massachusetts General Hospital. At this time the left knee and ankle were swollen, red and tender; the left shin edematous; the right thumb and right ankle slightly swollen.

March 4th. While in ward, developed a keratitis of both eyes.

March 14th. Transferred to medical wards.

He had never had rheumatism before. Gonorrhea eight years before. Had had connection with a woman five weeks before onset of present attack, but had noticed no discharge from urethra or painful micturition.

His examination upon entrance to Ward 31 revealed the following: appears very sick, dull and prostrated. Phalangeal joint of right thumb slightly swollen and tender, not red. Left knee tender and much swollen; fluctuation present; girth 15½ inches (right knee 14½ inches); patella floating. Left ankle swollen and tender, not red. Discharge of puriform material present at urethral meatus, which contained gonococcus upon bacteriological examination. Heart negative. Chest negative. Temperature 102°. Pulse 95.

March 16th. The patient has continued dull and feverish, the temperature at night running between 101° and 103°. Salicylate of soda, given in full doses for three days, seemed to have no effect upon the joints or fever.

March 17th. Right knee became painful and swollen. On this day a culture was taken from the blood upon the special media. A control culture was taken upon glycerine agar at the same time. At the end of forty-eight hours several minute whitish colonies appeared upon the specific media. These colonies, upon microscopical examination, proved to be composed of a biscuit-shaped diplococcus resembling the gonococcus of Neisser in morphology and reaction to staining reagents. Colonies transferred to blood-serum, agar and gelatine media failed to reproduce. Colonies transferred to the specific media upon the first day reproduced; those transferred later did not.

No colonies were obtained upon the glycerine-agar culture from the blood.

The patient continued to show signs of general infection. The temperature remained continuously above 100°, rising to 102°–103°. The right ankle-joint, the phalangeal joint of left great toe, the right wrist, the metatarso-phalangeal joint of right little finger became involved in turn.

April 1st. The process began to subside; no new joints became involved. The affected joints continued stiff and somewhat swollen, but gave no more signs of an acute process. No urethral discharge present. Temperature still between 99° and 101°.

May 1st. Temperature normal for first time. Joints stiff, and much evidence of chronic thickening present.

Discharged May 7th.

Cultures from the blood were taken March 20th and 24th and April 1st. In the first two cultures, colonies were grown similar in all respects to those described in the account of the first culture. No growths were obtained from the culture of April 1st.

In August, 1894, I made examination of the blood of five patients with gonorrheal rheumatism. The cultures were made upon the acid gelatine media of Turro. An urethral discharge containing gonococci was present at the time the cultures were taken in all cases. In three cases no colonies were grown from the inoculations. In two, specific bacterial organisms were grown from the blood in repeated cultures; and in the more typical case of the two the character of the organism was tested by inoculation into a bitch. This case, with Dr. E. G. Cutler's permission, I report.

Case II. G. A. entered Ward 7 of the Massachusetts General Hospital August 20th.

Five days ago he was kicked by a mule in the left hip, the kick knocking him over. Got up feeling all right. Next day, left hip and groin very stiff and painful. Next day, left hip better, but right hip and groin painful and stiff, with shooting pains up into loin and down thigh. He has passed bloody urine on several occasions since accident, but not upon every micturition. No pain on micturition or defecation. Three days ago both eyes became injected and painful, with sticky discharge. No chills or chilly sensations; no headache; no vomiting. Bowels all right. No pain in chest or belly. He has had gonorrhea about a month, and still has discharge from urethra.

Examination showed patient to be well nourished, but with a dull and heavy aspect. Both eyes injected and sore; puriform secretion in the inner canthus of both eyes; cornea clear; pupils equal and react. Tongue clean and moist. Heart and lungs negative. Abdomen soft. Slight tenderness in left groin. Bladder not distended. No buboes. Spleen felt below costal border. No paresis. Knee-jerks present. Moves hip-joints with pain, especially right hip. Tenderness and slight swelling over right Scarpa's triangle. Tender over right iliac crest and right half of sacrum. No tenderness over sciatics. Second joint of second toe, left foot, swollen, red and tender; also metatarsal phalangeal joint of great toe, with edema of dorsum of foot. Urethral discharge, which contains gonococci. No perineal tenderness. Urine smoky; specific gravity 1.019; albumin one-fifth per cent.; considerable sediment, much normal and abnormal blood, pus-cells, caudate cells, a few hyaline and granular casts, no bladder epithelium. Temperature at entrance 102.8°.

The temperature continued high, rising to 104° on the second day. The spleen became larger. Patient had a good deal of pain in sacrum and right hip.

On the fourth day right knee tender and painful. Next day boggy and swollen, and a culture was taken from the blood.

On the third day after, several small colonies appeared upon the media. The colonies had a slightly yellowish tinge; did not tend to spread. Transferred to agar, blood-serum and gelatine media, they failed to reproduce. Transferred to acid gelatine, they reproduced. The organisms composing the colonies were biscuit-shaped diplococci, resembling the gonococcus of Neisser in morphology and reaction to staining reagents.

The signs of general infection in the patient continued. The temperature remained between 101° and 103°. The spleen could be felt enlarged. The right wrist-joint became tender and swollen; then the right shoulder, the left hip, the left knee. The knee-joint was much swollen, the patella floating. In other joints, swelling not extensive.

September 5th. The left eye became inflamed, and a keratitis set up. The left wrist painful and swollen.

September 17th. The above-mentioned joints all still somewhat swollen and tender and very stiff. Right eye became injected, and keratitis set in.

October 1st. No acute joints present. Knees and wrists still swollen and stiff. Urethral discharge still present. Temperature between 99° and 101°.

Cultures were taken from the blood on August 25th (as described), on August 30th, September 4th, 8th and 20th. Upon all occasions except the last, colonies were obtained similar to those described in the account of the first culture taken August 24th. The colonies of August 30th were reproduced to the fourth generation, and this growth inoculated to the vaginal mucous membrane of a bitch. Thirty-six hours later a thin, puriform discharge was visible at the vaginal orifice and upon the mucous membrane. A bacteriological examination of this discharge revealed the presence in it of the biscuit-shaped diplococcus, both within and without the pus-cells. Distinct colonies of the diplococcus were also obtained by culture from the discharge. A second inoculation was made from the fourth generation of the culture of September 4th upon the urethral mucous membrane of a bitch, with a similar result. The inoculation in both trials was made by smearing the membrane. Cultures were taken on several occasions from the discharge from the eyes during the keratitis, and no diplococci were grown, nor were they found on slides made from the pus.

The marked feature of these two cases in which organisms have been found is the prominence of the signs of general infection and constitutional disturbance. The condition in both cases was distinctly typhoidal; in fact, the second case was at first considered to be typhoid. The spleen was distinctly enlarged in the second case. The range of temperature was much higher than is usual in gonorrheal rheumatism. In fifty-three cases of this affection at the Massachusetts General Hospital, of which I have examined the records, the temperature reached 103° in but four, and the average of the maximum temperatures of all cases was 101°; while in these reported cases the temperature reached 103° and 104° respectively, and remained between 101° and 103° for a week at a time.

◆

Reports of Societies.

CLINICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

HENRY JACKSON, M.D., SECRETARY.

Regular Meeting, Wednesday, October 17, 1894, Dr. F. C. Shattuck in the chair.

Dr. C. G. Cumston read a paper on

THE TREATMENT OF THE SO-CALLED INCURABLE PURULENT PLEURISIES, BY PROFESSOR REVILLIOD'S METHOD.[1]

Dr. Vickery: Does that long tube stay full of liquid all the time and so exert a constant siphonage, or is the main pull by means of the bulb. I should think *a priori* that in a great many cases there would be leakage enough of air round the tube in the purulent chest so that the long column of fluid would not be sustained throughout the twenty-four hours.

Dr. Cumston: Once the tube inserted and the adhesive plaster applied, I have always found that it closed hermetically around the tube. The suction is entirely produced by the bulb, the strength of which is governed by the height of the incision above the flask, according to physical law.

Dr. C. P. Putnam: I should like to know if, when

[1] See page 502 of the Journal.

the tube is taken out, there is, as a matter of fact, a rush of sufficient fluid to show that the tube has been filled in ordinary cases. Does the tube collapse at all?

Dr. Cumston: The tube does not collapse. It is all the time filled with a column of liquid.

Dr. V. Y. Bowditch: The results are certainly striking, and it seems a pity that we have not the records of the other cases of Professor Revilliod. Have they been published?

Dr. Cumston: Some of them have been published in different theses, but the literature is very scattered.

Dr. Bowditch: I can speak from observation of one case only which occurred when I was house-officer in the Massachusetts General Hospital. The tube went from the interior of the pleural sac down into a bottle of water. The results were not more striking than in the ordinary cases of drainage. Personally I have grown to feel more and more in favor of resection of ribs being made soon after the first permanent opening is made, if the amount of pus does not decrease comparatively rapidly.

Dr. F. C. Shattuck: In the case where there was left-sided effusion with great dislocation of the heart to the right, the third case I think, did the heart return to its proper place?

Dr. Cumston: It did. All the conditions returned to the normal, and the disparity between the two sides of the chest was a good deal equalized.

Dr. Shattuck: It seems to me that cases early recognized and promptly treated by free incision yield good and prompt results. Long-standing cases filter through the out-patient department into the wards and are sometimes very rebellious, probably by reason of the lack of early surgical interference; just in these cases the method of Revilliod may be of much value. We see cases where the ribs are so closely approximated that it is difficult even to get a trocar in between them for exploratory puncture. I do not see how in such cases this tube is kept pervious. I should think it would be squeezed between the ribs and the siphon action would be lost.

Dr. Cumston: I have no such case on record, and am unable to reply. I regret to say that in the cases I have reported to-night no bacteriological examination has been made.

Dr. R. C. Cabot read a paper on

ACUTE LEUKEMIA.[2]

Dr. J. J. Thomas: Dr. Cabot's criticism applies to almost all cases of leukemia. For a long time almost every man was satisfied to call that case leukemia in which he found increase of white corpuscles; the chief point seemed to be as to how many were necessary to call the case leukemia. The discovery of abnormal white cells in leukemic blood (I think Ehrlich first clearly described them, though Uthemann first called them myelocytes) gave a more definite and positive ground on which to base the diagnosis; and I think without the differential count and the presence of these cells not found in normal blood we are not justified in taking a case as proven. A man may be mistaken in his diagnosis, but the chances are that in a large proportion of the cases the diagnosis is correct. Certainly it is in regard to chronic leukemia, and probably in regard to many of the cases reported as acute leukemia, where the proof is incomplete. Where the presumption is that a certain number of the reported cases are really cases of acute leukemia, I think that the existence of three undoubted cases would certainly establish the existence of the disease. However, I think that a great many of them are cases that have gone on some time, where the existence of leukemia has not been suspected. We do not count the blood of people who come to us in health. About two years ago I saw a case of lymphatic leukemia where the increase of white corpuscles was about 30,000: I have forgotten the proportion of white to red. I saw the case a year afterwards, and the white corpuscles had diminished to about 20,000. Of that fully 90 per cent. were small lymphocytes, which I think justifies the diagnosis of lymphatic leukemia. Certainly any one examining that blood with the microscope without a differential count of the white cells, at the time I saw it last, would be apt to call it normal, and yet it was not. Again, if a person has abnormal blood-cells in the blood are we not justified in calling it acute leukemia if the white corpuscles rapidly increase and death soon takes place?

Dr. Shattuck: Two cases come into my mind: one I suppose must be thrown out as a case of acute leukemia because all the postulates are not fulfilled. The case was that of a child six or seven years old whom I saw some years ago with the late Dr. Dow, of Somerville. As far as symptoms went, the duration of the disease was five or six weeks. I saw the child shortly before its death. The spleen was enormous, and there were hemorrhages from various sources. Dr. W. S. Thayer, of the Johns Hopkins, examined the blood, and pronounced it a typical case of lymphatic leukemia. I think there can be no question as to the diagnosis; the only question is as to the duration. Another case illustrates very well Dr. Cabot's remark as to the latency of some cases. I was associated last winter in the care of a gentleman of about forty-five who had had a very severe typhoid fever some ten years before. Since then there had been some enlarged glands in the neck, but the health had been good, though not as vigorous as before. He had attended to his business, and when he was taken down he was thought to be looking remarkably well, thought to be better than for some years. It was supposed that this extremely severe typhoid fever, in which indeed he had Cheyne-Stokes respiration some days, had never been fully recovered from. But within about a year of his death he had taken a life-insurance policy for $25,000 in a first-rate company. Last winter he was taken down with the grip, was stricken down with the utmost suddenness, and had to be carried home. I saw him after that a number of times up to his death. There were enlarged cervical and axillary glands and moderate enlargement of the spleen. Dr. Cabot examined the blood, and established the presence of true leukemia. He died of a general pneumococcus infection, — primary in the right upper lobe, secondary in the endocardium and cerebral meninges. The autopsy was by Dr. Councilman. Undoubtedly, this man was suffering from leukemia, probably for several years. If he had not got the grip with the pneumococcus infection, there is no knowing how many years he might have lived, because he was apparently on the up-grade, so that practically his leukemia was discovered accidentally. This case may be reported in full at a later date.

Dr. G. M. Garland was unanimously elected chairman for the two ensuing years. A vote of thanks to Dr. Shattuck was passed, expressing appreciation of the great interest he had taken in the Section.

---

[2] See page 507 of the Journal.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, NOVEMBER 22, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 WASHINGTON STREET, BOSTON, MASS.

THE MICROBIOLOGY OF MENINGITIS.

THE number of "idiopathic," "simple" inflammations is becoming more and more restricted, and as it is regarded as doubtful whether "idiopathic" peritonitis or pleurisy exists, so idiopathic and simple meningitis seems likely to become a thing of the past, the tendency being to regard these serous inflammations as always septic and infectious.

The sixth and last volume, just published, of the new "Traité de Médecine"[1] (planned by the late Charcot and carried out largely under his supervision) treats of the meningites entirely from the standpoint of bacteriology. It knows no such entity as "simple" meningitis.

First, the distinction of *arachnitis* and *leptomeningitis* is no longer maintained. The pia mater, arachnoid, sub-arachnoid cellular tissue, as well as the surfaces of the ependyma, and sometimes even the dura mater participate simultaneously in the inflammatory process which constitutes meningitis.

Second, it is affirmed that just as there is no longer an endocardi*tis* but endocardi*tes*, as there is no longer one pleurisy but many pleurisies, so the term *meningitis* is the genus which includes many meningi*tes*, all different inflammations caused by different microbes. Doubtless these divers bacteria, with shades of difference, produce nearly the same effect — the same morbid process, so that it is not yet possible clinically to differentiate the specific forms and to classify them according to their parasitic cause. At the same time, the meningeal inflammation which is caused by Koch's bacillus of tuberculosis is anatomically distinguished by the existence of the tuberculous neoplasia, and clinically by its subacute course and its evolution. It constitutes, then, a clinical type which it is proper to separate from the group of acute meningites formerly designated, by reason of the absence of tubercles, as *simple* meningitis. The labors of Netter, Fränkel Sänger, Weichselbaum, etc., have largely established the infectious nature of the meningites not tuberculous, and set forth the rôle played by a certain number of microbes in the development of the disease.

The brain and its membranes are exceptionally well protected against infection from the outside, and an infection cannot take place directly without previous lesions of the organism. Either the pathogenic agents must be brought in contact with the meninges by effraction (as through a penetrating wound of the cranium), or by direct propagation from a neighboring inflammation, or by the indirect transport through the blood or lymph channels of the agents of a general infection, or of a local infection more or less distant.

The most simple mode of infection is that which results from a direct inoculation of the meninges. A traumatism opens the way to infectious germs from the exterior. Cases have indeed been reported where the meningitis succeeded a simple contusion, unaccompanied by wound; the explanation then would be that the traumatism caused the meningitis "by playing the rôle of a provocative agent and making of the meninges a *locus minoris resistentiæ* for an infection of unknown source." The bacterium may be the pneumococcus (ordinarily a harmless inhabitant of the mouth and pharynx), the colon-bacillus, the bacillus tuberculosis, the streptococcus, etc. Infection by contiguity is exemplified in meningitis by propagation from a phlegmon, a carbuncle, an erysipelas of the hairy scalp; syphilitic or tuberculous osteitis of the bones of the cranium; furuncles of the nose and lips by causing phlebites of the sinuses of the dura mater; furuncles and abscesses of the ear, otitis externa, media, and interna, mastoiditis; osteo-periostites and phlegmon of the orbit and opthalmites (the mode of propagation being the optic foramen); acute and chronic coryza, the ulcerous lesions of ozena (the propagation being by the cribriform plate of the ethmoid bone). Otitis media is perhaps the most common lesion, the meningites developing from caries of the petrous.

Any infection, no matter what may be its seat, may give origin to a meningitis, the microbe being carried from the distant focus to the brain by the blood stream. The meningitis may thus make its appearance in the course of a septicemic malady and complicate a puerperal infection, a pyemia, an ulcerous endocarditis, etc. The dominant microbe is the streptococcus. Fränkel and Krause were the first to notice it in the exudate fluid of the meninges and in the inflamed membranes in a number of cases supervening during puerperal septicemia.

Meningitis may be a complication or sequel of cholera, small-pox, scarlatina, dysentery, recurrent fever, typhus fever, measles, influenza and typhoid fever, the specific infection of those diseases being presumably the cause. In small pox, measles and the grippe it often follows suppurative otitis. In typhoid fever, the meningitis may be due to a secondary infection by the colon-bacillus, but it may have for its cause the typhoid bacillus itself.

---

[1] Traité de Médecine, tome vi, G. Masson, Paris, November, 1894.

But the far greater number of cases of meningitis are due to infection by the pneumococcus. Netter, Leyden, Sänger, Weichselbaum and others have reported numerous typical cases where the presence of the pneumococcus was noted in the meningeal exudate; their observations have been confirmed by Neumann and Schœffer, Ortmann, Runeberg, Ranvers, Bozzolo and Monte.

The pneumococcus infection of the meninges may supervene in the course of the pneumonia; it may follow a pneumococcus lesion of an organ in the vicinity of the brain (as of the nares, ears); it may be primary and spontaneous in appearance, independent of any previous pneumococcus lesion. In the latter case, it is sporadic or epidemic. The meningitis may be one of the local manifestations of the pneumonic septicemia, like the purulent pleurisy, the endocarditis, the pericarditis, which precedes or coexists with it. Out of thirty cases of meningitis not preceded by pneumonia, Netter found sixteen that were clearly due to the pneumococcus. Meningitis occurs in the course of pneumonia once in every two hundred cases (Guinon). Under certain circumstances pneumococcus-meningitis takes on an epidemic character, and constitutes that fearful disease known as epidemic cerebrospinal meningitis. Netter was the first to affirm the pneumococcus nature of this disease. This thesis is supported by numerous lines of proof: the simultaneous outbreak of epidemics of pneumonia and cerebrospinal meningitis; coincidence of the two affections; symptomatic and anatomo-pathologic identity of sporadic pneumococcus meningites and epidemic meningites. The bacteriological verification has been furnished in a certain number of cases by Leichtenstein, in the course of an epidemic observed at Cologne, by Foa and Bozdoni, by Uffreduzzi in the course of an epidemic in the city of Turin in 1885–1886, and by Bonome.

Staphylococcus meningitis appears to be extremely rare, the only case yet published is that of Galippe; here the golden pyogenic staphylococcus seemed to be the only pathogenic agent present.

Space does not allow us to follow this subject in all the interesting phases of the bacilli and cocci, classified and unclassified, that have been found in the exudates of acute meningitis. The pneumo bacillus of Friedländer, the colon-bacillus and the typhoid bacillus seem to have been the cause of several cases of suppurative meningitis.

Those who may wish to investigate still further the questions here raised will find much very valuable information in the chapter on Meningeal Diseases by Georges Guinon in the work which we have already cited.

The direction in which modern pathology is developing makes it probable that we shall before long be called upon to consider the propriety of a change in medical terminology. A pulmonary pneumococcosis will take the place of a pneumonia, and a meningeal streptoccosis of an acute meningitis.

A DANGEROUS KNOCK-OUT BLOW.

The death of the sparring partner of a well-known prize-fighter, at Syracuse, N. Y., last week, from the effects of a knock-out blow upon the point of the jaw, recalls the sad accident which occurred at Harvard College last year during a friendly sparring bout and resulted in the death of a student. In that case, a full account of which was given in the Journal for March, 1894, death was found to be due to rupture of the lateral sinus, the shock of the blow having been directly transmitted to that structure through the condyle of the jaw, and the petrous portion of the temporal bone.

As death in the Syracuse case has been reported to be due to cerebral hemorrhage, and the nature of the blow was the same in both cases, the result of an autopsy in the Syracuse case would be extremely interesting.

The blow upon the point of the jaw has from time immemorial been known as *par excellence* the knock-out blow, presumably owing to the number of times it has been successful in producing temporary unconsciousness in an opponent.

The stunning qualities of this blow may be very likely due to the close relation of the condyle of the jaw with the petrous portion of the temporal bone, containing as it does the delicate structures and elaborate nervous mechanism of the ear and the semicircular canals; perhaps also to the close relation to the great vessels and nerves at the base of the brain, and even to the pons and medulla.

But since, as proven by the Cambridge case and at least suggested by the recent case at Syracuse, fatal cerebral hemorrhage may result from the blow upon the point of the jaw, causing a "knock-out" of unpleasantly long continuance, it would seem better in the long run to avoid its infliction, especially in friendly sparring bouts.

The loss of one or more prize-fighters by accidental injuries received in the exhibition of their professional attainments could perhaps be borne by the community; but if many cases like that of the Harvard student are laid at the door of sparring as a pastime, the pastime had better be abolished in favor of football or some other perfectly safe form of sport!

THE PHYSICIAN AS TRADESMAN.

Formerly there were three "learned professions"; then other pursuits made claims to stand on a parity with these, both as professions and as learned; more lately all pursuits have been styled in the vernacular professions and all their followers professors; and, last of all, comes the period when no pursuits are professions and no men are learned. All occupations become trades and all men tradesmen. A contributor this week of a paper entitled "The Commercialization of Medicine; or, the Physician as Tradesman," evidently thinks that this last period has been entered upon, at least in this country.

Although we cannot accept his position in its entirety as applied at any rate to the Eastern States, there is evidently a considerable measure of truth in his forecast of a hard and unpicturesque reality. The times have changed and are changing; we have changed and are changing with them. It is inevitable, and the newer the country the greater the change. Whether human existence is gaining or losing remains to be seen; but life presents less individualism, less repose of thought or action, less of the picturesque and the mellow. Every one has all kinds of fruit at all seasons, picked before it is ripe, that it may be rushed to the best market by rail or steamship, and cold storage does the rest.

The profession of medicine and the physician have undergone the change along with all else, and must continue to march with the music. We think that comercialization has affected the physician as little in Boston and New England as anywhere in the United States, but it must be granted that our doctor of to-day is no more like his predecessor of fifty years ago than is our modern "merchant" like his predecessor in the palmy days of the old China trade.

Even in the laboratory "business methods" are very desirable, and in the field of practice the doctor without them is heavily handicapped. The practising physician must know how to handle his contemporary men and women as they are accustomed to being handled in other relations of life, in order to get patients; and how to "turn off" his clients in a thoroughly business-like fashion, in order to get more than he can properly attend to.

We are led to believe that the remarks of Prof. W. S. Chaplin of St. Louis, at the dinner of the Harvard Medical Alumni Association in June, 1893, were not so wide of the mark as the outraged protestants in the Western press a year later would wish to indicate. And the "Model Surgical Clinic" lately depicted in the Journal (August 23, 1894) has been so extensively copied that it evidently appeals to the general sense of the possible. That medical editors should be banqueted by drug manufacturers (at an annual reunion) does not seem to shock every one's sentiment of the fitness of things.

Trade and collectivism have made and will make their mark upon the medical profession; but its days as a profession based upon learning are not quite yet numbered, and the personal equation will still continue to be a large factor in its practice.

◆

MEDICAL NOTES.

The Manufacture of Diphtheria Antitoxin at Munich. — The Laboratory at Munich is unable, at least for the present, to keep up with the demands made upon it for the production of antitoxin, and there is no prospect of a regular output before January, 1895. The number of horses which are now under treatment is at present thirty-two, and it is said that they become fully immune in not less than six to fifteen months. Efforts are being constantly made to increase the strength of the serum.

Anecdote of Sir William Gull.— Sir George Johnson tells the editor of the *British Medical Journal*, that Sir William Gull, whom he met at Eastbourne shortly before his death, said to him, "You know the true translation of Γνῶθι σεαυτόν is, "Test your urine." The editor remarks that it would be interesting to know whether this had been done within a year or two in the case of the late Czar. The following note from *Le Progrès Médical* for November gives an answer which is interesting, if true:

> The Czar's Illness. — The medical profession of St. Petersburg, according to *Le Temps*, accuses Professor Zacharin of having neglected to ascertain the state of the late Czar's kidneys after his attack of influenza of last year. The surgeon of the imperial yacht *Polar Star*, while the imperial family were cruising last year along the coast of Finland, noticed that the Czar had edema of the face. He secretly secured a specimen of his majesty's urine from a servant, analyzed it, and found evidence of advanced disease of the kidneys. He informed the court physician, Dr. Hirsch, of his discovery, and the latter having confirmed the diagnosis by his own examination, ordered immediate return to dry land, and residence in a dry climate.

Surgical Interference in Perforative Ulcer of the Stomach. — In the editorial published in last week's Journal, on "Immediate Surgical Interference in Cases of Perforation of the Stomach by Ulcer," a case reported by Dr. Robert F. Weir, of New York, in an excellent article on the subject in the *International Medical Magazine*, for February, 1892, should have been mentioned. In this case, which was one of general perforative peritonitis, the opening in the stomach was closed by sutures, the patient surviving the operation only a few hours. An unsuccessful case operated on by Mouisset in 1890 has also been reported in the *Lyon Médicale*.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, November 21, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 147, scarlet fever 55, measles 33, typhoid fever 22.

Diphtheria in Quincy, Mass. — The Coddington School at Quincy, Mass., numbering five hundred pupils, has been closed on account of the prevalence of diphtheria. There have been already two deaths among the scholars, and one of the teachers is now ill.

The Typhoid Epidemic at Wesleyan University. — It has now been definitely ascertained that the cases of typhoid fever at Wesleyan University were due to infected oysters. The oysters were placed in a fattening-bed in the Quinnipiac River close to the house of a dealer, in which there were two cases of typhoid fever. The drain from the house emptied into the river close to the oyster bed. According to Dr. Charles H. Lindsley of the Connecticut State Board of Health, the Wesleyan cases arise from this source beyond the shadow of a doubt.

The Annual Report of the Massachusetts Board of Registration in Pharmacy, presented within the last week, shows that out of 661 applicants examined during the last year, only 126 passed the examinations, or 19 per cent. Of the applicants during the previous year 24 per cent. passed. During the year about 150 complaints of violations of the pharmacy law have been received. Seven certificates have been revoked; four have been suspended.

The New Hampshire Hospital Association.— The annual meeting of the New Hampshire Hospital Association was held at Concord, N. H., November 15th, with delegates present from Portsmouth, Manchester, Dover, Keene, Claremont and Concord. Dr. C. F. Towne read an interesting paper on "The Relation of the Citizens to the Hospitals." This was followed by a general discussion of hospital needs. The next session will be held in Portsmouth in May.

NEW YORK.

Small-Pox Increasing. — Since the advent of cool weather there has been a somewhat notable increase of cases of small-pox in the city. During the past week, on one day fourteen new cases were reported; on another, ten cases; and on a third, eight cases. A considerable number of these recent cases were traceable to an outbreak of the disease in West 39th Street a few weeks ago. On November 13th Dr. Doty, Chief of the Bureau of Contagious Diseases, reported that during the past two months 45 cases had been reported, and that of these no less than 32 came from the 39th Street district, where the first person to suffer from small-pox was a grocer with a shop in the basement of a tenement-house.

N. Y. State Association of Military Surgeons. — At the annual meeting of the New York State Association of Military Surgeons, which was held in the building of the Academy of Medicine on November 15th, the following officers were elected: President, Dr. R. S. Harnden, of Waverly; First Vice-President, Dr. C. S. Parkhill, of Hornellsville; Second Vice-President, Dr. J. A. Van Duyn, of Syracuse; Secretary, Dr. C. E. Herrick, of Troy; and Treasurer, Dr. J. F. Valentine, of Brooklyn.

Dr. Gibbons's Resuscitation Test. — Dr. P. J. Gibbons, of Syracuse, will not be able to make his resuscitation test in the case of the murderer Wilson at present, as an appeal has been made for a new trial and the electrocution has been necessarily postponed. In connection with this interesting matter the question has arisen whether the Governor has the legal right to sanction such a test; but in a dispatch from Albany dated November 16th, it is stated that the Attorney General of the State has informally expressed the opinion that if the relatives of the criminal consent there is nothing in the laws to prevent the experiments being made. Among those who have given expression to their doubts as to whether the interrupted current as applied in the electrocution of criminals really destroys life, are the well-known electrical experts, Drs. Wm. J. Morton and Augustin H. Goelet, the latter of whom published an article in the *Electrical World* of September 8th, entitled, "How to Deal with Apparent Death from Electrical Shock." Dr. Morton has given the following opinion: "Since the beginning I have agreed that there is no positive proof that any criminal claimed to have been killed by electricity has actually been so killed. The burden of proof has always rested on those who claim that he was killed. . . . It is a case of Scotch verdict — not proven. There is but one way to prove that a man has been killed by electricity, and that is to lay the body aside in a convenient room and wait for the signs of chemical decomposition. But to take a subject warm from the electrical chair and within an hour or so to cut him up is, in my opinion, simply a prostitution of science. It is a pollution of the true sources of knowledge. . . . As I recollect the official report concerning the microscopical changes found upon examination in the bodies of the criminals executed by electricity, it shows that in no one case has there been found any evidence of structural change in the tissues, except as to mere superficial burns produced by contact of the electrode with the skin."

Correspondence.

BERLIN LETTER.

THE NEW TREATMENT FOR DIPHTHERIA.

Berlin, November 2, 1894.

Mr. Editor: — The new treatment[1] of diphtheria by means of blood serum obtained from animals previously rendered immune is just now attracting so much attention that a cursory account of what I have seen of this treatment during the short time I have been in Berlin may be of interest. At the risk of repeating what may already be well known, I shall first hastily run over the method of preparing this *Heilserum*, as the Germans call it, and the way it is administered to the patient.

If an animal be given repeated doses of a poison which, while making the animal ill, are not sufficient to cause death, an immunity may gradually be developed which will enable the animal to withstand, without bad effects, doses of the poison that would kill a normal individual. We see this in the case of certain poisons obtained from plants. Opium is a good example. Behring showed it to be true also of poisons produced by bacteria. As the bacterial poison is thrown into the blood of an infected animal, the tissues offset it by producing a kind of antidote which will neutralize the poison. To this antidote is given the name antitoxin. In the new treatment for diphtheria this antitoxin, instead of being made in the body of the patient, is made in the body of an animal, such as a horse or sheep, and then injected into the patient. By these means is avoided the delay between the time when the poison is given off by the bacteria and the time when the tissues can produce the neutralizing antitoxin — a delay during which fatal damage may be done to the body. The antitoxin for the treatment of diphtheria is produced as follows:

A healthy animal, preferably a horse on account of its large size, is selected, and doses of the diphtheritic poison[2] are repeatedly injected under the skin. The dose must be large enough to make the animal ill without endangering its life. As the process goes on, the animal gradually develops an immunity. That is to say, antitoxins are formed in the body which counteract the effect of the diphtheritic poison. It may take only a few weeks, or it may require months, to bring an animal to a condition of immunity. That depends on the peculiarities of the animal. To determine whether or not a proper immunity has been attained, small amounts of blood are from time to time withdrawn from the body and tested. This is done by mixing in a vessel a definite amount of the blood with diphtheritic poison of known strength and of an amount, say ten times as great as is necessary to kill a guinea-pig in two days. The mixture is then injected subcutaneously into a guinea-pig. If the animal shows no ill effects, we know the antitoxin to be present in the horse's blood in very considerable quantity. If, however, the guinea-pig, while not dying in two days, nevertheless succumbs after a week, we know the antitoxin to be present in relatively small amount, and we may continue to administer to the horse the diphtheritic poison till a subsequent test shows the blood to contain the antitoxin in proper amount.

---

[1] See Deutsche Med. Woch., October 25th, for an excellent article on the subject, by Dr. H. Kossel.

[2] The diphtheritic poison for this purpose is made by introducing into a vessel of sterile nutrient bouillon a pure culture of the bacilli of diphtheria. The vessel is then closed and kept at a suitable temperature for about four weeks. After that 0.5 per cent. carbolic acid is added. This kills the bacilli, which sink to the bottom. The clear supernatant fluid contains the diphtheritic poison in solution.

When this condition is reached, a considerable though not fatal amount of blood is withdrawn from the horse into a sterile vessel and set aside in an ice-chest. After the blood has clotted, the clear serum is decanted off, 0.5 per cent. carbolic acid added to keep it from decomposing,[3] and we have the *Heilserum* ready for use.[4]

The amount of serum to be given in a case of diphtheria will depend on its strength, which, as we have seen, is determined only by experiment. In the Berlin Institution for Infectious Diseases a serum is used of such strength that 15 cm. suffice for a child of ten years. The serum is introduced subcutaneously. A portion of skin in the axillary line, about the level of the sixth rib, is thoroughly cleansed. Then with a clean syringe 15 cm. are injected under the skin into the loose areolar tissue. The needle is withdrawn and a piece of clean cotton is put over the puncture wound and secured with collodion. At the spot where the injection was made will be an elevation, from the presence of the serum, as big, perhaps, as the half of a hen's egg. This, however, soon disappears as the serum is absorbed. I happened to be present to-day when a new case was brought in, and saw the process of administering the serum. It must be added that the immunity gained from this treatment lasts, according to Kossel, only a few weeks, or at most, according to Ehrlich, two months. A child, therefore, that has been made immune during one epidemic of diphtheria may become a victim in the next, unless it is again treated.

I saw twenty cases of diphtheria yesterday in the Institution for Infectious Diseases, all being treated by the new method. Dr. Kossel, the physician in charge, explained each case, and allowed us to look into the throats, examine the temperature charts, and make whatever examinations of the patients we chose. The thing that first struck me on entering the wards was the absence of anything like illness in the looks of the little patients. They were, most of them, sitting up in their cribs playing with blocks and talking away in German as though they had never been sick a day. Each child had a diminutive wine bottle holding perhaps half a pint. These the children used as playthings and when they felt like it they drew out the cork and took a sip of wine. The bottles were always kept partly filled, and the children allowed to drink as much as they pleased.

Although the patients felt so well, many of them presented symptoms which would ordinarily be regarded as very alarming. In one child, for example, that I have in mind, the diphtheritic membrane involved not only both tonsils and the uvula but extended into both nostrils. Another child had diphtheritic laryngitis so it could not speak. The mother of this child was anxious to nurse it at home. Dr. Kossel, therefore, allowed her to take it away in spite of the persistence of the laryngitis. He regarded the case as practically out of danger.

One case in a little girl of four years showed a nearly healed tracheotomy wound. This child was, moreover, also tubercular, as shown by its prompt reaction to an injection of tuberculin. The prognosis in a case of diphtheria occurring in a tubercular patient is looked upon as very grave. Yet this child, when the diphtheritic membrane was so extensive as to necessitate tracheotomy, made a good recovery.

I will give a few notes on the first case I saw under the new treatment. They were taken from Dr. Kossel's remarks on the case and from the temperature chart, as well as from what I saw of the child on my two visits. The patient was a girl of five years. She was brought to the hospital October 25th at 2 P. M. She had been apparently well up to within twenty-four hours of her entrance, so that the case may be regarded as one of the first day. At the time of her entrance both tonsils were covered with diphtheritic membrane. The temperature was 103.8°. At 10 P. M., that is, eight hours after entrance, an injection of the serum was given. The temperature continued to rise till midnight, when it was 104.6°. It then dropped by crisis so that by 4 A. M. of the 26th it was 103°, by noon 100.4°, by midnight 99°. I saw the child about 11 A. M. on the 27th, and looked into her throat. She had then a temperature of 99.4° and was feeling perfectly well, although both tonsils were still largely covered with membrane. To-day, Sunday, the 28th, I again saw her, that is, three days after her admission to the hospital, and in the fourth day of the disease. There was a necrotic-looking patch not larger than a split-pea still left on one tonsil. Aside from that no membrane was to be seen. I examined her throat both times I saw her and noted carefully the extent of the membrane.

This fall of temperature by crisis shown in the above case is typical for cases treated in the first two or three days of the disease, that is, before complications like otitis media, pneumonia, infection of the lymph-glands, etc., have set in. In older cases with complications the temperature will depend on the secondary affection.

Dr. Kossel, in the *Deutsche Medicinische Wochenschrift* for October 25th, states that in the Berlin Institution for Infectious Diseases no case of diphtheria has died where the patient was received in the first or second day of the disease. I heard him say to-day that he had himself treated some eighty cases and had not lost a single one where the treatment was begun in the first four days of the disease.

The *Heilserum* also offers a means of diagnosis in doubtful cases where the question of diphtheria arises. If, for example, a child is taken with sore throat accompanied by fever, it may be impossible to determine clinically whether or not we have to do with a case of diphtheria. An injection of the serum will, if the case be really one of diphtheria, cause the temperature to fall practically to the normal inside of twenty-four hours. On the other hand, if the sore throat and fever remain uninfluenced for twelve hours or more after the administration of the serum, we may safely assume that the case is not one of genuine diphtheria.

At the Institution for Infectious Diseases every suspected case is treated as though it were one of real diphtheria, and the patient left in the same wards with the established cases. No bad results follow. If the patient really had diphtheria the fact is shown by the marked improvement that follows. If it happened to be a simple sore throat the case runs its usual course, the blood serum preventing any infection from neighboring cases.

Dr. Kossel told of three children that were brought to the hospital from one family. Only one child had diphtheria. The other two were brought because they had been exposed to the disease. One of these two had a somewhat rapid pulse, but aside from that showed no signs of being unwell. Because of the rapid pulse the child received an injection of the *Heilserum*, as did the one with the well-marked disease. The third child was apparently perfectly well, and, as a kind of control experiment, was left untreated. The next morning the one with the rapid pulse showed a perfectly normal condition, while the one which had been well and received no treatment had developed into a typical case of diphtheria.

---

[3] In a cool, dark place the serum will keep at least several months how much longer is not known.

[4] The serum is made according to the directions of Behring and Ehrlich by the firm Lucius and Bruening, Höchst, a. M. Germany.

From what I have seen and heard in the past week I am encouraged to believe that in a few months the physician will have at his disposal the means for curing practically all cases of diphtheria that come under his care within the first two or three days from the onset of the disease. One of the most frightful affections of childhood will thus be stripped of its terrors, and another disease be added to the small list than can be cured by the internal administration of medicine.

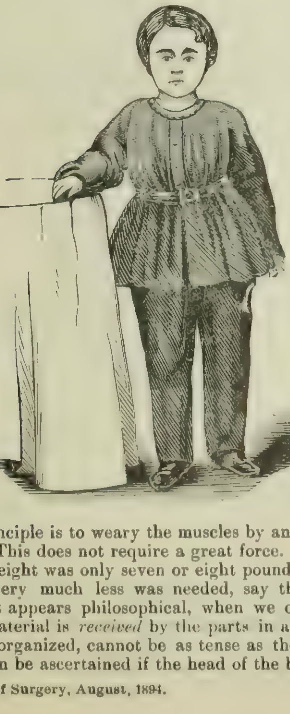
Very truly yours,
C. A. Ewald, M.D.

CONGENITAL DISLOCATIONS OF THE HIP.

Everett, Mass., November 10, 1894.

Mr. Editor: — In a paper by Dr. E. H. Bradford,[1] he describes a new mode of restoring congenital dislocations of the hip. His method requires division of the parts, making a rather severe flesh wound, and from his own account, is not very successful in restoring the head of the femur to its proper place in the acetabulum.

Permit me to call attention to some facts that I have discovered and published some years since, namely, that *all* of the soft parts can be elongated to any extent necessary by *continued*, *uninterrupted* extension, not by *stretching* them, but by their elongation by new material. This mode secures the proper lengthening of *all* the soft parts about the dislocated joint, including the capsular ligament. This result cannot be secured by *fixing* the limb, but it must be by a *constant* tension of the parts that it is designed to elongate. I wish to make this distinctly understood, that it is positively necessary that there be a *constant tension* of the parts we desire to lengthen. Where this process has been adopted, I have never known it to fail of elongating the surroundings of a joint sufficiently to bring the limb into its place without any *force*.



The principle is to weary the muscles by an unremitting pulling. This does not require a great force. I think my heaviest weight was only seven or eight pounds. In young children very much less was needed, say three pounds. This result appears philosophical, when we consider that the new material is *received* by the parts in a liquid state, and when organized, cannot be as tense as the old tissues. Then it can be ascertained if the head of the bone is in the acetabulum, by carrying the femur up. If it is in its place, the trochanter will be thrown out from the body, the depth of the rim of the acetabulum and the condition of the latter can be well ascertained, particularly if it is filled up. The limbs should be kept in this position until the parts about the joint have all become conformed to their position.

The cut gives the appearance of an interesting case that came under my care. The boy was about four years of age, had infantile paralysis of both limbs; there was dislocation of both femurs, one was upon the dorsum of the ilium, the other forward and down in the thyroid foramen. I applied extension by means of a weight and pulley. After a few weeks, it was found that the one displaced upwards could be brought down to its place, the other required some force to carry it over the edge of the pelvis, when it was readily brought into place, where it remained. The other was secured in its place by my splint, which, it will be recollected, has an inelastic band to prevent the limb being thrust up by the weight of the body or other force.

Very truly yours,
Henry G. Davis, M.D.

IS THE EMERGENCY HOSPITAL A CHARITABLE INSTITUTION?

Boston, November 16, 1894.

Mr. Editor: — The following case has recently come under my notice. A surgeon from the Emergency Hospital was called to attend a poor woman in the neighborhood of that institution who was flowing severely, so that it was necessary to send for the nearest aid. The surgeon conducted the miscarriage, for such it proved to be, successfully, packed the vagina, and, according to the statement of the woman's husband, charged five dollars for his services. As the man had no more money, the case was then referred to the district physician of the Boston Dispensary for the necessary after-treatment.

Before hearing of this case I had been led to believe that the Emergency Hospital was a charitable institution, but as I am now naturally in some doubt about the matter, I would like very much to get your opinion as to whether it is so considered.

Very truly yours,
District Physician.

A WORD FROM OLDERTOWN.

Oldertown, November 17, 1894.

Respected "1846": — Oh, that you had, forty years or so ago, come boldly forward in support of those of us who bravely, if not effectually, were trying to enforce such doctrines as are promulgated in your latest letter from Oldtown in this week's Journal; but better late than never — *macte virtute.*

Much is still wanting. Professor Cheever is said to have given some timely and much-needed hints thereon in his last Thursday evening's lecture at the Harvard Medical School. Let others follow.

Responsively yours,
C., Senior.

THE ROARING-BOX HUMANA.

Smithsburg, Md., November 14, 1894.

Mr. Editor: — The description in your last issue, of the peculiar anatomy of the gorilla with its air reservoir, recalls a story told by my mother. A colored boy in the family of her aunt, by whom she was brought up, had such an air bag which he could fill at will. He would breathe it full and then produce the most delightful musical sounds, soft and continuous like those of a church organ. The bladder, as she called it, was located in front of the throat above the clavicles and would swell out even with the chin.

Very truly yours,
E. Tracy Bishop, M.D.

---

[1] Annals of Surgery, August, 1894.

METEOROLOGICAL RECORD,

For the week ending November 10th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r. * 8.00 A. M.	We'th'r. * 8.00 P. M.	Rainfall in inches.
S .. 4	29.88	46	50	43	60	57	58	W.	W.	8	4	C.	C.	
M.. 5	29.64	45	50	40	71	96	84	E.	N.E.	16	27	O.	R.	.60
T .. 6	29.67	33	35	31	95	74	85	N.W.	W.	24	13	T.	C.	.90
W.. 7	30.00	32	38	27	62	58	60	W.	W.	18	8	O.	F.	
T .. 8	30.12	30	33	27	64	94	79	N.W.	N.	5	12	O.	N.	.29
F .. 9	30.00	32	34	29	91	100	96	N.	N.	14	10	O.	R.	.05
S...10	29.83	38	42	33	95	66	81	N.W.	S.W.	10	7	R.	C.	.29
☞														2.13

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatning; N., snow. † Indicates trace of rainfall ☞ Mean for week

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOVEMBER 10, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,956,000	601	204	12.75	14.28	2.72	.51	7.14
Chicago	1,600,000	—	—	—	—	—	—	—
Philadelphia	1,139,457	392	129	15.86	14.30	2.34	1.82	10.14
Brooklyn	1,043,000	364	131	16.74	13.77	1.35	1.35	12.42
St. Louis	540,800	—	—	—	—	—	—	—
Boston	501,107	198	67	24.50	7.00	2.50	4.00	14.00
Baltimore	500,000	—	—	—	—	—	—	—
Washington	285,000	91	35	17.44	14.17	1.09	7.63	7.63
Cincinnati	325,000	123	48	17.82	8.10	10.53	.81	5.67
Cleveland	325,000	109	48	36.80	7.36	1.84	4.60	1.84
Pittsburg	272,000	96	25	16.64	8 32	6.24	3.12	6.24
Milwaukee	265,000	—	—	—	—	—	—	—
Nashville	87,754	—	—	—	—	—	—	—
Charleston	65,165	—	—	—	—	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	100,410	36	16	22.08	8.34	8.34	—	5.56
Fall River	92,233	30	17	13.33	3.33	6.66	6.66	—
Lowell	90,613	35	12	19.30	8.58	5.72	—	2.86
Cambridge	79,607	34	12	26.42	14.70	14.70	—	8.82
Lynn	65,123	15	5	46.66	—	33.33	6.66	6.66
Springfield	50,284	19	3	10.52	26.30	—	5.26	—
Lawrence	49,900	—	—	—	—	—	—	—
New Bedford	47,741	11	7	—	9.09	—	—	—
Holyoke	43,348	7	0	42.84	14.28	28.56	—	—
Brockton	33,939	6	3	16.66	—	—	—	—
Salem	33,155	4	1	25.00	25.00	25.00	—	—
Haverhill	32,925	1	0	—	—	—	—	—
Malden	30,209	8	1	12.50	—	—	12.50	—
Chelsea	29,806	6	3	16.66	16.66	—	—	16.66
Fitchburg	29,383	4	2	—	—	—	—	—
Newton	28,837	4	0	50.00	—	—	50.00	—
Gloucester	27,293	-	—	—	—	—	—	—
Taunton	26,954	10	1	10.00	30.00	—	10.00	—
Waltham	22,058	4	1	25.00	—	—	—	25.00
Quincy	19,642	4	2	50.00	—	—	—	50.00
Pittsfield	18,802	5	2	40.00	—	—	—	—
Everett	16,585	5	2	20.00	—	—	—	20.00
Northampton	16,331	3	0	—	—	—	—	—
Newburyport	14,073	2	1	—	—	—	—	—
Amesbury	10,920	2	1	-	—	—	—	—

Deaths reported 2,327: under five years of age 815; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 411, consumption 282, acute lung diseases 265, diphtheria and croup 192, diarrheal diseases 85, typhoid fever 49, scarlet fever 47, whooping-cough 14, cerebro-spinal meningitis 12, measles 5, malarial fever 4, erysipelas 3.

From scarlet fever Cleveland 29, New York and Philadelphia 4 each, Boston 3, Brooklyn, Washington, Lowell, Cambridge, Springfield, Pittsfield and Woburn 1 each. From whooping-cough Brooklyn 5, New York, Philadelphia, Boston, Pittsburgh, Somerville, Brockton, Fitchburg, Pittsfield and Clinton 1 each. From cerebro-spinal meningitis New York and Worcester 3 each, Boston, Washington, Cincinnati, Cleveland, Lowell, Holyoke and Fitchburg 1 each. From measles New York 2, Boston, Cleveland and Providence, 1 each. From malarial fever New York 4. From erysipelas Boston 2, Philadelphia 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending November 3d, the death-rate was 17.3. Deaths reported 3,475; acute diseases of the respiratory organs (London) 329, measles 96, diphtheria 90, diarrhea 81, fever 46, scarlet fever 37, whooping-cough 32, small-pox (Birmingham 2, London 1) 3.

The death-rate ranged from 10.2 in Croydon to 25.4 in Burnley; Birmingham 15.1, Bradford 24.0, Hull 18.1, Leeds 20.3, Leicester 13.0, Liverpool 22.6, London 16.4, Manchester 17.3, Newcastle-on-Tyne 19.4, Nottingham 13.1, Portsmouth 14.0, Salford 21.3, Sheffield 17 9, Sunderland 23.8.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 10, 1894, TO NOVEMBER 16, 1894.

Leave of absence for one month is granted CAPTAIN BENJAMIN L. TEN EYCK, assistant surgeon.

By direction of the Secretary of War, the leave of absence granted FIRST-LIEUT. FRANCIS A. WINTER, assistant surgeon, in S. O. 71, July 25, 1894, Department of Texas, is extended one month.

By direction of the Secretary of War, the leave of absence granted CAPTAIN EUGENE L. SWIFT, assistant surgeon, in S. O. 147, October 11, 1894, Department of Dakota, is extended one month.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 17, 1894.

J. M. FLINT, medical inspector, detached from the U. S. S. "Baltimore," home and three months' leave.

C. U. GRAVALL, surgeon, ordered to the U. S. S. "Charleston," per steamer December 4, 1894.

J. A. HAWKE, surgeon, detached from the U. S. S. "Charleston" and to the U. S. S. "Baltimore."

J. S. HOPE, assistant surgeon, ordered to the U. S. Receiving-ship "Franklin."

W. H. BARNUM, assistant surgeon, detached from U. S. Receiving-ship "Franklin" and to the New York Navy Yard.

M. F. GATES, passed assistant surgeon, ordered to the U. S. Receiving-ship "Richmond."

G. R. BRUSH, medical inspector, ordered before Retiring Board at New York, November 17, 1894.

L. G. HENEBERGER, surgeon, detached from Marine Rendezvous and continue special duty in New York.

J. M. STEELE, surgeon, detached from League Island Navy Yard and to Marine Rendezvous, New York.

W. H. RUSH, passed assistant surgeon, detached from Naval Academy and to the League Island Navy Yard.

A. M. D. MCCORMICK, passed assistant surgeon, ordered to the Naval Academy, Annapolis, Md.

APPOINTMENT.

DR. JAMES M. JACKSON has been appointed physician to out-patients at the Massachusetts General Hospital.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Thursday evening, November 29th, at 8 o'clock, by Prof. W. T. Councilman. Subject, "Bright's Disease." Physicians are cordially invited.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.— A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday, November 26, 1894, at eight o'clock, P. M.

Dr. A. L. Mason: "Medical Treatment in Diphtheria."

Dr. E. M. Buckingham: "Diphtheria." Discussion opened by Drs. Geo. B. Shattuck, F. H. Williams, C. F. Withington, W. H. Prescott.

JOHN T. BOWEN, M.D., *Secretary*.

BOOKS AND PAMPHLETS RECEIVED.

Are There Degrees of Insanity. By R. M. Phelps, M.D., of Rochester, Minn. Reprint. 1894.

Spindle-Cell Sarcoma and Epithelioma; A Report of Cases. Arsenite of Copper as an Antispasmodic. By W. Blair Stewart, A.M., M.D. Reprints. 1894.

Original Articles.

PREVALENCE OF BOVINE TUBERCULOSIS.[1]

BY DR. AUSTIN PETERS, BOSTON.

Tuberculosis has been known for all time, and among all civilized people and in all habitable climates. Among cattle-keeping people it is known among their bovines; and while it continues to exist among the human race, it will prevail among their cattle, its prevalence among the latter depending upon how they are kept, where they are kept, what they are kept for, and upon the susceptibility of certain breeds or the constitutions of certain individuals.

Among the human family, as well as among the ox tribe, has Pharaoh's dream been constantly repeated, from the days of Joseph to the present day. The seven well-favored, fat-fleshed kine have been devoured over and over again by the seven ill-favored and lean-fleshed kine, which I have not the least doubt were suffering with tuberculosis. It is not even necessary to have the seven ill-favored and lean-fleshed kine to devour the seven healthy ones; for if a single tuberculous cow be placed in a dark, badly-ventilated stable with the seven well-favored ones, kept under unhealthy surroundings and forced to an enormous yield of milk, this single ill-favored and lean-fleshed individual will in time succeed in devouring the seven well-favored ones. Notwithstanding the fact that the milk from this herd yields the greatly-to-be-desired 13 per cent. of total solids, yet will there be "death in the pot," or rather in the milk-can — "consumption at eight cents a quart," or cholera infantum at the same price, or perhaps a pleasing mixture of the two commodities combined.

Admitting that tuberculosis is due to a specific germ, the bacillus of tuberculosis, and that it can be communicated from one animal to another of the same or a different species, by means of the expectorations after they become dry, or by the consumption of the flesh, milk, or dairy products of tuberculous cattle, yet in order to appreciate the danger to human beings from the use of the dairy products of tuberculous cows, it is important to have some idea of its prevalence.

It is an impossibility to get any statistics to show the extent to which this malady exists among our bovine population, but I think I can show that it is of sufficient frequency to be of very great importance from a sanitary and economic standpoint.

Fleming, in his "Manual of Veterinary Sanitary Science and Police," in speaking of the geographical distribution of this disease among animals, says: "Tubercular phthisis, or tuberculosis, probably prevails among domesticated animals over the entire globe, though its frequency will depend upon various external influences, as well as the constitutional tendencies of different species and breeds. In some countries it is enzootic and very destructive. Such is the case in densely populated districts and in unhealthy climates, or in regions where animals are improperly fed and housed. In Mexico, for instance, it is very common, and causes much loss; about 34 per cent. of the animals slaughtered for food being found affected. In Europe, particularly in the cow-sheds of the large towns and cities, it is extensively prevalent; and in this country (meaning England) it has long been recognized as a common disorder among animals, but more especially as affecting the bovine species."

Walley's "Four Bovine Scourges" considers contagious pleuro-pneumonia, rinderpest, foot and mouth disease and tuberculosis as the four great cattle plagues of the world.

In this country rinderpest is unknown; foot and mouth disease does not exist at present; contagious pleuro-pneumonia has been stamped out in every locality in the United States where it has ever existed. So that to-day we can safely say that the only one of the four great bovine scourges staring us in the face and challenging us to combat, if we are not afraid to grapple with it, is tuberculosis.

During the past four or five years many of the States, particularly in the East, have been aroused to take steps to eradicate tuberculosis from among their neat stock, chiefly by having the work attended to by cattle commissions; and while numbers of cattle are examined, yet, as a rule, the work has not been done in a way to give any idea of what relation the number of diseased cattle bears to the number of healthy ones, or what the ratio of herds where the malady exists, is to the herds where the creatures are all healthy.

During the winter of 1892 and 1893 the New York State Board of Health, having been empowered to regulate the matter of bovine tuberculosis in that State, undertook a farm-to-farm inspection of the cattle in two dairy districts, with a view of ascertaining about the percentage of tuberculous cows in a certain region. In lower Westchester County approximately 10,000 head were examined, and in the neighborhood of 80 were destroyed as tuberculous, or .8 per cent. In Orange County, in the neighborhood of Monroe, about 10,000 head of cattle were examined and 35 were killed as tuberculous, or .35 per cent.

In testing herds with tuberculin, I have found that by means of the old-fashioned physical examination about one case out of three present could be picked out; that is, after diagnosing the cases present in a herd by means of a physical examination, and then testing it with tuberculin, three animals will react to every one found by means of an ordinary diagnosis. Taking this for granted, it is safe to say that among the herds of the farmers in a district like Orange County, which somewhat resembles Worcester County, about one per cent. of the cows are tuberculous, these herds being made up largely of hardy grades of the Ayrshire, Holstein and Short-horn families. In Westchester County, nearer New York City, where more cattle of the Channel Island breeds are found, and the system of dairy farming more nearly resembles the milkmen's management on the outskirts of our large towns and cities in Eastern Massachusetts, it is safe to say that between two and three per cent. of the cows are tuberculous, allowing that only one case can be detected by means of a physical examination to three that will show a well-marked reaction to tuberculin. These figures compare quite evenly with the abattoir statistics of many of the cities of France, Germany, Belgium and Holland.

In Eastern Massachusetts we have no exact figures to give us statistics; but it seems to me that bovine tuberculosis must be much more frequent here than even in Westchester County, N. Y., or else I have been unfortunate enough to be called, during the past winter, to see so many herds where tuberculosis exists, as to prejudice me into this belief. Since December

---

[1] Read before the Massachusetts Veterinary Association, May 23, 1894.

1st, last, I have had occasion to examine about 500 head of cattle in Eastern Massachusetts, of which 75 have been tuberculous; but then, of course, I am very likely to be called to examine creatures where the presence of tuberculosis is known or suspected.

As to the prevalence of tuberculosis among cattle of various ages and sexes, abattoir statistics show it to be very rare in calves killed for veal. It is seldom seen in steers and oxen killed for beef; in fact, it is almost unknown among our Western beeves. It is seen chiefly in cows when slaughtered for food, and is met most frequently among dairy cows from the outskirts of large cities and towns. Here it is found more among the older cows, the lesion being much more readily found in cows over six years old than among those younger. That is, overcrowding in unsanitary stables and the depleting influences of lactation are the two great predisposing causes. Among certain fancy herds of pure-breds of different breeds tuberculosis exists to an alarming extent; but this is because some of our breeders have nurtured this malady as carefully for years as though they were trying to breed tubercle bacilli instead of cattle.

In Massachusetts our system for dealing with bovine tuberculosis is faulty: in the first place this is a commission-ridden State; everything is managed by commissions of three or more men. It is a well-known fact that an army of three generals would meet with defeat; a ship with three captains would meet with disaster; a railroad with three superintendents would go into bankruptcy; and yet that which would bring defeat in war, disaster in commerce, and bankruptcy in business is expected to work successfully in the affairs of an over-taxed people. These are the views of Seth Low, President of Columbia College, and Gamaliel Bradford. The only possible excuse for such a system is that it furnishes salaries for a lot of played-out politicians and impecunious lawyers, instead of placing the management of affairs in the hands of single, responsible heads, directly accountable to the appointing power.

Another criticism of the present state of affairs is the system of town and city cattle inspectors. One city or town may appoint a competent veterinarian to such a position (these instances are rare); a few more cities or towns may appoint an incompetent veterinarian, who is but a very slight improvement over any other ignoramus; but in most instances the appointees are men of no special qualifications for the positions they hold; their examinations of herds are farces, and the certificates they write are not worth the paper they are written on.

I am in favor of having a State veterinarian who shall be responsible either to the State Board of Health or to the State Board of Agriculture, depending upon whether this subject is considered most important from a public health or an agricultural point of view; then divide the State into districts, say ten or a dozen in number, and appoint the best veterinarian in that district (that is, the best cattle practitioner, as the best horseman is not always the best cowman) district veterinary inspector to act under directions from the State veterinarian. Furthermore, owners of animals suffering from contagious diseases should be reimbursed. The co-operation of farmers in eradicating bovine tuberculosis will never be secured until this is done. There should be also an arrangement for utilizing the meat of slightly diseased cattle for food, and the proceeds of these sales should be used for helping to pay the expenses of this work. It is an outrage to destroy a man's property without paying for it, and absurd to say that tuberculous cattle are not property.

The relation that the use of milk from consumptive cows bears to the malady in mankind will never be known until thorough steps are taken to prevent its use. If all the tuberculous cattle in the State were killed to-morrow, and infected stables burned, there would be a fresh supply in a few years from the contamination of consumptive persons, unless boards of health and physicians are ready to look upon it as an infectious disease, call it thus in annual reports and vital statistics, and take steps for preventing its spread from person to person and from mankind to cow. If we start a crusade against the poor cow, without taking any other precautions to guard against it, we shall be simply continuing to prevent a waste at the spigot while there is a big leak at the bung.

Sterilizing food is a safeguard to the public health; on the other hand, there is the economic standpoint of great importance to the farmer of protecting healthy from diseased cows.

I suppose that what I have said will lead to the old time hue-and-cry that "the horse-doctors want a pull at the public crib, but they shan't have it" so long as there are any fossilized politicians, unsuccessful lawyers, or even decayed labor-leaders to be provided for; but let me remind you that a capable veterinarian can make more in private practice than the salaries usually paid by the State amounts to, and as I generally give my text at the end of my sermons instead of the beginning, I will simply suggest to you, "To render unto Cæsar the things that are Cæsar's, and unto God the things that are God's."

◆

DIAGNOSIS AND PREVENTION OF BOVINE TUBERCULOSIS.[1]

BY DR. J. F. WINCHESTER, LAWRENCE, MASS.

It is essential in discussing the diagnosis of tuberculosis, to bear in mind that the veterinary surgeon may be called upon to say whether an animal is affected or not, under two very different circumstances. He may, in one instance, be expected to make a differential diagnosis in a case where the animal is noticed to be ill, and regarding which his advice is desired by the owner; or in another animal, as a veterinary inspector, he is expected to recognize the disease, when to the ordinary observer and owner the animal has the general appearance of health. It certainly must be very apparent, that if there exists any uncertainty in the first of these conditions, by a physical examination, how much greater must that difficulty be in the second. In order to illustrate this difference, one ought to bear in mind the lesions found at the autopsy of animals that have died from tuberculosis, or have been killed because hopelessly afflicted with it, in the first instance; and those lesions of tuberculosis which are found in animals killed for food, and supposed to be healthy at the time of slaughter, in the second.

The lesions of this malady have a very different distribution when we take account, not merely of the animals about which veterinary advice is sought, but of all cases in which tubercolosis in any degree is brought to light by a reasonably careful post-mortem examination. An absolutely certain diagnosis can seldom or never be made by ordinary clinical methods.

---

[1] Read before the Massachusetts Veterinary Association, May 23, 1694.

Tuberculosis may be acute or chronic, and the former may run its course in a few weeks, while the latter may last for years. At the beginning in the acute form, and for an indefinite length of time in the chronic, the disease process may be confined to one organ or to one region of the body, and the symptoms will vary according to the tissue involved.

In all the various forms and seats of the disease, the bacillus may be found in the affected parts. When the lungs are involved in the chronic forms, and the amount of the tissue is not extensive, the animal often presents the general appearance of health, with perhaps the exception of a slight cough. The diagnosis of such cases by the ordinary physical method will, as a rule, give negative returns, and suspicion only can be attached to such a case if associated with tuberculous animals. When the lungs become very extensively involved, the symptoms are more distinct and reliable; then the general appearance of the animal will assist. The fact that the lung in tuberculosis consolidates in patches with intervening spaces of normal tissue, will aid one to differentiate from many other forms of lung trouble. In the bovine race, when a certain amount of the lung is diseased, and that not slight by any means, they will gain in flesh, if the digestive system is in a normal state, while at a point beyond that necessary for the required oxidization of the blood, they will fail; the same clinical fact is seen when the pleura is extensively diseased.

The diagnosis of this disease in the digestive tract is impossible in the early stages by the usual method, and it is only when emaciation, diarrhea, constipation, and periodic attacks of hoven occur, that one might be justified in condemning the animal, if there are no other associated symptoms.

Occasionally one will see a bovine with chronic hoven; and if associated with tuberculosis, the post-mortem will often reveal an enlargement of the lymphatics at the cardiac portion of the esophagus, posterior to the diaphragm.

The different diagnosis of the diseases of the udder is very essential, for it is frequently tuberculous. When simple mastitis is present, you will find a diffused swelling of the quarter affected, which is hot and painful to the touch, the milk changes in its physical appearance and, as a rule, it responds quickly to treatment. When the udder is tuberculous, the swelling is hard and nodulated, and, as has been well said, it feels as though it was full of kernels or seeds, well defined; it is neither hot nor painful nor does the milk change in a marked degree, although in a short time it becomes poorer in quality while it may increase in quantity. The external or superficial glands, in many instances, will decide the question of this malady. They are larger than normal; nodulated, and those on one side of the body will not correspond in size to the opposite. Tubercles are sometimes found in or under the skin, and are easily felt in the form of well-defined nodules.

The placenta in tuberculous animals is often studded with small, opaque, well-defined new formations. The bones and articulations are not uncommonly attacked, those entering into the formation of the elbow, knee, hock, and stifle joints being most often affected. Lameness is very marked in some cases; the joints swollen and tense; the ends of the bones enlarged. The diseased bone may crumble and sharp spiculæ protrude through the skin. The cerebro-spinal system is not exempt from its ravages, and tubercular meningitis is not unfrequent. The symptoms will vary according to the location, from excitement to stupor, paralysis, partial or complete. Some animals will walk in a circle for days with the head down and to one side. Young animals not unfrequently die from acute tubercular meningitis. Paraplegia is seen when the lesions are located in the lumbar region of the spinal cord. It is generally acknowledged that the diagnosis of tuberculosis is no simple matter in any stage, especially where one cannot obtain a history of association with tuberculous animals; then how much more difficult must it be in equivocal cases. Instead of depending upon a physical examination or clinical observation to diagnose this malady, use can be made of the microscope, inoculation, or the injection of tuberculin.

The first two methods require special study and considerable time, which is not practical or desirable when a large number of animals are in question, while the third has been demonstrated to be an almost infallible test with proper care and observation. The tuberculin test is based on the fact, as shown by Koch, that it increases the activity of the disease process, creating a general disturbance of the system which is manifest by an elevation of the temperature. The minute quantity which will not affect a healthy animal, when injected into a slightly tuberculous one, will in from eight to twenty hours cause a decided rise in temperature. The explanation of this is, that the system contains tuberculin produced by the disease, to which the animal has become so accustomed that it cannot be detected by any clinical test. When the small amount of tuberculin used for the test is introduced into the circulation, it increases the activity of the disease process, and as a result the temperature of the body is elevated. From this fact it is evident that the quantity of tuberculin to be used ought to vary with each animal, but experiments and observation have demonstrated that for ordinary-sized cows, a certain amount (25 cubic centimetres) can be relied upon for positive results in occult cases. Cases may occur in which the temperature of a cow will rise after the injection of tuberculin and still the animal is not tuberculous. Any febrile disturbance may set in after the injection, such as the period of heat or bulling, close approach to parturition, active exertion, exposure, too hot sun, confinement in a close building or privation of water.

It is evident from these facts, that only the trained veterinarian should use tuberculin, and he must always be on his guard not to mistake any febrile disturbance that may arise, other than would occur by the use of tuberculin in the tuberculous. Laying aside these and other causes of error in unskilled hands, the elevation of the temperature should not condemn tuberculin, but stimulate a search for occult tubercles, and a failure will be rare.

There are cases where the animal is tuberculous and the injection of tuberculin will not cause any febrile reaction. In such animals the system is saturated with tuberculin, and the small amount injected will not make an impression. These cases are readily diagnosed by a physical examination. A reaction will take place, even in the slightest case of tuberculosis, by the use of tuberculin, and many of the animals would live for years and might recover. For this reason, when it is desirable to dispose of the diseased animals or to exclude from a herd any that are tuberculous, it is indispensable as a diagnostic agent. When tuberculin is properly prepared, it will not injure a healthy animal. That it will aggravate tuberculosis already in existence, is an established fact, and for this reason it has demonstrated its value as a test. Knowing this, it should never be used unless the owner or the government intend to make thorough work of eradicating the diseased animals.

Tuberculosis has been described as a universal panzootic, and from the deaths in the human subject of this disease it can well be termed pandemic. This being evident, prevention is certainly the most rational method of making any inroad into its prevalence.

Fleming, in his "Sanitary Science," 1875, under the heading of "Prevention," says: "The only preventive measures with which we are acquainted are those of a hygienic kind — proper food and water; sufficient exercise in the open air; clean, dry, and well-ventilated but not too cold stables; and keeping the cattle from undue exposure to severe weather. As there is reason to believe that the malady is hereditary, cattle having any tendency to it should not be bred from. As the experiments which have been conducted by most competent authorities have demonstrated that tuberculosis can be induced in animals by feeding them with tuberculous matter, care must be taken that this is not given to them as food. There being much reason to believe that the disease can be transmitted by cohabitation, whenever cattle show any tendency to it, they should be isolated from the healthy, and every precaution observed with regard to preventing contact. Animals slightly affected should be fattened and slaughtered; and their flesh, if *free* from traces of the disease, may be utilized. The milk of such animals should be proscribed, and in advanced cases, the flesh also."

It is readily seen from this quotation that the requirements for protection against the disease, either in man or animals, are the same. It can be concisely stated in the word "hygiene." I doubt if any one will take exception to the statement that sunlight, combined with cleanliness, proper drainage and ventilation, is necessary to maintain and create a constitution capable of resisting disease. Tuberculosis is an infectious disease, and with the means we have to diagnose this malady, there cannot be any excuse why the products of tuberculous animals should be used for the benefit of man.

In a *brochure* issued by the State Board of Health of Massachusetts (May, 1894), it is admitted that the milk from tuberculous animals is a menace to the health of mankind, and it should be proscribed. In regard to the meat from such animals, they recommend its thorough boiling, although they do not feel confident that it will cause the disease, since clinical evidence to that effect is not in existence. Since tuberculosis is a preventable disease, undoubtedly there are cases that will recover. This being a fact, why allow or sanction even the use of tuberculous meat, when it is known that the ptomaines or tuberculin which exists in the flesh of tuberculous animals are not destroyed by boiling, and if introduced into the system of a tuberculous individual, will excite the activity of the disease. Is it not desirable to ameliorate a case of tuberculosis after the possibility of prevention has passed? It is admitted by the producers of vaccine virus that the bovines that are used for its production should be in a normal condition, and that for this reason they are examined by a veterinarian in some instances, and at other times by a so-called "competent" man.

In an article in the *Boston Medical* and *Surgical Journal*, May 3, 1894, on the production of vaccine virus, no evidence is shown that tuberculin is used. Then of what value can be an opinion as regards the existence of tuberculosis in its occult form? One firm uses mature animals in order that the lymph may be richer in germs, while the other (of the two firms examined) uses young animals that are less liable to be diseased. In neither of these establishments does it appear that the product of each animal is kept by itself, nor that the animals killed are subjected to an examination to establish the fact of their normal condition.

In conclusion, let me congratulate the State Board of Health for its bulletin, as a step in the right direction for the prevention of this, the most universal and insidious of all diseases in the animal kingdom.

◆

SANITARY CONDITION OF DAIRY FARMS.[1]

BY DR. JOHN M. PARKER, HAVERHILL, MASS.

In a paper read before the American Medical Association in 1891 on "The Treatment of Chronic Pulmonary Consumption," the essayist remarks: "Our surroundings make us what we are. If our treatment could begin with the birth of the patient, in 99 per cent. of cases, we should have no tuberculosis to treat. *No matter about the family history.*" This remark applies equally well to dairy cows. *Their surroundings make them what they are.* And I venture to assert that, if the *sanitary* and *hygienic* conditions were what they should be, we would have little or no bovine tuberculosis in our dairy herds. It is the common, every-day life a person leads that governs his health; and it is the common, every-day life the dairy cow leads that governs her health and vitality. *Their surroundings make them what they are.*

Sanitary science has made vast strides in the last twenty years, yet our dairy farms are in practically the same condition they were in fifty or one hundred years ago. In fact, no effort is made on the average farm to conform to any sanitary laws or regulations whatsoever. The old barbarous practice of confining the cattle in stanchions is still in use; and the old barn and barn-yard with its strong odor and slimy filth is still in existence.

Sanitary science is advancing every year. Our cities are well-drained; our drinking-water is carefully guarded; houses and schools must have sufficient light and air; our young men and children must have exercise; but yet our dairy cattle are expected to retain their health and strength and to maintain their vitality, shut up for months in close barns, without ventilation or fresh air, and with little light — compelled to stand in their tracks unable to move; unable to turn round even to lick their sides.

It seems strange that the entire question of the sanitary improvement of our dairy farms should have escaped notice as it has. It is not a new subject. For many years past, authorities have agreed that the principal predisposing causes of tuberculosis are poor sanitary and hygienic conditions, and yet notwithstanding the universal prominence given to sanitary conditions as predisposing causes, they are almost entirely ignored among the prophylactic measures suggested by many of these same authorities.

---

[1] Read before the Massachusetts Veterinary Association, May 23, 1894.

No.	No. of Cattle.	Cub. ft. each.	Ventilation.	Light.	Water.	Cellar.	Disposal of Manure.
1	7	465	None	Poor	City	Yes	Cellar
2	10	286	None	Poor	Spring	No	Outside barn
3	1	440	None	None	City	No	Outside barn
4	6	224	None	Poor	Spring	No	Outside barn
5	4	143	None	Poor	Spring	No	Outside barn
6	7	800	Stairway	Fair	Spring	Yes	Cellar
7	7	416	None	Good	Well	Yes	Cellar
8	12	487	None	Good	Well	Yes	Cellar
9	19	1,165	Good	Fair	Well	Yes	Cellar
10	3	266	Poor	Poor	Well	Yes	Cellar
11	3	1,336	None	Good	Puddle	Yes	Cellar
12	12	233	None	Good	Spring	Yes	Cellar

In showing that sanitary conditions are not observed as they should be on dairy farms, I have attempted to tabulate the conditions as found on twelve farms in this vicinity. These are not picked out, but are taken at random from farms visited from day to day. The table shows roughly the amount of cubic space per cow; the ventilation, light, water-supply; whether there is a cellar, with its condition; and how the manure is disposed of. You will notice, as a rule, that the cattle are far too crowded. In the city of Boston each animal must have 1,000 cubic feet of space, and probably, with good ventilation, that may be sufficient, at any rate it is an immense improvement on many farms in other parts of the State; but even 1,000 cubic feet is altogether inadequate if there is no ventilation. What must be the condition of the barns then, when as in No. 5, there is only 143½ cubic feet for each animal, with no ventilation. In only three farms out of the twelve, you will notice, is there any attempt at ventilation, and even in these it is more in name than fact. And in not a single barn that I have been in is there any provision made for the admission of fresh air.

Of the twelve barns visited, four had good light, two had only fair light, five had very poor light, and one had no light all.

As a rule, New England farms have good water; but on some farms the wells are situated too near the yard and receive the surface drainage, and in some instances the cattle are even watered in creeks and puddles formed by the surface water.

Keeping the manure in the cellar is another common practice. In eight of these twelve barns, the manure is kept in this way. At the farm referred to as No. 8, there are twelve cows, each cow with 487 cubic feet of space. This barn is well lighted; the windows facing the south; but there is no ventilation whatever, except when the door is open. This farmer makes a special boast that his cattle are not out of the barn from fall till spring. They are watered in the barn, and the manure is dropped into the cellar below, where it is allowed to remain till removed in the spring. In making a visit to this barn during the winter, a man who was with me had to leave the barn because of the foulness of the air.

At another farm, Nos. 2 and 4, there are two barns. In one containing ten cattle, each animal has 286 cubic feet with no ventilation and only one small window for light. The other barn has six cattle, each animal having 224 cubic feet. This one also is without ventilation or sufficient light. In these barns the air was very bad.

At No. 5 there is no ventilation and only one small window for light. In this barn each animal had only 143½ cubic feet. Two out of four animals were evidently tuberculous.

At No. 10 three cows are kept in a tightly boarded pen, 10 x 10 x 8, giving about 266 cubic feet to each animal. At this barn there is a small ventilator and one small window, but in winter when everything is tightly closed, the atmosphere is fearful.

The other day I visited a barn, No. 11, and in conversation with the owner, I asked him where he watered his stock. "In the puddle outside," he answered. The puddle was a marshy place where the water lodged in wet weather. It was situated about twenty yards from the barn and formed part of the yard. The manure pile was on sloping ground at the side and drained into the puddle.

At No. 12 there are twelve cows, each having 233 cubic feet, with no ventilation whatever, the farmer taking special pains to have a heavy canvas curtain in front of the cows. This is a fearful hole in winter time, and it has the reputation of being the hottest barn in the district. This farmer is said to lose three or four cows every year.

No. 3 is a small shanty in the city with neither window nor ventilation. The water is carried to the cow, and she is in the barn winter and summer. Inside the barn is terribly filthy.

At another farm (the State Experimental Station of a neighboring State), the barn is so hot and close in winter that a friend of mine who was visiting there, had to leave and go into the open air because the hot, foul air in the barn made him sick and inclined to vomit.

These, gentlemen, are common examples of the average New England farm. Farmers have been taught to do the very things that are injurious to their stock. They have been taught to keep the manure in the cellar. What is the result? You have a damp, chilly atmosphere full of foul odors and organic impurities. They have been taught to keep the barn close and warm, and the only heat it gets is from the animal body. The hotter, they think, the better it is.

In the great majority of dairy farms there is not even a pretence of ventilation, while the cattle are packed in as close as they can conveniently be put. A cow has about four or five times the lung capacity of a man, yet on many of the farms each cow has only a tithe of the space required by a child under seven years of age, and that without any ventilation.

Fresh outside air contains only a trace of carbonic acid, about four parts in 10,000. The air of a room would be only fairly good with eight or nine parts in 10,000, yet some barns have as much as fifty or sixty parts of carbonic acid in 10,000; and I have no doubt, if the percentage were taken during cold weather in winter when the barns are tightly shut up, the air would be very much worse. When only a small quantity of carbonic acid is contained in the air, the carbonic acid in the lungs is very readily diffused through the atmosphere; but when that atmosphere has become impure, when it contains a large amount of carbonic acid with organic impurities, then the carbonic acid in the lungs is not so readily diffused through the air — it has found its level, and is retained in the system, where it lowers the vitality, causing the dulness and lethargy experienced by any one after sleeping all night in a close room.

In calculating the amount of impurity in the atmosphere of a barn, the carbonic acid is taken as the standard of impurity only because so far no simple means has been discovered by which the other impurities can be determined, so that the amount of carbonic acid shows only relatively the amount of impurity in the air.

When a ray of light penetrates a dark place, innumerable particles are seen floating in the air. In a barn these particles of so-called dust are organic matters given off by the occupants, as well as fungi, bacteria, dried manure, and particles of hay and grasses. It is this dust that is so dangerous as a source of infection in tuberculosis. The manure, as pointed out by Billings, contains the bacilli; when dry it becomes pulverized and powdery, and along with the discharges from the nose, it mixes with the dust and chaff and the other impurities in the air which are breathed by the cattle — ventilation which would rid the atmosphere in the barn of these impurities, being altogether lacking.

Drainage, and dark and damp cellars under the barns have a close relationship to the ventilation and warmth of the barn. The wet and filth usually found in the cellar, keep the air of the barn damp and chilly; while the decomposing animal and vegetable matters give off a quantity of carbonic acid which contributes largely to swell the amount already in the barn.

The cellar is considered by many farmers to be a necessity. There the manure is kept; there odd tools and implements are stored; and if the barn upstairs gets too crowded, one or more animals will be turned into the cellar. It is always dark and damp; the sunlight never penetrates there; the manure is thrown down, the liquid portion runs along and soaks into the ground; in many cases it is a little lower than the yard, and more or less of the surface water flows into it. It is never drained; usually it is damp and wet all summer long; the ground only dries by evaporation. According to Professor Kedzie, "To evaporate one pound of water consumes enough heat to raise the temperature of five and one half pounds of water from freezing to boiling point"; or, to vary the illustration, "Suppose that a tile drain discharges constantly for one day a stream of water whose cross section is one square inch, and velocity two and one-half miles an hour, *this one day's drainage would save the heat equivalent to nearly six tons of coal.*"

Further, we must remember that barns are usually warm; this warmth causes a current of air upwards, so that this damp, chilly air is drawn up into the barn above, where it does the most harm. In referring to this condition Professor Kedzie forcibly remarks:[2] "The evaporation of so much water renders the air over such a soil damp and chilly. This result is a physical necessity. This damp and chilly atmosphere has a more serious result than the simple feeling of discomfort. It has a most depressing influence on the human system, lowering its tone, enfeebling the vital powers, and acting as the predisposing cause of a long list of diseases, some of them the most destructive and incurable known to the medical profession. The depressing influence of the dampness and chilliness of a water-soaked soil is not to be compared to the effect of an occasional wetting, as when we are caught in a shower; the chilly dampness of the undrained soil is persistent and unremitting, dragging us down with its cold fingers at all hours, at 'noon of day, and noon of night,' as if we toiled and rested, waked and slept in a perpetual drizzle of cold rain. It may seem a small force at first; but its persistent, untiring and relentless pull tells upon the strongest at last like the invisible fingers of gravity which finally drag down all to a common level. This depressing influence is not developed suddenly and distinctly; but silently and secretly the sapping and mining go on till the explosion comes in sickness, suffering, and the sleep that is eternal."

If it is necessary to have cellars, then it is most essential that they should be well drained, well lighted and well ventilated; and the manure, instead of being dumped into the cellar, should be carried some distance from the buildings. Care should also be taken that the well is not situated so as to receive the surface drainage. Too often the well is situated in or near the barn-yard, and I have known cases where through either ignorance or carelessness, the cows were watered from a puddle or hollow near the barn into which the surface water from the barn-yard drained.

Light is another essential that is almost entirely neglected. Good light is just as essential to the health of the "higher animals as it is to plant life." We ordinarily get too much in the habit of viewing light in barns, as being simply for the purpose of enabling us to see what we are doing. Light, however, has a direct bearing on the health of the body, and an even more direct influence on the causation of this special disease under consideration. Light is especially necessary where, through want of exercise, the circulation is sluggish and the system is depressed; light will stimulate the circulation. It increases the oxidation; more carbonic acid is given off, and the functions of the whole body are quickened and enlivened; but sunlight also retards the growth of germ life, and more than that the vitality of certain forms of bacteria, including anthrax and tubercle bacilli, is destroyed by the action of light. So that while light is necessary for the healthy development of the higher forms of life, it is detrimental to the lower forms of life. And yet in how many barns are we able to see distinctly? In how many barns can we even see to read a thermometer without going to the window?

Nor are the above the only conditions that tend to impair the health of the dairy cow. On the average farm no care is taken, not a single precaution is observed to prevent the health of the dairy cow from breaking down under the strain to which it is subjected. Everything is made subservient to the one sole and single object of getting a large milk-supply.

One would think that common-sense would teach that to keep cows for months without their stirring out of their tracks, is, to say the least of it, an unnatural condition of things. Exercise is just as necessary for a cow as it is for the rest of the animal kingdom, yet it is something the dairy cow does not get.

---

[2] New Hampshire Board of Health Report.

Every one knows that exercise increases the flow of blood to the muscles; and in consequence of the greater amount of waste products carried off, and the greater amount of oxygen required by the system, a quickening of the heart's action and a quickening of breathing result. On the other hand, when little or no exercise is taken, the circulation becomes sluggish, and the heart, like any other muscle, degenerates for want of use; the breathing becomes shallow, and the lungs are not expanded. When any extra strain is put upon them, they are not able to do their work; and we have rupture and permanent dilatation of air-cells, along with weak lungs and a predisposition to pulmonary disease.

Exercise, on the other hand, causes an increased flow of blood to the lungs, with an increased vitality and strength. The increased flow of tidal air in and out of the lungs will tend to prevent the slow-growing tubercle bacilli finding lodgement, and in this way prevent their growth and development in the lungs.

In referring to exercise, I don't wish to be understood as advocating a large field or range for the cattle to run over. I don't wish to advocate anything impractical; but I do think that the present method of confining the dairy cattle with stanchions is capable of improvement. I do think they ought to be allowed their liberty; and further I do not see anything impractical in any such suggestions. Any condition that affects the comfort of the animals must affect their general well-being. Every one here must have seen how cows will rub and scratch themselves when first let out for water; often, even when thirsty, they will not touch the water till they have first licked themselves all over. It is impossible to stand behind a row of cattle for five minutes without seeing one or the other make a more or less ineffectual effort to scratch the body. No animal can be comfortable confined as they are in New England at the present time.

Every one knows that these conditions exist and are detrimental to the health of the animal. Then why are they not attended to? It is because through force of habit we have got accustomed to them, we simply take it for granted that these conditions cannot be improved.

◆

THE AGRICULTURAL ASPECT OF TUBERCULOSIS.[1]

BY DR. W. R. SESSIONS,

Secretary Massachusetts State Board of Agriculture.

It is but a few years since tuberculosis in cattle was known to the public to be prevalent. The attention of scientists, particularly of veterinarians, has lately been directed to the disease as a source of danger to the life and health of the human family. Investigations have proved the disease to be generally prevalent among the cattle in all thickly inhabited countries, although most of the cattle affected show few outward indications of the disease. In fact, a large majority of such infected animals are apparently healthy, and the presence of the disease cannot be detected with certainty without the use of tuberculin.

The danger to human life and health has been discussed and magnified until the public are demanding action by the State authorities for their protection. Authority has been given the Cattle Commissioners to kill without appraisal all cattle found to be infected with the disease.

The discovery that the injection of tuberculin is a very reliable method of detecting the disease has led many to believe that this should be applied by the authorities to all suspected herds, and some people are of the opinion that all the cattle of the State should be subjected to this test. From the experience thus far had in the use of tuberculin, we are led to believe that a large proportion of the cattle that are apparently healthy would be condemned by this test. The present law provides no recompense to the owner of such cattle. These conditions make the agricultural aspect of tuberculosis very serious indeed. The neat stock of the State is rapidly decreasing, the decrease having begun with the agitation of the danger from tuberculosis. In 1890, 200,658 cows and 62,549 neat cattle other than cows were assessed. In 1893, 186,806 cows and 47,528 neat cattle other than cows were assessed, a decrease of 13,852 in cows and of 15,021 in other neat cattle, making a total decrease of 28,873 in three years. The number of cows had been previously quite steadily increasing for thirty years from 149,090 in 1861 to 200,658 in 1890.

The dairy is easily the most important branch of farming in Massachusetts. The State Census of 1885 gives us the latest reliable figures. By that the value of dairy products was $13,080,526; hay, $9,676,893; other staple products, $4,578,763; fruit, $2,386,290; vegetables (potatoes are included in staple products), $2,762,941; animal products, $5,398,439. The hay crop is quite largely dependent upon the dairy interest, and the animal products are so largely dependent upon the dairy as to be almost a part of it. The veal product is certainly a dairy product, and most of the veal of the State is grown on the skim-milk of our dairies.

If the killing of tuberculous animals is to go on without compensation to the owners, this most important industry must rapidly decrease, carrying along with this decrease a still greater decrease in the value of much of the farming property of the State. The fine dairy barns that dot the farms of the State will become valueless, and the pastures will be allowed to grow up to brush. The State can ill afford a decrease in its agriculture and in its agricultural population. If the fight against tuberculosis is for the public good, the public should make part, at least, of the sacrifice deemed necessary. Especially is this proper in view of the fact that many cases of tuberculosis in human subjects do not terminate fatally and many apparently recover. I quote from "Tuberculosis in Relation to Animal Industry and Public Health," by Dr. James Law. "Dr. Biggs tells us . . . that in the Charity Hospital of the city [New York], 30 per cent. of all deaths show old lesions of tuberculosis now becoming stationary. He quotes a Vienna hospital pathologist to the effect that he finds similar old stationary lesions in 85 per cent. of all post-mortem examinations. This leaves but 15 per cent. who have not suffered from tuberculosis." It is not too much to claim that a like proportion of bovines slightly affected with tuberculosis would never be apparently injured by it. Such cases should be paid for in full, if sacrificed for the public good. But it would be difficult for the officials to discriminate in the matter of allowance for cattle killed;

---

[1] Read before the Massachusetts Veterinary Association, May 23, 1894.

and so it would probably be better to fix upon a portion of the value of the animal in health as the amount that should be paid to the owner of an animal condemned to destruction because infected with tuberculosis. I believe the owners of neat cattle as a class are unwilling to bear all the burden. They believe that if the public takes arbitrary possession of their property and destroys it, that an equitable portion of its value should be returned to them. In view of all that we know about tuberculosis, it cannot be absolutely determined what an equitable proportion is, and the matter must be decided by granting an arbitrary part of the original value.

The value of the animal condemned is but a part of the loss to the owner. His business is broken into; his herd is discredited; his customers are afraid of his product; and if permanent future immunity is to be gained by him, he must be to a large expense in disinfecting his barns and stables. This disinfecting is out of his line, but is as necessary to the public health as the slaughter of infected animals. The State should see that it is properly done; and it could be done cheaper and more certainly by agents of the State than by the numerous private owners. Why should not the State provide for this very necessary part of the protection of public health? Dr. Law says in the paper quoted above, "Sanitary laws, which in any way ignore or disregard the rights of property have within themselves the seeds of defeat. . . . If the stock-owner is not fairly reimbursed for his animals slaughtered, and for other losses sustained for the protection of the public health and of the country's herds, unscrupulous men will find ample means of trading off the as yet incipient and occult cases of tuberculosis, thereby planting the infection in new herds. Compensation must stop short of making the sanitary bureau a profitable customer for tuberculous animals at sound prices, but it must be so liberal as to enlist the ready co-operation of the stock-owner in having every infected beast safely disposed of."

The State is bound to protect the life and health of the people, and is also bound to do justice to all parties. The State is also, for its own good, bound to foster agriculture, for no nation can long continue prosperous without a prosperous agricultural population. A large per cent. of the successful men of our nation have always been from those born and reared on farms. It must continue to be so. And the more prosperous the rural population is, the larger proportion of able and faithful young men will it furnish for the service of the City, State and Nation.

◆

A DISORDERED PERIPHERAL SPACE-ORGAN.

BY EDMUND D. SPEAR, M.D., BOSTON.

On Wednesday, November 23, 1892, Mrs. J. F. T. came for treatment of her head, because she had not improved under the care of a general practitioner, who was treating her for disease of the stomach and liver. Two months before, she had applied at the ear department of the City Hospital because she had previously obtained relief there for certain head symptoms. At that time she was told that the ear was not at fault, and was referred to her family physician. She had symptoms as follows: a "dazed" feeling, a nervous sinking and desire to get a long breath. She was dizzy at times, but without tendency to fall in any particular direction; had a 'swishing' sound in the right ear; was not nauseated.

At the date, November 23d, she had all these sensations increased in intensity and accompanied with weakness of the back, palpitation of the heart and nausea. The previous evening's meal and the day's breakfast, though very moderate in quantity, were both lost by vomiting.

It is a very difficult matter, even for intelligent patients, to describe the symptoms which indicate the presence of a disordered space-centre. Witness the difficulty which obtains among writers, who try to give an idea of their feelings when returning from their first ocean voyage. I attempt an explanation of the term "dazed feeling."

It is an accepted fact that the knowledge of self-existence is derived from three sources. The consciousness of being comes to us slowly and gradually through long years of experiment with certain senses which can be named: the visual-sense, tactile-sense, and the space-sense. The organs giving us the sensations from which we learn the place we occupy in the physical world are nerves of touch, whose extremities are provided with special organs, the eyes, and the semicircular canals of the ear.

Ferrier has carefully collected the opinions of many experimenters as Cyon, Spamer, Högyes, Crum-Brown, to which he has added his own suggestions, and it is evident from these, as well as from other data, that we are constantly making use of these different senses, though more or less unconsciously, to maintain our equilibrium and adjust the movements of our muscles in performing the manifold acts necessary to the functions of the organism.

I have before referred in other writings, to certain phenomena illustrating the uses of the semicircular canals of the ear (or the peripheral space-organ) and the results of the observations in this case confirm my opinions then expressed.

If the space-organ is disturbed and performs its functions improperly, conveying impressions to the brain centres when it ought not to do so, we say we are dizzy. When the brain has been thus wrongly impressed for a considerable period of time the eye-muscles become affected, the visual impressions are not correctly transmitted to the brain, and there remains only the tactile sense from which the conscious ego retains its proper connection with the material world. This sense is not usually an acute or a cultivated one, and is insufficient to continue to serve in the place of the natural peripheral space-organ, so that the individual thus deprived of all means of properly locating himself in space loses confidence in himself, as having existence, and describes his condition as that of being dazed or dazzled.

When I first saw this patient's ear several years ago, she was frequently very dizzy. I then found an open tympanum with the membrane entirely destroyed, a mild form of inflammation of the mucous membrane in the "attic" or upper portion of the tympanum among those reduplications of membranes so carefully described by Bryant, and fluid lying between the two walls of the cavity and pressing through the incus and stapes against the oval window. At this time she obtained entire relief from the dizziness and improved somewhat in hearing.

Three months later she returned to my clinic after having been treated uninterruptedly by my colleague, Dr. George A. Leland, whose treatment had produced almost complete reproduction of a (cicatricial) membrana tympani, but with the same tendency to fluid collections within. I could not believe it possible that this was the same ear; but when I heard the patient's story, I told her that for once I was sorry to see a reproduced membrane, for some day she would need it removed. That November proved my prophecy correct, for I found a minute opening in the cicatrix, which was dense and firm and bulging outward, from pressure of the retained mucus, which now completely filled the tympanum.

The countenance of the patient plainly gave evidence of her almost distracted condition. Her knit brows, worn features, appealing look showed her suffering. It was hard for me not to credit her story, that she had some chronic gastric or hepatic disease.

However, I firmly believed in the theory that the semicircular canals form a peculiar end-apparatus for the preservation of the function of equilibrium, and through the connections of the vestibular branch of the auditory nerve with other nerves and centres can induce all the phenomena above referred to, and I told her that her troubles all proceeded from the ear. I made a horizontal incision across the bulging membrane and drew out, with forceps, thick mucus from the tympanum. The patient was asked to clear the ear twice daily with a warm alkaline solution and to return in two days.

It will be remembered that the next day, November 24th, was our annual feast-day. My patient returned on the Friday following, and stated that she was entirely relieved of all the head symptoms and had eaten heartily. The tympanum was clear and dry, and the incision had changed to a round perforation. Although she took cold several hours later and had a relapse, she had no return of the vertigo, nausea or emesis, and rapidly gained in health and strength, so that a month later she looked like a different woman.

In August of the following year, after this patient had continued to have mild attacks similar to those mentioned, and was partially relieved by incision, I entirely removed the reproduced membrane of the tympanum and cauterized its edges with chromic acid. Since the operation there has remained a dry, open tympanum; and if there have been two or three very mild attacks of dizziness, they have always been traceable to congestion of the tympanum following "cold" in the head, and always immediately relieved by nasal treatment.

Reports of Societies.

MASSACHUSETTS VETERINARY ASSOCIATION.

Regular Meeting, May 23, 1894, Dr. **Alexander Burr**, the President, in the chair.

After the reading of the papers by veterinarians on

BOVINE TUBERCULOSIS,[1]

the President called on Dr. H. C. Ernst.

Dr. H. C. Ernst: I came here to-night as a listener and learner, and because I felt sure from the list of papers that I should learn something that would be of value to me, and I have certainly done so by listening to what has gone before. It is a repetition of an experience I have had in other years, where circulars have been sent out asking for information in regard to cases which appeared to show a transmission of tuberculosis through milk. My replies from the veterinarians who were kind enough to send me any reply at all, were more valuable than those I received from medical men, and so it has been to-night in the papers that have been read. There have been a number of points that have been brought up that seem to me to be of very great value, and that I have been glad to listen to. Among the things that have attracted my attention as I have listened, in the first place, was the point that Dr. Winchester made in regard to the condition of the udder showing tuberculosis, that one of the physical signs was the nodulated, seed-like feel of the udder, differentiating it from chronic or acute mastitis. The specimens I have seen in years past have usually borne out that assertion; but I have certainly seen some where it was, by any physical or technical examination, entirely impossible to differentiate the condition from mastitis, and it was only by the microscope that that differentiation could be really clear. I have now at the laboratory a number of specimens which showed at first sight the ordinary appearance of mastitis, and it is only when the high-power lens is put on that the presence of tubercular growth can be made out. That point I speak of because it would appear to me to be an illustration of the fact that tuberculosis in its very earliest stages, when the development first begins, has not yet gone so far as to present this nodulated appearance to the fingers.

I have been much interested to hear the assertions in regard to tuberculin. As far as my personal experience has gone with the various gentlemen who have used it, in conversation with them, the opinions seemed to be very varied. Here, to-night, it appears to be a pretty unanimous feeling that tuberculin does furnish a very accurate means for diagnosing tuberculosis in cattle; the other side of the question has been the demand that has been made upon me during the winter for tuberculin for just this purpose of diagnosis. I have furnished some of it, but the results that have come to me seem to show that there is reason for the varying opinion as to its value as a diagnostic agent.

There is one point, I think, which may be of interest to the gentlemen here, because I have been asked concerning it several times, and that some of them do not know, and that is, whether the use of tuberculin has any tendency to produce tuberculosis. The question arises from the feeling which some men have that tuberculin is not thoroughly free from the active, vital, infectious principle; but, of course, that is not so. Tuberculin, if it is properly prepared, does not contain any principle which by any possibility can produce tuberculosis in a healthy animal, no matter what quantity is employed.

Dr. Parker's table, it seems to me, is a very striking one, and a serious arraignment of somebody. I do not know that the care of the cattle from which a milk-supply is obtained is under any one head, but if it is not, such a condition of things as this certainly appears to me to need attention. Secretary Sessions has said that, since the agitation in regard to tuberculosis, the number of cattle has decreased in this State, and that that decrease may perhaps be ascribed to the fear of the farmer of the loss of his stock because he is not remunerated for it. One or two instances have come to my knowledge where it was not because they were afraid that their cattle would be destroyed that they disposed of them, but it was because they were afraid of being obliged to keep them under healthy conditions. Milk-men who keep cattle to furnish the milk-supply in the neighborhood of a large city think more money can be made, of course, if they keep their cattle in cellars under these dreadful hygienic conditions; and the moment any special investigation comes, and they begin to feel they will be obliged to put out more money upon their cattle, then they will go out of the business rather than run that risk. It seems to me it is fair to take this feeling into consideration, as well as the point Secretary Sessions has made.

---

[1] See pages 525-531 of the Journal.

In regard to the hygienic surroundings of cattle and the specific action of sunlight upon bacilli, there is no question, of course, that these are very active factors in the destruction of the vitality of the organism. As to the exact time, I think it is hardly possible to state what that would be; but it is a well established law that sunlight is the very best germicide that we have yet discovered.

Another point is the assertion of Dr. Biggs, and the statistics showing a very large proportion of cases of healed tuberculosis that are found upon autopsy. I think these statistics are exaggerated, because I have not yet been able to find what evidence there is to prove that the cicatrices, etc., occurring in the lungs and other parts of the body, are healed tubercular lesions. They are healed perhaps, but why they should be called tuberculosis is something that has been impossible for me to understand. I do not think it is correct to claim, because a person is found to have a cicatrix in the lungs or elsewhere, that that person has had tuberculosis; and I trust that no such suggestion as that will be adopted.

Dr. W. T. Councilman: With regard to the importance of tuberculosis in cattle as a source of infection in man, we are too apt to belittle its importance. Tuberculosis is a disease which we have with us all the time, and one which probably carries off a greater number of the human race than any other single disease. We have been so long accustomed to its presence, that the disease, to a certain extent, has lost the horror with which we would invest any new disease. The most stringent measures are taken with regard to leprosy by all nations. Those affected are carefully isolated, and every care is taken to prevent new infection; yet the disease is one in which the danger of infection is so slight that many authorities deny its contagiousness altogether. Certainly we know enough about tuberculosis to be certain that infection may take place by means of food through the alimentary canal. Even though this be one of the less frequent ways in which infection takes place, we should take every measure to remove even such a chance for infection; and the cost and the difficulties of carrying out the prevention of infection in this way should hardly be taken into consideration. Probably one of the most frequent ways in which infection is spread by means of food, is from the milk of tuberculous cattle. Investigations which have been carried out in the laboratory of the Harvard University by Dr. Ernst, and in the laboratories in Germany, have shown that the presence of tubercle bacilli in the milk of tuberculous cattle is by no means rare. The proof that such milk may convey the disease is given by the result of animal experiment, and by the prevalence of such tuberculous lesions in the bodies of children, which can only be accounted for by infection through the alimentary canal. The number of deaths from tuberculosis give us by no means all the cases of infection, for the disease is very frequently recovered from.

With regard to the use of tuberculin as a test, I have not had a great deal of experience. I think it likely that in some cases of completely obsolete tuberculosis, where the lesions are of small extent and consist chiefly of caseation with following calcification in a few of the lymph-glands, that the tuberculin may not give a decided reaction. I had some time ago the opportunity of examining carefully the lungs of three animals in which tuberculin was used without reaction. In two of these, although symptoms pointing to an infection of the lungs were observed during life, no tuberculous lesions were found. The lungs were the seat of an extensive broncho-pneumonia of the type so often found in cattle. In the other case the lesions were confined to a few of the bronchial lymphatic glands. These were calcified, and microscopic examination showed undoubted tuberculous lesions, but which had ceased to be progressive. On the outside of the calcareous material in the glands, tuberculous tissue was found.

It would be extremely interesting to find how the infection of animals takes place, and with a view of determining this point careful investigations should be made. It is very probable that infection takes place from animal to animal by means of the bronchial and nasal secretions. Although animals do not expectorate, still the contents of the bronchi must be scattered in the mangers and other places when the animals cough.

In this connection I would like to speak of a herd of cattle which belong to my brother, who is engaged in the dairy business in Maryland. The herd consists of about one hundred animals, many of which are pure Jerseys, and the others vary from one-half to three-quarters pure Jersey blood crossed with various other cattle. The herd has been kept up, though not quite so large as at the present time, for the last fifty years. During that time I have had the opportunity of examining a number of the cattle which have died of various other diseases, but have never found any evidence of tuberculosis among them. The cattle have all been raised on the place, about ten to twelve calves being turned out yearly. My brother has always been careful to employ only perfectly strong, healthy individuals in the care of the cattle, and has not allowed any strange cattle to come on the place. I think it might be very interesting in the case of a herd like this to go through the entire herd with tuberculin. There can be no doubt, that infection in the cattle frequently takes place from stablemen and others concerned with their care, who themselves have the disease.

Dr. S. W. Abbott: I should like to call attention to a man whose portrait hangs upon the wall opposite, and who expressed belief in the infectious nature of consumption at a very early period; a man who was also in advance in all investigation, Dr. Henry I. Bowditch. His statements were founded upon his observations of his own patients. He had a very large practice among consumptives, and his belief was first published as long ago as 1869 or 1870, I believe.

Such tables as we see on the chart upon the wall, it seems to me, are unusually valuable, and I wish that these twelve observations could be increased to several thousand in this State. This ought to be done. It would be very convincing upon this subject to have a large number of tables prepared showing what are the actual conditions in which animals are kept for the production of milk and for slaughter. There is one additional column I should like to see added to that, and that is, the disposal of the dust from the stable and barn. That is one of the very important points. It has been shown by observation that dust and the disposal of dust has a great deal to do with the spread of consumption. Those industries which produce very large quantities of dust are those in which consumptives are most frequently found; and I wish that that one point might be shown, that is, as to the amount of dust and the dusty condition of the stable: how it is disposed of, whether the animals are turned out into the open air when the stables are swept, and whether the barn floors are sprinkled in order to keep the dust from arising, because it is certainly one of the most important conditions. Dr. Winchester has very kindly referred to the circular of the State Board of Health upon this subject which has been issued within the last few days, and some copies are upon the table for any gentlemen who would like to see them after the meeting. The subject has been taken up by many boards of health in this country (by the New York Pennsylvania and Michigan boards), and we have referred in that circular to the use of tuberculous meat and milk, or milk from tuberculous animals.

Much has been said here upon other points; therefore I will confine further remarks to the point mentioned by Dr. Winchester, the relation of tuberculosis to vaccination. In inquiries in regard to vaccination before the Public Health Committee this winter, this point has been brought up occasionally, not very strongly, but to some extent. Up to perhaps twenty-five or thirty years ago it was the practice throughout this country and almost all countries to vaccinate from "arm to arm," that is, by lymph taken from the arm of an infant on the seventh day and communicated to other persons by inoculation. That practice has almost entirely been done away with. We may safely say that nine-tenths of all vaccination in the United States at this time, and in many other countries, is now performed by lymph taken from the heifer. One reason for this change was the fear that vaccination from infants might convey syphilis, and there is no question that in rare cases such transmission may have happened. It was demonstrated by Dr. Corey in London, who allowed himself to be vaccinated by such lymph. He had an attack of syphilis himself, and went through its stages and was treated for it; and that fact, together with a few accidental cases, gave great impulse to animal vaccination.

Now the question comes up whether the transmission of tuberculosis may be possible by means of vaccine. My own opinion is that it is extremely improbable, for several reasons. I give you the reasons as they are stated by some of the best foreign authorities. They are principally these:

(1) In the first place, in almost all foreign countries the animals used for vaccine culture are calves. The German law provides that calves are to be used there from three weeks old to two or three months. It is the custom in two or three or four German institutions to use young animals. Now tuberculosis is almost unknown among calves. The slaughter-house inspection at Munich and other places has shown the fact that not more than one in 50,000 is shown to be tuberculous, hence the use of such animals would be comparatively safe.

(2) Another reason is the following: It is not probable that the tubercular bacilli would exist in the integumentary tissues, that is to say, in the vaccine vesicles. This point is not so easily demonstrated as the other.

(3) Again, vaccine inoculation is always performed by superficial scarification, and the puncture or scarification being extremely superficial, the infectious principle of *vaccine* lymph is very easily transmitted in that way, but *tubercular* infection is not likely to be transmitted except by a deep inoculation.

Those are the three principal reasons given why tuberculosis is not likely to be transmitted by the process of vaccination. It is quite an encouraging fact (and I think it is due partly to the rapid diffusion of popular information on the subject of tuberculosis) that the disease is diminishing steadily, uniformly. The number of deaths from tuberculosis in this State is definitely known; and it has certainly diminished, as far as deaths are concerned, from 25 to 35 per cent. within the last forty or forty-five years.

The **President**: I am sorry to say that one other member who had kindly consented to be here this evening, Dr. Durgin, Chairman of the Boston Board of Health, is unable to be with us on account of illness. Before opening the discussion I am going to call upon a few gentlemen to make some remarks, — those who have been doing special work upon the subject themselves. I will now call upon Prof. Leonard Pearson, of the University of Pennsylvania.

Prof. Pearson: I am very sorry you have seen fit to call upon me, because I have been enjoying myself and have been learning a great deal. I assure you I am repaid already for the journey I have taken to attend this meeting. The special subject of your discussion, as I understand it, is to formulate, if possible, some measures by means of which tuberculosis of cattle can be eradicated. This is such a deep and complicated question that it requires a great deal of study; and it seems to me that immature ideas upon questions of this sort should not be ventilated, but as to some other points that have been brought up I have had some little experience.

One case occurs to me which will throw a little light upon the means by which tuberculosis spreads, especially among cattle. I became familiar last fall with the condition of a herd of about 160 cattle some forty miles from Philadelphia. It was found that the percentage of tuberculosis among these cattle was something enormous. I think about 65 to 70 per cent. gave a reaction after the injection of tuberculin; and when they were destroyed, every one was tuberculous, and several of them had tuberculosis of the udder. The farmer who owned these cattle sent milk to a creamery. The cream was separated and made into butter, and the skim-milk returned to the farmer.

Another farmer, who had a herd of thoroughbred Guernseys, was shipping milk to Philadelphia and receiving a high price for it, so he sold all of his milk and bought skim-milk from the creamery to feed to the calves. He decided to have the herd tested, and the test showed that out of some eighty cows there were but two that had tuberculosis; but among the young stock there were several heifers that had tuberculosis. All of the animals which gave reactions were destroyed. The cows had tuberculosis of the lungs, while the heifers had tuberculosis of the intestines. That seemed to show rather positively that the disease must have been conveyed by the milk, and that heredity or contagion had but little influence.

As to the reliability of tuberculin I might say a word, since I have had rather an extensive experience with that agent, and have tested now about 900 cows. Of these 900 cows, in the neighborhood of 200 have been destroyed after having given reactions, and the lesions of tuberculosis were discovered in all cases. In some animals the lesions were not very evident, and it required careful examination to diagnose the condition; but in every case examined they were found. In some of these cases the disease was so extensive that it could be diagnosed without tuberculin, but in others the disease was not so widespread, and could not be diagnosed without this agent. I know one instance in which the reaction came on twenty-eight hours after the injection of tuberculin, showing that the test by tuberculin is exceedingly laborious, and requires in some cases twenty-eight, and occasionally thirty-six hours.

I think that is all I have to say. These points are things that have occurred in my own experience, and therefore things that I am perfectly familiar with, but as to the legislation which should be adopted, that is another point, and one that I think requires far more consideration than I have yet given it.

Hon. Levi Stockbridge of the Masssachusetts Cattle Commission: As to some of the points that have been taken up this evening I feel very much at home. Here is this table of Dr. Parker. I feel as if I was myself in some one of the many barns in Worcester and Middlesex, and I might almost say in every county of the State. I have witnessed exactly what he has described and pictured before us. There is one point, however, which I have always preached upon when I have been in those barns which have such close quarters, where cows are put in in October and do not go out-doors again until the following May, with close cellars underneath. In those cases there is another thing taking place which is injuring the animals, and that is high feeding to see how much milk they can be forced to produce beyond the capacity of the animal to bear it. But there is another side to that matter which has been discussed here to-night, and I wish the veterinarians would explain it. I do not understand it. Some of the best barns — so far as light, ventilation and all possible hygienic conditions that can be provided; with no cellars under the stable, outside of the barn proper — have had some of the worst cases of tuberculosis in this State. Can you account for it? I can call names, but it is not necessary. In more than one, in more than two, in more than three counties in this State where I have been at work, I can speak of barns that are model barns in all these respects; and yet there are more cases of tuberculosis in those barns than in poor barns. I condemn in unmeasured terms — in the strongest language I am able to use — those barns with cattle in the cellar, surrounded with water and by the great piles of manure that come down from above. It seems to be an enigma, how in these first-class barns, where all the hygienic conditions are supposed to be attended to — good light, cows outside of the barn (I mean in lean-tos, as they are called, where the hay is brought into them from the house barn) — how in these barns they can have so many cases of tuberculosis. Week after week and month after month I am called to such cases, and order the cattle to be killed, and they are coming right along. Explain it, gentlemen, if you can.

Now in relation to another matter. Gentlemen have spoken here to-night on the use of tuberculin. Dr. Winchester did not say he thought the Cattle Commissioners ought to use tuberculin for the purpose of diagnosing this disease. I know he thinks so. He might just as well say it. But with all the work on our hands, and making short visits to these barns, that being the best we can do, when we get there you can see we cannot go into the work with tuberculin as a means of diagnosing, for it would take twelve, eighteen, or thirty-six hours in a given case, and that we cannot do. Last week I visited nine towns in this State, nine different towns scattered all over the State; and how could we use tuberculin? But we are not so green about tuberculin as we might be; and really I can say that a great deal of good in the way of diminishing this disease may be done by the use of tuberculin, and therefore I think the Commission would recommend to owners to use tuberculin. We think that a very great advance may be made by its use; but if you believe you are going to stamp out tuberculosis by the use of tuberculin, as we stamp out contagious pleuro-pneumonia, I say, No, we shall never do that. We can diminish it, but can never stamp it out. But when our medical profession treat it as a contagious disease, we shall make more advance with the bovine.

Now, I ought not to take your time by talking about this matter, but the Cattle Commission must work by law. We have got to work according to law, and do only what the law authorizes us to do. In this one matter of paying for these cattle that are slaughtered, that are tuberculous, the Cattle Commissioners state, as a matter of principle, in their annual report that they do not think the cattle should be paid for. The owner lost his animal when it got the disease, and the animal is not worth a dollar. If a man should come to you with a tuberculous cow, however slightly infected, and offer to give it to you and put it in your barn, would you allow it to come in?

I hoped Dr. Peters would say something about payment in the State of New York, and I would like to ask him the question: Has the Supreme Court of the State of New York ruled upon this question that it is unconstitutional to pay a man for an animal that is not worth anything?

Dr. Peters: Ask Dr. Faust.

Dr. James Faust: The State of New York paid thirty dollars a head last year.

Prof. Stockbridge: Has the Supreme Court ruled on that question?

Dr. Faust: No.

Prof. Stockbridge: That is simply a newspaper report then. I thought I would like to know about it before our own law goes through.

Dr. Faust: Mr. President, I thank you very much for the kind invitation to come to this meeting, and I would like to start in right here by saying that I can see very readily why you cannot stamp out tuberculosis — because you will not give a poor farmer a dollar. That is why you fail. I endorse what the gentleman over there (Mr. Sessions) said, every word; and unless you do pay, you will never succeed.

I was amused when I heard Dr. Peters's paper. I am glad he went to Sunday School but he must have had a very poor teacher. The doctor says that the seven lean cows were tuberculous. Now, if you want to learn a lesson in Scripture, turn to Leviticus xxii, 22–28, and you will find a description of tuberculosis. The German text says, " Das Duerre, das Schwinden," and not as the English translation has it. Dr. Pearson knows that language very well.

Another point. This gentleman (Professor Stockbridge) asked a question. He spoke in regard to the elegant farms and stables, and wondered why tuberculosis should be found in them. That is a point worthy of consideration, and certainly ought to and can be answered. Since I have been employed for the State of New York, I have examined a great many cattle. I started with Hon. Levi P. Morton's stable; and I made this remark, that if he should turn the White House in Washington into a cow-stable, we could not have better sanitary conditions than his stable has. That is a fact. Out of 62 young and old, I killed 23 in the presence of two physicians and three competent veterinarians, and they were tuberculous beyond a doubt. Aside from that there was one heifer that three competent veterinarians examined physically, and all three were of the opinion that it had tuberculosis. It was tested with tuberculin, and there was no reaction. On the left side, in the middle of the lung, there was a dull spot. It was retested with a larger dose, but there was no reaction. And on the post-mortem there was no lesion found.

I went to Mr. E. Clarkson's place at Tivoli, and quarantined his cattle, because it appeared as if the whole herd were tuberculous. I used tuberculin very carefully, and not a single case of tuberculosis was found in that stable; yet I never saw worse sanitary conditions in my life than right here. Besides the cattle were starved, and the owner was a man worth millions of dollars. What was the reason of it? There had not been a bull or a heifer or a cow brought to that man's place in ten years, and previous to that time there had been no tuberculosis there. You cannot get tuberculosis without first having the germ.

I endorse every word that has been said here about hygienic conditions. I think, as veterinarians, we should have as much regard to sanitary conditions as the medical profession; and I think, if we understand our duty, we will do a great deal for the human race. I have tried to carry out these ideas. It is my aim. I am getting to be old and gray-headed, but not worn out; and I hope I shall live to see the day that this old gentleman (Professor Stockbridge) is disappointed, when we shall stamp out tuberculosis, and I am going to do my share towards it. One of the last cases I had was on Long Island — I won't mention the name, because it was private ground. On last Saturday I finished the killing of fifty-nine head, one cat, one dog, swine and chickens, and they were all tuberculous, and I am sorry to say the superintendent said to me, " Doctor, the worst of it is, two years ago I buried a pretty little boy, and the doctors from Brooklyn told me his sickness was caused by this milk."

I had another case at Mr. Douglas Merritt's, Rhinebeck, where fifteen years ago I was called (through the family physician) to examine a heifer. I pronounced her tuberculous after a physical examination. She died a month afterwards, so it did not need a great deal of skill. That man has since lost a flock of sheep and almost his entire herd of cows. Nineteen out of twenty-one head were killed, and without a doubt all contracted it from this heifer. Dr. Traver, of the American Veterinary College, was kind enough to furnish me with the post-mortem results. Mr. Astor's superintendent, a nephew of Mr. Astor, himself told me that Mr. Merritt's coachman, who was a great lover of milk, died of tuberculosis in a hospital in New York City; and he thought that, as the coachman was a great lover of milk, he had contracted it from drinking the milk from the deceased cows.

It is slow, but sure. It makes no mistake. When it gets hold of a victim, he is doomed.

In regard to the test by tuberculin, I think its value is well established. I do not think it is worth while to go into details about that. It has been satisfactory where it has been judiciously, carefully and honestly used. But if a man is inclined to be lazy, he should not try to use tuberculin, because it is very hard work. In one case at Hon. Levi P. Morton's, I got the commencement of a rise of temperature in the sixteenth hour. We went to work and kept it up and the temperature went up and down like a fever curve; but we carried it out for thirty-six hours after that, and it proved to be one of the worst cases of tuberculosis. In regard to the age of diseased animals, my experience is different from Dr. Peters's. I find that younger animals suffer more than old ones. And, of course, as has been mentioned by Dr. Peters in his paper, around cities it is worse than farther off.

From personal knowledge I will cite a few cases to show how herds can be infected by cattle brought from other herds. Douglas Merritt's heifer came from Mr. John D. Wing's. I killed 27 head for Mr. Wing in the presence of Professor Law. Mr. O. T. bought 25 head from Mr. Wing. Nineteen out of the 25 were killed, besides infecting his own herd. Mr. P. L. V. bought 25 cows from Mr. Beck — before that I had killed 70 head on Mr. Beck's place. And all this in eight years. Since Mr. V's purchase, I have killed for him 32 head; and of these 29 were of his own herd, the others purchased from Mr. Beck had been sold. This tends to show that the infection is carried from one herd to another.

The President: We have with us one other member of our profession who has done a great deal of work upon this subject; one who has probably devoted more attention to tuberculosis than any member in this State, or any member of the profession working in this State. I refer to Dr. Bailey, of Maine. Dr. Bailey, we would like to hear a few remarks from you.

Dr. G. H. Bailey: I would like, now that I am on my feet, to correct an impression that has been widespread in certain quarters, that Maine occupied somewhat a position of hostility to Massachusetts. Nothing could be farther from the truth. We have acted on the defence from the start, and are acting upon it now, never in any offensive sense. In regard to the quarantine law against Massachusetts, I feel proud of its results, and of the position I have occupied; and I feel more than ever like pursuing tuberculosis to my dying day. We have had good success under our law in Maine, in stamping out "contagious diseases," by the payment of a fair appraisal upon the basis of health, of which our State pays one-half, and

I believe that whenever Massachusetts modifies her present law and affords a fair compensation to owners of animals destroyed, it will prove the "open sesame" to success. I have never discussed the matter with Professor Stockbridge (who is a thorough disbeliever in indemnity); but I have broken many lances with Dr. Lyman, and I think he is beginning to see light. The probable appropriation of $50,000 by the present Massachusetts Legislature is a reminder to me that you realize, at least, it is going to cost you something to get rid of tuberculosis. The law does not require the performance of a duty, and at the same time withhold the means reasonably necessary for its performance; and I again suggest that the efficacy of the law requires that the owners of diseased animals should not have to run too much counter to their own interests in submitting to the obligations to report their cases, and the only means of diminishing their resistance is to establish the principle of a fair compensation in the case of slaughter. It is to the principle of mutuality that recourse must be had — a principle which should be applied under the control of the State.

I do not know that the farmers of Massachusetts are any more honest than those of Maine; but with no law of indemnity, our farmers would sell you and me the milk of their cows as long as they gave any, and the meat when they did not, and we would be buying and selling, and eating and drinking tuberculosis, as you are to-day in Massachusetts. We have a great many such cattle surroundings in Maine as Dr. Parker had so faithfully described in your State; and while I did not suppose you had so many around the "Hub of the Universe" as we possess in Maine, I have seen some shocking examples of unthrifty dairy stock caused by unsanitary conditions. I discovered a whole herd of cows not long since, where the animals stood two or three feet higher behind than in front, through the accumulations of their own dung throughout the entire winter of 1893–4; and when I asked the farmer what advantage he thought he gained from such a state of affairs, he told me he could milk them easier when they were propped up behind! Among all this filth, I was surprised to find no case of disease; while in other cases, like those of our State College, for instance, where we killed the entire herd of 57 animals, the condition of the cattle, the ventilation of the buildings, and the care of the cows were all those of a model establishment. And this leads me to the opinion that there are some legitimate reasons why you have more tuberculosis in Massachusetts than other New England States. You have more model establishments, where the cows are forced for the production of milk and butter; more high-bred in-bred herds; in fact, more Jerseys; and it is among this breed that we have found three-quarters of all the cases we have ever condemned in Maine.

I suppose you gentlemen are all aware that our quarantine against Massachusetts still continues; but perhaps you are not familiar with the facts which led to its enactment in January, 1892. Early in December, 1891, our Board received notice that a cheap class of cattle were being brought by the carload into Maine from Brighton Market, and either sold for beef to low-priced consumers, or sold to the farmers in Eastern Maine; and December 11th, we inspected a fresh arrival of 23 head, among which we found five bad cases of tuberculosis. Other similar cases rapidly developed; and these taken together with our previous experience with another class of high-bred and high-priced cattle, all of which had been purchased in your State for breeding purposes, and had proved to be diseased, we promptly decided to forbid further importations. Upon these facts, together with others since disclosed, we rely for the fullest justification and legality of our acts.

During 1893 and 1894 we have destroyed and paid for fifteen out of twenty head of Jerseys that came to us directly out of a large Massachusetts herd and that have never been in contact with a single Maine animal since their arrival; and it has only recently been discovered that the herd from which they came was diseased, and the sire of many of those sent to Maine destroyed.

Your Massachusetts Commissioners say in their last report (and I thank them for so kindly endorsing my position), "that one of the most serious obstacles to the working of their law regarding tuberculous animals has been encountered through unprincipled butchers, many of whom are established throughout Massachusetts, and make a business of buying up old worn-out or sick cows, many of them tuberculous, for a few dollars each, killing them and disposing of the meat to unsuspecting persons to be used as food."

This is just the class of cattle that were being brought so freely into Maine, prior to our notice of quarantine, and for which there is now no market in Maine or New Hampshire. If the owners of such animals knew they would be paid a fair compensation by the State, they would report such cases, and they would not be smuggled into the market. The whole business resolves itself into one of "hide and seek" to prevent the authorities from inspecting herds where the disease has been propagated for many years.

DR. J. B. PAIGE: The matter that Dr. Parker brought up in connection with the sanitary condition of our stables I believe to be a matter of prime importance in relation to the control of tuberculosis. Perhaps I can best illustrate by reference to a case of my own.

There is a stable in our section in which about 125 or 150 animals have been kept. It is an old-fashioned farm barn. Something like four years ago the owner of the stable had all the cattle that had been kept on that farm slaughtered on account of tuberculosis. The front of the mangers and floors and the woodwork which came in contact with the animals was removed; and after the premises were renovated, they were disinfected by the use of corrosive sublimate and whitewash. A herd of cattle from the vicinity of Chicago were then put into the barn, and I believe that those animals at the time they were brought on from the West were in a perfectly healthy condition, and free from tuberculosis. What is their condition now? A tuberculin test shows that out of 109 animals on that farm to-day there are not less than 29 per cent. that are tuberculous. I think in this case that the sanitary condition of the stable had a great deal to do with the spread of the disease, and I am in doubt as to whether it is possible to rid one of these old-fashioned stables of the infectious material. I think that is rather an important matter to take into consideration with the use of tuberculin, and so strongly do I feel upon that point that I do not recommend the use of tuberculin among cattle kept under these unsanitary conditions, and among animals which are housed in stables that we know to be infected with this principle, for I think it simply means an unnecesary destruction of a large number of animals that are not dangerous either to animals standing beside them or to human beings who use milk from them. What is the use of our destroying these animals that are so slightly affected when new animals may be put right back into the infected stable, and the disease is developed in them?

When we compare tuberculosis with contagious pleuro-pneumonia in reference to stamping out, I do not think we make a fair comparison. When you take out the last animal affected with pleuro-pneumonia, you are done with it until you get a new source of infection. It is not so with tuberculosis; for, besides the unsanitary condition, you have this infectious material in your stables to deal with.

Professor Pearson, in answer to a question as to what amount of reaction he would consider as indicating tuberculosis, said: I do not think that we can take a fixed rise as indicating tuberculosis, and follow that in all cases, as in some animals there is a greater reaction than in others. Some animals will indicate a reaction of one degree, while in another there is a reaction sometimes of seven degrees; and I did see one case in which the reaction was but six-tenths, and still the animal had tuberculosis. If the inspection is made at night, and you find even a slight rise of temperature in the morning, I take that as indicating tuberculosis, because we know in healthy animals the temperature falls during the night, and in the morning it is usually one or one and a half degrees lower than in the evening; so that where it is a degree higher there is a difference of two degrees between this animal and one in a normal condition. I should take that as indicating tuberculosis. If there is no difference, I should make a second test; but usually the reaction on the second test is slower than the first one.

Dr. Winchester: In regard to the second test, my reading has been that a great many animals will react at the first test, and it may be several months before they will react again; and I would like to make the inquiry whether the animal becomes accustomed to the effect of tuberculin for a certain time after the test.

Dr. Peters: I would like to give an instance. A week ago last Sunday I tested some cows with tuberculin, and the temperature went up pretty well, about to 106° or 107° — I am not able to state exactly, but there was a well-marked reaction. I reported the case to the City Board of Health; the City Board of Health reported to the Cattle Commissioners; and Dr. Osgood went out for the Cattle Commissioners to test these animals with tuberculin. The tuberculin I used was some that came from Pasteur's laboratory in Paris, and his came from the Bureau of Animal Industry at Washington. He also got a well-marked reaction among the cows. He had one which went to 107.3°. I don't think I had anything quite up to 107° — 106.8°, something like that. That is a case where the cattle reacted a second time, the second test being made three or four days after the first.

Dr. Osgood: When I first began the use of tuberculin I always reinoculated those that reacted in the first instance. I began by reinoculating after three weeks. I never failed to get a high reaction, except in one instance with a second inoculation, and, as Dr. Peters says, my reaction was higher than his. That was at the end of three days.

Dr. Kinnell: I had hoped to have heard some remarks from some of the members present on the amount of tuberculin used in each dose. So far as I can learn, my experience on this question has been unusual.

During the past three months, I have had occasion to test eight herds with tuberculin. The individuals of these herds comprise a total of 167. Of these, 33 gave a reaction indicative of tuberculosis. Of these 33, 26 have been slaughtered, every one of which have on post-mortem examination been found to be the subject of tuberculosis. The lesions found have been characteristic of all stages of the disease, from the earliest to the most advanced. In many of them all that could be found would be one or two little tubercular masses not larger than a hazel-nut or a walnut; while in others the lesions were of long standing and extensive distribution, involving both lungs, pleura, bronchial and mediastinal lymphatic glands in one mass of tubercular disease. The dose of tuberculin used in these tests varied from a minimum dose of one-third of a minim to a maximum of two-thirds of a minim, and in no instance was this amount exceeded.

My prescription for, say, nine mature Jersey cows is as follows:

℞ Tuberculin . . . . 6 minims
Carbolic acid solution (one per cent.) . 84 minims
Sig. — Dose for mature cow, ten minims.

For creatures a year old I use one-third of a minim, while for older cows of small size I use doses varying between those two extremes.

A month ago I had occasion to test a herd which had been tested by another practitioner ten or twelve weeks previously. So far as I can ascertain, the dose which was used was two and a half drops. Many members of the herd reacted, were condemned and killed, post-mortem examination fully proving the correctness of the diagnosis. But in the herd on the adjoining farm (a part of which herd he had tested at the same time) one of the cows had been tested and had failed to react, and consequently had passed as all right. This cow was slaughtered, and found to be in a worse condition than any animal he had condemned in either of the herds. In consequence of this, the owner of the first herd (all the members of which had been tested) did not feel very well satisfied, and had me retest the remaining eleven animals. I injected them with my usual two-thirds of a minim, and got in three animals the reaction indicative of tuberculosis. These animals were slaughtered forthwith, and after death examination revealed the following condition:

First Cow. — Both lungs extensively diseased, containing abscesses of various sizes, some filled with caseous and others with liquid pus. The mediastinal lymphatic glands represented by a tuberculous mass thirteen inches long and thicker than a man's arm. The bronchial lymphatic glands as large as a child's head and full of liquid pus. The pleura on both sides of the chest diseased. Cow well nourished and in good condition. Had been barren the last two years.

Second Cow. — A tuberculous mass in right lung, five or six inches in diameter, with semi-calcified walls and liquid and caseous contents.

Third Cow. — At upper border of right lung, one tubercular mass of recent origin about the size of an ordinary hazel-nut.

I thought this last case might have been developed since the original test. I have in my experience met with such a nodule, just such a size, and showing such a state of progress, in a calf six weeks old, and which calf I had reason to believe was infected through the milk. Now what are we going to say to all this? Must we say that the original dose, although not causing any reaction in the diseased animals, yet affected their systems in such a way as to render them susceptible to a second test? or rather ought we not to think that a small dose is much more reliable than a large one, and will obtain a reaction and give a result in cases where a large dose will prove negative?

To sum up, my experience leads me to make these assertions:

(1) That the dose of tuberculin ordinarily used is unnecessarily large.

(2) That a maximum dose of two-thirds of a minim is at least sufficient.

(3) That a small dose may be much better than a large one, as gaining a reaction where a larger dose will have no effect.

The tuberculin used is that manufactured in Germany and imported by Schulze, Berge and Koechl.

A reaction of two degrees was taken as indicative of tuberculosis. The highest reaction obtained (a rise of 6.4° F.) occurred in a cow whose lungs were found free from the disease, but the capsule of the spleen was the seat of well-developed tuberculosis.

◆

Recent Literature.

First Annual Report upon the Births, Marriages, Divorces and Deaths in the State of Maine, for the year ending December 31, 1892. Pp. 238. Augusta: Burleigh & Flynt, State Printers. 1894.

By an Act of its Legislature, the State of Maine provided, in 1891, for the registration of the vital statistics of the State. By means of this legislation the registration laws of the six New England States may now be considered as fairly complete, and will in the future secure registration of greater or less efficiency for this section of the United States, comprising a population of nearly five millions (by census of 1890).

Moreover, the Maine Legislature has manifested its common-sense in placing the supervision of this work, in common with the other New England States (except Massachusetts) under the charge of a board which appreciates the importance of this branch of public work, namely, the State Board of Health. By this Act, the Secretary of the State Board of Health is made the Registrar of Vital Statistics for the State.

In this first registration Report of Maine, Dr. Young, the Registrar, has succeeded in presenting a clear and intelligent statement, and in reducing the deficiencies in the returns of marriages, births and deaths, to a much greater extent than has prevailed in the initial reports of other States. By this report it appears that the birth-rate of the State for the year 1892 was 21.2 per 1,000 of the living population. The marriage-rate was 8.56 (persons married 17.12). The death-rate was 18.4.

A notable deficiency in the birth-rate of some of the cities (Auburn, Belfast, Gardiner and Rockland, for example), suggests that fuller returns from these places would materially affect the birth-rate of the State at large.

A valuable feature in the report is the frequent introduction of comparative international statistics, the importance of which must be fully recognized.

Much of the accuracy of the report, and especially of that portion which deals with the causes of death, is due to the fact that the Registrar returned more than 2,000 certificates to the clerks of cities and towns for fuller information and the correction of errors.

The compiler of the report recognizes the importance of beginning with a system of classification and nomenclature which is in accord with the progress of medical science; and while making no radical changes, he has succeeded admirably in bringing his system into harmony with modern medical belief and practice. The following quotation from page 224 sufficiently explains his position in this respect.

"A registrar about to adopt a system of classification of the causes of death for his State must be very uncritical and easily satisfied to be pleased with any of the arrangements which he finds in use. In the various States of the Union, the classifications differ among themselves enough so that he who would compare the statistical results of one State with those of another must constantly be on the alert that the classes or groups of diseases compared contain the same individual causes of death. Recent investigations into the causes of disease have so changed our conceptions of the nature of many of them, that the existing nosologies appear antiquated. As Mr. Wynter Blyth has said, 'the present classification was based upon an old — a dying — pathology.'

"Nevertheless, the compiler of this report deems it altogether out of place to attempt to satisfy himself with a rearrangement. He has, however, ventured a few changes which will, undoubtedly, place a few of the individual causes of death and groups of diseases more in line with the places to which they will be assigned in the future."

It is fortunate that in Maine this subject of nosology is entrusted to competent authority. In Massachusetts, on the other hand, no legislative authority exists for placing this question in the hands of any one who is competent to deal with it intelligently; and, as a result, the same nosology is in use to-day which was adopted in 1855, notwithstanding the urgent need of placing it in line with modern medical progress.

Medical Jurisprudence, Forensic Medicine and Toxicology. By R. A. Witthaus, A.M., M.D., Professor of Chemistry, Physics and Hygiene in the University of the City of New York, etc., and Tracy C. Becker, A.B., LL.B., Counsellor-at-Law and Professor of Criminal Law and Medical Jurisprudence in the University of Buffalo. In four volumes. Vol. II. New York: William Wood & Co. 1894.

The favorable opinion which the Journal expressed concerning the first volume of this work is applicable, without reserve, to the second volume, which has just appeared. The several chapters have been written by men who have earned the title of experts in the highest and best sense. The treatment of the various subjects is characterized by an originality and a thoroughness which place the work in the front rank and give to it a genuine encyclopedic quality. The reader cannot fail to receive from a study of its pages a distinct impression that the contributors have not only gathered what is best from the older literature of forensic medicine, but have added much that is valuable out of their own experience and original research.

Propriety forbids special commendation of selected chapters, and space cannot be taken for a critical notice of each title. We commend the entire book to our readers' favor, and simply add that it contains chapters on the following subjects: identification of blood and other stains and of human hairs (E. S. Wood); abortion and infanticide (Cameron); pregnancy, labor, the puerperal state, rape (Edgar); sexual incapacity, unnatural crimes (Rosse); railway injuries (Outten); simulated diseases (Parker); survivorship (Becker).

The book shows excellent pictures, for which the publishers deserve credit, in its clear type and acceptable illustrations. A table of all the medical and legal cases cited in the text is appended to the volume and a full index adds to its value as a work of reference.

Trephining in its Ancient and Modern Aspects. By John Fletcher Thorne, M.D., D.Sc. (Hon.), F.R.C.S. (Ed.), etc. Pp. 133, illustrated. London: John Bale & Sons. 1894.

This little work contains much that is historical. The author's idea is to rescue from oblivion valuable matter now lying forgotten among the writings of our professional ancestors. His style is attractive, and the tale an interesting one. It also contains much that is modern.

The first seventy pages are compiled from the early literature of the trephine, show its development, and contain a description of its modern application to head and spinal injuries. One finds interesting descriptions of former methods of treatment; of curious instruments and dressings. The subjects of the succeeding chapters are trephining for intracranial extravasation, abscess, cysts, tumors, meningitis, epilepsy, paralysis, idiocy, mania and gunshot wounds. The book concludes with a short chapter on trephining the spine, which is a discussion of the advantages and disadvantages of this operation; and a longer one entitled "Remarks on Trephining," which enumerates the indications for operative interference in these cases, describes some of the technique of modern operators, and discusses cerebral localization and the significance of clinical symptoms.

The book is an interesting one, especially to instructors in surgery, and is a good historical review of the subject in a convenient form.

Practical Manual of Diseases of Women and Uterine Therapeutics for Students and Practitioners. By H. Macnaughton Jones, M.D. Sixth edition. London, 1894.

That this work has reached its sixth edition testifies to the favor with which it has been received by the profession. It is more a manual for handy reference than an elaborate system, and as such serves its purpose very well. The author has re-written many parts to bring them up to the present status of our knowledge and has added considerable, so that the work is a thoroughly practical exposition of the subject. While in many minor details its teaching differs from the general methods in vogue in America, yet it is a safe and helpful book to follow. It is full of suggestions as to treatment based on the author's experience, which are very valuable.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, NOVEMBER 29, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

BOVINE TUBERCULOSIS IN MASSACHUSETTS.

We offer no apology to our readers for the large amount of space in this issue of the Journal devoted to a consideration of Bovine Tuberculosis. Bovine tuberculosis and human tuberculosis are more intimately related than is generally recognized even by the medical profession, and we believe comparatively few of the medical profession realize the extent of tuberculosis among cattle, or are clear in regard to the value or methods of exhibition of tuberculin as a diagnostic test. It may be that not one of our readers knows what a "bologna cow" is, and yet a considerable commerce exists in that kind of animal.

A month after the meeting of the Massachusetts Veterinary Association which we report, the State Legislature passed an act of sixty-one sections, entitled "An Act to Codify and Consolidate the Laws relating to Contagious Diseases among Domestic Cattle." An appropriation of $25,000 was made to carry out the provisions of this act during the balance of this year.

Under this law the cattle that have been owned in this State six months prior to condemnation are, if condemned by the State Cattle Commission, paid for by the State at half their agreed value, regardless of their tuberculous condition, if the autopsy confirms the fact of infection. If the autopsy shows no disease, the full value of the animal will be paid. In the case of cattle from without the State there is no compensation if disease is proved, but full value is paid if no disease is shown at the autopsy. The Commission is careful, in every case of condemnation, to establish the value of the animal, either by agreement with the owner or by appraisal, before the animal is killed. There are about 250,000 head of cattle in Massachusetts. If ten per cent. of these are tuberculous, at an average value of $34 a head it would cost the State $425,000 to recompense the owners.

The tuberculin test is used to establish the existence of tuberculosis, and much confidence is felt in it by the Commission. The usual dose is two cubic centimetres of the ten per cent. solution. The cost price of such a dose is about twenty cents. The Commission is using about $120 worth a week, but the tuberculin is furnished free by the Department of Agriculture in Washington, and is of very reliable quality. The experience of the Commission in the enforcement of the law during one week at Brighton and Watertown would indicate that at least twelve per cent. of the cattle in this State are tuberculous.

We hear of a case tried in the police court in Lowell two weeks ago in regard to the purchase of a cow for two dollars, and the subsequent sale of the carcass to a manufacturer of sausages for two dollars and a half, one cent a pound.

Inspectors found the cow was riddled with tuberculosis, and could not have lived a month. The following items are taken from the testimony. The original owner, on being asked if he considered the animal fit for food, said the cow was good. The counsel inquired, "Was it a good beef cow?" "No," answered the owner, "but it was a good 'bologna' cow." It then appeared that the final purchaser manufactures five thousand pounds of bologna sausage a week, and buys much meat at one cent a pound!

We reproduce a little more of this instructive testimony:

> "Do you buy many cows?" was asked of the first purchaser.
>
> "Yes, a good many."
>
> "What do you pay for them?"
>
> "Wall, all prices."
>
> "Do you get many for two dollars?"
>
> "Yes, bologna keows."
>
> "What's a bologna cow?"
>
> "A thin keow; a two-dollar keow."
>
> "Well, where do you get your authority for calling a thin cow a bologna cow?"
>
> "Why, from the keow."
>
> "Would you sell the carcass of a cow that had died?"
>
> "All keows has got ter die. Ef you kill 'em they die."
>
> "Well, would you sell the meat of a cow you call a bologna cow to a butcher?"
>
> "Of course, ef he gave me my price. Ef a man wanted to make a beefsteak out of it, it wouldn't be my business."
>
> "Then you would as soon poison a man with a beefsteak as a bologna sausage; you don't look at the moral aspect?" asked the examiner.
>
> "I don't know what you're talking abeout."

The Cattle Commission is evidently at work none too soon.

The State of Massachusetts has undertaken through the Cattle Commission something which has never been undertaken before. The Commission believes the State can be freed from bovine tuberculosis, and can be kept free. The price is a small one to pay for the accomplishment of such an object, which should be of the very first concern to the medical profession. There will undoubtedly be a strong effort made to turn back to the old conditions. We hope the State will persevere in its present course.

Diphtheria at Detroit.—It has become necessary to close two public and two parochial schools at Detroit, Mich., owing to the rapid spread of the epidemic of diphtheria. About twenty cases a day are now reported among school children in that city.

PRIMARY AMPUTATIONS IN THE TRAUMATISMS OF CIVIL LIFE.

In an address on the above important subject delivered recently before the New York State Association of Railway Surgeons, T. H. Manley, M.D., maintains the following thesis: That primary amputations in the traumatisms of civil life should be discontinued. His contention may be reduced to the following propositions:

(1) That unless a shattered limb has been traumatically amputated, or as he puts it, "quite totally destroyed," no one can tell whether restoration of circulation is possible under conservative treatment or not.

(2) In waiting to determine whether circulation can be restored, we also gain the opportunity for establishing reaction after the shock of the accident, which is often severe, so that the operation may be done under circumstances more favorable for preserving the life of the patient.

(3) Resection and modern osteoplastic operations now enable us to save many limbs which would heretofore have been ruthlessly sacrificed.

(4) By discarding primary amputations we are enabled to await the formation of a line of demarcation between living and dead tissues, which will show us exactly how much of the limb it is necessary to sacrifice.

(5) The charge that the chances of septic infections, gangrene and tetanus are increased by discarding primary amputations, is not supported by facts.

(6) Almost any description of a lower extremity, free from pain, is so superior to the most elaborate prothetic apparatus, that when there is the slightest chance of preserving even a shortened or distorted limb, that chance should be taken.

The first of these propositions, namely, that in cases where there is a reasonable probability that circulation can be restored, the surgeon should wait, hardly admits of question.

The second, which simply means that in cases of severe shock, it is better to wait for the establishment of reaction before operating, is also a well-known surgical axiom.

It would be difficult to question the third statement, namely, that by resection and other osteoplastic operations, limbs can be saved which would formerly have been sacrificed. Whether it was "ruthless" to sacrifice limbs which at the stage which surgery had reached at the time of operation could not be saved, we think admits of doubt.

The statement that in the serious crushes of railway practice, which form by far the larger number of the cases coming to amputation in modern civil practice, the chances of sepsis are not increased by waiting, we think admits of serious doubt. We have to deal with tissues — fat, muscle, connective-tissue, etc. — reduced to a state of pulp, with dirt, grease and all possible kinds of filth thoroughly ground in. By leaving such a mass directly connected with the actively absorbing lymphatics of healthy tissue, we are (1) taking the largest chances of direct infection, (2) furnishing a most favorable culture medium (the crushed tissue and blood-clot), (3) affording the most abundant facilities for absorption.

In the first place, it is impossible thoroughly to disinfect crushed and mangled tissue, and, in the second place, the attempt at disinfection is a more serious and exhausting operation than an amputation.

We think the experience of most surgeons will bear out the statement that, where an unsuccessful attempt has been made to save an injured limb, the necrotic member has proved often the source of rapid septic absorption, so that marked cachexia has supervened, and secondary amputation had to be performed through infected tissue, the flaps could not be safely sutured, and convalescence was tedious and painful. A primary amputation means usually first intention, and a speedy and painless convalescence; a secondary amputation, suppuration, frequent, tedious and painful dressings, and a slow recovery.

With regard to waiting for the line of demarcation, we must admit that while it is a question of operating at one or the other of two widely separated points,— between amputation below or above the knee-joint, for instance, it is in most cases better to wait.

When, however, it is a question merely of sacrificing an inch or two, more or less, of the tibia, the advantages of a primary amputation more than counterbalance those to be gained by waiting for the line of demarcation.

With regard to the last proposition, there can be no doubt that there has recently been a tendency in some of our large hospitals to perform amputation of the lower extremity at the point of election, that is, about the junction of the lower and middle thirds of the tibia in cases in which a more conservative amputation — Syme's, Pirogoff's or Chopart's, for instance — might have been performed, and would have given the patient a good end-bearing stump of the same length as the uninjured limb. The argument for amputation at the so-called point of election has been that an artificial limb which can be advantageously fitted upon such a stump, is less unsightly and as good for purposes of locomotion as any shoe which can be worn after a Syme's or Pirogoff's amputation.

On the other hand, according to the statement of one of our best-known makers of prothetic apparatus, a shoe can be fitted to a Syme's or Pirogoff's amputation stump, which looks exactly as well as the artificial foot, and is superior to the latter for purposes of locomotion. It would seem to stand to reason that an end-bearing stump would be superior for prothetic purposes to the cone-bearing stump which is obtained by the amputation at the point of election; and in the case of a poor man, who can ill afford the expensive artificial limb, the superiority of the former can hardly be questioned. A former objection to the Syme's or Pirogoff's stump, namely, the contraction of the tendo-Achillis, can now be overcome by section of that tendon, at the time of the operation.

Apropos of any such question as the one under discussion, the fact that it is most dangerous to lay down a hard and fast rule, to which every case must be subjected, has so often been proven in surgery, that it should never be forgotten. Although one may make a rule that primary amputation should never be performed, there, nevertheless, may occur cases in which primary amputations may be distinctly indicated.

The wise surgeon is not he who follows anybody's rules to the exclusion of common-sense and the peculiar conditions applicable to each individual case, but he who judges each case on its own merits, and acts according to his judgment.

◆

FOOTBALL AT SPRINGFIELD.

We must confess to a distinct disappointment at the way in which the Harvard-Yale game of football at Springfield was conducted this year. The promise of reform in rules and discipline has not been kept. The number of disabled men was unusually great, and there were several serious injuries; that these were in every case the result of "accidents" it seems to be difficult to admit. The rules may be amended to any extent, but it profits nothing if they are not or cannot be enforced. The penalty for slugging, or for purposely attempting in any way to injure an antagonist cannot be too severe or too severely enforced, if this game is to be continued as a competitive sport among college men. That a player may with impunity jump on an antagonist prostrate on the ground with the ball, after the whistle has been blown, and dislocate his victim's clavicle, should be an impossibility. What the umpire does not see, however, is supposed not to occur. In so far as the umpire is blind he may, at least, in that particular, be said to be a representative of justice; the best pair of eyes may really miss some of the incidents of the gridiron. Had the penalty of disqualification, however, been rigidly enforced from the beginning of the first half of this game, there would, we are convinced, have been fewer subsequent "accidents."

We still are of the opinion that there is much good in competitive athletics, and much good in the game of football, but the game will not continue to be tolerated if men are tolerated in it who permit themselves to behave like brutes. If there are such members of teams, there should be sufficient suitable supervisors of the game — be they called umpires, referees or linesmen — to render these brutes innocuous by instant and impartial disqualification.

It is generally recognized that the Harvard men were extremely well trained this year from the physical point of view, and much credit is due their trainer.

◆

MEDICAL NOTES.

The Southern Surgical and Gynecological Association. — The Southern Surgical and Gynecological Association held its seventh annual meeting at

Charleston, S. C., on November 13th, 14th and 15th, under the Presidency of Dr. Cornelius Kollock. A great many interesting papers upon a large variety of subjects were read during the six sessions of the meeting.

The Song of the Girdner Telephone Bullet Probe.— S. Morris Conant, in the *Medical Record*, perpetrates the following:

> "After the 'shootin's' over,
> After the scrap is done,
> After the 'Dago's' punctured,
> After the Cowboy's fun (?)
> Many's the gun 'not loaded,'
> I can attend to all;
> Merrily I will meander
> After the Ball."

Fatal Football Accidents. — It is reported that at Shreveport, O., on November 24th, a football player received a fracture of the spine, and that he lived only two hours. A boy, fourteen years old, is also reported to have been struck violently on the head during a football game at Worcester, Mass., on November 25th. He is said to have been able to walk home, though slightly dizzy, and to have been found dead in his bed the following morning. The story of this case is certainly very suggestive of hemorrhage from the middle meningeal artery.

BOSTON AND NEW ENGLAND.

A Fatal Accident at the Young Men's Christian Association Gymnasium.— An instructor at the Boston Y. M. C. A. gymnasium, slipped while attempting a somersault from the shoulders of a companion, and fell, striking on his head. He died in a few minutes. Death is said to have resulted from fracture of a cervical vertebra.

A Yale Student Contracts Typhoid Fever from Wesleyan Oysters. — A Yale student who attended the banquet at Wesleyan University, Middletown, partaking presumably of the infected oysters, is ill with typhoid fever.

A Public Hospital for Greenfield, Mass. — At a preliminary meeting looking toward the establishment of a public hospital for Greenfield, Mass., held November 18th, the plan met with enthusiastic acceptance. A meeting for organization was announced for Tuesday evening, November 26th.

Dartmouth College Medical Department.— Graduation exercises of the Medical Department of Dartmouth College took place Tuesday evening, November 20, 1894. A class of twenty-eight members received their degrees.

NEW YORK.

Diphtheria at Yonkers.— Since November 10th, when five cases were reported, there has been a considerable outbreak of diphtheria at Yonkers, and on November 16th the hospital for contagious diseases was opened for diphtheritic cases. The Health Officer, Dr. Valentine Brown, reports that the disease is not confined to any one locality, and that while the public and parochial schools have not been closed, every pupil is thoroughly examined by a physician every morning. In case the child presents any sign of illness it is immediately sent home, with a request to the parents that medical attendance be promptly summoned.

A Legacy to the Manhattan Hospital and Dispensary. — The late James Hood Wright, of the firm of Drexel, Morgan & Company, who, during his life was the principal benefactor of the Manhattan Hospital and Dispensary, situated at Amsterdam Avenue and 131st Street, has provided very handsomely for that institution in his will. It is not yet known how large the legacy is, but it will probably amount to several hundred thousand dollars, and of this one hundred thousand dollars may be used as a building fund.

The Woman's Hospital. — The thirty-ninth annual meeting of the Board of Governors of the Woman's Hospital was held at the institution on November 22d. The report of the Medical Board, which was read by Dr. Bache Emmet, one of the attending surgeons, showed that during the year ending September 30, 1894, the total number of patients treated in the indoor department was 802 (262 of whom were free patients), and in the outdoor department, 5,096. Of the former class 383 were discharged cured, 283 improved, 44 not treated. There were 27 deaths during the year. The President of the Board of Governors read the annual report of that body, and made an eloquent appeal in behalf of the new hospital buildings, which are to be located at the corner of 92d Street and Central Park, West; able and interesting addresses were also delivered by Dr. Paul F. Mundé and by the Rev. D. Parker Morgan.

Miscellany.

ANOTHER CASE OF GUNSHOT WOUND OF THE HEART.

During the past year there have been reported several cases of gunshot wound of the heart, not immediately fatal. Dr. J. R. Church reports [1] a case occurring in the services of Dr. Kerr at the Emergency Hospital in Washington, D. C.:

A. W., a white man, sixty-seven years old, was brought into the receiving-ward of the Emergency Hospital at 5.40 p. m., suffering from a gunshot wound of the thorax inflicted at 4.50. Upon his admission he was in a state of collapse, the features pinched and pale, the body covered with a clammy perspiration, and the dressings over the wound stained with blood. The wound which had been made by a pistol-bullet (32 calibre), was situated one-and-a-quarter inches below the mammary line and a little to the left of the centre of the sternum, and through it considerable blood had escaped. The pulse was almost imperceptible, the respiration fair, the mind wandering. The man was put to bed, the usual therapeutic agents were employed, and transfusion was performed; but the condition became steadily worse, and death took place at 7.45.

---

[1] Medical News, October 27, 1894.

A post-mortem examination was made, which showed that the ball had pierced the sternum just above the xiphoid cartilage, and entered the pericardium to the right and at the lower part. The sac was filled with blood, both fresh and clotted. The heart was pierced through the right ventricle, the anterior wound being one-half inch in diameter. The wound of exit was five-eighths of an inch in diameter and ragged. The diaphragm was perforated and the omentum wounded in several places.

The ball itself was lodged under the skin posteriorly between the ninth and tenth ribs.

The hemorrhage had been very fierce, the pericardium being choked with blood, the pleural cavity containing a large quantity, and the peritoneal cavity considerable.

◆

RESOLUTIONS UPON THE DEATH OF GEORGE W. DAVIS, M.D., M.M.S.S.

AT a regular meeting of the Hampden District Medical Society held October 16, 1894, the following resolutions were unanimously passed:

Whereas, George W. Davis, an esteemed member of this Society has been removed by death,

Resolved, That we hereby express our appreciation of his abilities and of his signal devotion to his professional work, and that we tender our sympathy to his bereaved family in their sorrow.

Resolved, That this resolution be entered upon the records of the Society; that a copy of the same be sent to the family of the deceased; and that a copy also be sent to the *Springfield Republican* and the *Boston Medical and Surgical Journal* for publication.

F. W. CHAPIN,
E. E. MARRYATT, } *Committee.*
M. CALKINS,

◆

MUNICIPAL SUPERVISION OF MILK-SUPPLY.[1]

ANOTHER advance in the line of controlling and eradicating tuberculosis has been taken recently in Philadelphia, where the Board of Health has instructed the chief inspector of milk to indorse as untrustworthy all certificates testifying to the freedom of herds of milch-cows from tuberculosis that are not based upon the use of the tuberculin-test by trained veterinarians. A register is to be kept in which shall be recorded all herds of milch-cows that supply the city of Philadelphia that have been certified as free from tuberculosis by the method approved by the Board of Health, as well as such as have not been reliably certified and which are to be designated as "suspicious." These records shall also contain the names of dealers supplied from the various herds and shall be open to the inspection of the public. All producers of milk supplying the city of Philadelphia who fail after sixty days' notice to furnish a certificate or clean bill of health of their cattle, based on the method of examination demanded by experts and approved by the Board of Health, shall be reported to the Board and be liable to have their milk rejected as being suspicious.

THE PHYSIOLOGICAL EFFECTS OF CYCLING.[1]

THE physiological effects of cycling have recently been studied by Dr. Blazhevich of St. Petersburg, who publishes his results in his "Graduation Dissertation." He tabulates 270 observations on 104 individuals of both sexes and various ages, distinguishing between ordinary riders and those who train themselves for, and ride in, races or attempt to cover long distances. He finds that the play of the chest is diminished immediately after riding, especially in the cases of women and children and of men racing or commencing cycling, the diminution amounting in these cases to from 1 to 1.5 centimetres. In men accustomed to the exercise the effect was scarcely perceptible. The general effect of the summer's riding upon the male votaries of the sport was, according to Dr. Blazhevich, practically *nil*. In women and children the effect was slightly to increase the vital capacity. The arm power was found to have increased more than the leg power in young persons and in beginners, but in the case of men of mature age who had previously been accustomed to cycling this was not so evident. Speaking generally, the effects of cycling on the system were found to be very similar to the phenomena noticed by Tsymkovski in soldiers who had been running, and by Gruzdeff and Passover as resulting from rowing.

◆

Correspondence.

THE DANGERS IN SPARRING FROM BLOWS UPON THE JAW.

BOSTON, November 24, 1894.

MR. EDITOR: — The recent unfortunate sparring accident emphasizes anew the dangers attending this sport, and more particularly the danger from blows upon the jaw.

The mechanism of these blows seems not yet thoroughly understood. That at Syracuse appears to have been delivered upon the point of the jaw. The fatal blow in the sad accident at Harvard not long ago was received upon the angle of the jaw. The former produced death, we are informed, through hemorrhage (the location of which it would be of interest to learn); in the latter case there was hemorrhage from a lateral sinus. It may be considered, then, beyond dispute, that the force of a blow, not necessarily very violent, on the jaw, may, if the direction is favorable be transmitted through the bones of the skull, and produce fatal hemorrhage. The Cambridge accident, together with a case reported to me by Dr. J. G. Pinkham, of Lynn (in which hemorrhage occurred from the longitudinal sinus), point to the sinuses as structures specially liable to rupture from external violence unattended by fracture.

In the study of the subject suggested by the Harvard case, I learned that a sharp distinction was to be made between this variety and the so-called "knock out" blow, which if I understand correctly, is rather of a swinging character delivered upon the *side* of the jaw, most effective when the jaw is relaxed. I am informed that certain blows on the side of the neck may come into the same category. It would appear that the results of this blow, while equally alarming in appearance, through causing instant unconsciousness, are produced by a different mechanism from that of those previously alluded to. The usual rapid return to consciousness without further symptoms throws hemorrhage out of the question; simple concussion, again, seems hardly a satisfactory diagnosis in view of the comparatively little force which produces unconsciousness, in spite of the fact that the elasticity of the joint would naturally lessen the amount of jar. It would seem, therefore, that some other theory must be applied than that the jar was transmitted to the intra-cranial contents. Of the structures suggested as possible sufferers in a recent editorial article in the JOURNAL, namely, the medulla oblongata, the auditory apparatus, and the vessels and nerves at the base of the brain, all excepting the vessels and nerves may be perhaps excluded, because injuries to the skull itself would seem fully as liable to affect these parts as blows upon the jaw. With regard to the blood-vessels, it is hard to see how these structures can be so affected as to cause unconsciousness, though it is not improbable that sudden compression of the jugular vein may favor tension in the lateral sinus, thus favoring hemorrhage. We are left, therefore, with the nerves, of which the sympathetic and the pneumogastric first suggest themselves.

---

[1] Medical News, October 20, 1894.

[1] Lancet, October 20, 1894.

These considerations led Dr. Harold Williams and myself to try a few experiments by way of studying the effect upon the circulation of blows on the jaw. The results were quite striking. When Dr. Williams struck himself with moderate force with the fist upon the right side of the clenched jaw, no special symptoms resulted beyond slight dizziness and disagreeable sensations, with momentary acceleration of the pulse. When muscular resistance was offered no effects were produced, and no alteration of pulse. When the same blow was used with a little more violence, striking the side of the relaxed jaw about half-way from the point to the angle, decided dizziness and faintness followed, together with pain in and around the left ear and a disagreeable full feeling. The pulse at the wrist meantime, suddenly stopped, then became rapid for a few beats, then slowed to sixty (previously eighty). Fifteen minutes later the pulse had risen to sixty-eight, and the disagreeable sensations were passing off. On account of the unpleasant features the experiment was not pursued.

Mr. O'Connell, instructor in sparring at the Boston Athletic Association, on being interviewed, described to us a number of instances of "knock-out" blows the effects of which were quite as suggestive of sudden cessation of heart-beat as of cerebral concussion; he emphasized also the importance of keeping the teeth clenched in sparring. He then voluntarily struck himself on the side of the jaw quite violently, with the result of weakening and slowing the pulse to fifty-four, and producing pain over both ears lasting fifteen minutes. We were unwilling to allow him to experiment further.

The most rational explanation of the circulatory symptoms noted, as well as of the disagreeable sensations, seems to be an irritation of the pneumogastric nerve, which passes at its exit not far from the articulation of the jaw.

An experiment tried on an etherized dog in the physiological laboratory of the Harvard Medical School through the courtesy and with the assistance of Dr. Bowditch, proved negative, a fact which favors rather than controverts the theory, inasmuch as the pneumogastric nerve in the dog is widely separated from the articulation of the jaw through the intervention of the tympanic or auditory bulla, a structure prominent in the dog, but wanting in man. The same structure is prominent in the skull of the monkey, which would render experiments on this animal futile.

These incomplete experiments point to the pneumogastric nerve as the sufferer from lateral blows upon the relaxed jaw, while cerebral hemorrhage must be feared from blows upon the point or angle of the jaw when so directed that their force is transmitted to the bones of the cranium. Whether the former, or so-called "knock-out" blow, has produced death, I am unable to say; that the latter variety of blow has proved fatal we have sad evidence. The object of this communication will be attained if it encourages such study of the subject as may be pursued without danger and may place our knowledge upon a sufficiently scientific basis to assist those in authority to eliminate as far as possible, at least in amateur contests, the dangerous element in this useful sport. If the subject has been already covered, I should be glad of the references.

Yours respectfully,
GEORGE L. WALTON, M.D.

THE PREVENTION OF DIPHTHERIA.

BOSTON, November 21, 1894.

MR. EDITOR: — The unusually large and increasing number of cases of diphtheria in the city of Boston prompts me to ask for a little space in the columns of the JOURNAL to emphasize and direct attention again to what seems to me at present the most efficient means of checking the spread of this disease and reducing its mortality; and I think the efficacy of this measure will be better appreciated if we first call to mind the mode of contagion and the natural history of diphtheria.

The diphtheria bacillus flourishes chiefly in the throat and is not a motile bacillus, but must be carried to the healthy individual. This is done principally by direct transferrence from mouth to mouth, or hand to mouth or nose. By mouth to mouth I mean, for example, a healthy child may catch diphtheria by biting from the same apple, putting the same toys in the mouth, using the same handkerchief as a child in whose throat diphtheria bacilli are present, or by kissing such a child; or a mother may use her own handkerchief for a neighbor's ailing child, and thus unwittingly carry the disease to her own children. Children invariably put their pencils, for example, into their mouths; and as in the public schools the slate pencils are gathered up every day and redistributed at random on the next day, it is easy to see how diphtheria originating with one child might spread in a school. The closer contact among children, and the habit they have of putting things in their mouths, shows why the disease is more prevalent among them than among adults. The bacilli may get on to the hands of those who are taking care of or are about persons ill with diphtheria, and unless the hands are carefully washed may be transferred to the mouth at the next meal on a piece of bread, for instance. Again, the bacilli may live for months in the garments of a person who has been ill with diphtheria. But I need not multiply examples as to the mode of contagion.

The bacilli, once conveyed to the mouth, may remain in the throat some days even, without showing any sign of their presence, and in some cases may produce no symptoms of disease, although during this period such individuals may give diphtheria to others; but in the usual course of things the presence of bacilli in the throat is followed probably after a day or two by congestion, and later by false membrane. This membrane may disappear from the throat before the bacilli. Therefore in the beginning and at the close of the disease an individual is especially dangerous to the community, because in the first case his diseased condition is unsuspected or thought of slight consequence, and in the second case because the normal appearance of the throat, although the bacilli may still be present, leads to the belief that the danger of contagion from him is past. The bacterial test, therefore, is of special importance in these two stages of the disease, as it is the only means of detecting the diphtheria bacilli; and the thorough use of this test is the best way at present in my estimation of checking the spread of diphtheria and reducing the mortality therefrom.

Two years ago the use of the bacterial test was begun in this city at the Boston City Hospital, and later bacterial tests were made in the laboratory of the Harvard Medical School. The Board of Health in New York has applied this test to over 14,000 cases; and a system somewhat similar to the one employed there has, as we know, been lately introduced in Boston by our Board of Health. The introduction of this system gives the city of Boston an opportunity to carry out the method I have advanced at medical meetings and which I have employed for some time past, namely, the application of the bacterial test to the throats of all the members of a household where a case of diphtheria has occurred, although all these persons except the patient seem perfectly well. By this method I have often detected in each household one or more wholly unsuspected cases of diphtheria. These persons were isolated promptly; treatment was begun early, and all recovered.

It is obvious how the spread of diphtheria would be lessened and the mortality diminished were such a system generally introduced, especially if it were made use of in the schools. For example, if a girl or boy were taken ill with diphtheria, the bacterial test should be applied immediately to all the children in the same schoolroom. The cost to the community of making these tests is small, and the method more humane and far less expensive than that now employed of waiting until the unsuspected patients, (the schoolmates of the original patient) need great care themselves, or may have also given the disease to others; for this may be done in the very early stages before their indisposition is suspected. This thorough method of applying the bacterial test has, as already indicated, the double advantage of checking the spread of the disease and of giving an opportunity for early treatment, thus reducing the mortality; for if efficient treatment is employed in the early stages of the disease, the patients usually recover.

It, therefore, seems to me that public sentiment should be created in favor of applying the bacterial test, not only to those who have sore throats, but if these sore throats prove to be cases of diphtheria, to all those who have been much in contact with these individuals, that is, for example, to the other members of the household, or in case of the patient being a child at school, to all the children who have been in the same schoolroom. It would be well to have our whole metropolitan district included in the scheme for applying the bacterial test. The tests could all be made in one laboratory, with convenient stations for collecting the tubes. Very truly yours,

Francis H. Williams, M.D.

TREATMENT OF CONGENITAL DISLOCATION OF THE HIP.

Cambridge, November 23, 1894.

Mr. Editor: — In a communication published in yesterday's number of the Journal (November 22, page 523), Dr. H. G. Davis says that in cases of congenital dislocation of the hip the contractions of muscles and other tissues tending to maintain the dislocation will yield readily, without any operation, to gentle but continuous extension, allowing the head of the femur to be easily brought back to its place in the acetabulum. This statement is perfectly correct; but the natural inference therefrom, namely, that *therefore* no operation or other treatment is necessary, is misleading. In such a case the difficulty is not to *get* the head of the femur into proper position, but to *keep* it there. And the keynote of the case is the fact that nature has failed to provide the usual means of keeping it there. The acetabulum is so shallow as to be functionally useless, and *hence* the dislocation. Until an artificial acetabulum has been formed the head of the femur cannot be expected to remain in place, while the great muscles of the thigh are constantly pushing it upward; and this is the object of operation. Dr. Davis's case was not a typical one; for the acetabula seem to have been fairly efficient, while the dislocations were due to another cause, infantile paralysis.

Sincerely yours,

Charles C. Foster, M.D.

MAY MEDICAL EXAMINERS TESTIFY AS EXPERTS AGAINST THE GOVERNMENT?

Mt. Gilead, November 24, 1894.

Mr. Editor: — May I ask, What right has an officer, appointed by the government, employed by the government, and paid by the government, and with a good round salary at that, to go into court as an expert, and be paid as a medical expert by persons under suspicion of crime, and there testify against the very government which employs him?

Yours truly, Backwoods.

Answer. — The same right that a government employé has to use the name of the government which employs him, in endorsing a brand of beer for which a price (namely, a few barrels of beer) is paid. Jack Frost.

THE ANTITOXIN TREATMENT OF DIPHTHERIA AT THE TROUSSEAU HOSPITAL.

Boston, November 26, 1894.

Mr. Editor: — The following brief extract from a personal letter dated November 13th, from M. Sevestre (of the Trousseau Hospital, Paris, well recognized as one of the most conservative and skilful practitioners in that city), regarding the antitoxin treatment of diphtheria may be of interest:

"In a few words, at the expiration of twenty-four to thirty-six or forty-eight hours after the injection, a peeling and disintegration of the membrane, a return of appetite; in case of croup, possibility of deferring tracheotomy, and when it proves necessary, the frequent possibility of removing the tube at the expiration of one or two days. A mortality (counting even the cases which die a few hours after entering the hospital) of 12 to 13 per cent. instead of about 50 per cent., which is the average during preceding years at this same season. You see this is sufficiently encouraging; but a cure in all cases is not to be looked for, and perhaps there are some little inconveniences attending the treatment. This last is a point to be studied."

Very truly yours,

F. Gordon Morrill, M. D.

RECORD OF MORTALITY

For the Week ending Saturday, November 17, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Typhoid fever.	Diphtheria and croup.	Scarlet fever.
New York	1,956,000	—	—	—	—	—	—	—
Chicago	1,600,000	—	—	—	—	—	—	—
Philadelphia	1,139.457	374	128	15.60	9.36	1.82	9.88	1.30
Brooklyn	1,043,000	330	92	15.00	16.50	1.50	10.50	—
St. Louis	540,800	—	—	—	—	—	—	—
Boston	501,107	202	57	20.09	11.27	2.45	13.72	1.47
Baltimore	500,000	—	—	—	—	—	—	—
Washington	285,000	98	28	18.36	16.32	7.14	6.12	3.06
Cincinnati	325,000	93	36	13.91	3.21	4.28	7.49	—
Cleveland	325,000	95	48	26.25	10.50	3.15	7.35	15.75
Pittsburg	272,000	77	29	18.06	14.19	5.16	7.16	—
Milwaukee	265,000	—	—	—	—	—	—	—
Nashville	87,754	22	6	—	—	—	—	—
Charleston	65,165	28	13	7.14	10.71	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	100,410	22	7	9.08	9.08	4.54	4.54	—
Fall River	92,233	25	9	24.00	8.00	8.00	4.00	—
Lowell	90,613	22	5	9.08	13.62	4.54	4.54	—
Cambridge	79,607	15	2	13.33	14.70	6.66	-	6.66
Lynn	65,123	17	—	11.76	11.76	—	11.76	—
Springfield	50,284	16	0	18.75	12.50	18.75	—	—
Lawrence	49,900	—	—	—	—	—	—	—
New Bedford	47,741	13	5	—	15.38	—	—	—
Holyoke	43,348	10	3	10.00	50.00	-	—	—
Brockton	33,939	—	—	—	—	—	—	—
Salem	33,155	4	0	—	50.00	—	-	—
Haverhill	32,925	10	1	30.00	—	10.00	20.00	—
Malden	30,209	11	3	—	18.18	—	—	—
Chelsea	29,806	15	4	—	—	—	—	—
Fitchburg	29,383	3	1	—	—	—	—	—
Newton	28,837	6	1	—	33.33	—	—	—
Gloucester	27,293	—	—	—	—	—	—	—
Taunton	26,954	—	—	—	—	—	—	—
Waltham	22,058	3	0	—	33.33	—	—	—
Quincy	19,642	6	4	—	—	—	—	—
Pittsfield	18,802	3	2	33.33	66.66	—	—	—
Everett	16,585	3	2	—	—	—	—	—
Northampton	16,331	5	1	20.00	—	—	—	—
Newburyport	14,073	3	1	—	—	—	—	—
Amesbury	10,920	6	2	—	16.66	—	—	—

Deaths reported 1,642: under five years of age 517; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 263, acute lung diseases 196, consumption 187, diphtheria and croup 134, typhoid fever 47, scarlet fever 34, diarrheal diseases 26, cerebro-spinal meningitis and whooping cough 5 each, malarial fever 4, small-pox 2, measles 2, erysipelas 1.

From diarrheal diseases Philadelphia 7, Brooklyn and Pittsburgh 4 each, Boston 3, Cincinnati, Providence and Charleston 2 each, Fall River and Medfield 1 each. From cerebro-spinal meningitis Washington 2, Philadelphia, Boston and North Adams 1 each. From whooping-cough Brooklyn 2, Pittsburgh, Fall

River and Pittsfield 1 each. From malarial fever Brooklyn 4. From measles Pittsburgh and Holyoke 1 each. From small-pox Philadelphia 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending November 10th the death-rate was 16.9. Deaths reported 3,388; acute diseases of the respiratory organs (London) 245, measles 91, diphtheria 77, diarrhea 72, fever 58, whooping-cough 32, scarlet fever 30, small-pox (Birmingham 4, London 1) 5.

The death-rate ranged from 12.7 in Huddersfield to 24.8 in Preston; Birmingham 17.8, Bradford 17.7, Croydon 13 0, Gateshead 23.5, Leicester 13.0, Liverpool 21.0, London 15 0, Manchester 18.8, Newcastle-on-Tyne 17.3, Nottingham 18.9, Sheffield 13 9, Sunderland 24.1.

METEOROLOGICAL RECORD,

For the week ending November 17th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..11	29.94	35	39	30	74	56	65	W.	W.	10	11	C.	C.	
M..12	30.26	31	36	25	76	53	64	W.	N.W.	14	5	C.	C.	
T ..13	30.23	34	43	24	59	92	76	S.	S.E.	8	8	O.	O.	.01
W..14	29.86	38	41	34	92	79	86	W.	W.	2	15	O.	O.	.13
T ..15	30.02	42	48	36	52	64	58	W.	S.W.	10	15	F.	F.	
F..16	29 94	52	61	42	67	77	72	S.W.	S.W.	13	12	C.	C.	
S...17	29.95	49	55	42	68	68	68	S.W.	N.W.	19	9	O.	O.	.09
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatning; N., snow. † Indicates trace of rainfall ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 17, 1894, TO NOVEMBER 23, 1894.

The leave of absence granted CAPTAIN ADRIAN S. POLHEMUS, assistant surgeon, is changed to leave of absence on account of sickness and is further extended to include December 26, 1894, on surgeon's certificate of disability.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 94, 1894.

FRANKLIN ROGERS, surgeon, ordered to the U. S. Receiving-ship "Wabash."

E. P. STONE, passed assistant surgeon, detached from the U. S. Receiving-ship "Wabash" and to the Naval Hospital at Boston.

CLEMENT BIDDLE, passed assistant surgeon, detached from the Marine Recruiting Rendezvous, Philadelphia, Pa.

T. W. RICHARDS, assistant surgeon, ordered to Naval Laboratory and Department of Instruction.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE TEN DAYS ENDING NOVEMBER 15, 1894.

AUSTIN, H. W., surgeon. To proceed to Boston, Mass., and assume command of Service. November 10, 1894.

IRWIN, FAIRFAX, surgeon. To assume charge of Quarantine Division of the Bureau. November 14, 1894.

MCINTOSH, W. P., passed assistant surgeon. Granted leave of absence for fourteen days. November 9, 1894.

YOUNG, G. B., passed assistant surgeon. Granted leave of absence for seven days. November 8, 1894.

PROCHAZKA, EMIL, assistant surgeon. Granted leave of absence for thirty days. November 14, 1894.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Thursday evening, December 6th, at 8 o'clock, by Prof. Thomas Dwight, LL.D. Subject, "Applied Anatomy of the Head and Neck in Adults and Children." Physicians are cordially invited.

SOCIETY NOTICES.

THE SUFFOLK DISTRICT MEDICAL SOCIETY, SURGICAL SECTION. – The Surgical Section of the Suffolk District Medical Society will hold its regular monthly meeting at 19 Boylston Place, on Wednesday evening, December 5th, at 8 o'clock.

The subject for discussion will be suggested by a paper from Dr. W. N. Bullard entitled, "A Consideration of Some of the Indications for Operation in Head Injuries."

This paper will be followed by the report of "One Case of Fracture of the Skull and Intracranial Hemorrhage," by Drs. F. S. Watson and W. N. Bullard.

"Modern Methods of Operating and the very Careful Study which these Injuries are Attracting," make the consideration of the subject of this evening's meeting an important one and it is hoped that those interested in the modern treatment of head injuries will find it convenient to be present. Several have been especially invited to contribute to the discussion of this paper.

C. L. SCUDDER, M.D., *Secretary*.

THE WARREN CLUB. – A regular meeting of the Club will be held at 101 Beacon Street, on Tuesday evening, December 4th, at 8 o'clock.

Dr. Howard Lilienthal, of New York: "Some Surgical Complications of Gonorrhea."

Dr. F. B. Mallory: "A Case of Actinomycosis with Autopsy."

Dr. Malcolm Storer will show "Specimens from a Case of Extra-Uterine Pregnancy."

JAMES G. MUMFORD, M.D., *President*.
W. E. PAUL, M.D., *Secretary*.

BOSTON SOCIETY FOR MEDICAL OBSERVATION. – A regular meeting of the Society will be held at 19 Boylston Place on Monday evening, December 3d, at 8 o'clock.

Dr. P. C. Knapp will read a paper entitled: "The Treatment of Chorea with Especial Reference to the Use of Quinine."

Dr. S. J. Mixter: "Intestinal Incision and Drainage in Cases of Acute Peritonitis."

JAMES G. MUMFORD, *Secretary*.

THE PHILADELPHIA ACADEMY OF SURGERY.

SAMUEL D. GROSS PRIZE.

The Quinquennial Prize of one thousand dollars under the will of the late Samuel D. Gross, M.D., will be awarded January 1, 1895.

The conditions annexed by the testator are that the prize "Shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice, founded upon original investigations, the candidates for the prize to be American citizens."

It is expressly stipulated that the successful competitor, who receives the prize, shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language, should be sent to Dr. J. Ewing Mears, 1429 Walnut Street, Philadelphia, before January 1, 1895.

Each essay must be distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The Committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

RECENT DEATHS.

FRANK STOWELL WHITTEMORE, M.D., M.M.S.S., died in New York City, November 24, 1894, aged thirty years.

OCTAVIUS STURGES, M.D., F.R.C.P., senior physician to Westminster Hospital, London, died November 3, 1894, aged sixty-one. For many years he had been on the staff of the Hospital for Sick Children on Great Ormond Street. He was the author of well-known works on pneumonia and chorea.

BOOKS AND PAMPHLETS RECEIVED.

The Production of Diseases by Sewer Air. Stomatitis Neurotica Chronica. By A. Jacobi, M.D. Reprints. 1894.

The Special Training of the Medical Officer with Brief Notes on Army Medical Schools Abroad and at Home. By Dr. Charles H. Alden. Reprint. 1894.

Directions for Laboratory Work in Bacteriology for the Use of the Medical Classes in the University of Michigan. By Frederick G. Novy, Sc.D., M.D., Junior Professor of Hygiene and Physiological Chemistry. Ann Arbor: George Wahr. 1894.

Lecture.

THE MILITARY MEDICAL OFFICER IN PEACE AND WAR.[1]

BY JOHN VAN RENSSELAER HOFF,
Major and Surgeon, United States Army.

A PRESIDENT of the United States has said that, "Under our system we will never have a large standing army, and our strength and safety are in a general dissemination of military knowledge among the people." How far the necessity for this applies to the special class of citizens who devote themselves to the practice of medicine, I have heretofore endeavored to show.

The military medical officer is the outcome of long and peculiar experience. He is essential to an efficient army; and it is therefore, I believe, necessary that some knowledge of his duties should be systematically spread among those who will, in the event of war, become the medical officers of our armies.

The National Guard is a valuable training-school for the future medical officer, and with the increasing efficiency of its sanitary department, is daily becoming more so; but were the guards of all the States on the high plane that a few have attained; and were all their medical officers equally enthusiastic, they could not furnish one tithe of those needed in a war of any proportions or duration. It is to the medical schools that we must look for a systematic diffusion of this knowledge.

Scores of combatant officers are detailed as military instructors at the various educational institutions throughout the country, teaching our youth the elements of the art of war. But so far as I know with a single exception, not a medical school is making any systematic effort to teach medical students and medical men the duties of medical officers. And yet how, otherwise, are they to learn them?

Though military sanitation has no abiding place in our medical schools, the medical officer is their handiwork, for the medical department of the army is open to the reputable graduate of any recognized medical college. He himself holds the key which admits him; for the law says, "All vacancies in the grade of assistant-surgeon shall be filled by selection by competitive examination." And all promotions, up to and including the grade of colonel, shall be by seniority. The examination is made by a board of medical officers who decide, as to its result, solely upon the merits of the candidate, the individual is unknown to the board, and any extraneous influence would prove an absolute detriment to him.

The examination successfully passed, the newly-made officer, endowed with all the rights, privileges, and obligations attaching to a first lieutenant of the army, is assigned for instruction to duty in the Army Medical School, Washington, D. C. This school marks one of the very important forward steps, made by our department in recent years; before its organization, the fledgling of Æsculapius, fallen into the lap of Mars must needs have trusted to the blind fortunes of war for his experience. His assignment to duty for instruction with some senior officer of his corps, often determined his future value as an officer; and under any conditions, the instruction to the new appointees was as varied as were the views and numbers of the instructors. The only outcome of such a plan must necessarily be the absolute diversity of opinion now obtaining in our service regarding military sanitary matters. The school will unify opinion, consolidate the corps, and make it in its singleness of purpose a much more efficient and influential body than it has heretofore been; but its facilities are open to a handful only, and unless mightily extended, this school, valuable as it is, will cut but a small figure in the medico-military education of the great mass of medical men.

The purpose and duties of the sanitary department of an army may be considered under two heads: (1) Its relation to the military bodies in peace, which is simply a preparation for (2) its true function in war.

In peace its duties are the general care of the sick, military and civilians, attached; the careful observation and regulation of the sanitary surroundings of the soldier, bearing in mind the various conditions of service in climates of widely varying character; the prevention as well as treatment of diseases; the examination of recruits; the discharging of physically unfit men; the management and control of the various classes of hospitals — general, post, field; the supervision and control of all officers and men, both patients and those doing duty in the hospitals; the command, discipline, and interior economy of the hospital corps.

The sick for whom the military medical officer is responsible, come from two classes — the military body proper, consisting of the officers and enlisted men; and the "civilians attached," the latter made up of the families of officers and enlisted men, employés of the various departments, etc.

From his clientel and the varied circumstances of his practice, it will be observed that he must of necessity get a broad experience in his profession. Ordinarily his practice is so general that opportunity is not afforded him to adopt any of the numerous well-known specialties of our profession, but his whole training is of a character to form the military sanitarian. Every encouragement is given him by his department to keep thoroughly abreast of the times. He is supplied with standard works and standard remedies, and must from time to time render an account of his stewardship, through the instrumentality of searching examinations.

Upon the completion of his course of instruction at the school, the young medical officer is assigned to duty at some one of the numerous posts scattered throughout the country, when his practical experience begins. We will follow him.

Fortunately, his four months in the school has somewhat accustomed him to the wearing of Uncle Sam's livery, and when he dons his uniform to report to the commanding officer of his first station, he does not feel himself the observed of all observers, and all clothes. Such was not the experience of the older officers. Having reported, which is the formal announcement of his presence at the post, he looks about at the various houses from which, within the limitation of his rank, he is entitled to select his future residence, and having found satisfactory quarters, he notifies the quartermaster of his selection.

Among the few emoluments of the army officer is his habitation, be it house or tent, which (the house) he selects according to his rank, mayhap turning out another officer, who in turn selects his junior's quarters, and so it goes on until the whole garrison gives an impression of an animated May-day scene. What to put into his house is for himself to decide; the government furnishes nothing, and objects to nothing in reason.

---

[1] A lecture read before the Medical School of Harvard University, October 18, 1894.

Having reported, in compliance with the phraseology of his order, to the commanding officer, he is directed by him to report to the senior medical officer under whose supervision his work is to be done. Now begins the upbuilding of an experience which is to make or mar the unformed character.

The method of recruiting the Medical Corps of the Army is such as to demand of its officers a high grade of educational attainment; and as only about ten per cent. of the applicants receive commissions, it is reasonable to assume that the corps is recruited from among the best material furnished by the schools. What this material becomes, the Medical Department is itself responsible for.

The post-surgeon in due time assigns the young officer to such work as the situation requires. After a day or two to familiarize himself with his surroundings, he probably receives an order to take charge of the sick reporting at "surgeon's call."

The Army Regulations, that portentious code of rules, say: "At surgeon's call the sick of the companies will be conducted to the hospital by non-commissioned officers, each non-commissioned officer will give to the surgeon the company sick-report book, in which there shall have been previously written the names of the company sick. The surgeon, after examination, will indicate in the book, opposite the names, the men who are to be admitted to hospital, and those who are to be taken to quarters, what duties the latter are capable of, together with any other information in regard to the sick which he may have to communicate to the company commander." The analogue in civil life of "surgeon's call" in the army is the out-patient department of a general hospital. Certain formalities attach to it, but the professional phases of these functions are practically identical. The names of those reporting sick are entered in the hospital day-book; the patient is called by the orderly who attends the medical officer, is examined, and if his condition demands it, is ordered into hospital. If, however, his ailment is trifling, requiring treatment in quarters only, he is given a prescription, which if for medicine, he carries to the dispensary, where it is compounded; or if for a dressing, he presents it to the non-commissioned officer on duty in the operating-room.

Having examined all the cases and entered their disposition in the company sick-books, which he signs, and in the hospital day-book, in which he also notes the diagnoses and any other points of interest, the medical officer then has time to supervise the dressing of any special case that requires it. In the meantime the morning report of sick is being made out by one of the non-commissioned officers and its verification before presentation to the senior medical officer for signature, completes the work to be accomplished at surgeon's call.

It is of importance that the notes in each case be sufficiently clear so that when the record is transferred to the hospital register all essential facts may be included.

The medical history of a soldier furnishes the evidence upon which his pension is granted; and in every entry the medical officer is required to specifically state whether or not the disease or injury originated in the line of duty. The importance of a careful investigation is apparent, as the lack of it might entail great cost and injustice to the government, or the soldier, usually, however, to the former, for the concrete man before us, appeals to our sympathies more strongly perhaps than does justice to the abstract government, our impersonal selves.

An hour's interval, and the young officer returns to the hospital, and looks over with his senior the numerous cases of trifling ailments among soldiers, who do not require to be excused from duty and consequently do not "go on sick-report" as they call it; and, among the civilians attached, the wives and children who are able to be out. Affections of all kinds prevail among the latter, and in the course of the day the medical officer must practise many specialties. Then follows a visit to the wards, where the cases are carefully examined and prescribed for, and then to the operating-room where such operations and dressings are done as may be necessary.

The morning professional work at the hospital having been accomplished, the senior medical officer starts upon his rounds among the civilians attached who are too ill to present themselves to him; and the young officer awaits his return to the hospital. Being of an inquiring turn of mind, he questions the hospital steward as to the various reports, etc., required of a medical officer; as to his so-called extra professional or official duties, their character, etc.; and the fact dawns upon him that he has come into a position the duties of which he knows practically nothing of.

In order to a proper understanding of these duties it is necessary to observe that the medical officer is the servant of the government which he represents, and that his relation to his patients in the military service, is as such a representative.

It must be remembered that in consideration of a certain remuneration the soldier devotes his life to his country. This remuneration includes, among other things, an annuity for life, amounting to three-fourths of his pay, if an officer, or a pension if an enlisted man, should he be permanently disabled, and life insurance (pension) for his family should he die, providing that his disability or death is incident to the service. The interests of the government and the individual are for the most part coincident, as health and consequent efficiency are of the highest advantage to both, and the end to be sought; but it may readily be perceived that sometimes the individual is neglectful of his health, he indulges in excesses of all kinds, and breaks down physically as the result thereof. Such a break-down not being incident to service, the subject is not entitled to retired pay or pension. Here it is that the medical officer steps in to protect the interests of the government.

From the foregoing it will be seen that there cannot exist between this officer and his military patients the same relationship which obtains between a physician in civil practice and his patients; for in the latter case the physician is the patient's agent, and their relationship is covered by the seal of professional secrecy, while in the former the medical officer is an agent of the government, and is required to report to the War Department all the physical aches and ills from which his patients suffer.

Towards the other class of patients, "the civilians attached," which, in the language of the regulations, "He will attend . . . when practicable," the medical officer's relationship is identical with that existing between the civil practitioner and his patient; for the government not being pecuniarily interested in this class, demands no detailed report of its ailments.

It is to these reports that the young officer now turns his attention, and knowing little about them, he is soon lost in their mazes, and cries out at the endless "red tape." But "red tape," which is so fashionable to decry, is the synonym of order, regularity, system and efficiency; without it a small business may possibly be carried along fairly well, but no large business can be, and certainly no great institution in our country or any other, whose ramifications are so extensive as are those of the army, reaching as they must in almost every direction, can be successfully carried on with much less attention to detail.

The daily morning report of sick heretofore referred to, is a numerical report by organization of those excused from any part or all of their duty, and the place of treatment whether in quarters or in hospital. It includes those who remained sick, carried over from the previous day's report, those who were taken sick in the mean time, and the disposition of those who were dropped by return to duty, transfer to another hospital, discharge or death. This report is signed by the senior medical officer immediately on duty with any command; it is for the immediate commander, and is taken to the adjutant's office, usually by a non-commissioned officer of the hospital corps, before "guard-mount."

At the same time he takes the morning report of the hospital corps, which is a numerical statement of the detachment, giving the number of men present for duty, sick, absent, on detached service, on furlough, etc. This report is also signed by the same officer, and is submitted each day. With these reports are sent all official communications that concern post headquarters or are required to pass through military channels.

The medical officer has two channels of communication with his superiors, one through which he addresses the purely military functionaries upon matters of a strictly military nature, and this is called the military channel. It begins with the adjutant of the command, to which the addressing officer is attached, passes on to the adjutant-general of the superior headquarters (usually one), finally reaches the adjutant-general of the army, and ends with the commanding general or with the Secretary of War. When a communication is acted upon, it is returned through the same channel to the officer who originated it. The other channel is known as the corps channel, and is used only for communications which have no bearing upon any thing or body, outside the department. They are sent to the medical director, who forwards them directly to the surgeon-general, who, if necessary, returns them to the same officer.

The most important paper made out by a medical officer is the monthly report of sick and wounded of the command to which he is attached. This is an exact copy of the hospital register of all cases that have not been disposed of in previous like reports, and gives the hospital number, the name, rank, organization, age, length of service, cause of admission, diagnosis, whether or not the disease or injury originated in the line of duty, sequelæ, disposition (return to duty, remaining under treatment, transfer, discharge, death, etc.), and finally the date of disposition. It also gives the names of the organizations composing the command, and their strength, a numerical statement of the number of cases remaining under treatment at date of last report, of those taken sick during the month, returned to duty and remaining, the total number of days of treatment in hospital and in quarters. It is also a record of diseases among the civil population attached to the command — however, only as to the number of cases, not as to the names of the individual patients. A brief sanitary memorandum accompanies and completes the report. It is sent direct to the surgeon-general, and a copy of it to the medical director, before the 5th of each month.

Other monthly reports sent to the surgeon-general through the medical director are these: the personal report of the medical officer, giving in brief a history of his duty during the month — of leaves of absence and the authority therefor; of sickness, etc.— which report should be brief but full, as to a large extent an officer's record is compiled from it; sanitary report (through military channels); report of recruits; return of hospital fund; and return of the hospital corps.

The quarterly reports required are a return to the quartermaster-general of clothing and equipage and of quartermaster stores, and a return to the chief of ordnance of ordnance stores.

The only annual report rendered by a medical officer is the return of medical property and medicines, to the surgeon-general; this is also rendered when an officer is relieved from responsibility for medical property.

In addition to the foregoing, numerous special reports upon various subjects are constantly being made.

The permanent records or books pertaining to the medical department of a post are the medical history of the post, meteorological register (at certain posts only), register of patients, register of the detachment hospital corps, statement of the hospital fund, record of examination of recruits, record of deaths and interments, morning report of the detachment hospital corps, transfer (of patients) book, clothing-book, descriptive-book, and copies of requisitions, returns and other reports, and of all orders and letters relating to the department.

In addition to the foregoing, experience has taught the necessity for the following; a blotter or day-book, in which are entered the names of all patients treated each day, their treatment and a brief history of the case; a register of patients' effects, in which is entered a list of all property received from a patient when he enters the hospital; daily bill-of-fare record; property-book, containing a list and the location of all property pertaining to the department; a detachment hospital corps order-book; a roster of duty assignments hospital corps and a record of instruction; and a roster of company bearers.

(To be continued.)

TUBERCLE BACILLI IN BUTTER. — A Swiss physician introduced butter made from the milk of a tuberculous cow, and containing tubercle bacilli, into the abdominal cavities of guinea-pigs. The guinea-pigs died of tuberculosis. He then bought butter from various markets, and injected five to ten centimetres of it into the abdomens of guinea-pigs. Two out of twenty specimens of butter were found to contain virulent tubercle bacilli.

Original Articles.

THE DIAGNOSIS AND SURGICAL TREATMENT OF CASES OF EMBOLISM AND THROMBOSIS OF THE MESENTERIC BLOOD-VESSELS, WITH REPORTS OF CASES.[1]

BY FRANCIS SEDGWICK WATSON, M.D.,
Visiting Surgeon to the Boston City Hospital; Instructor in Genito-urinary Surgery, Harvard Medical School.

IN the *Boston Medical and Surgical Journal* of April 26, 1894, Prof. W. T. Councilman reported three cases of occlusion of the superior mesenteric artery.

Two months later Dr. J. W. Elliot mentioned to me a case on which he had operated for intestinal obstruction, in which the patient died, and the autopsy showed thrombosis of the mesenteric artery.

Two days later a woman fifty years of age entered my service at the Boston City Hospital, with the following history: For several years she had had attacks of dyspnea and palpitation. One week previous she was seized with violent colicky pains in the abdomen, which were not localized. This pain persisted intermittently for five days, then became localized in the right iliac fossa and diminished in severity. There had been no passage of feces or flatus since the beginning of the attack. Vomiting began two days before entrance, and has persisted ever since. There had been gradually increasing abdominal distention from the first.

When received at the hospital, the patient was conscious. Her face and extremities were cold, cyanotic, and covered with cold sweat. The abdomen was greatly distended and universally tympanitic. The pulse was 120°, weak, thready and irregular. Temperature subnormal.

Operation.—A median incision was made below the umbilicus, three inches long, and subsequently extended to six inches. A portion of the enormously distended ascending colon immediately protruded through the wound. The whole of the ascending colon was glued lightly to the parietal peritoneum by recent adhesions, which were easily separated by the hand. There was about a pint of dark bloody serum free in the peritoneal cavity. The ascending colon was deeply congested; and in places beneath its serous surface there were hemorrhagic extravasations, from a point two inches above the cecum to its junction with the transverse colon. Scattered over the same area were about a dozen spots of beginning gangrene, varying in size from a quarter of a dollar to a ten-cent piece. A few gangrenous spots were situated in the mesentery at its junction with the bowel. The cecum and vermiform appendix presented a perfectly normal appearance. A portion of the ascending colon close to the cecum was drawn out of the wound, and a small incision was made into it, through which a great quantity of the intestinal contents (which was fluid and of normal color) was evacuated, and the gut was rapidly flushed with hot water.

The collapsed colon was then drawn through the wound and examined throughout its entire length. The most careful search failed to show any constriction, or other of the usual causes for intestinal obstruction or gangrene; and I then concluded that I had to do with a case of occlusion of the mesenteric vessels. On carefully examining the mesentery supplying the ascending colon, I found near its base, in the middle portion, a thickened area in which there could be distinctly felt between the thumb and finger, hard, round, elongated masses, some of which were about the size of a slate-pencil; which I believed to be branches of the superior mesenteric artery or vein occluded by thrombi. The lines of demarcation at either end of the diseased part of the bowel were well defined, and I wished to excise the part of the gut between them; but at this point the patient's condition became so alarming that I hastily made an artificial anus and abandoned the thought of any further surgical interference. The patient lived for five days, on the third day there was discharge of feces by the rectum; and on that and the following day the patient seemed to rally somewhat in strength. On the fifth day the temperature, which had been subnormal throughout, suddenly rose, and the patient died. An autopsy was not permitted. There was no vomiting or pain after the operation.

Although not positively demonstrated by post-mortem examination, I think it may be fairly assumed that this was a case of occlusion of the mesenteric vessels with the resulting intestinal lesions.

A few days after this case another one came to Dr. J. W. Elliot, in which he not only recognized the condition, but also saved the patient's life by what, I think, may be properly called a brilliant surgical achievement, thereby marking, so far as I can learn, the first successful result of surgical intervention in this disease. Previous to my case, one occurred in the hands of my colleague, Dr. Abner Post, at the Boston City Hospital, and within the last few days, Dr. D. W. Cheever has had still another.

An examination of the records of the Boston City Hospital for the past ten years, for which I am indebted to the kindness of Drs. Stokes and Dennett, furnishes three more examples of thrombosis of the mesenteric artery in which the lesion was clearly demonstrated, and three others in which it was not demonstrated, but was probably overlooked, inasmuch as the intestinal conditions which have been seen in all the proved cases were present in these last ones also, and no other cause was discovered to which they could be referred.

We have, then, a series of fourteen cases, in ten of which the condition was demonstrated accurately, occurring here in Boston within the past eight years (eight of them observed within the past year), through which can be traced an interesting progress from the record of the pathological anatomy in the autopsy-room to the clinical recognition of the disease at the time of operation, and finally to the saving of a patient's life in the surgical amphitheatre by the remarkable operation of Elliot.

The first satisfactory description that I have found of the pathological anatomy of this condition is that of Virchow in his *Gesamt. Abhandlungen.* He published, I think in 1858 or 1859, an account of the post-mortem appearances in three such cases. In the hospital records and literature accessible to me, I have found reports of 52 cases, occurring between that time and the present, of occlusion of the mesenteric arteries or veins by emboli or thrombi, in all of which there are accurate records of the pathological conditions; to 27 of this number are attached clinical histories sufficiently satisfactory to permit of drawing inferences from them. These latter I have analyzed with only two objects in view: First, as to the possibility of making the diagnosis; and second, as to the chance of saving life by surgical operation. In order to assist in following this analysis, the cases are here presented in the following order: (1) Cases of embolism or thrombosis of the superior mesenteric artery, with clinical histories; (2) Of the mesenteric veins, with clinical histories; in all, 27 cases.

---

[1] Read before the Surgical Section of the Suffolk District Medical Society, November 7, 1894.

CASES OF THROMBOSIS, OR EMBOLISM, OF THE SUPERIOR MESENTERIC ARTERY.

Case I. Cohn.[2] Woman, aged forty-five years. The only intestinal symptom mentioned is diarrhea. Pneumonia and pleurisy supervened.

Autopsy. — The colic branch of the superior mesenteric artery was entirely occluded by an embolus. Infarction of the transverse colon. Mitral disease. Old coagulum in the left ventricle. Pleurisy and pneumonia of the left side.

Case II. Cohn.[2] Man, aged twenty-eight years. Diarrhea is the only intestinal symptom mentioned. Patient had syphilis and Bright's disease.

Autopsy. — Branches of the superior mesenteric artery supplying the lower portion of the ileum firmly plugged by adherent coagula. Infarction of the last foot of the ileum. Atheroma of the aorta. Heart normal.

Case III. Oppolzer.[3] Male, aged fifty years. Suddenly seized with violent colicky abdominal pain, not localized. This was followed shortly by vomiting and a profuse bloody diarrhea. Old cardiac disease was present.

Autopsy. — Main trunk of the superior mesenteric artery totally occluded by an embolus two inches long. Infarction of the bowel from the middle of the duodenum to the middle of the transverse colon. The mucous membrane of the intestine swollen and softened. Stenosis of the mitral valve, and coagulum in the left ventricle.

Case IV. Kussmaul.[4] Male, aged twenty-six years. Was suddenly attacked, in the course of cardiac disease and empyema, with profuse bloody diarrhea. Subnormal temperature followed, and death thirty-six hours later.

Autopsy. — Branches of the superior mesenteric artery supplying the jejunum totally occluded by hard adherent thrombi extending into the peripheral arteries. Infarction of the lower part of the small intestine. The mucous membrane of its lower portion deeply injected and showing small necrotic areas. Hemorrhagic peritonitis, hemorrhagic extravasations into the mesentery. Peri-myoendocarditis, empyema, Bright's disease. Infarctions of both kidneys and spleen.

Case V. Pieper.[5] Male, aged thirty-eight years. Was suddenly attacked with violent colicky abdominal pain, not localized, preceded a few hours before by profuse vomiting and bloody diarrhea. These symptoms appeared on the seventeenth day of an acute rheumatism, on the eleventh day of which endocarditis developed. One day later the patient died.

Autopsy. — The main trunk of the superior mesenteric artery was totally occluded by a firm adherent coagulum. Infarction of the whole small intestine, and of the large intestine as far as the transverse colon. Intestinal contents bloody. General peritonitis. Infarction of the spleen.

Case VI. Moos.[6] Male, aged nineteen years. On the eighteenth day of an acute rheumatism was suddenly attacked by a profuse bloody diarrhea, followed shortly by violent colicky pains (not localized), and by gradually increasing abdominal distention. Temperature subnormal. There was evidence of widespread embolism in other parts of the body at the same time. The patient recovered at the end of eight weeks.

Case VII. Zenker.[7] Male, aged thirty-nine years. Amputation of the right leg for injury July 19, 1869. Died November 17th. Septicemia followed the amputation. During the last three days there was occasional vomiting, but no other abdominal symptom.

Autopsy. — Infarction of a portion of the small intestine. The branch of the superior mesenteric artery supplying this area was totally occluded by a hard, adherent embolus. Thrombosis of both femoral veins. Septic abscesses in left arm and right thigh.

Case VIII. Baumler.[7] Male, aged sixty-one years. Had chronic heart and renal disease. Five days before death began to vomit. Three days before death abdominal distention and subnormal temperature.

Autopsy. — Three and one-half centimetres from its origin the superior mesenteric artery was totally occluded by a coagulum fourteen millimetres long; from it a prolongation extended three millimetres into one of the branches of the vessel. There were two branches given off from the artery between its origin and the embolus, which were free from emboli.

Case IX. Concato.[8] The patient was suddenly attacked three days before death with violent colicky pain and tenderness in the epigastrium, which persisted until death. There were no other abdominal symptoms except slight distention. Temperature subnormal.

Autopsy. — Several of the branches of the superior mesenteric artery were totally occluded by thrombi. Infarction of the small intestine from the upper part of the jejunum downwards. The contents of the bowel were bloody. The peritoneal cavity contained a considerable quantity of foul, dark fluid. Atheroma of the abdominal aorta, with several thrombi on its walls.

Case X. Putnam, Mary.[9] Woman, aged thirty-five years. Was suddenly attacked with copious diarrhea; the stools were tarry. A few days later she had violent colicky abdominal pains, not localized, followed two hours later by vomiting, and two days later by abdominal distention. Death occurred three days after the appearance of pain.

Autopsy. — Gangrene of the last two feet of the ileum; the mesentery of this portion of the bowel was thickened, and contained extravasations of blood. Numerous hard bead-like bodies were felt in the mesentery near its intestinal attachment. The blood-vessels were not, however, thoroughly examined.

Case XI. Howse.[10] Woman, aged forty-eight years. There were two attacks of abdominal pain some months before the present illness. The latter began with severe pain in the right hypochondrium, but it lasted only a short time. Vomiting followed soon after, and also diarrhea, which was profuse but not bloody, and continued till death, three weeks later. Abdominal distention was present throughout the illness. The temperature ranged from 99° to 102° F. There was gangrene of the left foot.

---

[2] Klinik. der Gefässkrankheiten, p. 548.

[3] Allg. Wien. Med. Ztg., 77-88, 95-103, 1862.

[4] Würz. Med. Zeitsch., v. v, 210-220, 1864.

[5] All. Med. Cont. Ztg., v. xxxiv, 493-496, 1865.

[6] Virchow's Arch., v. xli, p. 62.

[7] Deutsch Arch. fur klin. Med., v. xvi, p. 527, 1875.

[8] Rivista Clinica del, 1866.

[9] New York Medical Record, vol. vii, p. 208.

[10] Transactions Pathological Society, London, vol. xxix, p. 101, 1878.

Autopsy. — The main trunk of the superior mesenteric artery was totally occluded by a firm thrombus which extended into the aorta downward. The aorta above was healthy. Extensive ulcerative processes of the mucous membrane of the lower part of small intestine and first part of the ascending colon. Peyer's patches were not implicated in this process. There were two fistulous communications between separate parts of the intestines, and they were not of recent formation; one was between a loop of small intestine and the ascending colon, the other between small intestine and descending colon. Some of the branches of the superior mesenteric artery were occluded to their terminations with thrombi.

Case XII. Aronshon.[11] Male, aged forty-five years. Was seized with sudden violent pain in the epigastrium; this ceased in two days. Eight days later he had a similar attack accompanied by dyspnea and cyanosis; these symptoms lasted four days. There was no vomiting or diarrhea. The abdomen was slightly distended. Temperature 100°. Chronic cardiac disease and edema of the lungs. Death on the twelfth day.

Autopsy. — Superior mesenteric artery, and its branches as far as the intestine, were occluded by thrombi. Embolism of one of the arteries of the brain. Infarction of jejunum and ileum. The pelvis contained a considerable quantity of bloody fluid. Edema of lungs. Hypertrophy of left and dilatation of right side of the heart.

Case XIII. McCarthy.[12] The patient was attacked suddenly with violent pain in the right hypochondrium; the pain persisted for six days. Vomiting, obstipation and abdominal distention were present throughout the illness. Laparotomy was performed for the relief of intestinal obstruction, which was secured by making an artificial anus. The patient died shortly afterward.

Autopsy. — The main trunk of the superior mesenteric artery was occluded by an embolus originating in a thrombus in an atheromatous aorta.

Case XIV. Hahn.[13] Male, aged fifty-six years. Suddenly attacked with vomiting, followed by severe epigastric pain which continued until death. There was no diarrhea, constipation or abdominal distention. The abdominal walls were soft and natural. Cardiac and renal disease were present. Death in one day.

Autopsy showed embolism of the superior mesenteric artery.

Case XV.[14] Male, aged seventy-eight years. Chronic cardiac and renal disease. Died without having any abdominal symptoms whatever. Temperature normal. The patient was under observation for three days. He was brought to the hospital unconscious, after having fallen in the street. He regained consciousness a few hours later.

Autopsy. — Totally occluding thrombus of the principal branches of the superior mesenteric artery. Hemorrhagic infarction of the small intestine. Fifty centimetres of ileum above the ileo-cecal valve was dark red in color, covered with patches of shreddy membrane. The intestinal walls much thickened. Mucosa hemorrhagic, and showing small spots of superficial necrosis. Hemorrhagic infarction in right kidney, hydronephrosis of left kidney, chronic interstitial nephritis. Chronic lepto-meningitis, endarteritis of cerebral vessels. Acute endocarditis. Chronic emphysema of lungs.

Case XVI.[15] Male, aged sixty-one years. Twelve days after the beginning of senile gangrene of the feet the patient was suddenly attacked with violent colicky abdominal pains, not localized. The pain continued until death. One day later there were no other abdominal symptoms. Temperature subnormal.

Autopsy. — Embolus of the superior mesenteric artery. Infarction of the whole of the small intestine, most marked in the upper part of the jejunum. Thrombus in mesenteric artery began four centimetres from the aorta and extended throughout the branches almost to the intestines. General peritonitis. Thrombi in the aorta. Embolism of the femoral artery. Old and recent infarction of kidneys.

Case XVII. Grawitz.[16] The patient had short periods of unconsciousness and vomiting.

Autopsy showed embolism of the superior mesenteric artery.

Case XVIII. Kaufman.[17] Violent colicky abdominal pains, not localized.

Autopsy showed embolism of the superior mesenteric artery. Atheromatous aorta. Endocarditis. Thrombi in the heart.

Case XVIX. Moyers.[18] A patient with cardiac disease was suddenly seized with violent colicky abdominal pains, hematemesis and diarrhea.

Autopsy showed embolism of the superior mesenteric artery.

Case XX. Osler.[19] Woman, aged fifty-five years. Suddenly attacked with violent abdominal pain, not localized. Vomiting soon followed, and persisted till death, finally becoming fecal. Tympanites was present. Death one week after onset of attack.

Autopsy. — Thrombosis of the superior mesenteric artery, totally occluding its orifice. Hemorrhagic infarction of jejunum and ileum.

Case XXI. Osler.[19] Woman, aged seventy-five years. Suddenly attacked with severe abdominal pain, not localized. Frequent vomiting and diarrhea; the latter lasted but a short time, and was followed by obstipation and abdominal distention.

Autopsy. — Embolism of the superior mesenteric artery. Infarction of the small intestine, involving most of the ileum and jejunum. Recent warty vegetations on the heart.

Case XXII. Osler.[19] Male, aged forty years. Suddenly attacked with violent abdominal pains, not localized. Vomiting and diarrhea soon followed; the stools were tinged with blood. Tympanites appeared later. Death at the end of one week.

Autopsy. — Superior mesenteric artery was blocked for half an inch of its main trunk by a fibrinous clot, which extended into the artery from an aneurism of the aorta, from the sac of which the superior mesenteric artery had its origin.

---

[11] Gaz. Des. Hop., September 1, 1868, No. 102, p. 406.

[12] London Lancet, March 22, 1890.

[13] Dissertation, Munich, 1889.

[14] Boston City Hospital Records (not published), June 17, 1887.

[15] Ibid., vol. xxv, p. 222 (not published).

[16] Virchow's Arch , Bd. 110, p. 434.

[17] Ibid., Bd. 116, p. 353.

[18] Glasgow Medical Journal, 1880, vol. xiv, p. 481.

[19] Practice of Medicine, 1893, p. 404.

Case XXIII. Councilman.[20] A woman, eighty-five years old, was attacked with moderate abdominal pain, which after a few hours became intense, and was localized in the right iliac fossa. This pain persisted throughout the illness. Vomiting began on the fourth day and continued until death, finally becoming fecal. There was complete intestinal obstruction throughout the illness. The abdomen was distended after the second day. Subnormal temperature until the eighth day; it then rose to 101.5°. Fatty degeneration of the heart, and lobular pneumonia were present. Death on the twelfth day.

Autopsy — Thrombosis of the superior mesenteric artery, extending from a thrombus of the aorta which arose from a rough calcified plate on the surface of the aorta near the origin of the superior mesenteric artery. The extension of the thrombus into the latter vessel was short, and did not absolutely occlude its lumen; the rest of the vessel and its branches were free. The intestines were distended and but moderately congested. There was no intestinal infarction.

Case XXIV. Councilman.[20] A man, sixty-one years old, with senile gangrene of the feet, had general, slowly increasing abdominal pain two days before death.

Autopsy.— The superior mesenteric artery was occluded by an embolus arising from a thrombus formed on a calcified plate in the atheromatous aorta, near the origin of the superior mesenteric artery. Hemorrhagic infarction of the entire small intestine; necrotic areas on its mucous membrane. Thrombosis of the femoral arteries, and embolus and infarction of the kidneys.

Case XXV. Councilman.[20] A man, sixty-two years old, was suddenly attacked with violent general abdominal pain and tenderness which increased until death. There was no vomiting. Diarrhea for eight days before death. Temperature was slightly elevated. Cardiac symptoms had been present for eight months previous. The patient died on the eighth day after the appearance of the abdominal pain.

Autopsy.— Total occlusion of the superior mesenteric artery, at its origin, by a thrombus, which probably originated in an atheromatous aorta — infarction of small intestine — cardiac hypertrophy and insufficiency of the aortic valves.

Case XXVI. Munro.[21] A man, fifty-one years old, felt pain in the lower abdomen after lifting a heavy weight, and soon afterward passed blood per rectum. This was succeeded by colicky pain in the abdomen. Constipation followed for one week. Pain was the first symptom, and was referred to the region of the transverse colon. Vomiting was present during most of the illness, and finally became fecal. A large, hard mass could be felt in the left iliac region. Temperature subnormal. Laparotomy was performed at the end of three weeks. The hard mass in the left iliac region was seen to be thickened, mesentery contained hemorrhagic extravasations. In the description of the operation it is not clear what was done, if anything, beyond opening the abdomen.

Autopsy. — Embolism of the inferior and superior mesenteric arteries. Infarction of the small intestine and its mesentery, also of the descending colon and sigmoid flexure.

Including the author's, the whole number of cases is 27. A study of these cases gives the following results:

Pain occurred as the first symptom, or coincident with vomiting or diarrhea, in 18 cases. In all but three of these it was violent, paroxysmal, colicky, abdominal pain, not localized definitely. In two cases it was localized in the epigastrium, and in one in the right iliac fossa. In most of the cases the pain continued throughout the illness. Pain was absent in four cases, and not noted in five cases.

Diarrhea occurred as an early symptom in 14 cases. It was bloody in seven of these. There was no diarrhea or other disturbance of the bowels in six cases. Obstipation was present in five cases. No observation is recorded in two cases.

Vomiting occurred as the first symptom, or as closely following the abdominal pain, in 14 cases; in 2 of these it was bloody, and in 3 it was fecal. In most of these cases it was persistent, and continued during most of the illness. There was no vomiting in 6 cases, and there is no record about it in 7.

Abdominal Distention occurred in 12 cases, appearing a day or two after the beginning of the illness and gradually increasing. There was no distention in 4 cases, and there is no record of it in 11.

Temperature was subnormal in 11 cases, elevated in 4, not recorded in 13.

Preceding or Coincident Diseases in 16 cases. In 9 of these cardiac and (or) renal disease was noted during life; pneumonia and pleurisy in 2; gangrene (senile) of feet in 3; pyemia in 1; acute rheumatism in 1. There was evidence of embolism elsewhere in but 5 cases during life.

Age.— The cases occurred at the following ages:

Between 10 and 20	1 case
Between 20 and 30	2 cases
Between 30 and 40	3 cases
Between 40 and 50	4 cases
Between 50 and 60	5 cases
Between 60 and 70	4 cases
Between 70 and 80	2 cases
Over 80	1 case

Sex. — There were 14 males and 7 females. Six cases not noted.

Autopsies show that the source of the embolus or thrombus, to have been the heart or atheromatous aorta in 15 cases, an aneurism of the aorta in 1. Undetermined or not noted in 9. There was no autopsy in 2.

Total Occlusion of the main trunk of the superior mesenteric artery occurred in 8 cases. It is interesting to note the symptoms in connection with these particular cases. In the first case there was hemorrhagic infarction of almost all the small intestine. The patient, however, had no abdominal symptoms whatever. Duration of the illness was three days. In the second case there was infarction of the jejunum and the ileum. Slight tympanites and epigastric pain were the only abdominal symptoms. In the third case there were fistulous communications between the intestines in two places, which were not of recent formation, and an ulcerative process of the mucous membrane of a part of the small intestine. The abdominal symptoms in this case were pain, vomiting, diarrhea (but not bloody), and abdominal distention. In the fourth case there was infarction of almost all the small intestine. The attack came on gradually, vomiting and abdominal distention were the only symptoms. In the fifth case there was infarction of all the small intestine and of the large intestine as far as the transverse colon. General peritonitis. . The abdominal symptoms were violent colicky pains, vomiting and bloody diarrhea. In the sixth case there was infarction of the small and part of the large intestine. The abdominal symptoms were violent pain, vomiting and profuse bloody diarrhea. In the seventh case there was infarction of all the small intestine and general peritonitis. The only abdominal symptom was acute, colicky pain. In the eighth case there was hemorrhagic infarction of the whole of the small intestine. Abdominal pain and diarrhea were the only symptoms.

---

[20] Boston Medical and Surgical Journal, April 26, 1894.

[21] Lancet, January, 1894, p. 148.

It will be noticed that in one case there was entire absence of abdominal symptoms, and that in two others they were very slight, but that in all but one of these cases of total occlusion of the main trunk there was infarction of a very great part of the intestines; whereas in another case in which only the branches of the vessels supplying a part of the ileum and jejunum was plugged, and in which but a short distance of the small intestine was involved in an infarction, there were nevertheless sudden violent abdominal pains and profuse bloody diarrhea. Other examples of the same combination as in the last case are to be found; in other words, the plugging by an embolus of one of the smaller branches of the artery with a comparatively slight intestinal lesion as a consequence may produce as severe and as many (or more) abdominal symptoms as when the main trunk of the vessel is occluded, and may lead to a more speedily fatal termination. So that it is impossible to discriminate clinically as to the extent, or even probable location, of the occluding body, even if it be possible to make a fairly accurate diagnosis as to the nature of the trouble itself.

Before speaking further of diagnosis, I wish to add the reports of three cases of

THROMBOSIS OF THE SUPERIOR MESENTERIC VEIN.

CASE I.[22] Female, age 34. Confined one month previous to attack. Ten days before, had phlegmasia of the left leg, which subsided in a week; then the right leg was similarly affected. Nine days before attack, she had a troublesome diarrhea. She was attacked, one month after confinement, with violent pain in abdomen — paroxysmal, colicky, not localized; vomited viscid, blood-stained fluid in small quantities; collapse; was conscious; six hours later pain almost ceased, and patient improved; abdomen soft and natural, no tenderness anywhere, no tympanites, nothing to be felt; a few hours later pain returned and she died — twelve hours after attack began.

Autopsy. — The jejunum was of a dark-purple color. The congestion extended a short distance into the mesentery; the congested area was sharply limited above and below, the rest of the digestive tract being healthy. There was no distention of any part of the bowel. The heart, aorta and mesenteric arteries were normal. The branches of the mesenteric vein coming from the affected portion of the intestine, and for a short distance beyond either end of it, were occupied by firmly adherent, hard thrombi, extending throughout the entire course of the vessels. The thrombi could be felt as hard masses lying in the mesentery to within an inch or two of the bowel. The femoral veins were plugged by recent thrombi.

CASE II.[23] A young girl, who was in the hospital for an abscess of the neck, developed erysipelas. A few days later she was seized with violent epigastric pain, and died in a few hours.

Autopsy. — Thrombosis of the superior mesenteric vein and its tributaries. Hemorrhagic infarction of the intestine throughout the area of the vein's distribution.

CASE III.[24] A woman, aged fifty. For a year she had had renal and cardiac symptoms: Edema of the feet and of the face, vomiting, dyspnea, palpitation and frequent urination. The patient entered the hospital December 11, 1886. Two weeks previous the abdomen became distended and has increased steadily in size since. Examination showed cardiac hypertrophy and tricuspid regurgitation. The urine contained granular and hyaline casts and one-eighth per cent. of albumin. There was a well-marked anasarca. There had been marked constipation for two or three weeks; the bowels could be moved by cathartics with difficulty. Two days after admission, four quarts of ascitic fluid were withdrawn by trocar. Three days later, Cheyne-Stokes respiration and constant vomiting of dark-brown fluid took place. Pulse 180. Patient became comatose two days later, and died on the eighth day after admission, and in an uremic convulsion.

Autopsy.[25] — Hypertrophy and dilatation of heart. Venous engorgement of the lungs, liver and spleen. Thrombosis of portal vein and its branches. Ascites. Hemorrhagic infarction and necrosis of jejunum; 50 centimetres of the jejunum was of a dark-red color and covered with a recent fibrinous false membrane. The mucous membrane was greatly thickened, very dark in color, and showed occasional necrotic areas. The mesentery was much thickened. A firm thrombus occupied the junction of the superior mesenteric and splenic veins, nearly occluding their lumen, and extending into them. The peritoneal cavity contained about one litre of clear fluid.

Of these three cases, two were of more violent character and of more rapid course than any of those in which the artery was involved.

There are two recorded cases of embolism of the inferior mesenteric artery; but I do not find that they present any symptoms which serve to differentiate them from the others, although it has been stated that this class may be distinguished from those of the superior mesenteric vessels by the presence of fresh blood in the dejections and by the localization of pain in the lower part of the abdomen. The number of observations of embolism of the inferior vessel seems too few to allow this inference.

With regard to the diagnosis there are certain symptoms which when associated, are fairly, though not positively, characteristic. They seem to me to be, in the order of their importance, as follows: (1) Colicky, very intense, not definitely localized, abdominal pain. (2) Bloody diarrhea. (3) Subnormal temperature. Vomiting if present (and next to pain it is the most frequent symptom) strengthens the diagnosis, as do also abdominal distention and marked prostration; but the first two or first three symptoms, when occurring in combination, are the only ones that can be called in any sense characteristic. Pain is the first symptom more often than any one other, and its intense character is dwelt on by several authors.

---

[22] Fagge: Trans. Path. Soc., London, 1876, vol. xxvii, p. 124.

[23] McWeeney: Lancet, December 23, 1893.

[24] Boston City Hospital Records (not published), vol. ccl, p. 228.

[25] Medical Records, Boston City Hospital; vol. ix, p. 188, vol. ccl, p. 226 (not published).

Gerhardt and Kussmaul speak of the evidence of embolism elsewhere in the body as one of the symptoms essential to making the diagnosis. When present it is, of course, of great value, but as already pointed out, it occurred in but few of the cases enumerated here (in eight). The coexistence of cardiac disease and atheromatous arteries is also affirmatory in connection with the important symptoms mentioned. There remains a considerable number of cases in which there are no well-marked abdominal symptoms; in these it is impossible to make a diagnosis. In about one-quarter of the cases the symptoms are seen to be sufficiently characteristic to warrant the diagnosis. In none could the extent of the intestinal lesion or the situation of the thrombosis or embolus have been determined without surgical exploration of the abdomen.

SURGICAL OPERATION.

(1) In about one sixth of the cases the autopsy showed that the intestinal lesion was sufficiently limited and well defined to allow of a successful resection of that part of the bowel.

(2) In the majority of cases there are coexisting diseases, most frequently cardiac or renal, or atheromatous arteries, and most of the patients are beyond middle life.

(3) There is, on the other hand, a small minority of cases of individuals below middle life, in whom the source of the embolus, or cause for thrombosis, is obscure or undiscoverable, in whom no serious disease of other organs can be detected.

(4) Practically, all patients die when left to themselves or under any form of medical treatment.

From the above considerations it may be concluded that laparatomy is indicated in all cases in which the symptoms suggest the nature of the disease, and in which the patient is not too greatly prostrated or has not some other fatal disease. There will probably occur a few in which the local and general conditions of the patients are favorable to success. Where a not too extensive portion of the gut is involved, and if it be possible to do so, resection of the diseased part should be practised; otherwise an artificial anus should be made, and if the patient survives, the cut ends of the bowel may be united subsequently. That this is actually possible, is shown in the remarkable case of Elliot's which he is to report to-night, in which he successfully resected about four feet of the small intestine.

In conclusion, and to show the possibility of survival after total obliteration of the main trunks of the mesenteric arteries, the following case is appended:

John Chiene.[26] Female, age sixty-five, a dissecting-room subject. The vessels were injected from the femoral. The branches of the celiac and mesenteric arteries were found to be filled with the injection, but their main trunks were totally occluded as far as their first branches by an old embolic process which evidently dated back for a considerable period. There was an aneurism of the lower abdominal aorta, from the sac of which the lower mesenteric artery sprang. The celiac axis was converted into a hard fibrous cord for its first half inch; beyond this point the branches were free. Both mesenteric arteries were obliterated at their origins, but their branches were filled with the injection through the superior hemorrhoidal, which was as large as the femoral. The blood reached the superior mesenteric through the left and middle colic arteries, which were double their natural size. The extra- and retro-peritoneal plexus of the ordinarily small arterial vessels was enormously enlarged, and served as the channel of communication between the internal iliacs and the mesenteric arteries; this plexus ran along the sides and posterior surface of the rectum. The author states that this is probably the only recorded case of obliteration of the main trunks of the three anterior branches of the abdominal aorta supplying the viscera, and the subsequent establishment of collateral circulation. The author concludes as follows: "This case confirms the view that between the visceral and parietal branches of the abdominal aorta there exists a free communication through the sub- or extra-peritoneal plexus of arteries, as described by Professor Turner in 1863. Enlargement of this system of arteries in the abdomen and pelvis may take place to such an extent as to become the channel of blood-supply to the abdominal viscera when their main arterial trunks are obliterated."

This article of Chiene's deserves careful study in the original.

ADDITIONAL REFERENCES.

Gerhardt. Würz. Med. Zeitsch., vol. iv, 141–149, 1863.
Klob. Zeitsch. der K. K. Gesell., Wien., 1859.
Alexander. Berl. klin. Woch., 1866.
Merkel. Wien. Med. Presse, vol. viii, 740–763, 1867.
Molliere. Lyon Méd., vol. viii, 691–779, 1871.
Litten. Virchow's Arch., vol. lxiii, 289, 1875.
Lereboullet. Rec. de mem. de Méd.-Milit., vol. xxxi, 417, 1875.
Fagge. Transactions Pathological Society, London, vol. xxvii, 124, 1876.
Chuquet. Bull. Soc. Anat., Paris, vol. liii, 124, 1878.
Leroux. Prog. Méd., 184, 1879.
Bertrand. Contribution à l'Etude des Obliterations Mesenteriques, quarto, Paris, 1876.
Coats. Glasgow Medical Journal, vol. xiii, 495, 1880.
Faber. Deutsch. Arch. für klin. Med., vol. xvi, 527, 1876.

A REPORT OF THREE CASES OF EMBOLUS OF THE MESENTERIC ARTERY, WITH REMARKS ON THE SUBJECT.[1]

BY HOWARD A. LOTHROP, A.M., M.D.

THE subject of this evening's paper recalls to me three cases which I had the good fortune to observe recently, in one of the Vienna Hospitals. A few notes taken at that time serve to refresh my memory both in regard to the clinical history and the result of the autopsy some hours later. They were all fatal cases; all were adults, and, as the post-mortem showed, they were all hopeless from the outset.

CASE I was that of a man about thirty-five years of age, well developed and nourished, with the history of having always been well. No gastro-intestinal disturbance. Two days before entrance, he was seized with sudden, sharp, abdominal pain, followed by nausea and vomiting. At entrance he complained of less pain, but had marked general abdominal tenderness without distention. There was but slight rise of temperature, while the vomitus was dark in color and contained blood. The patient was suffering from considerable shock. The next morning there were signs of great collapse, while, in addition to the continued dark-colored vomiting, a diarrhea had set in which showed a considerable amount of blood in the stools. Patient had now become very anemic. During the day he continued to fail, relapsed into a deep coma, and died late in the afternoon. No diagnosis was made with any certainty.

---

[26] Journal Anatomy and Physiology, Edinburgh, vol. iii, p. 65, 1868.

[1] Read before the Surgical Section of the Suffolk District Medical Society, November 7, 1894.

Autopsy. — On opening the abdominal cavity a small amount of nearly clear serous fluid escaped; all visible convolutions of the small intestine were of a chocolate-brown color, while their serous covering was less lustrous than normal. In great contrast was the normal large intestine, forming a frame, as it were, for the dark centre. The circulatory disturbance involved the entire jejunum and ileum without any well-marked line of demarcation at either end. Thrombi could be seen radiating along the course of the mesenteric vessels, which were traced up to a common origin in the main trunk of the superior mesenteric artery. The contents of the small intestine were semi-solid and of a dark-brown color, some of which had regurgitated into the stomach, while more had passed on into the colon. On tracing the thrombi to their origin and on opening the vessel, an embolus was found located in the superior mesenteric artery near the origin of the arterio colica media (see diagram). Secondary thrombi had formed along the course of this artery, distal to the seat of embolus. In the spleen were two scars, the result of old hemorrhagic infarcts. The heart was hypertrophied and dilated, and the mitral and aortic valves were the seat of a chronic endocarditis. Examination otherwise negative.

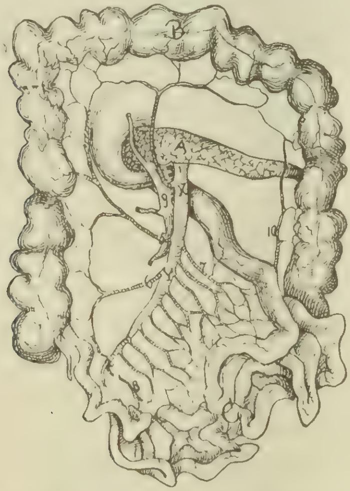


Diagram Showing Branches and Distribution of the Superior Mesenteric Artery.

1, 2. Main trunk. 3. Inferior pancreatico-duodenal. 4. Colica media. 5. Colica dextra. 6. Ileo-colic. 7, 8. "Intestinal branches" (about twelve in number). 9. Superior mesenteric vein. 10. Colica sinistra (branch inferior mesenteric artery). A. Pancreas. B. Ascending, transverse and descending colon. C. Coils of small intestine. X. Site of embolus in Cases I and III. Y. Site of embolus in Case II.

Case II entered the hospital moribund, and of the history I know nothing.

Autopsy on the next day revealed the characteristic picture as seen in Case I, although the area of chocolate-brown intestine was less extensive. There was no peritonitis, and measurement showed that about ten feet of ileum were included in the infarct. The embolus was in the superior mesenteric artery near the ileo-colic artery. A chronic endocarditis was present in this case.

Case III was a man aged forty years, who entered the surgical ward with the history of sudden onset of acute abdominal symptoms three days previous. He had been vomiting from the outset, and had had diarrhea for the last twenty-four hours. There were traces of blood in the vomitus and stools. General condition very poor. Diagnosis uncertain.

Operation. — Median abdominal incision. Slight serous fluid escaped, all visible coils of small intestine were dark red and injected. A careful search was made for the cause of this condition such as volvulus, intussusception, strangulation from bands or cords, obscure herniæ, etc., but all was in vain. The wound was closed, to be followed by death in about twelve hours.

Autopsy on the next day revealed a beginning peritonitis. The intestines presented a picture otherwise practically identical with that seen in Case I, which would seem to be more or less characteristic of embolus of the superior mesenteric artery. The embolus also had about the same location and its origin could be traced to the mitral valve.

Dr. Elliot has reported a favorable case, one which without operation would have been fatal. These three cases were all fatal, and probably no procedure would have saved life in any one of them.

DIAGNOSIS.

The symptoms seen by me in these cases were those of a late stage; but these, together with the history obtained, leave us with a group which can be considered more or less characteristic of embolus of the superior mesenteric artery. They are:

(1) Sudden abdominal pain over a considerable area generally including the umbilical region.

(2) Nausea and vomiting — vomitus in late stages containing blood.

(3) General abdominal tenderness.

(4) Diarrhea, a rather late symptom. Stools apt to contain blood if patient survives for several days.

(5) Shock with constitutional disturbance, such as would be looked for in any case of acute intestinal obstruction.

Given a case presenting such a group of symptoms, before arriving at a diagnosis of embolus of the superior mesenteric artery, we must consider and rule out such possibilities as —

(1) Volvulus.
(2) Intussusception.
(3) Strangulation from bands or cords.
(4) Herniæ of all kinds.
(5) Perforation of gastric or duodenal ulcer.
(6) Acute pancreatic affections.

As a further aid to diagnosis a complete physical examination should be made: the heart should be studied with reference to endocarditis; renal elements in the urine might suggest the possibility of embolus in the kidney; while old or recent cerebral symptoms might indicate the possibility of cerebral embolus as well as an atheromatous condition of the blood-vessels.

PROGNOSIS.

Prognosis depends upon — (*a*) General symptoms, as to whether the patient has strength sufficient to withstand the shock, both of the attack and that necessarily consequent on any operative procedure; (*b*) Local conditions, such as the character and seat of the embolus. A septic embolus would almost inevitably result in a fatal peritonitis. A bland embolus would be more or less serious according to its point of arrest in the artery, which is made clearer by the following diagram, which shows the branches and distribution of the artery in question.

For the sake of classification I would consider three conditions:

(1) Embolus sufficiently large to obstruct the artery near its origin. Death would seem inevitable, for this would cause a sudden loss of blood-supply to the jejunum, ileum and ascending and transverse colon. Cases I and III belong to this class.

(2) Embolus in the main trunk of the artery, but distal to the ileo-colic and several of the "intestinal branches." Death to be expected from peritonitis as a result of gangrene and perforation if left alone. Life may be saved by operative intervention and the necrotic intestine resected. Case II was an example of this class; and if the primary cause in Dr. Elliot's case was an embolus, I would include that here also.

(3) If the embolus is sufficiently small to find its way into one of the "intestinal branches," no serious secondary results need be feared, for the collateral circulation is very free as seen by the diagram, and the the condition is as trivial as an embolus in one of the smaller branches of an artery supplying an extremity.

Autopsies reveal to us that emboli emanating from the left heart are by no means rare occurrences; and I believe that the reason why we so seldom hear from them in the superior mesenteric artery, is because they are either too large to enter that artery, or are too small to obstruct its main trunk, but pass on to a point of arrest where the collateral circulation is well provided for.

TREATMENT.

Here we can be very brief. Disastrous results which would otherwise come from small emboli are guarded against by nature. This class of cases will pass unnoticed.

If embolus is *diagnosed*, operate, for neglect is sure death. Class I is fatal at best, Class II may be saved by resection.

If embolus is *suspected*, operate, for the dangers of an exploratory laparotomy in well appointed hospitals are less than the risk incurred by expectant treatment.

THE EFFECTS OF WARM DOUCHES, MASSAGE AND FRICTION UPON THE EXPANSION OF THE LUNGS.

BY DOUGLAS GRAHAM, M.D.

There are often more ways than one of accomplishing the same object, and much as we would like massage to prove the best, we sometimes have to concede that other means are more effectual. In an instructive article in the *Revue d'Hygiène Thérapeutique*, for July, 1894, Dr. J. Nicolas has given us the results of his experience, demonstrating that the warm douche alone produces greater pulmonary expansion than massage does alone. But we think, if he had combined the two he would have obtained greater expansion than from either; and if to both he had united passive and resistive movements of the arms to expand the chest, somewhat after the manner of artificial respiration, there would, no doubt, have been obtained the greatest expansion of all. However, the paper is so exceedingly interesting and valuable that it is well worth while to reproduce it in brief for those who may not have the opportunity of reading it in the original.

The thermal station of Mont-Dore each year has a large number of patients affected with asthma, emphysema, or chronic bronchitis. For these the warm douches are frequently used, as well as the imbibition of the water and inhalation of the mineral vapors which constitute the basis of treatment. Those who favor this threefold use of the water have hitherto regarded the warm douche as only a form of revulsion. The heat and the force of the percussion of the douche determine a powerful attraction of the blood to the skin at the expense of the deeper parts; and the perspiration which is thus provoked may bring about resolution or chronic engorgement of the lungs. But these effects hardly suffice to explain the comfort which the emphysematous patients experience immediately after the douche; neither do they account for the rapid modification which supervenes in their respiration.

Patients attacked with pulmonary emphysema having attracted the attention of M. Nicholas by the amplitude and the freedom of respiration after the warm douche upon the chest, he has verified their assertions by auscultation and by measurement, by means of the spirometer. He found that the vesicular murmur which was scarcely perceptible to the ear before the douche became clearly perceptible afterwards — a proof that there was more air introduced into the chest and with greater rapidity, and this was confirmed by the aid of the spirometer.

The respiratory capacity having been measured several days in succession and several times each day, before and after the douche, the figures below indicate an average.

Case I. Slight emphysema, slight chronic bronchitis. Pulmonary capacity before the douche, 3,500 c. c. (333 cubic inches); after the douche, 3,800 c. c.

Case II. Very pronounced emphysema, slight bronchial catarrh, frequent asthma at night. Pulmonary capacity before douche, 1,800 c. c.; after douche, 2,000 c. c.

Case III. Bronchitis and empysema. Lung capacity before douche, 1,500 c. c.; after douche, 1,800 c. c.

Case IV. Emphysema with frequent attacks of asthma. Lung capacity before douche, 1,500 c. c.; after douche, 1,900 c. c.

Case V. Chronic bronchitis, empysema. Lung capacity before douche, 1,800 c. c.; after douche, 2,100 c. c.

Case VI. Emphysema and asthma. Lung capacity before douche, 1,100 c. c.; after douche, 1,300 c. c.

Case VII. Chronic bronchitis and emphysema. Lung capacity before douche, 2,500 c. c.; after douche, 2,800 c. c.

It is useless to increase cases, as the results were uniform, and show an increased expansion of the lungs after the douche of from 200 to 300 cubic centimetres (12 to 18 cubic inches), on an average.

From whence proceeds this expansion? It may be due in part to the reflex action which the douche by its warmth and strength of projection determines upon the respiratory nerve centres, and which thus causes cessation of the dyspnea. It may also be due in part to the absorption by the lungs of the vapor and of the carbonic-acid gas which are set free from the mineral water when the column of liquid is broken against the chest. The vapor and the carbonic acid calm the bronchial spasm, and thus facilitate the entrance of air into the lungs.

But, above all, the douche appears to act by the massage which it exerts upon the muscles of the thorax, exciting their contractility. And for this it ought to combine the following conditions of temperature, pressure and duration: The temperature ought to be about 38° Centigrade (100° F.); the water should be projected in a horizontal jet or vertical column, but not in the form of spray, which lacks force, and under a pressure of five or seven metres; the duration ought to be for seven to ten minutes, as this length of time is indispensable for the succession and repeated irritation of the muscles of the thorax.

In order to supplement the insufficiency of their respiration, emphysematous patients make involuntary efforts with all the muscles that are capable of increasing inspiration. Not only the intercostal muscles are called into extra play, but also all the muscles inserted into the thorax: the pectorals, the trapezii, the scaleni, the large dorsal, the large serrati and the sterno-cleido-mastoid increase their usual method of action and co-operate in the expansion of the chest. The massage produced by the douche increases the contractility of these muscles and the inspiratory effort thus becomes less difficult and more complete.

In healthy people who desire to inspire the greatest volume of air possible by extra efforts for the purpose of ascertaining their lung capacity, all the muscles capable of increasing the expansion of the chest are also called into their utmost play. With these subjects the stimulation of the muscles of the chest and of the back by the warm douche also increases the amplitude of pulmonary inspiration, but to a less extent than with the emphysematous, as shown by the following experiments:

CASE VIII. Normal respiration. Lung capacity before douche of eight minutes, 3,050 c. c.; after douche, 3,200 c. c.

CASE IX. Normal respiration. Lung capacity before douche, 3,500 c. c.; after douche, 3,750 c. c.

The increase of muscular contractility is evidently the true explanation of the principal mode of action of the douche upon the thorax. Indeed, when the douche is replaced by friction upon the muscles of the chest and back nearly analogous results are obtained. Four experiments are reported in which massage has been practised — twice with the hand and twice with a flannel glove — for about eight minutes, care being taken to make the fingers penetrate into the intercostal spaces and to rub the pectoral, trapezii and other muscles in the direction of their fibres, but avoiding compression of the chest.

CASE X. Healthy subject. Lung capacity before massage, 2,800 c. c.; after massage, 3,000 c. c.

CASE XI. Slight emphysema. Lung capacity before massage, 3,500 c. c.; after massage, 3,700 c. c.

CASE XII. The same patient as No. XI is rubbed with a flannel glove for eight minutes. Lung capacity before friction 3,500 c. c.; after friction, 3,700.

CASE XIII. Normal respiration. Frictions with flannel glove. Before friction, 3,000 c. c.; after friction, 3,150.

The observations on Cases I, XI and XII were all made upon the same patient. In comparing the results, it is seen that the douche causes greater expansion of the lungs than massage or friction. On the other hand, massage or friction has the advantage of much more universal application, and even upon patients who are tuberculous or suffer from cardiac affections to whom the shock of the douche might be injurious.

The increase of respiration in consequence of the douche is not of long duration. Cold makes it cease rapidly; but in a warm and damp atmosphere the increase lasts a long time, three-quarters of an hour to an hour, during which respiration is more full and more free. It is, therefore, on sound common-sense that the custom has been established at Mont-Dore of first sending patients to the douche before making them sojourn in the inhalation rooms where they absorb by the lungs the vapor charged with the principal constituents of the mineral water, carbonic acid, iron and arsenic.

This action of the douche repeated finally determines a permanent increase of the respiratory capacity, as has been previously demonstrated by M. Nicolas. In this way the diminution of the oxygenation of the blood is compensated in the emphysematous; and this explains in great part the incontestable efficacy of the waters of Mont-Dore against pulmonary emphysema, besides the alterative action of the waters, which lessens the frequency of the cough and diminishes the abundance of the bronchial catarrh.

In order to cure chronic emphysema it would be necessary to restore the elasticity of the air-cells, to repair the loss of substance of the alveoli, to re-establish the capillary vessels that have disappeared; that is to say, that the absolute cure of emphysema is no more to be expected from thermal waters than from other ways of medication. But ameliorations can be brought about by means of mineral waters externally and internally, and especially those of Mont-Dore, which are almost equal to a cure.

Even as patients affected with narrowing of the mitral orifice can live without suffering so long as their valvular lesion is compensated by a sufficient hypertrophy and contractility of their heart muscle; so also those whose lungs are attacked with emphysema, find in the increase of pulmonary expansion and consequently in the introduction of a greater quantity of air, a compensation to the limitation of their field of aeration of their blood. They no longer experience the same anguish, and can, to all intents and purposes, consider themselves cured. All the hydriatic customs at Mont-Dore tend to this result, but the douche has an immediate action upon respiration to which it has seemed desirable to call attention.

The number of cases in which massage was used is hardly sufficient to base a trustworthy comparison upon. Most people who have had their chests *masséed* will remember what delightful involuntary deep inspirations are produced. It would have been well if M. Nicolas had told us how the frequency of inspiration is affected by the douche and by massage. Generally respiration becomes much less frequent as well as deeper and freer under massage. As expiration is also hindered as well as inspiration in emphysema, better results would probably have been obtained if M. Nicolas had had his patients' chests compressed so as to aid the expiratory effort. And if to the douche, the massage and movements to aid in expanding and contracting the chest, *effleurage* or stroking the limbs and body *away from the heart* toward the extremities, so as to retard the flow of venous blood and hinder it from crowding the right side of the heart and lungs, we feel sure that the mechanical treatment would be most rational and the best results would follow. Here is one of those very rare instances in which rubbing down would be better than rubbing up.

◆

Medical Progress.

RECENT PROGRESS IN ANATOMY.

BY THOMAS DWIGHT, M.D.

STATISTICS OF VARIATION AND ANTHROPOLOGY.

FOR many years statistics of variations in structure have been collected by different observers. *Facile princeps* among these was the late Prof. Wenzel Gruber, of St. Petersburg. The lead, however, will soon fall to the indefatigable Professors Schwalbe and Pfitzner, of Strassburg. For five years the Anatomical Society of Great Britain and Ireland[1] has done this work by collective investigations, that is, by the sending out of certain questions to the leading medical schools, and the tabulation of the answers by a committee. Similar work has been carried on in the dissecting-room of the Harvard Medical School. The publication by the writer[2] of certain observations made there on the frequency of the psoas parvus and pyramidalis led Professors Schwalbe and Pfitzner[3] while publishing certain new series of observations to claim that the differences in percentages of certain variations in different countries give them an anthropological significance. Some peculiarities seem to occur in different countries with one and the same frequency. To take an example almost at random: a third head of the biceps, springing from the brachialis anticus was found in France, by Testut, in 10.5 per cent.; in England, by Wood, in 10.3 per cent., and at Strassburg, by Schwalbe and Pfitzner, in 11 per cent. On the other hand, these last observers found the palmaris longus wanting in 20 per cent., while Gruber at St. Petersburg found it wanting in 12.7 per cent. Recently the collected results in Great Britain and Ireland show it wanting in 12.1 per cent. At Strassburg and St. Petersburg it is wanting decidedly more often in men than in women. This is not the case in England. Both in Russia and England the muscle was wanting some three per cent. more frequently on the left than on the right. At Strassburg there was no particular difference between the sides. These rather curious developments tend to make one question whether, in spite of the large numbers, the series are really as large as they need to be. With regard to the psoas parvus, the differences are considerable. Russia seems to differ materially from other countries. Schwalbe and Pfitzner give the following table showing the percentage in which it is wanting:

In St. Petersburg	49%
In Strassburg	57%
In Massachusetts	61%
In England	64%

The most striking discrepancy is shown in the form of the bifurcation of the common carotid between the inhabitants of Strassburg and those of Breslau. In 20 per cent. of the former there was found the so-called candelabra form of division, which occurred in 60 per cent. of the latter. The observations on the pyramidalis are also very curious. The following table shows the percentage of cases in which it was wanting.

	Men.	*Women.*
In Strassburg	14%	10%
In Massachusetts	18%	27%
In Great Britain and Ireland	21%	23.5%

Two points are very essential for correct results in these investigations. The first is that the series should be large enough to give a constant average. Thus if in 100 subjects a certain muscle is found wanting in 3 and in the next 100 in 12, it is certain that a series of 100 is too small, and it is probable that one of 200 is not large enough. The difficulty is increased when the results are subdivided to show the condition in the two sexes and in the opposite sides of the body. Series which seem trustworthy as a whole are so no longer when broken up. The other essential point is that the material should be homogeneous. In certain countries it probably is so; in others it certainly is not.

LEVEL OF TERMINATION OF THE SPINAL CORD.[4]

The collective investigators of Great Britain and Ireland, already referred to, have considered this question. It speaks volumes for the zeal of those in charge of the dissecting-rooms that the answers should show observations on 198 subjects, 115 male and 83 female. "A glance at the table will show that there is greater tendency for the cord to reach a lower level in the female than in the male. Thus, whilst the cord terminates in 43 per cent. of cases in the female opposite the second lumbar vertebra, it only reaches this level in the male in 27 per cent. of the cases. In the female the chances of its terminating opposite the first or second lumbar vertebræ are just about equal (42 and 43 per cent.), whilst in the male the chances are just double that it will terminate opposite the level of the first lumbar vertebra (54 per cent. opposite first lumbar vertebra, and 27 per cent. opposite second lumbar vertebra). Two cases are recorded in which the cord in males terminated as high as the twelfth dorsal vertebra, whilst in females the highest point attained was the disc between the twelfth dorsal and first lumbar vertebra. The lowest point reached by the cord was noted in a male, as occurring on a level with the upper border of the third lumbar vertebra."

THE SMALL INTESTINE.

The following paper by Dr. Sernoff,[5] of Moscow, shows small results for great labor, but the method used is worthy of mention. His object is to study the topography of the folds of the jejunum and ileum. Thinking it desirable to fix the gut and the mesentery, he injected a 12-per-cent. aqueous solution of pure chromic acid through the femoral artery with moderate pressure for an hour and a half or two hours, the circulation in the extremities being prevented. The subject was then left in a cold room for four or five hours. The intestines and mesentery should then be found of the consistency of gutta percha.

One of Sernoff's most interesting results is an accessory one, namely, the development and situation of the valvulæ conniventes. According to the usual account these are highly developed in the upper part of the small intestine, amount to less about the middle, and finally disappear altogether. Sernoff states that in chromic-acid subjects these folds are found as much in one part as in another. They are, however, less regularly transverse below than above. They suffer, moreover, very little diminution in size. In all parts of the gut there are places quite without valves. Usually these places are at the convexity of folds. He, therefore, regards the valves not as fixed unchangeable structures, but more like the folds in the stomach, depending on the condition of the muscular coats.

---

[1] Journal of Anatomy and Physiology, vol. xxix, October, 1894, and preceding volumes.

[2] Proceedings American Philosophical Society, 1893.

[3] Morphologische Arbeiten., Bd. iii, Heft 3, 1894.

[4] Journal of Anatomy and Physiology, vol. xxix, October, 1894.

[5] Internat. Monatschrift für Anat. und Phys., Bd. xi, 1894.

It was recorded a few years ago in these Reports, that Henke[6] had described a plan of the arrangement of the coils of the small intestine as follows: on the left they are transverse; in the middle and right they are vertical. A single piece of gut connects these two divisions which are separated by a line along the edge of the left psoas. Sernoff has figured this arrangement as beautifully shown, but this he found quite the exception. The writer's experience is much the same. Sernoff finds that we can recognize five groups of folds, though the matter is of little practical value. First, those at the top just below the transverse colon and its mesentery. These are always horizontal and transverse. Second, those of the true pelvis which are also horizontal, though some run forwards and backwards. Third and fourth, the folds to the right and left of the spinal column, which are always vertical. Fifth, those in the middle at the front of the abdomen which are absolutely without order. Our author's observations are far from numerous so we should be surprised if this scheme should ever reach general acceptance. There is another point, however, which he mentions as constant, namely, the termination of the ileum, rising from right to left out of the true pelvis, turning over its edge to reach the cecum.

Sernoff does not, of course, mean to deny the occurrence of anomalously placed ceca, which are getting all too common. Indeed, he himself relates two cases in which it was found much displaced; once closely fastened to the left side of the fourth lumbar vertebra, and once to the underside of the transverse colon.

ANOMALIES OF THE LARGE INTESTINE AND RELATIONS OF THE RETRO-PERITONEAL CONNECTIVE TISSUE.[7]

It is impossible to attempt a full abstract of this excellent paper, on account both of its length and complexity; but it is one which should be known and studied by all interested in abdominal practice, either surgical or medical. The author calls it a topographical-clinical study. The anatomical points are frequently illustrated by cases and autopsies. For instance, the very rare occurrence of a sufficiently long mesentery of the ascending colon to permit the fold to become twisted is verified by an autopsy. This length of mesentery is not to be confounded with malposition of the origin of the mesentery from arrest of development with which cecum and ascending colon may be found floating free in the front of the abdomen. Needless to say, there is much on exceptional positions of the cecum. The variations of the transverse colon and of its two flexures are also discussed. Sometimes both flexures are wanting, and the transverse colon itself is very small. The ascending colon may run obliquely up to the middle of the abdomen under the liver, and then almost immediately down again to the other side, thus cutting both corners of its usual course. Sometimes, on the contrary, the transverse colon shows a double fold. The relatively enormous sigmoid flexure of the infant sometimes persists. Curschmann remarks that in these cases the large intestine is always uncommonly long. A peculiar arrangement is one in which the lower part of the sigmoid flexure is followed by a large fold passing into the rectum on the right side, near to the cecum, and sometimes even connected with it. The importance of this anomaly in diagnosis is evident.

Of the second part of the paper, relating to the retro-peritoneal connective tissue, we shall notice only the remarks on the place at which a peri-nephritic abscess breaks through into the pleural cavity. This occurs near the last rib. It seemed to Curschmann that the point of rupture might not be wholly accidental. Many researches showed him a weak point in this region. Though he probably refers to the same place, his description is less clear to us than that in Quain's Anatomy: "It frequently happens that fleshy fibres spring only from the inner portion of the external arched ligament, and in that case a triangular interval is left between the vertebral and costal portions of the muscle, through which the areolor tissue of the thoracic cavity becomes continuous with that of the abdomen." Thus the point is not a new one, but it is worth dwelling on. We may add that, according to Curschmann, this weak spot is a pretty constant one.

CALIBRE OF THE SMALL INTESTINE.

Drs. Chaput and Lenoble[8] made a series of experiments on the cadaver to ascertain the safety of using Murphy's largest button for intestinal suture. This model has a minimum diameter of 26 mm., and a minimum circumference of 81.5 mm. They find that the lower end of the small intestine, well known to be its smallest part, is of smaller calibre than the ileo-cecal valve. They found that the internal circumference of the lower end of the ileum when not blown up averaged only 32 mm. After insufflation, in four cases, the external circumference was 78, 80, 83 and 110 mm. But they found, on cutting these blown-up intestines, that their internal circumference was greatly reduced by valves so as to equal only 50 mm. The authors believe that in life these valves project still more prominently.

ANOMALY OF RENAL ARTERIES AND VEINS.[9]

The following observation by Morestin is sufficiently curious to deserve mention. The age and sex of the subject are not noted. On the left there were two large renal arteries arising from the aorta, from two to three centimetres apart. The upper one divided into two immediately after its origin. These entered the hilus at the upper end, and the other at the lower. Two large renal veins filled the space between these arteries, crossing each other like the arms of an X placed on its side. The lower one passed in front of the aorta, the other behind it. Each opened separately into the cava. There was a short but free communication between them where they crossed. The spermatic vein divided, sending a branch to each. On the right this arrangement is curiously reversed. The two veins are parallel running one above and the other below the arteries, which cross each other like an X. The superior artery shortly after its origin divides into two which travel together.

---

[6] Arch. für Anat. und Physiol., 1891.

[7] H. Curschmann, of Leipzig: Deutsches Archiv für klin. Med., Bd. 53, Heft 112, 1894.

[8] Bull. Soc. Anat., Paris, 1894, Nos. 10 and 11.

[9] Loc. cit., Paris, 1894, No. 12.

THE IMPRESSIONS FOR THE FIFTH PAIR OF NERVES AND THE GASSERIAN GANGLION ON THE PETROUS PORTION OF THE TEMPORAL BONE.[10]

A depression near the apex of the petrous portion is usually mentioned in anatomies, some stating that it is for the ganglion, others for the nerve. According to Rauber, neither of these views is quite correct. He has studied the point on about one hundred skulls, and has dissected the soft parts on twelve heads. He concludes by recognizing the following features: (1) A curved cut in the superior border of the petrous portion for the nerve. (2) A groove on the upper (anterior) surface of the bone, running downwards and outwards for the sensory root. (3) A depression for the gasserian ganglion, which, however, is only occasionally large enough to receive the whole of it. Usually it only supports the outer part of the ganglion. It may be wanting. (4) When the last-mentioned feature is wanting, there is a rounded cut in the lower border of the anterior surface of the petrous portion.

◆

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

C. L. SCUDDER, M.D., SECRETARY.

Regular Meeting, Wednesday, November 7, 1894, Dr. F. B. **Harrington** was chosen Chairman for the ensuing year.

Dr. Francis S. Watson read a paper on

INTESTINAL GANGRENE DUE TO EMBOLISM OR THROMBOSIS OF THE MESENTERIC ARTERIES, WITH REPORT OF A CASE.[1]

Dr. D. W. Cheever: On the morning of October 11th, when I got to the City Hospital about ten o'clock — I mention this particularly to show that there was no delay in the case — I found an old man about seventy in the accident-room who had been brought in by his son from one of the suburbs. He was not moribund, though he was subnormal in temperature, had a certain lividity about the face, very rapid pulse, and an immensely distended abdomen. The history, so far as could be obtained, was that he had had symptoms of intestinal obstruction for three and a half days; that those symptoms began with intense pain, that his temperature had been near normal, or subnormal; and that no operation had been got from the bowels during that time. When I saw him he vomited, and the vomitus was not strictly fecal, but very dark and offensive, though not bloody. He had two herniæ, both of which were down. They were, however, apparently easily reduced, and were not edematous or tender. As far as treatment went, he had taken cathartics himself, which he had promptly vomited; had been given some opium; and on the evening before his entrance, as an examination by Drs. Reynolds and Crowell revealed a thick or punky feeling in the rectum, an effort had been made to secure an operation of the bowels by a large enema of two quarts, which had been thrown into the rectum, and all of which had been retained. As he was not moribund it was thought proper, as the friends expected it, to open the abdomen and see if anything could be done. No accurate diagnosis was made in my own mind, except the general one of intestinal obstruction. After he was etherized a median incision was made, and a plan was carried out which I had formulated in my own mind, but which proved to be a signal failure. The incision at first was made four inches long beginning at the pubes, but immediately there were disclosed very distended coils of intestine; and as the incision was not long enough, I extended it to one inch above the umbilicus, so that we had a very long incision. My plan was, after getting the abdomen open, to aspirate the distended coils of intestine, and then to endeavor to find the source of obstruction. As soon as we opened the abdomen, there presented themselves two enormous coils, which resembled in some respects the cases that have been detailed to-night. I was particularly struck with the loss of gloss of the intestine; there was no shine to the peritoneum; the surface looked soft and pulpy; the color was dusky red, but not black; it was not even chocolate colored. The intestines were not matted together by adhesions, nor was there any bloody fluid in the general peritoneal cavity. On aspirating I found, to my great annoyance, that the inestine was so rotten that fluid began to flow around the needle the moment the puncture was made, and on slight pressure, the needle would tear the intestine; and this mass of bowel, which was large intestine as shown by the longitudinal bands on it, distended enormously with the enema which had been given the previous evening, began to leak out great quantities of offensive yellow fluid, but no blood; and under these circumstances I ceased the aspiration, pinched up the opening and checked the flow, washed out the surface as well as I could, and endeavored to find some source of obstruction. Here I was met with a great surprise. Here was the large intestine distended with fluid. Evidently the obstruction was not in the rectum. It occurred to me that it was probably about the ileo-cecal valve. On finding that region, I found the small intestine healthy, not distended, extremely shrunken and collapsed and not the seat of obstruction. It was evident that any obstruction by twist or intussusception could not exist; in fact, that no cause for obstruction apparently existed; and the only thing I could think of was paralysis of the large intestine from general peritonitis. The patient bore up pretty well; and as farther search seemed useless, it seemed to me the cardinal rule was to be followed of making an artificial opening, and relieving the distention. Taking the portion of the distended bowel on the descending coil I opened it, and an immense quantity of fluid gushed out, but no blood. The intestine collapsed and was sewed up to the wall, the abdomen was washed out with sterilized water, and the wound partially closed; and the man put to bed with this artificial anus. Immediate relief of the symptoms followed, and for twelve hours he was extremely comfortable; the vomiting ceased; the contents of the bowel flowed out easily through the opening; he took nourishment and showed signs of rallying. The operation was done about eleven in the morning; the same night he began

[1] See p. 552 of the Journal.

[10] Anatomisches Anzeiger, Bd. ix, Nr. 22, 1894.

to fail, distention returned, hiccough occurred, and he collapsed and died in thirty hours after admission to the hospital. It was noticed in this patient that the arteries of the wrist were very atheromatous (autopsy). This, then, would seem to be a case like those referred to by Dr. Lothrop, in which the plug was in such a place that any treatment would have been hopeless.

DR. H. O. MARCY: Some time last spring a woman of possibly eighty became ill with symptoms of intestinal obstruction. She had been in previous pretty good health. Symptoms came on slowly; at last the obstruction was complete — nausea, vomiting, great distention of the abdomen, as in Dr. Cheever's case, but the symptoms were rather more gradual. I saw the case in consultation. We, feeling that the case was not necessarily fatal, notwithstanding her age — the other organs were healthy — advised laparotomy for exploration, thinking it probable that she had some obstruction that might be amenable to treatment. Our advice was not accepted, and about a week later she died. At the autopsy embolism of the mesenteric artery was clearly defined, and about two feet of the small intestine was necrotic. The line of demarcation was not very clear. The interesting thing was the extremely atheromatous condition of the descending aorta, showing that we had abundant reason for finding such condition. As Dr. Porter said, until I began to look up the subject it was a new chapter in surgery to me, and I was surprised to find this condition of things was to be kept in surgical consideration. I was conversing some time ago with Dr. Frank S. Billings, and he says it is not at all uncommon to find embolism of the mesenteric artery and gangrene of the intestine in horses, even in young animals in otherwise healthy condition.

DR. F. B. LUND: In looking up cases of extensive resection of the intestine I found six or seven cases where over one hundred centimetres had been resected, and it was found that those who survived the immediate effects of the operation got along very well without suffering from malnutrition. One case, however, was reported by Baum where about four feet were resected, that died after four months, and no other cause for death could be found at autopsy than malassimilation from removal of too much intestine. That was the only case in these extensive resections that has suffered in nutrition. It seems to me that a practical point is brought out by this successful resection in reference to strangulated hernia. It is said by nearly all writers on strangulated hernia that where there is the question of immediate enterorraphy after resection of a gangrenous piece of gut it is necessary to find out whether it is near the duodenum, because if it is near the duodenum the continuity of the intestinal canal must be immediately restored or the patient will die from malnutrition. When it lies low down in the ilium it is feasible to establish an artificial anus without danger of the patient's nutrition suffering. If four feet of the jejunum can be safely resected without interfering with the nutrition of the patient it would seem that the point of the location of the gangrenous knuckle is not so important in deciding the question of enterorraphy after resection of the intestine.

DR. F. B. HARRINGTON: In this connection I should like to speak of a case of gangrene of the rectum following operation. Whether this has any bearing on the subject or not, perhaps it is worth reporting. The patient (sixty-five) had a femoral hernia, and came to the hospital; it was reduced by operation, and the wound closed by the operation for radical cure. A small knuckle was found not larger than the tip of the finger, pretty dark colored; but her condition had not been very bad. The patient did well for several days. Going round the wards one day, I found her sitting up, not by orders, however. She was put to bed, and a few days afterward it was noticed that there was a sloughing spot about the anus. This condition extended around the anus, and the parts became very foul. In a short time masses of the rectum came away, and within a week large pieces came away, one piece four inches in length. The entire sphincter sloughed off, and a large portion of the tissues in the ischio-rectal fossa, especially on the right side. There was evidently obliteration of the blood supply in some way. The patient did well for a week or more, when these symptoms followed. Whether it was due immediately to the gangrenous piece of intestine that was returned or whether it was due to her age and other conditions, we did not know. The patient gradually failed, and was taken from the hospital, and died about a week after she left. No autopsy was obtained. In that case there evidently was a gangrene from obstruction of some kind. It is quite possible that that being a left femoral hernia, a portion of the sigmoid flexure may have been included, and that there was a gradual extension to the hemorrhoidal veins.

DR. WATSON: I have a specimen of the appendix which I think shows exceedingly prettily in miniature the same condition we have been talking about to-night. I removed its mesenteric attachment entire in this case, with the appendix, tying them off in one piece. There is apparently an embolic condition of the vessels through the mesentery, and an infarction of the appendix without any perforation as yet, but one beginning, clearly defined necrotic area on the appendix, and one on the mesenteric surface. This specimen suggests that in some cases of appendicitis the process may originate in embolism of its mesenteric blood-vessels.

DR. H. A. LOTHROP reported

THREE CASES OF EMBOLUS OF THE MESENTERIC ARTERY.[2]

DR. E. A. TRACY, of South Boston, showed a

NEW MATERIAL FOR THE MANUFACTURE OF SPLINTS.

It consists of wood pulp reinforced by gauze. He showed various splints used for different parts of the body made of this material.

PATHOLOGICAL SPECIMENS.

DR. H. O. MARCY presented some interesting specimens.

No. I. Cancer of the left femur. Mrs. W., age sixty-one, was never robust. I removed the left breast for carcinoma two years ago. Last May she had pain in the left thigh, which was continuous until death. Nothing objectively noticed until last summer. Shortening slowly supervened without evidence of injury. Early in September a weight was applied for extension and fixation, but the leg was soon nearly three inches shorter than the right, with a large bowing outwards of the thigh. She was sent home from the country late in September, and was confined to bed with pain and weakness. Death occurred November 3d from acute changes supervening in the left lung, very likely embolic. No return of disease in left breast.

---

[2] See page 557 of the Journal.

The specimen shows the remarkable combination of the processes of repair with those of disease. No fracture had taken place, but the periostitis has caused a callus to be deposited, making the very crooked enlarged bone quite firm. Autopsy limited to examination of leg.

No. II. Here are the ovaries and tubes from two patients upon whom I operated this morning. Histories not unlike. Pelvic pain, semi-invalidism, with very marked reflex disturbances. One was thought by her physician to be upon the verge of insanity. There were pelvic adhesions, and the tubes were distended, as may be observed, to the size of small sausages, and were thought by the assistants when brought into the wound to be coils of small intestine. Abdominal wound closed without drainage and sealed with collodion. [November 19th, convalescence rapid and uneventful. Union primary.]

No. III. This was a patient of Dr. Hildreth, of Cambridge, upon whom I operated because of a large, old, irreducible hernia. Age forty-eight. Otherwise well. Has worn a "Sherman" truss, the spring pad of which has caused so much absorption and thinning of the abdominal wall, that exterior to the ring there is a direct opening through the fascia admitting the tips of two fingers. The neck of the thick omental tumor is felt nearer the median line, nearly wrist size. The specimen shown is the untouched deformed omentum, which it seemed best to remove. It was nearly the size of two outspread hands. The cord was dissected free quite to the internal ring, the sac freed within the ring, held tense, sutured across its base and resected. The inner border of Poupart's ligament was sutured to the inner border of the conjoined tendon, fixing these structures to the transversalis fascia quite to the lower border of the internal ring. The cord was replaced in the new canal thus formed, and the external aponeurotic structures closed over quite to the level with the upper border of the os-pubis, thus reforming the external ring. The structures are evenly coapted without undue tension by the double continuous buried tendon suture; the skin is coapted by a buried suture, and the wound sealed with iodoform collodion. [November 19th. Primary union has supervened without pain or edema.]

No. IV. Mr. M., age seventy-one. For years had an old, large, irreducible scrotal hernia. Recently a truss-vender applied very indiscreetly a strong pressure without upon the neck of the tumor, causing ecchymosis and such swelling that an immediate operation was considered necessary. The tumor extended quite one-third to the knee, measuring about eighteen inches in circumference. By estimate there was a pint and a half of fluid in the sac; it also contained this large fatty tumor, fist size, which had apparently developed in the retained omentum. This was attached to the base of the sac. It was freed over the mesenteric attachment, then sutured across and resected; the stump was overcast and returned within the abdomen. Through this large opening several pints of ascitic fluid escaped. This is the sac which was resected after suturing its base. It was quite as large as a baby's head. The parts were closed with double buried tendon sutures and the wound sealed without drainage. Twenty-six days after the operation the man died of an interstitial nephritis and hepatitis (liver about half the normal size). The specimens from autopsy are unusually interesting. This portion of the omentum shows the repair which had supervened at the site of resection, with a portion of the tendon suture scarcely changed in its appearance. The closed peritoneum is here shown as smooth, firm and glistening, without adhesions. It will be noted that the abdominal wall is thick, firm and strong, the skin wound only a line. In a word, the repair processes had supervened in a perfectly normal manner, although the subject was a sufferer from chronic organic changes which caused his death.

No. V. The cancerous uterus from a vaginal hysterectomy in a very large, thick-walled woman of fifty, said never to have had suffering until she first noticed a slight bleeding in July. It is presented to show that the organ had enlarged to this size — that of the fist — by multiple fibroids. It was everywhere fixed by adhesions, and the right tube was dilated to the size of the finger and filled with pus. Because of hemorrhage, I opened the abdomen for the first time in my experience with vaginal hysterectomy — a very difficult operation. But convalescense has been very satisfactory.

No. VI. A very large, very multiple uterine myoma. A hemorrhagic case. Patient very anemic, weighing less than ninety pounds. Uterus removed by first ligating the broad ligaments, and then reflecting a peritoneal flap anteriorly and posteriorly quite to the cervix, which was then sewed through with tendon and the tumor resected. The flaps were then inverted and closed by a continuous *parallel* tendon suture, drawing upon which closely approximates the healthy peritoneum evenly over the stump while the suture itself is buried from sight. Abdominal wound closed without drainage. Recovery rapid and uneventful.

No. VII. The last specimen shown is by far the most interesting, perhaps unique. It is a case of spina bifida in a girl of seventeen. The tumor was the size of half an orange at birth; now it measured twenty-nine inches in circumference, and the sac contained one gallon of a perfectly white, slightly albuminous fluid of a specific gravity of 1.010. The patient had consulted many surgeons, but I advised operation because of the rapidly growing tumor and its large size, making the danger of rupture imminent. The sac was dissected to the base, opened, the cauda found attached, was freed and returned. The sac was sewed across with a double continuous tendon suture and resected. The opening was through the lower two lumbar vertebræ. The stump of the sac was stitched to the strong muscular aponeurosis upon either side, the flaps closed down upon the muscles, and the skin closed with a buried tendon suture and sealed. The union was primary and the cicatrix is firm. Operation done October 16th. Patient a bright, strong girl. Table during operation was on an inclined plane with head low.

Ergotin for the Night-Sweats of Phthisis. — Goldendach reports excellent results from the subcutaneous use of ergotin in the treatment of phthisis, to control the night-sweats. Twenty minims of a solution made according to the following formula are given at bedtime:

Ergotin Alcohol, dilute	3 parts
Glycerine Distilled water	each 5 parts

THE BOSTON

Medical and Surgical Journal.

THURSDAY, DECEMBER 6, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

Subscription Terms: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 Washington Street, Boston, Mass.

OCCLUSION OF THE MESENTERIC ARTERY.

It is only of late that the diagnosis of cases of obstruction of the superior mesenteric artery has received any attention, and but one case, that of Dr. J. W. Elliot, has been reported where the condition was relieved by operation. We publish to-day instructive reports of new cases in surgical practice, and also references to previous cases as recorded. The reader's attention is directed to previous pages of this Journal.

The condition is comparatively rare. It is difficult to understand why this should be. At autopsies, evidences of obstruction of branches of the *splenic* and *renal* arteries, shown either by recent infarctions or by the cicatrices resulting from old ones, are exceedingly common. The obstruction is usually due to emboli coming from thrombi in the left side of the heart or in the aorta. We can frequently find the evidences of past attack of acute endocarditis as well marked by the old infarctions of the kidney or spleen as by the thickening of the endocardium. It is difficult or impossible to understand why a solid substance in the blood current should, in obedience to some physical law, find entrance into these vessels in preference to others. The superior mesenteric artery would seem to favor the entry of emboli into it more than either the renal or splenic arteries. It comes off from the aorta at a more acute angle, and is wider than those arteries. Emboli must frequently enter into it, but they do not produce the same effect as in the kidney and spleen. In these organs all the arteries are terminal, that is, every arterial branch supplies a definite portion of tissue and has no anastomosis with neighboring branches. Whatever the condition of the circulation, obstruction of one of these branches is followed by anemic necrosis of the area of tissue supplied by it. There may be varying degrees of hemorrhage into the anemic territory. The final result is organization and cicatrization of the infarcted area. Infarction of the kidney can be experimentally produced by injecting solid substances into the aorta.

It is probable that embolus in these arteries is not more common than in other arteries, but the results are always seen. We see the same thing in the lungs. Every embolus which is thrown into the blood current from the venous side of the circulation must enter into the pulmonary artery and be carried into the lungs. We find recent thrombi with infarction in the lungs, but we do not find cicatrices which have resulted from old thrombosis and infarction. The pulmonary arteries are terminal and they must frequently receive thrombi. No result ordinarily follows because there is such an abundant anastomosis between the *capillaries* of the part supplied by the thrombosed artery and the neighboring capillaries that the integrity of the tissue is preserved. In addition to this abundant capillary circulation, all parts of the lung receive a small supply of blood from the bronchial arteries. As a rule, we only find infarction of the lung when the venous pressure is raised so high, either from mitral stenosis or regurgitation, that the low pressure of the blood in the thrombosed territory, coming as it does from the neighboring capillaries, cannot overcome it.

Probably the same thing is true in the mesenteric artery. It is probable that embolus of certain branches or even of the entire artery is not so very uncommon; but it does not, in the ordinary conditions of the circulation, give rise to infarction. The different branches of the artery anastomose freely with one another and receive anastomoses with the branches of the inferior mesenteric below and the gastro-duodenal above. Under ordinary conditions of the circulation these anastomoses would provide a sufficient supply of blood to preserve the integrity of the tissue. Infarction would take place either when the venous pressure was so raised, from cardiac or hepatic obstruction, that the low pressure in the thrombosed area could not overcome it, or when from any cause the arterial pressure was so low that the anastomosing branches could not send sufficient blood into the territory. In looking over the cases reported, one must be struck both by the frequency of coincident cardiac disease and by the age of the patients. Disease of the arteries would also favor the production of infarction by preventing a sufficient dilatation of the anastomosing arteries. Tying the superior mesenteric artery in a dog will produce infarction of the small intestine, but the operation produces engorgement of the portal veins and favors infarction. Thrombosis of the artery is much less apt to be followed by infarction than is embolism, the slow occlusion of the artery giving time for the establishment of the collateral circulation. Aneurism and occlusion of the artery in the horse is not uncommon and is seen without producing infarction.

It would be interesting to make corrosion preparations of the artery in all cases in which embolism could have occurred, in order to determine its frequency. Even when the circulation is sufficient to prevent infarction, paralysis of the bowel may take place, as is shown in the case reported by Councilman [1], in which the artery was partially occluded in an old woman with weak circulation.

◆

A CASE OF EMBOLISM OF THE ABDOMINAL AORTA.

JÜRGENS [2] reports the following extremely rare case from the clinic of Dr. Dehio in Dorpat.

The patient was a student of pharmacy, twenty-seven years of age, with no history of rheumatism, but since childhood subject to palpitation of the heart and shortness of breath on exertion. Five years ago he suffered from edema, which disappeared under treatment by digitalis, leaving behind, however, shortness of breath and palpitation. During the following years he suffered from a slight cough in addition to his other troubles, but on the whole considered himself in fairly good health.

On April 4, 1894, he was taken suddenly with fever and a sensation of burning at the pit of the stomach, and so marked a weakness in the legs that he fell. There soon followed pain, swelling, and redness of the left leg, bluish discoloration over the back of the foot and numbness, followed by anesthesia and motor paralysis. The physician who was called found a systolic murmur at the heart's apex, and an irregular pulse. He improved under treatment; the swelling diminished and sensation partially returned, but no motion.

Two and a half weeks later, on the morning of May 6th, the patient was again seized with sharp pains in the abdomen, followed in a few hours by paraplegia with almost complete loss of sensibility in the lower half of the body, with incontinence of urine and feces. On his admission to the hospital at 4 P. M., it was found that since his former attack he had suffered from constipation and loss of appetite, and that lately his abdomen had become somewhat distended. He was then suffering from constipation, loss of appetite, thirst, retention of urine, pain in the abdomen, and palpitation.

On physical examination were found a bluish "marbled" appearance of the dependent portions of the lower extremities, and of the abdominal wall from the symphysis pubis to a height of three fingers' breadth. The legs were cold, and the hypogastrium colder than the epigastrium; there was no motion of the knee, ankle- and toe-joints, and very slight motion of the hip-joint. Anesthesia was complete over both lower extremities, except the upper part of the left thigh, where it was partial. The cremaster reflex was absent, the abdominal reflex present only over the epigastrium. The femoral pulse on both sides was barely perceptible, the malleolar pulse not present. The sensation of the upper part of the body, and the motion of the arms was normal. The respiration was deep, but rapid (40 to 42). The heart's area was enlarged downward, and to the left, and there was a loud systolic mitral murmur. The abdomen was distended, and there was slight dulness in the flanks; otherwise nothing abnormal.

During the next few hours the discoloration extended to the anterior portion of the lower extremities, and spread a little higher on the abdomen, and the abdomen became markedly distended and tympanitic. Then the femoral pulse disappeared, the skin became cold and moist, the radial pulse grew gradually more rapid, in spite of stimulation; and at half-past ten death occurred, preceded by vomiting of stomach contents discolored with blood. At the autopsy there was found stenosis and insufficiency of the mitral valve and anti-mortem thrombi in the left auricle. In the abdominal cavity there was found a little bloody serous fluid; the intestines were distended with gas and fluid; the peritoneal coat shining, but of a dark purple color; numerous sub-peritoneal ecchymoses. The stomach was distended, containing about a litre of bloody fluid. Throughout the whole of their extent the small intestines contained dark bloody fluid; the mucous membrane was edematous and cyanotic. The same changes were present in the large intestine. The spleen was enlarged, and contained areas of hemorrhagic infarction. The kidneys also showed the presence of infarcts. In the abdominal aorta, extending from the left renal artery to the inferior mesenteric, was an old adherent, stratified, brown clot, which did not entirely fill the lumen of the aorta, but left room between its left and anterior surface for a second smooth, soft thrombus, which lay close to the intima, and completed the closure of the aorta. This second thrombus extended upward as far as the superior mesenteric, and first lumbar arteries. Below the old thrombus first described, other thrombi extended downward and "rode" the bifurcation of the aorta, extending into both external and internal iliac arteries. An old thrombus was also found in the left femoral artery.

Reviewing the history of the case, Jürgens concludes that on April 14, 1894, a blood-clot, disengaged probably from the wall of the left auricle, found lodgement in the aorta, between the left renal artery and the inferior mesenteric, partially closing the latter, and as a result producing the constipation and abdominal distention of which the patient complained during the next two weeks. This formed the oldest portion of the thrombus described above. A portion of it was broken off at the time, and occluded the left femoral artery, producing the changes in the left leg. The gradual growth of the aortic thrombus, coupled with increasing heart weakness, led on the 6th of May to complete occlusion of the aorta, with the rapidly fatal result above related.

Of interest in connection with the subject of the articles in this number of the JOURNAL, is the occlusion of the superior mesenteric artery, which occurred in this case, not from thrombosis of that artery itself, but from thrombosis of the aorta extending across the origin. The presence of blood in the intestines, evidenced during life by bloody stools or vomitus, and verified by autopsy or operation, is an important sign of superior mesenteric thrombosis.

---

[1] See page 555 of the Journal.

[2] Münchener Med. Woch., October 28, 1894.

The subperitoneal ecchymoses, likewise described in mesenteric thrombosis, were present in this case, also the edema and cyanosis of the submucous coats.

Although Jürgens regrets that no investigation was made of the condition of the superior mesenteric artery in this case, he feels sure, and we think rightly, that it must have been occluded by the thrombus which extended up to the level of its opening into the aorta.

◆

FOOTBALL.

The present discussion in regard to football has clearly shown the ignorance of many who by their criticism of the game have designated the whole sport as *brutal.* And even in the game in question the charge of brutality narrows itself down to one, possibly to two, players. Those who are so eager to censure and cry down a sport on account of the actions of a few should, at least, be willing to give to that sport its just deserts, and be ready to recognize the benefits which accrue to many from a healthy indulgence in it.

Football, as it should be played, teaches a man self-reliance, command over self, and perseverance. It cultivates perception, ability to judge quickly, and the power of concentration. A man to play football must have his wits about him. His opponent is pressing him closely; he must hear and interpret the signals as they are given and then act quickly. The moment the play starts he must call his physical and mental powers into activity. He must do his share of the work; he must be ready to take advantage of any misplay; he must look for unprotected places and govern himself accordingly. Obstacles are thrown in his way which must be overcome; and when, in addition, he grows weary from physical fatigue, he must learn to force himself to do what but a few moments before required no especial effort. Football teaches a man, therefore, how to contend against opposition and, best of all, how to contend against opposition from himself. It teaches, or should teach him, self-denial and self-control.

What other sport is there in the world which so closely combines so many demands upon the physical and mental qualities of our youths? It can be truly said that it demands too much of all, if all were to play it. But football is not a game for every college man to indulge in. The narrow-chested and puny should carefully avoid it, and, in avoiding it, regret that their fathers and mothers, in their day, had not seen fit by proper indulgence in healthy exercise to guarantee to them a sturdy constitution and a healthy frame. The chances of the game may result in a few broken bones, but the benefits derived help, in no small measure, towards producing a generation of healthy, courageous and manly individuals.

Because a game is rough and has not as yet been regulated in a proper measure, are we as Americans going to throw over the entire sport? Are we going to confess that we are unable to take advantage of its strong, healthy points, and simply say it is too rough a game for boys to play? The games of tennis and golf have their followers; baseball and rowing have their enthusiasts. All these games develop healthy men. But football is the only sport which in the same measure develops the majority of the qualities of which we as Americans are most proud.

Rather let us sacrifice a few bones, than give our young men the idea that they must be strong but careful not to expose themselves to the danger of getting hurt. The time may come when Americans may again be called upon to contend against other nations, and if we are to make babies of our youths the imprint of our counsels will be plainly seen upon them. Let us rather make a point of seeing that they learn to play fairly; that they learn to govern their brute instincts, that only those who are able to do this are permitted to indulge in rough play.

If a player is known to be brutal, he should never be allowed on the field. If a man is or becomes unfit physically, he should be kept out of it. But once and for all, let us not give the youths of the day the impression that the only sports to be indulged in are those which do not call for courage. To the timid, a vigorous, well-fought football game is an unpleasant spectacle, and they shudder to think of the possibilities. They do not like the game because they themselves never had the courage to play it, and even if they did they never played it well. To a man of physical courage, however, the game seems different. His blood tingles as he sees a runner throw off his opponents and dodge down the field. His heart goes with the player, and he mentally urges him on. He feels the uncertainty as the last guard to the goal is neared, and if the runner is well tackled his congratulations go out to the man who had the courage to stop that rush. A man of courage knows too well the dangers of the game, but he also knows how much greater are its benefits.

There are points, however, upon which both the timid and the courageous agree, and these are the incidents which from time to time take place and make one ashamed of those who are playing. These are the brute exhibitions of a brutal nature.

Football men must see to it that hereafter they do not present the spectacle of unfair play to the prejudiced opponent as well as to the enthusiastic lover of the game, lest these both of necessity be brought to act together to enforce the suppression of this sport.

The football season of 1894 has just closed. There has been a great hue and cry against the danger and brutality of the game, yet it will be found that very little serious damage has been done among college youths. On the contrary, the football men of our colleges have gained muscle, experience and a good stock of health. There is no question but that, before another season opens, changes must be made in the rules and a proper provision made for their vigorous enforcement. What has in the last few weeks been generically known by one player's name must be eliminated wherever found.

DIPHTHERIA ANTITOXIN IN NEW YORK.

The New York City Board of Health under direction of Drs. H. M. Biggs and W. H. Park, have thirteen horses and some other animals in process of immunization against diphtheria. The inoculations of toxine were begun seven weeks ago, and the Board will probably be ready to furnish the first supplies of antitoxin serum before the end of January. The New York Board was enabled to begin its operations thus early through the generous act of a private citizen who advanced the necessary funds. The appropriation of $30,000, which the Board has asked for, would not be available through the ordinary channels before January.

There is no question, as we have before stated, but that the production and quality of such agents as the antitoxines, must be under the supervisory control and guarantee of some responsible organization.

MEDICAL NOTES.

Small-Pox in Dublin, Ireland.— During November there was an alarming outbreak of small-pox in the drapery establishment of Pim Brothers, at Dublin, fourteen cases being removed to Cork-Street Hospital in one week.

The Small-Pox Ameba. — Dr. Maximilian Herzog, of Chicago, claims to have discovered a "small-pox ameba," the presence of which in the blood on the first or second day after vaccination, is the only sure test of a successful vaccination. No matter how swollen the arm or uncomfortable the patient, the vaccination is not effective unless the "ameba" is found, the unpleasant symptoms being due to the vaccine points being loaded with croton oil, or some other irritant!

Diphtheria and Speaking-Tubes.— An outbreak of diphtheria involving twenty-two of the working-girls in a certain place of business in Hackney, England, led Dr. J. K. Warry to investigate the causes of contagion. He found that three of the girls whose work was nearest the speaking-tubes, and who therefore most frequently sent and received messages, were the first to come down with the disease. The tubes were used at times by every one of the work-girls, but most frequently by these three. The large majority of the girls attacked worked in a large room at the top of the building, but a shop assistant on the ground floor whose special duty it was to answer the speaking-tube calls from the affected room, was also found to be suffering from sore throat. Were the Klebs-Löffler bacilli transmitted along the whole length of the tube? If so, this bacillus infects at longer range through tubes than in the open.

The Dangers of Railway Travel. — In the records of the Nuremberg Railway, the first line constructed in Germany, there is said to be preserved an interesting protest against railway travel, made by the Royal College of Physicians of Bavaria, containing the following passage: "Travelling in vehicles drawn by locomotives ought to be forbidden in the interest of public health. The rapid motion cannot fail to produce in passengers the mental affection known as *delirium furiosum.* Even if travellers are willing to expose themselves to this danger, the government ought at least to protect the public. A single glance at a locomotive going at full speed is enough to produce the same cerebral trouble; it is therefore absolutely necessary to build a fence ten feet high on each side of the railway line."

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, November 28, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 138, scarlet fever 33, measles 29, typhoid fever 24. During the week ending at noon, December 5, 1894, the following cases were reported: diphtheria 121, scarlet fever 53, measles 70, typhoid fever 8.

Admission to Massachusetts Medical Society. — An examination for admission to the Massachusetts Medical Society will be held by the Censors of the Suffolk District, at 19 Boylston Place, on Thursday, December 20, 1894, at 2 p. m.

Charles River Dam. — At the last regular meeting of the Cambridge Medical Improvement Society, which was held at the Colonial Club, Cambridge, Monday evening, November 26th, the Charles River Dam and Basin, proposed by the Joint Board of Park Commissioners and State Board of Health was carefully considered in relation to its probable effect upon the health of the towns and cities upon its banks. Well-known physicians from the places to be affected — Newton, Waltham, Watertown, Brighton, Boston and Cambridge — were present by invitation, and took part in the discussion. It was then voted unanimously, that in the opinion of the meeting the proposed dam would improve the sanitary condition of the river and of the adjacent lands. It was also voted to send a copy of the above vote to the Board of Harbor and Land Commissioners. Fifty of the leading physicians of the district were present.

NEW YORK.

Mount Sinai Hospital.— The Mount Sinai Hospital has received a legacy of $10,000 from the estate of the late Adolph Bernheimer, a wealthy brewer.

The Montefiore Home.— The new wing of the beautiful Montefiore Home for chronic invalids, on the Western Boulevard between 138th and 139th Streets, which has just been completed at a cost of $40,000, was opened on Thanksgiving Day with appropriate ceremonies. Among the addresses made was one by Hon. Charles S. Fairchild, ex-Secretary of the Treasury.

Surgeon-Generalship of New York.— Much regret is expressed at the retirement from the position of Surgeon-General of the State of Dr. Joseph D. Bryant, who during the past ten years has done so much to increase the efficiency of the medical department of the National Guard. It is announced that Governor-elect Martin has determined to appoint in his place Dr. M. O. Terry, a homeopathic practitioner of Utica.

Mrs. Mary E. Mott died at New Hackensack, N. Y., on November 25th, at the age of nearly 105. Mrs. Mott was born in Mulberry Street, New York, January 14, 1790; her husband, George B. Mott, was superintendent of the lunatic asylum on Blackwell's Island at the time of his death, forty-four years ago.

Medical College Football Teams.— The football craze has extended to the medical colleges of New York and Brooklyn, and during the past month a number of matches have been played. The championship game came off on Thanksgiving Day at the Columbia Oval at Williamsbridge, when the eleven of the College of Physicians and Surgeons defeated those of the Long Island College Hospital by a score of 6 to 0. The contest is described as a very rough one, but no serious casualties were reported.

Diphtheria Antitoxin at Brooklyn. — Dr. Jesse T. Duryea, medical superintendent of the Brooklyn hospital for contagious diseases at Flatbush, reports that out of fourteen cases of diphtheria treated with antitoxin, twelve recovered. In the two cases of failure the disease had reached a very advanced stage before the remedy was applied. The serum was received from Berlin, but as the supply was soon exhausted, Dr. Duryea some time ago began the experiment of preparing it himself by the inoculation of horses.

Babies Hospital.— The formal opening of the new addition to the Babies Hospital, at the corner of Lexington Avenue and 55th Street, took place on November 24th. Dr. T. E. Satterthwaite, of the Board of Directors, presided, and the medical report for the past year was read by Dr. L. Emmett Holt, the physician in charge. The principal address was made by Dr. A. Jacobi, and after some closing remarks by Bishop Potter, the hospital was thrown open for public inspection. The institution maintains a dispensary for out-door patients and also a summer home at Oceanic, N. J.

The Disposal of Garbage. — The advisory committee appointed last July, to investigate and report on the best manner of disposing of the city's garbage, of which ex-Mayor Franklin Edson is chairman, and the President of the Board of Health one of the members, made a report to the Mayor on November 22d. The committee inspected the garbage reduction plants in Boston, Philadelphia, Chicago and other large cities of the United States, and also those of London, Liverpool, Manchester and other English cities. Among the recommendations made by them were the following: That dumping be prohibited in the harbor; that garbage be kept separate from ashes, in galvanized iron vessels with tight-fitting covers; that the garbage be disposed of by the reduction process, producing fertilizers and grease; that a separate collection of other refuse be made, and that this be used for filling at Ricker's Island or elsewhere; that the street sweepings be sold for fertilizing purposes; and that water-tight carts, which should be disinfected before leaving the wharf, should be employed for carrying away the sweepings.

◆

Miscellany.

HARVARD MEDICAL ALUMNI ASSOCIATION.

This flourishing organization has just issued Bulletins Nos. 6 and 7. No. 6 is a well-arranged, accurate catalogue of the names and residences of all its members, with an excellent index. It was prepared, as was the previous one, by the Association's Treasurer, and is of practical use. There are 1,114 members, scattered in almost all the United States and in several foreign countries.

Bulletin No. 7 is a record of the meetings during the past year and of the annual dinner. The speeches of the eminent medical guests and others are instructive and entertaining.

The Association is financially prosperous, is a power in the country for the advancement of higher medical education, and the Harvard Medical School is deriving benefit from the organization. The Association may be congratulated on its good work. All graduates of the Harvard Medical School are eligible to membership.

◆

A FRENCHMAN'S IMPRESSIONS OF FOOTBALL.

At the Harvard-Pennsylvania game of football played last year at Cambridge, Paul Bourget was an onlooker. His lurid impressions are given in the last chapter of "Outre Mer," from which we take the following brief extract:

> The signal is given and the play begins. It is a terrible game, which, by itself would suffice to indicate the differences between the Anglo-Saxon and the Latin world — a game of young bulldogs brought up to bite, to rush upon the quarry, a game fit for a race made for wild attack, for violent defence, for implacable conquests and struggles even to extermination. With their leather vests, with the Harvard sleeves of red cloth, and the Pennsylvania blue and white vests and sleeves, so soon to be torn — with the leather gaiters to protect their shins, with their great shoes and their long hair, floating around their pale and pink faces, these scholarly athletes are at once admirable and frightful to see, as soon as the demon of contest has entered into them. At each extremity of the field is a goal, representing, at the right end, one of the teams, at the left the other. The entire object is to throw [*sic*] an enormous leather ball, which the champion of one or the other side holds in turn. It is in waiting for this throw that all the excitement of this almost ferocious amusement is concentrated. He who holds the ball is there, bent forward, his companions and his adversaries likewise bent down around him in the attitude of beasts of prey about to spring. All of a sudden he runs to throw the ball, or else with a movement of wild rapidity he hands it to another, who rushes off with it, and whom it is necessary to stop.
>
> The brutality with which they seize the bearer of the ball is impossible to imagine without having witnessed it. He is seized by the middle of the body, by the head, by the legs, by the feet. He rolls over and his assailants with

him, and as they fight for the ball and the two sides come to the rescue, it becomes a whole heap of 22 bodies tumbling on top of one another, like an inextricable knot of serpents with human heads. This heap writhes on the ground and tears itself. One sees faces, hair, backs or legs appearing in a monstrous and agitated melée. Then this murderous knot unravels itself, and the ball, thrown by the most agile, rebounds and is again followed by the same fury. Constantly, after one of these frenzied entanglements, and when the knot of players is undone, one of the combatants remains on the field motionless, incapable of rising, so much has he been hit, pressed, crushed, thumped.

It is well that M. Bourget was not present this year at Springfield.

◆

THE MORTALITY AMONG RUSSIAN PHYSICIANS.

THE study of the relative mortality rates of various professions is an interesting and suggestive one, and has already demonstrated the high death-rate of the medical profession and the shorter duration of life of physicians over many other classes of men.

Some interesting statistics on this subject have recently been published by M. Zelande in *Wratsch.*[1] There are in Russia between 15,000 and 16,000 physicians and during the years 1891, 1892 and 1893, a study of the mortality statistics was carried on by M. Zelande. The average mortality each year was 13.9 per cent., the total number dying in the three years being 642. In 417 of these the cause of death was not obtained, but the remaining 225 fell into the following divisions:

Gastro-intestinal disease	1
Morphinism	1
Erysipelas	1
Hepatic disease	1
Glanders	1
Freezing	1
Dysentery	3
Pyemia	3
Diphtheria	4
Renal disease	6
Grippe	6
Cancer	7
Typhoid fever	7
Cholera	9
Cerebral apoplexy	9
Paralysis and other cerebral affections	10
Cardiac disease	10
Accidents	11
Pleurisy and pneumonia	12
Sudden death	17
Suicide	20
Tuberculosis	34
Typhus fever	51
Total	225

Such figures permit the following conclusions:

"(1) The foremost place is filled by contagious diseases, contracted in all probability at the patient's bedside, typhus fever, diphtheria, cholera, etc., a total of 71 such cases; so that nearly a third of the physicians of Russia, the cause of whose death is recorded, fell, as it were, on the field of battle.

"(2) The second place is occupied by tuberculosis, which caused the death of 15.1 per cent of the whole number of physicians dying, while in general statistics it furnishes but 11 to 13 per cent. of all deaths.

"(3) Suicide is relatively very frequent among Russian physicians reaching 8.8 per cent., and is said to be increasing every year."

---

[1] Médecine Moderne, No. 76, 1894.

STATUS AND PAY OF JAPANESE ARMY SURGEONS.[1]

THE surgeon-general of the Imperial Army has the rank of major-general and the same amount of salary, 300 yen per month, the yen being equivalent to about 75 cents of our money. Surgeon-inspectors, whose position is analogous to that of colonel and assistant surgeon-general in the United States Army, have the rank of colonel and a salary of 193 yen per month, or 3 yen more than a colonel of cavalry receives, and 15 more than a colonel of infantry. Surgeons of the first class rank as lieutenant-colonel, and their pay, 143 yen, bears the same relation to that of a regimental lieutenant-colonel that the pay of an inspector does to that of regimental commanders. Surgeons of the second-class, with the rank of major, draw 93 yen monthly. Assistant surgeons of the first class, and pharmacists of the same grade, have 52 yen, or the pay of a captain. Assistants and pharmacists of the second class rank as first lieutenants and have the pay of the grade, 32 yen. Assistants and pharmacists of the third class have the rank and pay, 26 yen of the second lieutenant. These medical, like other officers of the army, have increased pay when assigned to special duty; those on duty in the War Department, for instance, having an increase amounting to about one-third of the regular salary of their grade.

---

[1] Medical Record, October 27, 1894.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOVEMBER 24, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and croup.	Scarlet fever.
New York	1,956,000	644	210	14.56	17.76	2.26	7.68	1.92
Chicago	1,600,000	—		—	—	—	—	—
Philadelphia	1,139,457	390	120	17.68	10.40	1.30	13.26	.52
Brooklyn	1,043,000	336	114	22.04	20.30	1.45	15.95	.29
St. Louis	540,800	—	—	—	—	—	—	—
Boston	501,107	204	63	21.56	14.70	1.47	14.70	1.47
Baltimore	500,000	—	—	—	—	—	—	—
Washington	285,000	—	—	—	—	—	—	—
Cincinnati	325,000	103	34	13.58	12.61	5.82	5.82	.97
Cleveland	325,000	94	40	27.56	10.60	3.18	5.30	19.08
Pittsburg	272,000	86	31	19.72	17.40	6.96	5.80	—
Milwaukee	265,000	—	—	—	—	—	—	—
Nashville	87,754	22	4	9.10	9.10	—	4.55	4.55
Charleston	65,165	39	8	—	—	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	100,410	20	6	15.00	5.00	—	5.00	—
Fall River	92,233	33	10	21.21	6.06	3.03	9.09	—
Lowell	90,613	36	13	2.78	16.68	2.78	—	—
Cambridge	79,607	21	4	23.80	9.52	—	—	9.52
Lynn	65,123	23	7	17.40	4.35	—	8.70	4.35
Springfield	50,284	11	2	18.18	9.09	9.09	—	—
Lawrence	49,900	—	—	—	—	—	—	—
New Bedford	47,741	22	9	9.11	4.55	4.55	—	—
Holyoke	45,548	—	—	—	—	—	—	—
Brockton	33,939	10	2	20.00	40.00	—	10.00	—
Salem	33,155	7	3	14.28	14.28	—	14.28	—
Haverhill	32,925	13	3	—	7.69	—	—	—
Malden	30,209	7	3	14.28	14.28	—	—	—
Chelsea	29,806	13	2	46.14	15.38	—	46.14	—
Fitchburg	29,383	8	3	25.00	12.50	12.50	12.50	—
Newton	28,837	5	2	—	—	—	—	—
Gloucester	27,293	—	—	—	—	—	—	—
Taunton	26,951	15	7	33.33	6.66	—	33.33	—
Waltham	22,058	5	1	60.00	20.00	—	60.00	—
Quincy	19,642	6	4	—	—	—	—	—
Pittsfield	18,802	9	4	—	—	—	—	—
Everett	16,585	5	1	—	20.00	—	—	—
Northampton	16,331	—	—	—	—	—	—	—
Newburyport	14,073	—	—	—	—	—	—	—
Amesbury	10,920	4	2	—	—	—	—	—

Deaths reported 2,219: under five years of age 717; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 395, acute lung diseases 322, consumption 288, diphtheria and croup , diarrheal diseases 49, scarlet fever 43, typhoid fever 36, whooping-cough 14, malarial fever 8, small-pox 6, erysipelas 5, measles 4, cerebro-spinal meningitis 3.

From typhoid fever Philadelphia 7, New York and Brooklyn 5 each, Pittsburgh 4, Fall River and Cambridge 3 each, Boston and Providence 2 each, Cincinnati, Springfield, Malden, Pittsfield and Hyde Park 1 each. From whooping-cough Brooklyn 7, Boston 4, New York, Providence and Pittsfield 1 each. From malarial fever Philadelphia 3, Brooklyn and Boston 2 each, New York 1. From small-pox New York 6. From erysipelas Pittsburgh 2, New York, Brooklyn and Worcester 1 each. From cerebro-spinal meningitis New York 2, Providence and Worcester 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending November 17th, the death-rate was 17.1. Deaths reported 3,427; acute lung diseases 245, measles 108, diphtheria 73, diarrhea 67, fever 51, whooping-cough 37, scarlet fever 35, small-pox (Birmingham and Liverpool 2 each) 4.

The death-rate ranged from 10.7 in Croydon to 26.3 in Newcastle-on-Tyne; Birkenhead 13.3, Birmingham 19.2, Bradford 17.5, Huddersfield 11.6, Hull 20.1, Leeds 18.2, Leicester 11.0, Liverpool 20.3, London 15.3, Nottingham 15.9, Portsmouth 15.2, Sheffield 18.5, Sunderland 23.8, West Ham 15.8.

METEOROLOGICAL RECORD,

For the week ending November 24th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..18	30.18	36	41	31	53	73	63	N.	E.	12	6	T.	F.	
M..19	30.00	38	46	30	85	47	66	W.	W.	7	20		C.	.02
T..20	30.59	24	34	15	36	62	49	W.	S.W.	13	12		C.	
W..21	30.20	38	49	27	78	92	85	S.E.	N.W.	8	11		R.	.12
T..22	30.26	44	50	39	78	63	70	W.	N.W.	14	2		C.	
F..23	30.08	44	50	38		78	85	S.	W.	14	16		R.	
S...24	29.98	40	44	36		83	75	S.W.	S.W.	12	6		C.	
☞	30.17		45	31			71							.14

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatning; N., snow. † Indicates trace of rainfall ☞ Mean for week

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIFTEEN DAYS ENDING NOVEMBER 30, 1894.

Murray R. D., surgeon. To proceed to Key West Quarantine and assume command of station. November 17, 1894.

Carter, H. A., surgeon. To proceed to Norfolk, Va., and assume command of Service. November 17, 1894. Granted leave of absence for fifteen days. November 20, 1894.

Wasdin, Eugene, passed assistant surgeon. To proceed to Pittsburgh, Pa., and assume command of Service. November 21, 1894.

Williams, L. L., passed assistant surgeon. Granted leave of absence for sixteen days. November 20, 1894.

Magruder, G. M., passed assistant surgeon. To proceed to Galveston, Texas, and assume command of Service. November 21, 1894.

Kinyoun, J. J., passed assistant surgeon. Granted leave of absence for six days. November 26, 1894.

Perry, T. B., passed assistant surgeon. Granted leave of absence for thirty days. November 20, 1894.

Goodwin, H. T., passed assistant surgeon. To proceed to Cincinnati, O., to inspect unserviceable property. November 20, 1894.

Guiteras, G. M., passed assistant surgeon. Granted leave of absence for ten days. November 28, 1894.

Geddings, H. D., passed assistant surgeon. To proceed to South Atlantic Quarantine and assume command of station. November 21, 1894.

Perry, J. C., passed assistant surgeon. Granted leave of absence for thirty days. November 24, 1894.

Young, G. B., passed assistant surgeon. Granted leave of absence for ten days. November 20, 1894.

Strayer, Edgar, assistant surgeon. To proceed to Boston, Mass., for duty. November 22, 1894.

Blue, Rupert, assistant surgeon. To proceed to Charleston, S. C., for temporary duty. November 21, 1894.

Prochazka, Emil, assistant surgeon. Leave of absence granted. November 14, 1894. Cancelled. November 26, 1894.

Thomas, A. R., assistant surgeon. To rejoin station, St. Louis, Mo. November 16, 1894.

Cumming, H. S., assistant surgeon. To proceed to Norfolk, Va., for temporary duty. November 22, 1894. Granted leave of absence for eighteen days. November 27, 1894.

PRIZE OF THE AMERICAN NEUROLOGICAL ASSOCIATION.

The American Neurological Association offers a prize of $200 for the best essay on any subject connected with Neurological Science.

This competition is open to *physicians* who are legal residents of States in North and South America.

Essays must be sent to the Secretary of the Association on or before the tenth day of May, 1895.

Each essay shall be accompanied by a sealed envelope containing the name and address of the author, and bearing on the outside a motto, which shall also be inscribed upon the essay.

Essays shall be typewritten, in either the English or French languages, and with the pages securely fastened.

The Council of the Association reserves the right to reject any or all essays judged unworthy of the award.

Each essay must exhibit original research, and none will be accepted that has previously been published.

Græme M. Hammond, M.D., *Secretary*,
58 West 45th Street, New York City.

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The next lecture will be given on Thursday evening, December 13th, at 8 o'clock, by Prof. Thomas Dwight, LL.D. Subject, "Applied Anatomy of the Head and Neck in Adults and Children." Physicians are cordially invited.

SOCIETY NOTICE.

Boston Society for Medical Improvement.— A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday, December 10, 1894, at eight o'clock, p. m.

Dr. W. H. Baker: "The Removal of the Uterine Appendages for Nervous Disease." Discussion opened by Dr. John Homans and Dr. R. T. Edes.

Dr. W. M. Prescott: "Is Acute Lobar Pneumonia Ever Caused by Etherization?" Discussion opened by Dr. M. H. Richardson and Dr. H. L. Burrell.

John T. Bowen, M.D., *Secretary*.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the Medical Society of the State of New York for the Year 1894.

Hepatic Abscess, with the Report of a Clinical Case. By W. Blair Stewart, A.M., M.D. Reprint. 1894.

Transactions of the American Ophthalmological Society, Thirteenth Annual Meeting, Washington, D. C., 1894.

Report on Typhoid Fever in the District of Columbia. Submitted by the Medical Society of the District of Columbia to the Committee on the District of Columbia of the U. S. House of Representatives, June 14, 1894. Washington: Government Printing Office. 1894.

Abbott's Bacteriology; The Principles of Bacteriology; a Practical Manual for Students and Physicians. By A. C. Abbott, M.D., First Assistant, Laboratory of Hygiene, University of Pennsylvania, Philadelphia. New (second) edition. With 94 illustrations, of which 17 are colored. Philadelphia: Lea Brothers & Co. 1894.

Fibroid Diseases of the Lung, Including Fibroid Phthisis. By Sir Andrew Clark, Bart., M.D., LL.D., F.R.S., Late President of the Royal College of Physicians, London; Consulting Physician to the London Hospital and to the City of London Hospital for Diseases of the Chest, Victoria Park; W. J. Hadley, M.D. (Dur.), M.R.C.P., Assistant Physician and Pathologist to the London Hospital, etc.; and Arnold Chaplin, M.D. (Cantab.), M.R.C.P., Assistant Physician to the City of London Hospital for Diseases of the Chest, Victoria Park, and to the East London Hospital for Children, Shadwell. With tables and eight plates in colors. London: Charles Griffin & Co. (Limited). 1894.

Lecture.

THE MILITARY MEDICAL OFFICER IN PEACE AND WAR.[1]

BY JOHN VAN RENSSELAER HOFF,
Major and Surgeon, United States Army.

(Continued from No. 23, p. 551.)

THE senior medical officer having completed his round of professional visits, returns to the hospital to inspect its sanitary condition, police, the "diets," etc., during which inspection the junior accompanies him.

The food for a military hospital comes from the commissary, which means, in army parlance, the storehouse pertaining to the commissary department, containing the various articles of the ration (part of the regular allowances of an enlisted man); it also contains other articles of food, and certain additional things, as brushes, combs, buttons, thread, etc, which can be purchased at cost price.

The ration, as officially designated, is the established daily allowance of food for one person. Its components are as follows: 12 oz. of pork, bacon or canned beef, or 20 oz. of fresh beef, or 22 oz. of salt beef; 18 oz. of soft bread or flour, or 16 oz. of hard bread, or 20 oz. of corn meal; 2.4 oz. of beans or peas, or 1.6 oz. of rice or hominy; 1.6 oz. of green coffee or 1.2 oz. of roasted coffee, or .3 oz. of tea; 2.4 oz. of sugar; .3 gills of vinegar; .6 oz. of soap; .6 oz. of salt; 16 oz. of potatoes.

These components of the ration have a money value, and, practically, the material or the money may be drawn. The management of the ration, what to draw and what to save, is a matter of great importance to the successful conduct of the hospital, for upon it depends the variety of food, in other words, the character of the table.

The money received for the sale of the part of the ration saved, constitutes the hospital fund. This fund is augmented in various ways. In the first place, it is increased by a dividend from the profits of the post exchange (enlisted men's club); this, however, is allowed to the men of the hospital corps detachment only, and not to the sick, which is a rank injustice, for the sick need the delicacies which this dividend upon their own investment would buy. It is further increased by a charge to officers and certain enlisted men for board while under treatment in the hospital, by savings made in flour, etc. The hospital fund is used chiefly to purchase food and delicacies for the sick.

The Medical Department itself issues a certain amount of "hospital stores," so-called, such as liquor, meat extracts, condensed milk, sugar, soap, candles, etc., though this list has recently been materially reduced, and the difficulty of properly feeding the sick correspondingly increased. Those hospitals that are so fortunate as to have a garden to draw upon for fresh vegetables, and a cow to supply fresh milk, have great advantages over those not so provided.

The hospital dispensary is a well-appointed drugstore on a small scale. The medical and surgical supplies for the army are furnished by the Medical Department, those ordinarily issued and the amount thereof required for different sized commands are set forth in an official publication, called the "Standard Supply Table." This pamphlet is a mine of valuable information to one wishing to supply a command in garrison, camp or field. It not only teaches the proper routine of obtaining and accounting for supplies pertaining to the Medical Department, but it contains valuable suggestions as to other supplies pertaining to other military departments, the quartermaster's, commissary, ordnance, etc., from all of which the medical officer must obtain little or much to complete his outfit. For example, the quartermaster's department builds the hospital, which the Medical Department furnishes within and uses; it makes the tents for the field, and the ambulance wagons which become for the nonce the moving hospital; it supplies heating apparatus, water, etc.; it also supplies all the clothing used by the enlisted men of the hospital corps and by the patients under treatment (except night-shirts).

The Commissary Department, as already stated, is practically the source of food-supply for the army; for while much that is eaten does not come directly from that department, the money with which it is purchased certainly does.

The Ordnance Department furnishes the arms and equipment for the sanitary soldier.

But as would naturally be inferred, the medical officer depends upon his own department for most of the material with which his work is done. Nor is he absolutely confined to the limits of the supply-table; for anything he needs will be given him, if the reasons therefor are sufficiently cogent. Should he desire to investigate a new remedy, a sufficiency of it will be issued him. Should he require some unusual surgical appliance, the asking will obtain it. Should he wish to make bacteriological or chemical investigations, the necessary apparatus will be sent him. All the department asks is that what is required will be properly and diligently used, and, as evidence thereof, that a report upon the results of investigations be made.

The inspection over, the young officer betakes himself to the library, to await his chief, the senior medical officer. The library, familiarly termed the surgeon's office, is the medical headquarters of the hospital. It usually contains bookcases supplied with well-selected medical works, to which each year, a few of the best of the recent publications are added. A number of the standard medical journals furnish current professional information, and the place invites to study.

The senior medical officer, having completed his rounds and given such orders as are required, then has time to examine the recruits who desire to enlist, or have already been enlisted by the regimental recruiting-officers. This is one of the most important duties a medical officer has to perform, and upon its proper performance the whole military superstructure depends.

The War Department has laid down very strict regulations regarding the physical examination of applicants for enlistment; and it is presumed that when a man has been passed by the medical officer, he conforms to the physical requirements and is in normal condition. Precedent to his physical examination, a careful investigation as to antecedent character, etc., is made by the recruiting-officer, and references are looked up. A detailed statement covering these points, and his physical history, is signed by the applicant; and he is informed that if this statement is false, he will be punished for fraudulent enlistment. Contrary to public opinion, not one-quarter of the men who apply for enlistment are accepted, and as a result, the general average among enlisted men is far above that of the same class in civil life.

---

[1] A lecture read before the Medical School of Harvard University, October 18, 1894.

Desiring to impress upon the mind of his pupil the importance of the work, into a knowledge of which he is about to be initiated, the senior premises the examination by a few words, outlining the objects sought and ends to be gained in the physical examination of recruits.

The governments of all civilized nations, especially those to whom large standing armies have become a necessity, are fully alive to the great importance of the judicious and careful examination of recruits. The importance of this examination has a twofold aspect, as a pecuniary question and as a military necessity.

The Austrian regulations say "that the duty of inspecting conscripts and recruits requires the utmost skill, impartiality and circumspection on the part of the medical officer." The Prussian regulations set forth that "the duty of inspecting recruits and of determining whether they are fit or unfit for the military service of the country is one of the most difficult and responsible a medical officer has to perform. To enable him to execute it correctly and with suitable promptitude he would require more knowledge and experience than is generally supposed. The regulations of our own bureau of the provost-marshal general, the offspring of the war, 1861–65, say that the duty of inspecting men, and of determining whether they are fit or unfit for the military service of the country requires the utmost impartiality, skill, and circumspection on the part of the examining surgeon . . . for upon the manner in which this duty is done, will depend in a very great degree the efficiency of the army." He must bear in mind that it is the number of bayonets in the field, and not the number of names on the rolls that determines the strength of an army.

The regulations governing physical examination are, briefly, as follows:

The examination must be conducted in the daytime, in a large, well-lighted room, furnished with table, platform-scales and measuring-rod. None other than those whose presence is absolutely required, should be admitted to the room. The man is to be examined stripped; this requirement would seem to go without saying, but its neglect during the early days of the War of Secession has probably cost our government millions in pensions. I read in the report of a medical officer of that time, that early in the war it happened to him to be present at the muster-in of several regiments of volunteers, and to make a so-called physical examination of the men composing them. He says: "My duty consisted in walking through the ranks with the commanding officer, to point out those disqualified for military duty. I was not permitted to examine them stripped. During the progress of this hasty and most superficial examination, I saw not a few blind, some variously deformed and others decrepit from old age, and found it necessary to reject so many that the commanding officer was constrained to expostulate with me." Another writer says: "I know of several regiments in which the medical inspection was performed by the surgeon walking down the line and looking at the men as they stood in ranks."

The examiner should have a measuring tape, stethoscope, Snellen's vision test-types, skeins of wool for determining color perception, and materials for vaccination.

The recruiting sergeant, or other intelligent assistant, should be carefully instructed in the proper manner of performing the various movements required of the candidate; and these the latter will imitate, while the examining officer inspects him both front and rear.

"The person of the recruit," says Tripler, "should be washed clean before he is presented for inspection. It is impossible for the medical officer to ascertain the existence of certain defects that absolutely disqualify when concealed, as they effectually may be, and sometimes are, by incrustations of filth a month old."

A well-defined system of examination should always be followed, which may well begin with the sight and hearing;[2] "for one often finds it a waste of time and patience to go through a long examination only to learn at the end that there is some disqualifying condition of one or the other sense." The hearing of each ear and the sight of each eye is tested separately, and not until after the satisfactory completion of this examination does the candidate remove his clothing. While undressing it has been suggested that he should be narrowly watched, for at this time he is apt to be off his guard, and a defect which he is desirous to conceal may then be detected, or the absence of a disability which he may subsequently feign, noted.

The height, weight, and chest measurements are next taken. Between these there is an average proportion, which in a man fit for active service will admit of slight variations without indicating a departure from health; a deviation of a fraction of an inch or a few pounds from the standard in any particular case may be disregarded "if the applicant is otherwise in good health."

In all armies there is a minimum standard of height and weight at which recruits may be accepted, varying in different countries, and in the same country under different conditions.

When an army has ample material from which to select its recruits, a certain height may well be insisted upon; but otherwise or in war, when, says Keefer, "brains, eyes and hands are demanded to direct the gun and pull the trigger, a lower figure may well be taken, especially since a short, stocky man is usually possessed of greater endurance than a very tall one."

The circumference of the chest, maximum and minimum, should be measured immediately over or below the nipples, thus excluding the pectoral muscles. "The examiner must carefully scrutinize the body surface for the detection of any obvious defects, such as skin disease, varicose veins, spinal curvature, etc., which being concluded, the various parts are examined in detail. The cranium is felt; the eyes, ears, nose, mouth and throat critically viewed; the heart and lungs examined by the usual methods of inspection — palpation, percussion and auscultation; and the abdomen is gone over systematically. The presence or absence of venereal diseases, testicular abnormalities, hernia and hemorrhoids is next ascertained. The recruit is then put through a vigorous gymnastic exercise, which is designed to show the power of his muscles and the mobility of his articulations. While cardiac and respiratory action is still excited, by reason of the exercises just finished, the heart and lungs should again be auscultated. Finally, the examination is concluded by testing the color perception; after which, the accepted recruit is vaccinated.

---

[2] The order of examination of a recruit laid down in "Greenleaf's Epitome" the official guide, concludes with the special senses; of a cadet, it begins with them.

"Upon the completion of the examination, an 'outline figure card' is made out. On this card, bearing an outline of the human figure, front and rear, every mark which will serve to identify a deserter, or prevent re-enlistment of the dishonorably discharged, is accurately described and located."

Each peculiarity or deviation from the standard is to be noted on the enlistment papers; for even though it be considered not disqualifying at the time of examination, it may become so later, in which event it will almost certainly be made the basis of a claim for pension.

The importance of the physical examination of recruits for the national guard, has recently been recognized by our State military authorities; and to-day, in the best organizations, physical examination is compulsory.

Since then, so much particularity is required for admission into the service, how are unfit and disabled men, for such there always are, gotten rid of when once enlisted?

Soldiers are discharged by reason of expiration of term of enlistment; by purchase after one year's service; on their own application after twenty years' service; by civil authority, under certain peculiar conditions; by sentence of a court-martial; by order of the war department; or upon surgeon's certificate of disability. The giving of a certificate of disability, it is needless to remark, demands a full appreciation of the meaning of the words, "I hereby certify." From April, 1861, to May, 1863, the aggregate of discharges on surgeon's certificates, reached the enormous number of nearly 200,000. The possibilities of this function of a medical officer illustrates the necessity for a conscientious performance of this important duty. As has already been stated, the medical officer's first duty is to his country, whose servant he is: his second duty is to the soldier.

Before giving a certificate for discharge, the officer must decide (1) if there be any disability, (2) if it is permanent, (3) if it is actually disabling, (4) if it is incident to service and in the line of duty.

"Malingering" is a disease very common in active armies, and not unusual in our own to-day. No factor has been more influential in producing this result than the ease with which pensions have been obtained, for every man discharged on surgeon's certificate of disability at once becomes a claimant. The certificate must be made upon a printed form furnished by the adjutant-general of the army (no written form being accepted). It contains (1) the name of the soldier, the military organization to which he belongs, date of enlistment, etc.; (2) a statement of his immediate commander as to the circumstances connected with the acquirement of the disability, and his opinion as to its being incident to service; (3) a certificate of the medical officer, giving in his own handwriting, the nature of the disability, his opinion as to its origin, and its incidence to the service, and the extent to which it incapacitates the man for earning a living. The certificate is made out in duplicate, and forwarded through military channels to the general officer commanding, who, after approval by his medical director, orders the man discharged.

Among the numerous other duties of a medical officer is that of the sanitary supervision of the *personnel*, habitations, and surroundings of the command to which he is attached, and the recommendation of such measures as he may deem necessary to prevent or diminish disease among troops. "For this purpose," as the regulations have it, "he shall examine and note in the medical history of the post, at least once a month, the sanitary condition of all buildings, the drainage, and the amount and quality of the water-supply, the clothing and habits of the men, the character and cooking of the rations, and shall, immediately after such examination, make a report thereof in writing to the commanding officer, with such recommendations as he may deem proper. The commanding officer shall return the report with his views thereon, and if he deem the action recommended impracticable or undesirable, he will state fully his objections. The endorsement shall be recorded in the medical history of the post, and a copy of the report and endorsement shall be forwarded by the medical officer through military channels to the surgeon-general." The importance of a proper performance of this duty cannot be overestimated, for upon it, in large measure, depends the physical well-being of the command. Particularly is it so in the field among raw levies, who have no knowledge of how to properly care and provide for themselves.

The duties of a military medical officer are performed under extremely varying conditions. His life in garrison during times of peace is simply a preparation for his life under the normal conditions of an army, in war; for, of course, the only reason for the existence of an army is the possibility of war. So far then as possible, the daily routine at a post is an endless rehearsal of those things which would be done in active service.

The management of a post hospital, which, with one exception, is the only class of military hospitals now existent in our service, should be as far as possible exactly like the management of the great general hospitals which will spring up in the event of war. The hospital is subdivided for convenience of administration into different departments, as dispensary, operating-room, wards, kitchen, etc., each of which is presided over by a designated individual, who is made responsible for the proper management of his department. For the most part, in their interior economy stationary military hospitals are managed as are those in civil life; certain details are necessarily different, but the general result is identical Both must be highly disciplined organizations to be efficient ones.

In addition to the duties which pertain more particularly to his own department, the medical officer has much to do with official matters non-medical. He often serves on court-martial and board duty. He is by law a member of all boards for the admission of officers into the service, whether from civil life directly or from the military academy; of all boards for the promotion of officers and for their retirement. In fact, he has a finger in almost every official pie.

The necessity for a trained body of sanitary soldiers working under the immediate direction of the medical officer has been recognized by military sanitarians for a hundred years, and more or less efficient organizations of this character have existed in some or other armies for that time. The public appreciation of their value is directly proportionate to the amount of active service done by the army.

(*To be continued.*)

Original Articles.

DEATH SUPPOSED TO HAVE BEEN CAUSED BY VIOLENCE.[1]

BY Z. B. ADAMS, M.D., OF FRAMINGHAM.

> "But is this law?
> Ay! marry is it; Crowner's quest law."

THE following is copied from the Record-book of a medical examiner:

"The weather was cool. Attention was called to the house by the bad odor issuing from it. At 9.15 A. M., May 28th, I entered the room, which had been closely shut. The body was found lying upon the left side in bed. Wherever exposed, it was completely covered with huge white maggots. The surface was black from decomposition. The eyeballs had burst, and the belly was inflated with gasses. The skin fell off wherever touched, and the odor was fearful. It seems incredible that all this could have taken place in the short space of 86 hours, in cool weather, and the entrance of flies prevented by closely shut doors and windows. A considerable sum of money was found under his pillow. No suspicion of foul play could be entertained."

Certainly this was a disagreeable case; but the duty of the examiner was absolutely repulsive when he was obliged to sign a printed "return of view" stating that "the death was supposed to have been caused by violence."

And perhaps more disagreeable still would have been the experience, if, as in the case cited by Medical Examiner Seymour, of Hampshire County, another medical examiner and an attorney, consulted in regard to the matter, had pronounced the action of the medical examiner in returning a "view" as being unwarranted, and apparently the county commissioners had coincided in this opinion.

The chief ground of complaint against the language of law is found in its redundancy. To secure precision and avoid ambiguity the writers of our laws strive, whether by amplyfying, restricting, or otherwise defining the meaning, to remove all chance of equivocation. Thus the statutes are overburdened with verbiage. But in the law relating to medical examiners (a law, be it remembered, the aim of which is to discover homicide, to protect the innocent and punish the guilty of the heinous crime of murder), and in the most vital point of this law, is introduced a phrase so loosely drawn, so vague and unprecise, that scarcely two intelligent men can be found who will agree upon its meaning. One might even be permitted to infer that in drafting Section 10 of Chapter xxvi, it was intended to imply that medicine being confessedly an inexact science legal phraseology applied to medical questions should be likewise inexact.

"The phrase 'supposed to have come to his death by violence,'" says Dr. Mead in his excellent paper read before this Society in June last,[2] "is very indefinite and elastic; it wisely leaves the medical examiner's field unfenced and uncircumscribed. It does not say upon whose supposition the examiner may act, nor does it limit his action to those cases which are known to be due to violence; in fact, he is to decide this very point by his examination."

This is admirably stated. Still every medical examiner must experience a cold shudder of disapproval when called upon to state, in a plain case of death from natural causes, that "death was supposed to be caused by violence."

The first and obvious meaning of death by violence is death caused by the hand of another. Clearly this excludes suicide and accident, whereas deaths from these two causes constitute the bulk of cases of violent death which the medical examiner is called upon to "view." No one can doubt that these are proper cases to view. This, then, cannot be the true definition of the words of the statute.

But violence may mean any injury which happens to the body from without. Neither can this be the meaning of the statute; for such a definition omits cases of sudden death from natural causes which the medical examiner, as I will show further on, is very properly called upon to view. These are cases of unexpected or unexplained death, where either no physician was in attendance, or the cause of death seems obscure and perhaps liable to suspicion. To quote Dr. Mead's language upon this point, "Suspicions are aroused by the suddenness and unnaturalness of the death . . . different from the usual form of natural death with which every one is more or less familiar." The conclusion of the bystander "being either that it was a violent and unnatural death, or was caused by some natural agency with which he was unacquainted."

Some cases of death from natural causes may by a forced construction be placed under accidental or violent deaths. Such, for examples, are rupture of aneurism from muscular effort, fatal hemoptysis in phthisis from violent exercise, a perforation caused by vomiting in ulcer of the stomach, disease of the heart ending in sudden death while straining at stool, etc., but such accident or violence cannot have been contemplated in a statute devised to detect and punish the crime of homicide. There are cases occasionally where there is evidence to show that death resulted from natural causes when in matter of fact it was due to gross violence. In a case of sudden death where every evidence was at hand to prove the existence of disease of the heart, an unsuspected fracture of the frontal bone was found, caused by a fall. Again an infant was buried without a certificate, the undertaker being satisfied by representation made by the family that death was due to convulsions, when the autopsy, three weeks afterwards, revealed a fracture of the skull the result of the brutal carelessness of its drunken father.

But such cases of violence or homicide do not sufficiently show the value of the present form of the statute. *One* of its undoubted objects is to detect crime where slow or subtle poisons, or some unusual methods are employed, which produce a fatal result with symptoms similar to those of natural death; and another purpose is to detect and punish the abortionist. Of the first class we have a fine object-lesson in the well-known case of Mrs. Robinson. Of the second class, is the case recited by Dr. Durell at our last meeting,[3] where, on the representation of a doctor, he was on the point of issuing a certificate of death from natural causes, when accident revealed the fact that a crime had been committed.

Dr. Mead says, "The office of medical examiner was created to render the detection and punishment of crime more certain and effectual"; and we may add that it is precisely in these cases of secret or concealed homicide that the medical examiner may render the greatest service to the community.

---

[1] Read before the Massachusetts Medico-Legal Society, October 3, 1894.

[2] See Journal of October 12, 1894.

[3] See Journal of April 19, 1894.

A prejudice in favor of an individual, or what is called "popularity," may screen a cunning criminal, as, on the other hand, malevolence may bring suspicion upon the innocent; indeed in cases of sudden or unexpected death it is not safe to leave the question of the cause to the decision of the family, the police, the board of health, nor even of the doctor. There is a distinct advantage in an inquiry of this kind in calling upon a stranger, as it were an indifferent spectator, to whom all the facts are submitted anew, who can view the case from a new standpoint, whose sympathies and interests are in no way involved, and who, moreover, by special training and experience is competent to decide upon the testimony.

It is claimed that the law has worked well. How can that be shown when, on the one hand, we have no means of knowing how many cases of secret homicide may have escaped detection under the guise of death from natural causes; nor, on the other, how often a groundless suspicion may remain in the minds of the community against an innocent person?

It is to be regretted that no statutory provision exists authorizing the medical examiner to make post-mortems at his discretion in cases of unexplained death.

Both the State and the medical examiner would be the gainers by such legislation. In case a secret homicide should be revealed in this manner, the value of the law in its widest possible interpretation would be proved, while the medical examiner would have no difficulty in recovering payment for his labor; whereas if, as no doubt would happen most frequently, no crime was brought to light, not only might a cruel suspicion be removed from some innocent person, but much knowledge would be gained upon doubtful questions connected with sudden death, while mortuary statistics so far as they are based upon medical examiners' certificates would possess far greater value than now.

I would suggest that Section 10, of Chapter 26, of the Public Statutes might be amended acceptably as follows:

> Medical examiners shall make a view of the dead bodies of such persons only as are supposed to have come to their death by violence; or, when called upon, when the death is sudden or the cause of death is unknown; in which case they are hereby authorized to make a post-mortem at their discretion, such post-mortem not to be returned as a medico-legal autopsy.

I append to my paper the following from a member of this Society:

August 23, 1894.

DEAR DR. ADAMS: — I am a little shy about trying my hand at tinkering statutes, and that is why I haven't replied sooner to your earlier request.

I am not thoroughly convinced that it is desirable to amend the law. While I am in favor of the widest and most liberal latitude in the discretion under which medical examiners act, and while I believe (as I have always acted), that a medical examiner should not inquire closely into the character of the "notice" by which he is summoned, but should presume that in the mind of the one summoning him there is a good reason for the summons, I do think that the clause "such persons only as are supposed to have come to their death by violence" is a useful clause *sometimes* as a bar to frivolous calls and to calls clearly outside the function of the medical examiner, considered theoretically.

If I were commissioned to formulate statutory provisions which would conform closely to my own practice during the past seventeen years as a medical examiner, my suggestion would take this shape:

(1) Omit Section 10 of the present law altogether.

(2) Amend Section 11 by omitting the words "who is supposed to have come to his death by violence" and substitute therefor the words "into the cause and manner of whose death a medical inquiry is deemed necessary," so that the first part of the Section 11 would read: "When a medical examiner has notice that there has been found, or is lying within his county, the dead body of a person *into the cause and manner of whose death a medical inquiry is deemed necessary*, he shall forthwith repair, etc."

This change would sufficiently enlarge the medical examiner's jurisdiction to include all possible emergencies, without, in my belief, opening the door to abuse. It would take off the implied inhibition which now hampers some of our best examiners; and it would express what is really the practice of others of our leading men.

The only question in my mind is whether a change is either necessary or expedient. Personally, I am not hampered by the present statute, for I go whenever and wherever I am called within my district, always assuming, in the absence of information to the contrary immediately available, that a medical inquiry into the cause and manner of the reported death is deemed necessary. And I feel sure that the same "discretion" in the way of executing this statute would be approved, whoever the examiner was. In this matter, I think Dr. Mead's position is correct, although a strict interpretation of the law is clearly against it; but, on the other hand, if a *strict* interpretation of the law is insisted on, and every medical examiner before he answers a call, must run around the country hunting for that "supposition" of "violence" in the case, as a condition precedent to his official action, he and his law will become absurd. As I see things now, I don't very much care whether the door of opportunity for action under the statute is opened more widely, and I shall keep on answering calls, as I have done in the past, without a preliminary cross-examination of the motives of the person who does the act of calling me. In other words, I think we may say of the medical examiner, when he is summoned to a case:

His not to reason why;
His not to make reply;
His but to get there, spry!

and take charge of the body.

Yours very truly, ——— ———

◆

WAS IT MURDER OR SUICIDE?[1]

BY E. P. HURD, M.D., OF NEWBURYPORT, MASS.,
Medical Examiner, Third Essex District.

ON the morning of July 28, 1894, an empty boat was seen on the flats near Carr Island, opposite Jefferson Street, Newburyport. Its oars and anchor were missing. In the bottom of the boat, lying loose, were two boards which had served as seats. A straw hat, evidently the property of an adult man, was the only other thing which was found aboard. The boat was subsequently identified as the property of a resident of Amesbury who had left it at Black Rocks near the mouth of the Merrimac the day before. The oars and sail had been removed by him and locked up ashore. When the owner recovered his boat, he found, as before mentioned, that the anchor and about seven feet of rope were missing. On the morning of the 28th of July, as two fishermen of the South End were going to their clam-beds, they saw in shallow water, the tide being low, the back of a man protruding above the surface of the water. This was at the edge of Hook's Channel, and the place where the body was discovered is nearly dry at low tide. They rowed up to the body, and found around its neck a rope about seven feet long attached to which was a boat anchor, weighing about nine pounds. The anchor was embedded in the mud, but had not caught. The body was lying with the face downward and had evidently been in the water several days, being badly swollen and discolored. The fishermen took the anchor into their boat and towed the body to one of the lower landings, where it was examined by me.

---

[1] Read before the Massachusetts Medico-Legal Society, October 3, 1894.

On the person of the dead man were two dime novels, which suggested an expectation of some leisure time, and papers which proved beyond doubt that he was C. F. A., of Haverhill, and also that he was a printer by trade. The body was that of a very large man, five feet ten inches high, weighing about 180 pounds. He was well dressed in a light-gray summer suit and a new pair of laced boots. No hat, no purse, no money, no watch, was on his person.

The remains were in a state of rapidly advancing putrefaction. The face was swollen and the features distorted. A frothy, sanious fluid ran from the mouth. The epidermis was livid, in spots green. The veins of the face and temples were engorged. The abdomen was enormously swollen (cadaveric tympanites); the thorax was livid, greenish, the epidermis in places peeling. A tight rope, with anchor attached, was around the neck: the knot was at the back part of the neck, and examination proved it to be a slip-noose. The knot seemed to be drawn very tight; there was a deep, wide crease around the neck where the rope had constricted the parts. Above and below this crease, the integument was swollen and overlapped. The knot seemed to me drawn tighter than any man could have drawn it himself with his hands above his head, pulling upwards; it was tight enough certainly to produce strangulation. I may say, however, that the deceased was a large muscular man, that a strong, nervous pull on the slip-noose thus adjusted would draw it pretty tight; and it is a perfectly defensible proposition that any strong man could thus inflict dangerous strangulation upon himself if he were disposed. It is the improbable that often happens.

There were no marks of violence on the person of the deceased other than those inflicted by the rope around his neck; no wounds, contusions, or fractures. A post-mortem examination subsequently made certainly favored the hypothesis of death by strangulation. There was no water in the lungs or stomach, nor in the pleural cavities. The right side of the heart was distended by dark blood; the left side was empty. The lungs were collapsed. Their bases were engorged with dark blood; the upper portions crepitated well on pressure. On section a frothy, sanious fluid exuded; the same fluid was found in the bronchi. There was intense lividity and swelling of the face, lips, hands, eyelids and scalp, with dark veins very prominent; the eyes were red and protruding, the tongue swollen and protruding. The mark of the rope around the neck, four days after the discovery of the body, was very pronounced. The brain, on account of the advanced decomposition, was not examined.

The epidermis of the feet and legs was of a livid, greenish color, and was macerated owing to long lying in the water. The blood was everywhere fluid, and was oozing in places, as on the thorax, owing to cracks in the skin.

The day of its discovery, the body was identified by the guardian and by a sister as belonging to C. F. A., of Haverhill, a young man twenty years of age, who had left home on the morning of the 19th, and had not since been heard from. Careful examination revealed the fact that young A. was of dissipated habits. This opinion I had previously formed by a perusal of a diary found in his possession. He had kept very low company; had had intimate relations with a certain disreputable female, and there was infatuation and deep jealousy. This fact I learned of the chief of police. For several days prior to his disappearance, he had acted strangely; had been moody, dejected, and had been heard to say that he wished himself dead. There had been a quarrel with his mistress.

A. never carried much money on his person; in fact, he was earning but moderate wages at his trade. There was no means of knowing how much money he had when he left home on the 18th or 19th of July, but the amount could not have been large. His guardian stated that A. had drawn on him the day before his disappearance for ten dollars. What became of the sum, the detective who undertook to work up the case was unable to determine. Certain it was, that there was no pocket-book and no money on A.'s person when found on the morning of the 28th.

The owner of the boat found it on the morning of the 20th at Carr Island, as before stated. The rope and anchor found around the neck of A. were identified as belonging to the boat. The hat was A.'s hat. The boat had been anchored the day before at Black Rocks, near the mouth of the river. The sail and oars had been removed so that the boat might not be stolen.

We are now able to reconstruct a portion of this history. A. had wandered away from Haverhill on or about the 19th of July, and found himself at Black Rocks, a little retired landing, with about four houses a little distance from the water's edge. The presumption is that he came down in the electric-car. He was seen by no one on the way; no one remembers to have seen him from the time he left Haverhill till he arrived at Black Rocks. He was observed at Black Rocks on the evening of the 19th by two rather suspicious characters, one of whom has served a short sentence in jail; this is according to the testimony of these parties, elicited by a detective. Yet these men deny having had any conversation with A. It was impossible to find a shred of evidence to connect either of them with the disappearance of A., though some hope was at first entertained by the detectives that a clue might be found here.

How did A. get to Hook's Channel where his body was found? That boat moored by its owner at the Black Rocks' landing, must have borne the body of A. on the night of the 19th to the place near Hook's Channel where it was found on the morning of the 28th. Did it bear him alive, or did it bear him a corpse? This is the question that is still unsolved.

One theory, entertained by many, is that A. was the victim of a foul murder. At Black Rocks he fell in with one or more desperadoes who, for money, or from some other motive, murdered him. He may have been lassoed, as the Thugs strangle their victims; he was then robbed of what little money he had. The murderers found that they had a corpse to get rid of; there was only one boat there (as was the fact) and this boat was without oars. However, there was no other means of covering up their guilt; they hastily, under cover of the darkness, threw the body into the boat and paddled up the river with the seats of the boat (there were two of them) for oars. The tide was then setting strongly toward Newburyport; and if the boat had been left to the action of the tide alone, it would not have drifted out to where it was found, namely, at Hook's Channel. This is absolutely certain if we can rely on the testimony of all competent boatmen. Consequently, to reach Hook's Channel, the boat must have been paddled considerably out of the current. There was doubtless a good reason why the murderers of A. (if this deed were really a homicide) preferred to row out of the main current — they would thus avoid any small boats which might be passing up or down the river. Hook's Channel was some distance to the left of the main current and boatmen would naturally keep away from that quarter, especially as it was shallow water in that direction. The theory then is that the supposed murderers, after paddling the boat with their dead body out to Hook's Channel, dumped the body overboard, first taking the precaution, by tying the anchor-rope about his neck with the anchor attached, that the body should never rise to the surface and tell of their crime. There is nothing inherently improbable in the supposition that this same rope was the instrument by which the murderous deed was accomplished in the first place. In favor of the theory of murder is the fact that the deceased when found had no knife in his possession with which the anchor-rope could have been cut. Detective Hammond, however, makes light of this objection, for he has ascertained that A. was in the habit of carrying a pocket-knife with a large blade; this he might have flung into the river after cutting the rope. Another fact in favor of the murder theory is the absence of any money on the person of A. when found.

The subsequent course of our supposed murderers is easily imagined. They paddled their boats over to the Newburyport side, landing on Joppa Flats, then left it there and went their way unobserved and unsuspected. If they imagined that the place where they dumped their victim was deep water, subsequent developments revealed their mistake.

As for the boat, it might readily drift on the ascending tide from the place where it was left, to Carr Island, the other side of the river. This is conceded by the boatmen of Joppa and by others well acquainted with the river. On asking several of the river boatmen whether an empty boat which had been abandoned at Hook's Channel, where the dead body was found, would naturally float on the tide to Carr Island, I could not find one who believed that a boat would be likely to drift in that direction, but all admitted that the course of such a boat would depend somewhat on the wind. It does not seem to me improbable that a boat might drift with the tide from that locality to Carr Island.

Against the homicide theory are (1) the want of any known motive for the murder; (2) the absence of any marks of violence on the person of the dead man other than those caused by the rope; (3) the absence of any clue to the murderer. Moreover, in favor of the suicide theory are the following considerations: (1) The testimony of A.'s employer and of his friends that he had been acting strangely, had been moody and taciturn; (2) that he seemed to have "skulked" away to Black Rocks (fifteen miles), not mingling with any company, and keeping his plans to himself; (3) the place where the Amesbury man's boat was left moored was a retired place — and a man who was meditating suicide would naturally seek such a place. In brief, we can easily imagine such a succession of events as these: In a state of melancholy, perhaps even of mental aberration, A. strays to Black Rocks. He is meditating suicide, and finds the boat. The tide is flowing upward; he raises the anchor, and enters the boat. He is soon out in the midst of the current, drifting upward towards Newburyport. He shrinks from meeting other boats or being seen; he is determined to bury himself from all eyes and to do it so effectually that no one will ever know what has become of him. Especially is the thought gratifying to him that *she* who has caused him so many woes, whom he has so adored, but who has been false to him — that *she* will wonder what has become of him, will miss him, will perhaps some time long for him, but will never, never know his fate. The tide carries him towards Newburyport; he seizes the board on which he had been sitting and sculls to the left. There is a broad plain of ebbing waters in the direction of the clam flats; it is quiet and retired out there; the water seems deep; here is a good place to carry out the cherished design. Choosing what he thought a suitable place, he is about to cast himself overboard, when he remembers that he has heard that after a certain time bodies rise to the surface. This thought is abhorrent to him; he wishes to make his fate forever a mystery. He looks around for a weight; he sees the anchor, cuts the rope, throwing away the knife which he will never need again; he may have done the same thing by his pocketbook. It is the work of only a few moments to adjust the slip-noose to his neck; in his frenzy he gives a strong, impetuous tug with both hands on the rope, which, with the anchor, is now at arm's length above his head, and falls overboard. The anchor drags him to the bottom; the constriction of the gullet and windpipe by the rope precludes the entrance of water into the lungs and stomach, and fatal asphyxia soon sets in.

On the whole, I think the hypothesis of homicide the more probable. My first impression when I saw that man on the wharf with the noose so tightly drawn around his neck — *This must have been murder* — will probably yet be verified, if the old adage, "Murder will out" be true. Had A. designed to commit suicide he would have been satisfied with attaching the anchor rather loosely to his person, the object being only to keep the body from rising. Then again, the post-mortem findings certainly favored the hypothesis of death by strangulation rather than by drowning. And yet I am aware that persons have died from drowning without swallowing a drop of water, owing to sudden constriction and closure of the glottis. There are, I believe, no absolutely reliable pathognomonic signs of death from drowning.

Prolonged Treatment of Fecal Accumulation.— A writer in a medical journal describes a case in which a fecal accumulation was made to disappear by an injection of glycerine *per annum*. The number of annual injections required is not stated.

Clinical Department.

A CASE OF PERITYPHLITIC ABSCESS IN A CHILD FOUR YEARS OLD IN WHICH THE APPENDIX WAS NOT THE CAUSE OF THE ABSCESS: RECOVERY.

BY JOHN HOMANS, M.D.,
Surgeon to the Massachusetts General Hospital, etc.

Dorothy D., aged four years, a healthy child, but habitually constipated, of a nervous temperament and inclined to nausea and vomiting, became feverish on December 28, 1892, and complained of a pain in the abdomen in the region of the umbilicus and to the right of it. When first seen by her physician, Dr. Thomas Dwight, on December 30th, her temperature was 103° and her pulse 120. A small dose of morphia was given and a cathartic.

On December 31st, the child was rather worse — restless, painful night, no movement of bowels. Pain at the same point, which was rather dull on percussion, and suggested a tumor. I saw the case in consultation with Professor Dwight at about noon on Saturday, the 31st. It was evident that there was obstruction of the bowels, but whether from local peritonitis or something mechanical, I could not determine. There was considerable distention and tenderness, most marked in the umbilico-pubic region. I decided to watch the child closely, and open the abdomen if it seemed best. Dr. Rotch saw the case on Sunday, the 1st of January, 1893. It was decided at the consultation to give a cathartic once more, and castor oil was decided upon.

On January 2d there had been a very slight action from the oil, but the little patient was somewhat nauseated. There was a tumor in the lower and right umbilical region the size of an egg. The child seemed weaker, and had taken no nourishment to speak of since December 28th. The pulse had continued at 120 per minute. I determined to open the abdomen, and did so on January 2d. An incision was made, two and one-half inches long, between the umbilicus and pubes. Before the peritoneum was opened, the bladder, which rose to the umbilicus and ought to have been emptied by catheterization, was punctured and the very minute hole was sewed up with fine black silk. The bladder was at the same time emptied by a catheter in the urethra. On opening the peritoneum the healthy bowels were seen and on separating them towards the right of the umbilical region, a level surface of grayish color came into view. On this surface, which was the roof of an abscess, lay the appendix. It looked like a little earth-worm and was slightly pinkish in color. It was not adherent, and was about two and a half inches long. I lifted it up and carefully examined it. It appeared perfectly normal and I laid it down again. A minute opening in the roof of the abscess gave spontaneous exit to a stream of pus the size of the smallest needle. This opening was enlarged, after the intestines had been protected by gauze, and about two ounces of rather thick and offensive pus ran out. The abscess cavity, and the peritoneal cavity in the neighborhood, was thoroughly douched with warm water. A small glass tube with some gauze around it was put in the abscess cavity, and the wound was sewed up around it. The appendix was not removed. The temperature at 8 p. m. was 98° and the pulse 140. A catheter was kept in the bladder. Stimulants, milk and eggs were given. There was considerable serous discharge from the drainage-tube. The bowels moved on the fourth day, and at this time the tube and gauze were removed. The catheter was removed from the bladder, and the urine was drawn every four hours.

The discharge became slight on the seventh day, and soon ceased. The wound was entirely healed on the fifteenth day, and the patient was walking about on the seventeenth.

She has been perfectly robust and well since. Two years have now passed, and her constipation has been less than before the operation. The fact that the appendix was not at fault — was neither constricted, swollen, gangrenous, nor perforated — and that yet there was the usual abscess we find in cases of appendicitis, leads me to think the case worth reporting. Perhaps as the appendix was not affected in this instance, it may not be in some others. I have no explanation to offer for the formation of the abscess. Except for the youth of the patient and the fact that the appendix was normal and sound, the case does not differ from other cases that we call appendicitis when we operate on them and do not happen to see the appendix.

◆

HYDRAMNION WITH HYDROCEPHALUS, REQUIRING CRANIOTOMY.[1]

BY THOMAS E. CUNNINGHAM, M.D., CAMBRIDGE, MASS.

Excessive accumulation of liquor amnii constitutes the condition known as hydramnion. The usual causes are found in disease of the uterine membranes or fetus. The amount of fluid present differs greatly, and depends on the different degrees of the affection and somewhat on the particular cause. In by far the larger number of cases the amniotic fluid is so little in excess of the normal amount that a diagnosis is not made or if it is, only at a late period, at the moment of delivery. In another class there is more fluid, which appears rapidly; and owing to excessive distention the uterus will be very liable to take on contractions, these leading to premature rupture of the membranes and expulsion of the fetus. There is another class of cases I wish to call your special attention to, a more pronounced type, but by no means the worst. The exaggerated form I have never seen. This variety of hydramnion has been mistaken for ascites and ovarian cyst, and treated by tapping with fatal results. Kidd treated one case in this way, thinking he had an ovarian cyst complicating pregnancy, and afterwards delivered the woman of twins. This condition is very unfavorable for the child, a large number being born dead, or dying shortly after birth. Owing to the exaggerated distention, uterine inertia is apt to follow, with all the dangers and horrors of post-partum hemorrhage. It behooves us to be keenly alive to the many accidents that may happen while conducting a case of this kind.

Having made a diagnosis is one thing, treating it is yet another. Various views have been advanced as to the proper procedure when once intervention is decided upon. The concensus of opinion, however, seems to favor the puncture of the sac in the interval of the pains. If done during a contraction there is great danger of syncope, the waters rush out with such force, rapidly decreasing the inter-abdominal pressure. In my case, although the distention was enormous and the diaphragm forced upward, the patient was in a good condition, well nourished and free from edema; and there were none of these evils to combat.

---

[1] Read before the Cambridge Society for Medical Improvement.

The following is a brief account of the case: Mrs. Alice W., born in Newfoundland, age thirty-six years, has a sound family history. She has been twice married, has had thirteen pregnancies, four miscarriages, eight normal births, and one abnormal (the subject of the present paper).

During the latter part of August, 1893, she had her last menstruation. Some time in October a bloody discharge appeared from the uterus; and as it continued off and on for five or six weeks, she imagined another miscarriage had taken place. In January, however, she "felt life" and thought herself somewhat larger than usual. Every week after this the abdominal distention added to her discomfort, until finally she complained of tightness and distress, with broken and imperfect sleep. In every other respect, however, she enjoyed the best of health; her appetite was good, bowels regular, and circulation perfect, as shown by absence of edema of extremities all through her pregnancy.

On the 16th of May, unable to endure her agony longer, she sent for me. I found her sitting on a chair, the abdomen enormously distended, and complaining of great distress. For a whole week she had not been able to lie down, and to add to her misery labor pains were coming on. My first thought was that an ovarian cyst was present, but on examination a correct diagnosis was readily made. Treatment expectant. The following morning found no change; delay counseled. In the evening was sent for again, and the distress being so great it was decided to rupture the membranes. As the os was one-third dilated and the membranes somewhat tense, this was easily accomplished. I do not know how much liquor amnii escaped, but it was a large amount and in much less time than it takes me to tell it. I was afterwards able to collect three-fourths of a pailful, which in appearance was perfectly normal. To describe the relief that followed this very simple procedure is beyond my very limited powers.

The patient was now left for the night with the instructions that if strong labor pains set in to send for me. About 4 A. M., six hours after rupturing the membranes, I was again called. The pains were not strong and the examination *per vaginum* was anything but satisfactory. It was thought a head presentation existed at the previous visit, but now it appeared more like a breech. Ether had to be given to settle the question, and with this in view my brother, Dr. Joseph Cunningham, was called to my assistance. It was then determined that the presenting mass was a hydrocephalic head and that the child was dead. Forceps were applied; but as they slipped, owing to the compressibility of the child's head, they soon had to be abandoned. My craniotomy instruments were then obtained, and, reinforced by the assistance of Drs. Clarke and Tuttle, the head was perforated with Smelly's scissors, under due antiseptic precautions, and the child delivered by the aid of the cephalotribe. The patient made a complete and uneventual recovery.

DURING the recent cholera epidemic in St. Petersburg there were 3,713 cases, 2,043 being fatal.

Medical Progress.

REPORT ON THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D.

ANTITOXIN IN DIPHTHERIA.

[MY last report on therapeutics (May 31, 1894) included the abstract of an article by Ehrlich, Kassell and Wassermann on the use of antitoxin in diphtheria. Since that time the articles which have been published on this subject would fill the JOURNAL many times; but I have chosen from these one, by a distinguished French observer, to present the views recently expressed. Antitoxin has as yet been little used in this country; but from the Continent, where it has been employed in large numbers of cases, we have very favorable reports. My own experience includes thus far only a few cases. It is probable that the antitoxin will find its chief usefulness in the early rather than in the late stages of the disease. There are three makes of antitoxin, Behring's, Aronson's and Roux's. The latter has not reached this country yet so far as I I am aware. Behring's solution is made in three strengths, No. 3 being two and a half times as strong as No. 1. His solutions will keep several months if put in a cool, dark place. For making the injections Behring recommends the use of a Koch's syringe which will hold ten cubic centimetres. The injection should be made where the skin is loose, as on the chest or thigh, and not upon parts of the body where the patient would lie. Scrupulous care should be taken to have the syringe perfectly clean, and the skin should be carefully cleansed at the place where the injection is to be made. F. H. W.]

THE SERUM THERAPEUTICS OF DIPHTHERIA.[1]

Prof. E. Roux, *chef de service* of the Institut Pasteur, and president of the French Committee for the study of diphtheria, in a communication to the Eighth International Congress of Hygiene and Demography (Budapest, September, 1894), states that diphtheria is a localized affection. Since 1891, with the collaboration of L. Martin and A. Chaillou, he has followed up the experiments of the treatment of diphtheria by antitoxin serum, first upon animals and subsequently upon children, and can now say that their results confirm essentially those of Behring and his co-workers in the treatment by antitoxin, both of animals and of children affected with diphtheria. The animals furnishing the antitoxin serum are rendered immune against diphtheria — that is to say, they are accustomed to the toxin of diphtheria. The most rapid process for obtaining the toxin consists in making the culture in a current of moist air. Vessels with flat bottoms and with lateral tubes are used; into these is poured an alkaline bouillon peptonized to two per cent., the liquid being spread in a thin layer. After sterilization, recent and very virulent diphtheria bacilli are added, and the temperature of the chamber is raised to 37° C. When the development has fully begun, the current of air that passes into the neck of each of the phials is regulated, after bubbling through a wash-bottle. After three weeks, or at most a month, the culture is sufficiently strong for use. The completed cultures are filtered through a Chamberland bougie, and the clear liquid is kept in well-filled vessels, corked, and sheltered from light, at the ordinary temperature. Prepared in this manner, a dose of one-tenth of a cubic centimetre of the toxin generally kills a guinea-pig weighing 500 grammes in from forty-eight to sixty hours. It finally loses its activity, but only slowly if properly kept under the conditions mentioned.

---

[1] The Lancet, September 22, 1894.

In order to treat children ill with diphtheria, large quantities of serum must be available; therefore it is desirable to immunize large animals capable of furnishing abundance of antitoxin. In conjunction with M. Nocard horses were immunized, because the serum of the horse, even in considerable doses, is not injurious to animals or man. It is also easy to draw from the jugular vein of the horse large quantities of blood from which a perfectly limpid serum separates out. The pure toxin is injected under the skin, beginning with one cubic centimetre; and the quantity is progressively increased. At the end of a month, two or three times a week from 20 c. c. to 30 c. c. are injected at each sitting. The result is better if small and repeated doses are injected than if large doses are given at long intervals.

Before treating children with the horse serum its efficiency was tested upon animals inoculated with diphtheria upon the mucous membrane, in order to approach as near as possible to actual conditions. Female guinea-pigs are useful in these experiments, as it is easy to produce diphtheria of the vulva and vagina in them. If the serum is injected twelve, or even twenty-four hours after the development of the false membrane, the disease is arrested and the animals recover; whereas guinea-pigs not so treated die in from four to six days. Even a few hours after the injection of the serum the redness and swelling of the tissues diminish, the false membranes detach themselves, and the mucous membrane recovers with rapidity. The serum not only prevents general poisoning, but its action upon the local lesion is also most marked. The diphtheria produced in the trachea of rabbits resembles exactly the diphtheria of children. Such rabbits die in from three to five days; those receiving serum in sufficient quantity, even twelve and twenty-four hours after the injection, recover. It is much more difficult to cure rabbits inoculated in the trachea with a mixture of diphtheria bacilli and streptococci. Diphtheria associated with streptococci is the most grave form met with: in children it is the most frequent determining factor of broncho-pneumonia, and the same holds good among rabbits. Still the serum is efficient in these cases if used within the first twelve hours, and given repeatedly at intervals in strong doses. The rabbits treated after twelve hours died, in the majority of cases, with centres of broncho-pneumonia in which were found the diphtheria bacillus associated with the streptococcus. The failure of the serum in these cases is due to the fact that it does not stimulate with sufficient energy the cells already pervaded by the products of the streptococcus. These experiments upon animals were the necessary preparation for the treatment of diphtheria in children.

February 1, 1894, these observers began to treat diphtheria cases at l'Hôpital des Enfants Malades. Several horses were well immunized, so that serum could be used in large quantities without fear of running short. In preceding years MM. Roux and Tersin, MM. Martin and Chaillou, had studied diphtheria in the same wards, and were therefore familiar with the type of disease that presented itself at the hospital, and were consequently prepared to appreciate the modifications the new treatment might bring about. No selection was made in the cases, so that the gross results during the months of treatment by antitoxin may be set side by side with those previously recorded. Nothing was changed in the nursing of the patients; the local treatment remained the same (glycerine and salicylic acid, boracic acid washes). From February 1 to July 24, 1894, 300 children ill with diphtheria entered the hospital and were treated with serum; 78 of these died, a mortality of 26 per cent. The mortality in children in the same hospital prior to this was 50 per cent. All the children that entered the diphtheria ward from February 1 to July 24, 1894, were given on admission a subcutaneous injection of 20 c. c. of serum on the side of the abdomen. If the bacteriological examination showed that the patient did not have diphtheria, the injection was not repeated. One hundred and twenty-eight children affected with various forms of angina were thus treated, and in some cases the angina appeared to be relieved. If the injection is properly made into the subcutaneous cellular tissue, it is not painful, and in a few minutes the serum is absorbed. In diphtheritic children the first injection was followed in twenty-four hours by another of 20 c. c. or 10 c. c.; this was generally sufficient to complete the cure. If the pulse and temperature remained high, the injection was repeated; if the temperature does not fall below 38° C. the curative effect is not complete. The mean weight of the children treated was 14 kilos and they received a little more than a thousandth part of their weight of serum. The minimum quantity of serum used was 20 c. c. and the maximum 125 c. c. During convalescence, some days after the injection of the serum, ill-defined eruptions sometimes occurred, most frequently resembling urticaria. These eruptions, unaccompanied by any fever, were due to the serum.

The principal modifications produced by the serum are as follows: The general condition of the patient remains good, or improves, very quickly, provided the treatment is not begun too late in the disease. The duration of the disease is curtailed; and the complications following diphtheria are more rare. A few paralyses only have been observed. The false membrane ceases to grow within twenty-four hours after the first injection, and detaches itself in thirty-six or forty-eight hours, at the latest by the third day; the diphtheritic bacillus disappears from the throat at the same time as the false membrane. Most frequently cultures cease to produce diphtheria bacilli from the third to the fifth day. The temperature falls promptly under the action of the serum. A single injection of serum is not sufficient to bring down the temperature of patients affected with the grave form of angina; the defervescence only begins after the second or third dose and takes place by lysis. The pulse returns to normal two or three days after the temperature. Since the use of serum the irregularities of the pulse that were formerly the rule have not been noticed. Albuminuria is less frequent and of shorter duration among diphtheritic patients treated with serum.

Angina, in which the diphtheria bacillus is associated with the streptococcus, is of graver import than pure diphtheritic angina. In these complicated cases the serum is less efficacious, and only produces good results when injected in strong and repeated doses. In spite of energetic intervention the disease is of longer duration, and the temperature and pulse only return slowly to normal. Broncho-pneumonia is a formidable complication, always threatening in these cases of associated angina.

Among the 300 diphtheritic children, 169 had angina, and 120 of these pure diphtheritic angina. Of these 120, 9 died, a mortality of 7.5 per cent. If 7 children who were less than twenty-four hours in the wards are deducted, the mortality would be 1.7 per cent. Forty-nine patients had angina associated with the streptococcus; of these 12 died, a mortality of 24.2 per cent. If 4 children who were less than twenty-four hours in the wards are deducted, the mortality would be 17.7 per cent. This same class of diphtheritic angina with streptococci showed in the same hospital, under the care of MM. Martin and Chaillou, a mortality of 87 per cent. before the use of serum. Where diphtheria extends to the larynx and tracheotomy is necessary, more abundant and more numerous injections of serum must be given. In the great majority of children the trachea and larynx rapidly clear themselves of the false membrane, and the canula can be withdrawn much earlier — on the third or fourth day after the operation. The mortality of children is caused by pseudo-membranous bronchitis, and above all by broncho-pneumonia. This is common when the diphtheria bacillus is associated with staphylococci and streptococci. Then the disease takes a rapid course, and the serum is of much less effect.

Of the 300 diphtheritic children, 121 were subjected to tracheotomy, 56 died; a mortality of 46 per cent. During preceding years croup not treated with serum by MM. Martin and Chaillou yielded a mortality of 68 per cent. Of these 121 children, 49 had pure diphtheritic croup, with 15 deaths, a mortality of 30.9 per cent. Deducting 4 children that were less than twenty-four hours in the wards, there would be a mortality of 24.4 per cent. The cases of associated croup numbered 72, with 41 deaths, a mortality of 58.3 per cent. Deducting 10 children that were less than twenty-four hours in the wards, there would be a mortality of about 50 per cent. The mortality without serum had previously reached 80 per cent. Ten cases of croup were not operated on — there were no false membranes in the throat at entrance to the hospital. Under the influence of the serum the obstructed inspiration diminished. The children threw up the false membrane, and after two or three days the respiration was normal.

Serum should be injected and the operation of tracheotomy delayed as long as possible. Since the use of serum the number of tracheotomies has much diminished at l'Hôpital des Enfants Malades. In 1891 and 1892, 50 out of 100 children were subjected to tracheotomy; whereas, of 300 children treated with serum, 121 only were operated upon. With the use of serum tracheotomy should in the great majority of cases be replaced by intubation. It will more frequently suffice to retain the tube in the larynx twenty-four or forty-eight hours, to prevent imminent asphyxia, and to gain time until the false membranes detach themselves. Intubation is the complement of the serum treatment of the future; tracheotomy will be the exception.

For local treatment to assist the serum, all caustic and poisonous substances are absolutely proscribed. The use of a wash two or three times a day, of boracic water, or better, of water to which is added fifty grammes of "liqueur de Labarraque" per litre, is suggested. The preference is given to boiled water rather than to antiseptic liquids, which cannot be swallowed without danger to children. The statistics published here would have been more favorable if better isolation had been possible. Among the 300 diphtheritic patients 85 had concurrent diseases: 33 measles, 13 scarlet fever, 6 tuberculosis, 3 whooping-cough, 3 varicella and 39 broncho-pneumonia. This last affection is especially formidable among children that have undergone tracheotomy; and those suffering from broncho-pneumonia should be isolated as well as those affected with diphtheria associated with staphylococci and streptococci. By a suitable arrangement of wards all the complications that invaded these patients might be avoided.

(To be continued.)

Reports of Societies.

MASSACHUSETTS MEDICO-LEGAL SOCIETY.

F. W. DRAPER, M.D., SECRETARY.

The Society met October 3, 1894, fifteen members present, and the President, Dr. Z. B. Adams, in the chair.

The President read a paper entitled

DEATH SUPPOSED TO HAVE BEEN CAUSED BY VIOLENCE.[1]

The paper presented a review of some of the limitations which the statutes impose upon the medical examiner's freedom of action, and discussed especially the interpretation of the word "violence." It was suggested by the reader that the law would be improved if medical examiners were authorized to make autopsies in all cases of obscure and sudden death, even if the suspicion of violence were wanting.

Dr. Hough, of New Bedford, said that it might happen, now and then, that medical examiners went beyond the letter of the law in order to comply with its spirit. He deprecated any attempt to alter the statutes — they were well enough at present. If authority was extended in the direction suggested, the county commissioners would naturally object to the larger account for autopsy fees, which such an extension would create. Moreover, the legislators when asked to amend the law would inquire if the change was not designed for the very purpose of permitting more autopsies and so of receiving larger fees. He felt sure that, in all necessary cases, medical examiners were not hampered under the present conditions imposed by law, and he saw some danger in any attempt to make a change. He objected to the proposed method of amendment because it left in doubt the question of emolument, and suggested that many objections might be removed by giving salaries rather than fees.

Dr. Durell, of Somerville, said that the law now in force was the best in the country concerning inquests; and, in his opinion, it would be unwise to meddle with it. It would be difficult to formulate a statute to cover all contingencies, and he hoped no attempt would be made in that direction.

Dr. Hurd, of Newburyport, said he was not in favor of any radical changes in the law relating to medical examiners. If the medical examiner feels that an autopsy in any case is called for, he can obtain the authority required, if not from one source then from another. He mentioned a case of his own in which the mayor of his city having declined to authorize an autopsy, the district attorney willingly gave him the desired authority, as provided by law.

---

[1] See page 576 of the Journal.

Dr. Dolan, of Fall River, wished some method might be devised by which the medical examiners in other counties than Suffolk might make more autopsies without the imputation of mercenary motives. In Suffolk County, where the medical examiners receive salaries, the ratio of autopsies to cases is one to four; in other counties, where fees take the place of salaries, the ratio is one to thirteen, the fear of creating a suspicion of extravagance being always present.

A committee was appointed to consider the expediency of asking legislation along the lines referred to in the discussion.

Dr. Hurd, of Newburyport, read a paper on the following question:

WAS IT MURDER OR SUICIDE?[2]

Dr. Hough, of New Bedford, said that in the cases of drowning in which he had made autopsies, about fifty in number, he had found water in the lungs or in the pleural cavities according to the time which had elapsed after the death; the presence of water in the pleural cavities, the evidences of inflammation being absent, he had come to regard as positive proof of drowning. Water in the stomach did not seem to him to be a sign of much value. He had usually found the kidneys congested; subpleural and subconjunctival ecchymoses had not been observed by him.

Dr. Presbrey, of Taunton, said that the presence of bloody ooze at the mouth and nostrils seemed to him to have value as a sign of drowning; also, that "goose-skin" on the extremities was worthy of consideration. He reported a case of drowning in shallow water, the subject being an epileptic patient who had fallen in such a way that his mouth and nostrils were covered.

After brief discussion, the Society unanimously passed the following, which had been presented at the previous meeting:[3]

Resolved, That, in the opinion of the Massachusetts Medico-Legal Society, it is improper and objectionable conduct in medical examiners to accept service as medical experts for the defence in trials for homicide in this Commonwealth.

BOSTON MEDICAL LIBRARY ASSOCIATION.

Holmes Memorial Meeting.

Tuesday Evening, October 30, 1894.

Dr. F. Minot, President of the Association: In opening this meeting it is hardly necessary for me to make any allusion to the connection between Dr. Holmes and our profession. I flatter myself that I have known that connection longer than any one here, as I was one of the first pupils Dr. Holmes ever had in the "Tremont Street Medical School," a private institution founded in the hope of endeavoring to put a little medical knowledge into the heads of medical students in addition to the lectures delivered in the Mason Street College. We had a room over Metcalf's shop in Tremont Row, and there was a dissecting-room adjoining it. Dr. Reynolds, Dr. Holmes, Dr. Bigelow and Dr. Storer were instructors. It constituted a sort of primary school to the medical college; and it was a very much better school than the medical college itself at that time. Dr. Holmes was one of the most delightful of instructors, as you all know. His branch was the practice of medicine, and he and Dr. Bigelow published a book on that subject by taking Marshall Hall's "Theory and Practice of Medicine," and enlarging, correcting and improving it in every way. To Dr. Holmes especially I feel indebted for what little knowledge of anatomy I possess. You all know the strong interest he took in medicine and in literature; and it seems most fitting that he should be connected with this institution, which will be one of the most valuable to the medical profession, and through that to the community at large.

The next business will be the presentation of some resolutions by the Librarian, as chairman of the committee.

Dr. J. R. Chadwick, Librarian of the Association: In presenting for your consideration the resolutions upon the death of our first President, Dr. Oliver Wendell Holmes, in pursuance of the vote of your Executive Committee, I wish briefly to lay before you the considerations which give him a greater claim to the gratitude and veneration of this Association than of any other.

He was our first President, accepting the office when we had no assured standing in the community — when we had no funds, no books, no building, nothing but enthusiasm and a firm belief that the library which we intended to create was a real want of the medical profession of this city. During the early years of our undertaking he was faithful and assiduous in presiding over the meetings of the Executive Committee, guiding us by sage counsel and stimulating us by judicious encouragement. At the meeting held to inaugurate the occupancy of our present building he delivered an address which for knowledge of medical classics, play of fancy and wise advice could not have been surpassed by any English-speaking medical man. He contributed liberally from his own means on the occasion of our two appeals for pecuniary aid and secured contributions from his friends amounting to several thousand dollars.

He served as our President for thirteen years, retaining the position until 1889, long after he had withdrawn from all other connection with the medical profession.

Finally, on tendering his resignation, he gave us his medical library of 965 volumes and many pamphlets with the shelves which still contain them. What this gift, the largest that we have ever received, meant to the donor he told us at the time in these words: "These books were very dear to me as they stood upon my shelves. A twig from some one of my nerves (as I remember saying long ago) ran to every one of them. From the time when I first opened Bell's 'Anatomy' to that in which I closed my Sharpey and Quain and my Braithwaite's 'Retrospect' they marked the progress of my studies and stood before me as the stepping-stones of my professional life. I am pleased that they can be kept together, at least for the present; and if any of them can be to others what many of them have been to me, I am glad to part with them, even though it costs me a little heartache to take leave of such old and beloved companions."

---

[2] See page 577 of the Journal.

[3] Journal for October 11, 1894, page 371.

Since this parting token of his unfailing satisfaction in our progress and abiding faith in our future, his interest has never flagged. By word of mouth and by letter he has repeatedly sought to know of our prosperity during the past six years of his waning powers.

His eulogy you will hear from lips more eloquent than mine; mine has been the duty of merely setting forth our obligations to him.

As Chairman of the Committee on Resolutions, I have the honor to offer the following

Resolutions.

Resolved, That the Boston Medical Library Association has learned with profound sorrow of the death of its first President, Dr. Oliver Wendell Holmes.

Resolved, That this Association desires to put on record its appreciation of his long service as its President, and of the great interest which he always manifested in its welfare and also to give expression of its admiration of those qualities of mind and heart which made him the most eminent and best beloved member of our profession in America.

James R. Chadwick,
Fred. I. Knight, *Committee.*
Ch. P. Putnam,

Dr. Thomas Dwight: I beg leave, Mr. President, to second these resolutions. We meet here to-night to do honor to the memory of our friend Dr. Holmes, for many years our President. Not only those who have been associated with him, not only those who have been his pupils, but all of us who have known him — I might also say all who have read him — claim the privilege of calling him a friend. His great activity of mind brought him before us in many relations; but we all of us think of him as a man of letters first of all. This character suffuses his whole being. As anatomist, as after-dinner speaker, working with the microscope or conversing with his friends, discussing philosophy or making a joke, he was always a scholar. How generously he put his literary powers at the service of his friends of the University, of the profession, many around me can testify. To-night we recall particularly his gift of his professional library to this Association. We think of him as the scholarly professor parting from books which were very dear to him. Those who have heard him speak of his library in public or private know that he cannot have given it up without a pang. He had a particular liking for the old masters of anatomy. He caught the quaintness of their conceptions and passed them on, yet more quaint by the transmission. He knew, as probably few professors of anatomy now know, how much we owe to each of these pioneers of anatomical science, what were his merits, what his limitations. He could trace the rise of many a doctrine or theory from its vague beginnings to its final development or collapse. He had a true antiquarian's love for the volumes which he freely gave to this Association. There is little we can do in return. His name will be preserved in print after the walls of our new building shall have crumbled. None the less it is natural that we should wish in some way to offer a public, and so far as may be, a lasting tribute to his memory.

Dr. C. B. Porter: When I was asked by Dr. Knight to say something in regard to Dr. Oliver Wendell Holmes to-night, it was with special reference to personal reminiscences, that is, some of my own personal dealings with Dr. Holmes. I had the great pleasure to be demonstrator for eleven years under Dr. Holmes — I say great pleasure, because it was always a pleasure to be in his company. About him there was an atmosphere which I never remember to have been crossed by anything disagreeable. He possessed amiability of character; he showed appreciation of all the work that was done for him, making that appreciation known by public recognition before the class, and there was therefore a stimulus to those who worked under him to do their best to provide what he wanted. He was always genial, always kind. He would frequently come into the demonstrator's room, having climbed the long flight of stairs which many of you will so well remember in the old medical school, sometimes assisted by the janitor on account of his difficulty of breathing — would come puffing into the dissecting room, breathing laboredly and saying in a humorous way: "The bellows don't work well to-day"; but in a few moments he would recover his breath and say, "What have you prepared for me?" He would look it over always with a great deal of care, and then go in and present it to the students.

He had in lecturing, as a great many of you will remember, a peculiar way of directing attention to what might be called unimportant things or things which would not otherwise perhaps attract the attention of the students. I remember a remark of his one day when he was about to describe a muscle. He said: "Gentlemen, if you were carving a turkey at dinner, and you wished to present the lady whom you admired most at the table the most delicate part of the fowl, what part would you give her? The muscle I am now about to describe — the pectoralis minor." The pectoralis minor is not on the surface and is not of much special use in connection with the surgical anatomy in that part of the body, and would not perhaps attract attention, but that remark would fix it thoroughly in the minds of the students.

He was, so far as I know, a man entirely free from all professional jealousies, and he liked harmony in the profession itself. As I was asked to refer to personal reminiscences I am going to read a portion of a letter to me sent the morning after I gave a reception to Dr. Henry J. Bigelow and Dr. Holmes at the time when they were made emeritus professors of the Medical School.

296 Beacon St., December 29, 1882.

Dear Dr. Porter: — Never was a pleasanter and more entirely successful social meeting than that of last evening. Such a gathering not only gives pleasure to all who are privileged to take part in it, but leaves a kindly harmonizing influence which will be long felt and help to keep our Boston brotherhood what it has so long been, a united family, singularly free from those jealousies and feuds which have not rarely been the reproach of the profession in other great medical centres.

With cordial thanks for my own share in its pleasures,

Faithfully yours, O. W. Holmes.

In other words, he had felt that possibly that gathering in a friendly way tended to keep all of us nearer in touch with each other and to free us from any jealousies.

He was fond, I should say as I recollect him, of attention. I remember what pleasure he seemed to take in the gatherings that took place at the Revere House in the old days, when he would be the centre of an admiring group of students listening to his bright sayings; and many times the crowd was so great that those on the outskirts could hardly hear what he said. He was always frank in recognizing attention. When I had been his demonstrator for ten years I thought I would put him in mind of it. I sent him and Mrs. Holmes a basket of flowers on New Year's Day. The letter he wrote me in reply is so characteristic I may be excused if I read it.

296 Beacon St., January 1, 1878.

Dear Dr. Porter: — Mrs. Holmes and myself send our heartiest thanks for the beautiful basket of flowers which are filling our house with perfume and our hearts with grateful sentiments. You and I have worked together while the flowers of many seasons have bloomed and faded, and I hope we may see a few more roses bud and bloom before parting company.

With kindest regards, and best wishes for many more new years to you than I can hope to welcome, I am, as always,
Faithfully yours,
O. W. Holmes.

Few, I think, unless they knew Dr. Holmes very well, would know how ready he was, and how in the simplest things in life there was a touch of humor to him.

At the time of the Peace Jubilee I returned to my office on Boylston Street one day, and I found my slate in the hall covered with Latin words and signed O. W. Holmes. I immediately got down my dictionary, for I could not translate it without; and I found out by my translation that he had been to the Peace Jubilee, had soiled his boots so thoroughly with the dirt there that he did not like to go down town in such a plight, and stopped and asked my servant for a boot-brush that he might clean up his boots, and he had dignified this rather menial performance by writing it all out in Latin and leaving it on my slate. I do not doubt but that Dr. Holmes, with his keen sense of humor, was thinking of the trouble I would be put to in translating that Latin to ascertain the very commonplace thing which he had done. I very much regret that I did not save that slate.

Dr. H. P. Bowditch: Your Librarian has asked me to relate this evening the circumstances under which I came into possession of a copy of a sonnet by Dr. Holmes addressed to Alma Mater. It is a sonnet which was written in 1882 at my request, and to my knowledge has never found its way into any of the published editions of Dr. Holmes's works; and I think when I read it most of you will be listening to a new poem by Dr. Holmes. The way it came into my possession was this: I was invited in 1882 to attend a meeting of the New York Harvard Club, and knowing that I might be called upon to make some remarks on behalf of the Medical School I thought it would be an excellent plan if I could induce Dr. Holmes to give me a few lines which I could read there, so as to insure a favorable reception for my own remarks. He kindly consented to write something for me, and then added: "You do not want anything in verse, do you?" I replied that I had not ventured to think of anything like that, but that nothing could be more delightful. "Well," he said, "I will see what I can do." Two or three days later he handed me a half-sheet of note paper, and said: "There is what I have written. You can see how you like it." I glanced over this beautiful little sonnet, expressed my delight, and told him I thought nothing could be more appropriate, and that my speech would be the event of the evening with such a gem of literature to present. He then said: "Now, let me hear you read it, I want to hear how it sounds." So I had to submit to the ordeal of reading a poet's verses at sight, with the poet as an audience. After I had acquitted myself of the task to his satisfaction he completed his kindness by offering to send me printed copies of the sonnet for distribution at the dinner.

Alma Mater.

Yes, home is sweet! and yet we needs must sigh,
  Restless until our longing souls have found
  Some realm beyond the fireside's narrow bound
Where slippered ease and sleepy comfort lie, —
Some fair ideal form that cannot die,
  By age dismantled and by change uncrowned,
  Else life keeps circling in the self-same round,
And the low ceiling hides the lofty sky.
Ah, then to thee our truant hearts return,
  Dear Mother, Alma, Casta, — spotless, kind!
  Thy sacred walls a larger home we find,
And still for thee thy wandering children yearn,
While with undying fires thine altars burn
  Where all our holiest memories rest enshrined.
Oliver Wendell Holmes.
Boston, February 21, 1882.

I thought it might interest the members to see the original autograph poem as it was handed to me, and I have framed it in connection with one of the pictures the Journal has contributed. I think the poem is one of the sweetest Dr. Holmes ever wrote, and the portrait the best representation of him as he appeared in the later years of his life.

Dr. Geo. B. Shattuck: In meeting here to-night to do honor to Dr. Holmes's memory, we naturally think of him as we have all known him. All excepting the very youngest among us have known him, and some of us intimately; and here in this place we naturally think of him as a man interested in books and interested in our profession of medicine. His interest in both was continuous and always great, at one time more in one, at another time perhaps more in the other, but they always acted and reacted upon each other. I remember very well making a call upon him many years ago when I had just begun the study of medicine. I found him in his library, then in Charles Street. He fell to talking about books, and he got a little enthusiastic and took down some of the books he was particularly fond of. He took down some of the anatomical books we have here now. I remember his taking down his copy of Albinus, his copy of Bidloo and of Mascagni, with the beautiful plates which those books all have; and if any of you have not availed yourselves of the opportunity of looking over those which you have here, it would be well worth your while to do so. His love for them is something I can remember to the present time. I recollect that he was turning over the Bidloo, which he was very fond of. Bidloo was the Dutch physician to William III, of England. Presently he turned over a page and came to a very beautiful lady who was holding out her abdominal walls in the same attitude one would take if one were going to dance the minuet. He pointed to it with great satisfaction, and said: "Is not she beautiful? See with what coquettish confidence she shows the abdominal contents, as though to say, 'Behold here are my jewels.'" And so he went on, but it was the real love which he had for those books which remained in my mind; and we always think of him in that way, his literary qualities act upon his professional and the professional upon the literary.

I recall two stories. Of course, I have heard a good many repeated. We all remember a good many, I have no doubt; but I recall two I have heard within a few days that illustrate one or the other quality. He was always so playful about such stories that I do not hesitate to repeat these in an intimate company of this kind. One of them illustrates the way in which his anatomical knowledge was always in his mind. He had been off lecturing and he came back to town. He had been compelled to attend some receptions; and a friend was asking him when he came back what sort of a time he had. He said: "Well, I had to go to some receptions, and I had to be introduced of course to everybody, and had to talk to everybody, and it was pretty long, and that sort of thing gets pretty tiresome. You stand on one leg and then stand on the other, and you get so tired finally that your testicles hang down to your os calcis." What a pithy statement of weariness! The other story I repeat as a pendant to this, because, whilst one shows the anatomical work cropping out in his conversation, the other shows his scholarly characteristics cropping out in anatomical surroundings. He was going though the old pathological museum at the old Medical School. Dr. Jackson had a specimen on the table; and as he walked by he looked at it and said, "Hollo, what is this?" Dr. Jackson said, "Why, it is a penis." Dr. Holmes said, "Where did it come from?" "Well," said Dr. Jackson, "there was an operation over at the Massachusetts Hospital. A man had to have his penis amputated and they sent it over here." Dr. Holmes said, "Well, does not that man make you think of Socrates?" Dr. Jackson said, "Make me think of Socrates? No." "Well," said Dr. Holmes, "is it not recorded that Socrates offered a cock to Æsculapius?"

There was another thing about Dr. Holmes which, it seems to me, ought to be emphasized, and which comes homes to me in a measure because I had opportunities of observing it, and that was his extreme accuracy; and I think it is very remarkable that we should note this in a person with his other characteristics. He was brilliant, of course. He was witty; of course we all know that. He had a very quick, rapid, almost intuitive mind; we all recognize that. He was a wit and a genius; but then we do not all of us remember that he was not only those things, but also a plodder and distinctly so, and it is very seldom that you find those things united. Dr. Holmes in all the work that he did was very painstaking, very accurate, and very laborious even to the smallest details. I was talking with a gentleman the other day. He and another friend were editing a review. They were then young men, and they knew Dr. Holmes very well. One of them was a kinsman. They applied to him for an article on Jonathan Edwards, asked him if he would not give them one. The review was not one with a very large circulation, but he took an interest in their efforts to make it a success, and he said he would. So they waited some time; and, finally, as the article had not been received, one of them went to see him, and was shown the reason the article was not ready, and what he had done. He found that Dr. Holmes had two large blank books ruled down with parallel columns; and in these were noted all the references which Jonathan Edwards had made to any other writers in one set, and all the references which any other writers had made to Jonathan Edwards in another set, and all the passages of Jonathan Edwards's own writings referring to each other, so that he had a double or treble set of cross-references there of everything concerning Jonathan Edwards. He spent the leisure time of a year in working up this article, and finally sent it to them. Practically it was in a measure given, because he certainly could have sold it to some other magazine or review for a more considerable sum than they were able to give him. It is simply another illustration of his kindness and his desire to help other people, and at the same time of his extreme accuracy and of the painstaking habits which he had in his work. In that respect he reminds me of a workman who takes a pleasure and a pride in doing good work. I think that this was his attitude toward his work apart from any question of remuneration. If remuneration came, very well; but whether it was more or less, the work must be for his own satisfaction.

I have sometimes queried in my own mind exactly why and how he came to be so accurate and painstaking. I suppose in a measure it was inherited. I think that his father, who had the tastes of an antiquary, must have had qualities of that kind, and I imagine in a considerable measure he must have inherited it; but I think also that he saw the value of those habits and the necessity for them, and that he cultivated any original characteristics which he had. Certainly the two occupations which took up most of his time, that is, his teaching of anatomy and his literary work, both of them tended to foster any such habit as that, any such characteristic which he might originally have had, and also tended to show him the necessity of cultivating it further.

He was very careful and exact about all his writing, about all his proofs, and very accurate in all these respects; and then in the midst of this accuracy would come out suddenly this fun and playfulness, and often it would be the last thing you would expect to be combined with that. I noticed in the report of the interview which Ernest Hart publishes in a late issue of the *British Medical Journal*, he gives an account of meeting Dr. Holmes, whom he admired very much, in London, and he was much struck with the purity of Dr. Holmes's English and complimented him upon it. Dr. Holmes acknowledged that he thought he spoke fairly pure English, but thought it was not so unusual in this country as Mr. Hart supposed, and finally, as they were taking leave, Dr. Holmes said to him, "I wish you would give me your ticket"; and Mr. Hart said, thinking now he had caught him, "In England we call that a card." The interview had been serious up to that point; but he could not resist having that little joke, which to this day Mr. Hart has evidently never comprehended.

He was keen and shrewd and business-like. He knew perfectly well what he wanted to do and how to do it, what he wanted to get and how to get it, but at the same time he was never mercenary. He was generous by nature, and generous because he thought it was due from him to be generous. He was never little, never petty. He knew how to "hustle" and did "hustle," but never ceased to be a gentleman. He was always that under all circumstances. Even in his reply to Hodge and Meiggs, one of whom certainly gave him great provocation, you can see that he could be sharp, but he was always the gentleman.

He was intelligently generous. He knew what he was doing when he was generous. In that connection

I recall his delivering the poem at the centennial celebration of the Massachusetts Medical Society, which many of you will remember. It was a very excellent poem, and at that time the JOURNAL had made a good deal of effort to get out a suitable memorial number of that celebration. A good deal of hard work, a good deal of time and a certain amount of money had been spent in trying to bring that result about. After the exercises I went to see Dr. Holmes. I said, "I hope, Dr. Holmes, that you will feel that the *Medical Journal* is the proper place for your poem. We have these other mementos of the occasion." And he said, "Well, I hope I shall feel so too. I think I shall, but you know my position is such now that when I write a thing of that kind of course it has a market value, and I only mention this because I would like to think about it a little." I said, "Very well; you will let me know about it!" He said, "Oh, yes; I will write to you." After two or three days he wrote to me a kind note, and said he had thought it over, and made up his mind that the *Medical Journal* was the right place for that poem, and he should send it. He sent it, and it was published; and I think the Medical Library Association is now the owner of the manuscript.

DR. D. W. CHEEVER: I expressed my feelings in regard to Dr. Holmes so recently before many of the gentlemen here present that I may ask to be excused from making any formal remarks. I should like to mention one anecdote, however. About a year since I made a most charming call upon Dr. Holmes. I found him in his library, and although he was quite infirm, still he entertained me half an hour most pleasantly. His characteristic dislike of being talked about by reviewers was quite evident at that time. I asked him how he was, and he said he was pretty well, but had some infirmities in his breathing, sight, and in his hearing. "By the way," said he, "there was a brute of a reviewer here one day who wrote that I was deaf. I am not deaf, only a little hard of hearing. When we come to shut up the shop as we all must, if nature will only put up the shutters one by one, we can get along."

DR. C. M. GREEN: I should like to say just a word in regard to Dr. Holmes. I am one of the younger men who had the privilege of being taught anatomy by Dr. Holmes. I recall the way he had of playfully illustrating things, that was brought to mind by Dr. Porter. I remember the way he used to speak of the fimbriated end of the Fallopian tube, as reminding one of the fringe of a poor woman's shawl. I also remember, and I would like to recall to my classmates here, the occasion of our graduation from the Medical School, when Dr. Holmes gave a breakfast to the class of '77. that was the year when the corporation gave the Class Day. The class, I believe, failed to elect officers, and it was thought as the corporation gave a Class Day they would make something of the day for the Medical School; and on that occasion it was Dr. Holmes of the professors who gave a breakfast to the medical class. I remember meeting Dr. Minot there.

A little incident once occurred to me in meeting Dr. Holmes which shows how much he loved to be remembered by his pupils. He used to say to us that he had so many pupils he could not remember us, perhaps could not remember our faces, and certainly not our names. He said he would be most delighted if we would speak to him, and that we must not feel hurt if he did not bow to us first. One day I was coming down in a Back Bay horse-car which was crowded. Dr. Holmes entered, and there was no seat. I rose and offered him my seat. At first he declined to take it. I said no pupil of his would sit and see him stand. His countenance lighted up, and he accepted the seat from a former pupil which he had been unwilling to take from a supposed stranger.

The PRESIDENT: If there is no other gentleman who wishes to speak, the Chair will put the motion proposed by Dr. Chadwick and seconded by Dr. Dwight.

The motion was carried unanimously.

DR. CHADWICK: Since the meeting of the Executive Committee at which a recommendation to change the name of this Association was adopted, the committee have come to realize that perhaps so radical a change as this would not be advisable; they have therefore authorized me to offer as a substitute a motion that "the principal library hall in our new building be named the Holmes Hall in memory of Dr. Oliver Wendell Holmes," that in it be placed our portrait of Dr. Holmes, and his library. These other mementos, portraits and autographs which I have collected I shall donate for the same purpose.

DR. W. STURGIS BIGELOW: The custom of connecting with an institution the name of a distinguished man is one which is liable to grave abuse. It may readily be taken advantage of for the advancement of private interests or the promotion of selfish ends. But, on an occasion such as this, it would be alike unbecoming and ungrateful to fail to express a full and heartfelt recognition of our profound obligation to our greatest benefactor.

Dr. Holmes was a man of many sides. He was familiar with many forms of mind and many varieties of character. Like Lord Bacon he thought that nothing human was alien to him, and his interests were as wide as human nature and as deep as human thought. He was one thing to all men — kindness. No one who came to him for advice or help left his presence without a sense of gratitude and of personal obligation, not only for his interest in the applicant's individual welfare, but for the sweetness and light which seemed to radiate from his life into their own. In his own words —

> "A whiter soul, a fairer mind,
> A life with purer course and aim,
> A gentler eye, a voice more kind,
> We may not look on earth to find.
> The love that lingers o'er his name,
> Is more than fame."

But, among all his interests, two were dominant and transcendent: medicine and literature. By the first he is known to more than a third of a century's students and to the whole medical profession, by the second he is known throughout the English-speaking world.

The Boston Medical Library is in this community the representative and embodiment of both these interests. As such he recognized it. He assisted at its birth; aided and stimulated its growth; as its first president, gave it for many years the benefit of his wisdom, his counsel and his experience; afforded it material aid and support in many forms and through many channels; gave his own superb medical library — the accumulated treasures of a lifetime — to become the nucleus of its collections; and from its earliest beginnings up to the end of his life took an earnest and unflagging interest in its welfare.

This debt of obligation to such a man is far too heavy for us to repay, but we can at least acknowledge it. We cannot add lustre to his name. We cannot add one ray to the splendor of his reputation nor one leaf to his crown of bay.

But it is alike our duty and our privilege to put on enduring record, so far as we may, our gratitude for his kindness and help; our pride in his leadership and our sympathy in the world-wide sorrow at his death.

No better words perhaps can be spoken of him than those which he wrote of another more than half a century ago:

"Thoughtful in youth, but not austere in age;
Calm, but not cold, and cheerful, though a sage;
Too true to flatter, and too kind to sneer,
And only just when seemingly severe;
So gently blending courtesy and art,
That wisdom's lips seemed borrowing friendship's heart;
Taught by the sorrows that his age had known
In other's trials to forget his own, —
As hour by hour his lengthened day declined
A sweeter radiance lingered o'er his mind.
Cold were the lips that spoke his early praise,
And hushed the voices of his morning days;
Yet the same accents dwelt on every tongue,
And love renewing kept him ever young."

Mr. President, I have the honor to second the resolution.

The resolution was then read and unanimously adopted.

The **President**: Dr. C. J. Blake is invited to present the portrait of Dr. Holmes to the Society.

Dr. C. J. Blake: At this meeting evidently informal remarks and reminiscences are permitted. Therefore, before proceeding to the subject of the portrait let me say that Dr. Cheever's anecdote recalls a remark of similar import made by Dr. Holmes, and, with your permission, I must tell another story to lead up to it. Dr. Holmes was very fond of a story, a professional story was especially dear to him; and I asked him one day about two years ago if he had ever heard the story of Dr. Jackson's remark concerning my uncle, James Blake. Mr. James Blake died a good many years ago. He had some peculiar disease of the bladder, and realizing that this was a rare opportunity he requested that an autopsy should be made by his old friend, Dr. J. B. S. Jackson. In the course of time Mr. James Blake died, and I, then a medical student, was deputed to call upon Dr. Jackson and prefer my uncle's request. "What!" said Dr. Jackson, "my friend, your uncle, James Blake, dead! Of what did he die?" I gave as nearly as I could the circumstances of my uncle's death, and said that he had especially requested that Dr. Jackson should make a post-mortem examination. "Oh, I am very sorry," said Dr. Jackson, "Thursday is the only time — funeral Thursday. Wednesday afternoon, it is quite impossible; I have an engagement with Dr. Holmes at that time which I cannot break. You will have to go for Fitz. He will do everything well, properly; but I cannot tell you how much it grieves me to think that I cannot pay this last tribute of respect to my dear old friend." The story led to inquiries for the health of my father, a year older than Dr. Holmes, and to the remark, "You young fellows do not know how much you owe to us who stand between you and the door; but when we have passed through, you will find that you are very much nearer to it than you think now."

The portrait here which is to be hung in the Holmes Hall was painted by Mr. E. T. Billings in 1889, the year in which Dr. Holmes resigned his position as President and gave his library to the Boston Medical Library Association. He had been asked to have his portrait painted on several occasions, and several artists were suggested; but he always objected, saying: "I am old; it is fatiguing; I shall have two or three dozen sittings; I hardly think I care to undertake it." Mr. Billings had painted the portrait of Dr. Bowditch which hangs in this hall, and the picture was in my house in Marlborough Street. On the occasion of one of Dr. Holmes's calls, I asked him to look at it, which he did with the remark that he was not a judge of painting, but that this was a good likeness with one exception, namely, that he thought he had never seen Dr. Bowditch quite so spruce before. He examined the portrait still further, and said again, "Yes, that is a very good likeness." Here seemed to be an opportunity. I said: "Dr. Holmes, Mr. Billings would be very glad to paint your portrait. He has painted the portraits of Garrison, Phillips, and Dr. Bowditch, and if you like this portrait, are you not willing to try it? Let Mr. Billings have half-a-dozen or a dozen sittings if you find that they do not tire you, and stop at any time." Under circumstances he consented, and so it came about that he went to Mr. Billings and had the portrait painted. Mrs. Billings was present at many of the sittings, and has kindly contributed the following notes. Dr. Holmes thought that the artist would not succeed in painting the portrait in a short time and fully expected to get tired and give it up.

The portrait began under discouragement. Dr. Holmes had been painted and photographed so many times, and, as he said, unsatisfactorily always, that he had no faith that any one could reproduce his face except to make him wish afresh that "Nature had been kinder to him." In his lines "To the Portrait of a Lady," he says:

"I love sweet pictures; I will own
That I would like myself to see my portrait on a wall
Or bust upon a shelf;
But Nature sometimes makes one up
Of such sad odds and ends,
It really might be quite as well
Hushed up among one's friends."

He was very sensitive and critical, yet satisfied with truth only; so that after the second sitting, during which Dr. Holmes with great frankness expressed his mind in regard to the picture which he looked at each time, the painter became disheartened, and asked his wife to happen in next time to sit with the sitter. The third sitting was a remarkable one. Dr. Holmes said there was a good foundation. He stood before the picture and talked on the anatomy of his face, and went over all the muscles, giving their names. He was delighted to learn that Mr. Billings had studied art anatomy with Dr. Rimmer, and that he was receptive and sympathetic on this subject. His faith grew, and that helped the work wonderfully. He became more at ease; was playful, witty, beaming; and at the close of this sitting studied the painting, and said, "Well, Mr. Billings, you have got the old man. You have the *equilateral* under the nose, made by the middle of the upper lip, the lower part of the nose, the full muscle of the cheek and the upper lip. No one gets that. You have it; and without it there can be no likeness of me — hereafter — for expression."

He brought in at the fourth sitting many photographs taken in various places, which the two studied together. He said all were unsatisfactory, the London ones being, to his mind, the best. When he came into the studio this time, he playfully put his hat on the bust of "The Father of his Country."

A large portrait of George Bancroft, just finished, pleased him very much; and he never failed to salute it every time he came with "Good morning, George," or some pleasant word.

He never went to sleep when there was any one to listen to him, and while he was talking in an easy way, the expression would change with lightning rapidity; and the painter's brush flew with equal speed, catching the flitting motions, utterly silent himself absorbed in the work. Mr. Billings had a way of motioning with an uplifted finger when the sitter moved out of position; Dr. Holmes called this, "the gentle telephoning."

He reverted often to his early life — told of a sister who had died when he was a very young man. They had been very dear to each other; and Dr. Holmes said the best in him, the most he had reached, was owing to her. He spoke of his age; said a companion late in life was the greatest boon Heaven could give to man; that though friends were kind, he yet had many lonely hours. His contemporaries, he said, had passed on.

He spoke of his gift of books to the Medical Library; said he meant to get the enjoyment of *seeing* them used; that he had already, when unobserved, seen young men looking at some very early volumes. He said the books gave a good idea of the progress of medical practice in his day, and that he took the most comfort in what he had done in forwarding Truth. He here spoke of his memorable saying of throwing all medicine except, etc., into the sea; said he was often misquoted, and told what he did say; he hoped it would do good.

Truth seemed to him *supreme* in all the paths of life. He did not wish to be helped, as he said it would make him *feel* old. His step was sprightly, his form erect, and his voice particularly unlike an old man's.

When finished, he was enthusiastic in his commendation of the portrait, and added, "You have made me look like a gentleman; the coat is a credit to the tailor." He presented the artist with all his photographs, and thanked him for his patience, and congratulated him.

The portrait was paid for by subscriptions by members of the medical profession, and it is in behalf of these gentlemen that it is presented to the Medical Library Association — there were many contributions given without names. It was deemed desirable to have, if possible, a photograph of the picture; and this photograph is unique because it would be impossible to reproduce it from the portrait as it stands. The reds would take black, and the yellows and certain of the lights would be sharply defined. It was necessary, in order to get a satisfactory photograph of the portrait, to have Mr. Billings paint it over with fugitive colors; and this he did; several negatives were taken, one coat of color after another being put on until finally the photograph approved by Mr. Billings and by Mr. Cook, the photographer, was obtained. There are also prints from some of the early negatives. Dr. Holmes's opinion of this portrait, which is to be permanently in the possession of the Library and in the hall bearing his name, is of course of value. One remark I remember his making of it as he looked at it: "Yes," he said, "it is there; the age is there; the wrinkles are there. It is a likeness. It is the portrait of an old man; dew-lap and all."

I have here a copy of the letter of which this is the original. This was in response to the request that he should write a letter stating his opinion of the portrait in order that the letter might be preserved with it. Dr. Holmes also saw the portrait two or three times after it had been finished; and on each occasion expressed himself still more satisfied with it, saying finally, "The portrait grows upon me. I think that is the likeness of me that will stand."

296 BEACON ST., February 11, 1890.

DEAR DR. BLAKE: — I consider Mr. Billings' portrait of myself an excellent likeness, and so far as I can judge, a good painting.

I have had many pictures and photographs taken, but it seems to me that no one of them has been so satisfactory as this by Mr. Billings. Very truly yours,

OLIVER WENDELL HOLMES.

DR. CHADWICK: I wish to move a vote of thanks to Dr. Blake and his fellow-contributors to the memory of Dr. Holmes.

Motion carried unanimously.

DR. CHADWICK: It may interest some of those who have not seen all of these portraits to have their attention called specifically to them. These five portraits were made for Mr. Bartlett, the sculptor, who was to make the bust of Dr. Holmes. They never have been published except the one that recently appeared in the *Medical Journal*. Here is a bronze cast of his fist which Mr. Bartlett took the opportunity to make. A little episode in connection with this is rather amusing. Mr. Bartlett as he was about to cast the hand, asked Dr. Holmes if he would hold a pen. He said, "No; take it that way (the first closed tightly); that does not show the old man's wrinkles, does it?"

On that wall hang the elevations and the floor plans of the building which we expect to build. Yonder is a chart of the growth of the six or seven principal medical libraries of the country — the yearly growth. Here are a lot of photographs of all kinds connected with Dr. Holmes. These are proofs, I think, from the last published edition of his works. Here is one of the earliest, if not the earliest, daguerreotype of Dr. Holmes, dating prior to 1850.

◆

Recent Literature.

Obstetric Surgery. By EGBERT H. GRANDIN, M.D., Obstetric Surgeon to the New York Maternity Hospital; Gynecologist to the French Hospital, etc.; and GEORGE W. JARMAN, M.D., Obstetric Surgeon to the New York Maternity Hospital, Gynecologist to the Cancer Hospital, etc. Philadelphia: The F. A. Davis Co. London: F. J. Rebman.

This book differs from most obstetric text-books, in that it fills an empty niche in the literature of the subject. It is valuable not only from this fact, but on account of its own great intrinsic excellence. The authors have thoroughly succeeded in the difficult feat of combining a wise and ripe conservatism with that spirit of promptness in diagnosis and readiness to look the gravest emergencies in the face, which is the type character of the recent advances in obstetrics. The book will be of real interest to specialists, but the fact that it avoids lengthy discussions of unsettled points, and confines itself to a clear and practical exposition of the operative methods and principles which are accepted by the leading obstetricians of to-day, renders it pre-eminently a book of the greatest value to the general practitioner; and it is a pleasure to urge its perusal upon him. The unusual excellence of the book certainly warrants an extended review, which can best be given by a separate consideration of the individual topics which it takes up.

It is one of the few books in which the directions for asepsis are at once thoroughly complete and such as can be adapted to private practice. The chapter on pelvimetry is timely and excellent, though we disagree with the statement that the justo-minor pelvis is a rare form in America, and on the contrary believe it to be the most common of the deformed types among American born women.

The section on the induction of abortion and premature labor is one that should be read by every one who is concerned with these operations. This is the first textbook that we have seen in which only the modern methods are recommended, and in which the dangers and advantages of the different procedures are justly stated in accordance with the views of the present day.

It is to be regretted that the section on the use of the forceps falls a little below the very high standard of the rest of the book. The directions for their use might easily be made more precise and detailed. The distinction which the authors make between medium and high forceps is to be praised, but it is surprising that in the consideration of the application of the forceps to partially rotated, occipito-posterior positions, no mention whatsoever is made of the operative procedures for the restoration of flexion, of the necessity for securing and maintaining flexion as a necessary preliminary to rotation of the head, nor of the impossibility of successfully delivering a persistently extended head. It is, we think, a mistake that the very excellent article on the internal rotation of the child in occipito-posterior positions, high, should have been placed under the head of version, although we concede that that is its schematic place.

The chapter on version is careful and excellent, though the authors seem to look upon incisions into the cervix somewhat more lightly than most authorities.

The chapters on symphysiotomy and the abdominal operations are all that could be desired — full, clear, and moderate in tone, yet fully up to the spirit of the day.

The sections which treat of the destructive operations are, perhaps naturally, written with rather less enthusiasm than the rest of the book, but are nevertheless very good.

The chapter on the surgery of the puerperium is one of the best that the book contains.

We dissent heartily from the author's statement that most lacerations of the cervix should be immediately repaired; though we agree with him as to the ease with which the operation can be performed with but one untrained assistant. The directions for the repair of the perineum are excellent, and if the general practitioner would but learn to attempt some such simple form of suture, he would, we think, find his results much better than by the use of the usual shallow external sutures. Rupture of the uterus is well and wisely treated.

In the section on septic endometritis, the authors seem to place a little too much reliance on the existence of fetor as an early symptom. In our experience it is often absent. Yet this section is, upon the whole, admirable and to be highly praised.

We are surprised that the authors omitted to mention the use of the vaginal route in the treatment of what they call intra-extra-peritoneal abscess, that is, in purulent localized peritonitis. In our experience it has many advantages over the abdominal method, in those cases to which it is applicable.

The book is at its best in the chapters which treat of major obstetrical surgery, but deserves hearty praise throughout.

A Treatise on the Principles and Practice of Medicine. Designed for the use of Practitioners and Students of Medicine. By AUSTIN FLINT, M.D., LL.D. Seventh edition, thoroughly revised. By FREDERICK P. HENRY, A.M., M.D. Philadelphia: Lea Brothers & Co. 1894.

The last edition of this work appeared in 1886, the author being assisted in its revision by his son, the present Prof. Austin Flint and by Prof. Wm. H. Welch of the Johns Hopkins University. The section on General Pathology, which contained about one hundred pages, has been omitted from this edition. The present editor has contributed about one hundred pages of new matter, in which are included some twenty distinct articles, besides numerous interpolations in every section of the book. The editor's contributions are signed with an H. Special attention has been given to the department of therapeutics. The present edition contains 1143 pages, about the same number as the former edition. The editor's work, as distinct work, has been well done. The desirability, except, perhaps, from the commercial point of view, of continuing the life of a treatise on the principles and practice of medicine after the death of its author, is open to a difference of opinion. Flint's Practice of Medicine, as he left it, is too well known to require extended comment.

A Dictionary of Medicine. Including General Pathology, General Therapeutics, Hygiene and the Diseases of Women and Children. By various writers. Edited by RICHARD QUAIN, Bart., M.D., LL.D., F.R.S., etc., assisted by FREDERICK THOMAS ROBERTS, M.D., B.Sc., etc., and J. MITCHELL BRUCE, M.A., M.D., etc. With an American Appendix by SAMUEL TREAT ARMSTRONG, M.D., Ph.D., etc. New edition, revised throughout and enlarged. Vol. I, Abdomen — Lysis; Vol. II, Macrocheilia — Zyme. New York: D. Appleton & Co. 1894.

The first edition of Quain's Dictionary of Medicine was issued in 1883, and was in one royal octavo volume of 1816 pages. The present edition is in two volumes, the first containing 1261 pages and the second 1305 pages. The difference represents the changes and progress in the subjects of which it treats during twelve years, years which embrace an unusually active and eventful period in the history of medicine. In so far as possible the different articles have been revised by the original contributors. The editor has been assisted by two colleagues, and an American appendix has been added. Forty-three new illustrations have been furnished.

With the exception of the editor of the American appendix the contributors are all Englishmen, and generally writers well known in connection with the special subjects. The American appendix contains about forty pages, and consists chiefly of information in regard to American mineral springs and some short statements on topics peculiarly American.

Those who have learned to value Quain's Dictionary of medicine in its first edition will appreciate it still more in this new one.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, DECEMBER 13, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 WASHINGTON STREET, BOSTON, MASS.

PANCREATIC DIABETES.

THE subject of the pathogeny of diabetes was brought prominently before the recent meeting of the French Congress of Medicine at Lyons, and was discussed by Lancereaux, Lépine, Glenard, Comby, Teissier, Charrin, Renault, and others. We shall here take up but one aspect of the question and state the principal facts on which the existence of pancreatic diabetes is affirmed; these facts are now numerous, and are constantly increasing.

In 1877 Lancereaux reported to the Academy of Medicine, with the morbid specimens, two interesting cases of "grave diabetes," dependent (as he believed) on destructive lesions of the pancreas. In 1879 appeared the inaugural thesis of Lapierre on diabetes caused by alterations of the pancreas. The disease, as he describes it, begins suddenly, and manifests itself by intense thirst and hunger, then by abundant polyuria with sugar oscillating between 300 and 600 grammes per day, and rapid emaciation, with loss of all the forces, and finally complications (broncho-pneumonia, diabetic coma, phthisis) that carry the patient off. The same writer published a subsequent memoir founded on twenty well observed cases; in fourteen of these there was atrophy of the pancreas more or less advanced. In some the disease was due to calculous obstruction of the duct, in others to chronic disease followed by atrophy of the organ, and in still others by sclerosis.

These observations received powerful confirmation by the experimental results of Mehring and Minkowski who extirpated the pancreas in dogs.[1] They found that diabetes begins a short time after extirpation and persists till the death of the animal. "In addition to the glycosuria, there are polyuria, great thirst, hunger and rapid emaciation." In one dog, which had fasted forty-eight hours, the urine contained from five to six per cent. of sugar, while another dog, weighing sixteen pounds, fed on an exclusive meat diet, eliminated daily almost one litre of urine with six to eight per cent. of sugar. The urine also contained acetone. No glycogen was found in any of the organs after death, even in animals that had been dead four weeks or more. It was said there was no injury to the solar plexus by the operation, so that the diabetes could not be referred to nervous influence. These investigators noticed that whenever there was left any fragment of the pancreatic tissue in the abdomen, glycosuria did not develop. The total ablation of the pancreas produces a permanent diabetes, and this comes on immediately and attains its maximum in two or three days.

Dominicis, an Italian physiologist, made subsequently a similar series of experiments, though without absolutely identical results; in a few of his animals (one-third of the cases), the diabetes failed to appear after total extirpation of the pancreas, and where the disease did appear, it was not till twenty or thirty hours after the operation.[2]

Redmond, of Metz, in 1889 and 1890, published some experiments made with Marinisco and Chaput, as the result of which they conclude that total destruction of the pancreas generally produces permanent diabetes, and that even partial ablation of this organ is sometimes followed by the same effect.

Hedon excised the pancreas in twenty-two dogs, and in each case diabetic urine was passed the day after and persisted until death with all the characteristic symptoms of sacharine diabetes.[3] When injections of paraffine were made into the pancreatic duct, destroying the digestive function of the gland, diabetes did not supervene.

Thiroloix [4] succeeded by a novel method in completely destroying the pancreas, and yet in keeping his dogs alive a long time. By injecting asphaltum into the pancreatic duct, he caused sclerosis of the organ, which became shrunken to a hard, firm cord, deprived of all gland cells, yet under these conditions glycosuria did not appear. In other cases he removed a portion of the pancreas, after which he obtained symptoms of intense glycosuria. In another series he removed the whole of the pancreas and obtained a lasting diabetes. On autopsy, lesions of the solar plexus were noted. His conclusion is that ablation of the pancreas acts reflexly, by its influence on the nervous system. In other words, "pancreatic diabetes may be regarded as a particular form of nervous diabetes." This does not differ from the old theory of Klebs which regards diabetes as an expression of lesions of the solar plexus. This is the view of the pathogeny of "lean" (grave) diabetes held by Mathieu in the *Traité de Médecine.*

Lépine, who was co-referee at the recent Lyons Congress, has recorded forty cases of removal of the pancreas in dogs. After complete removal, he has always noted the appearance of sugar in the urine within eight hours, and the diabetes is permanent. He believes that the blood has the power of constantly destroying glucose by the action of a ferment made in the pancreas (glycolytic ferment); this ferment is diminished in diseases of the pancreas and wanting when that gland is destroyed. Lépine adduces experiments which he thinks sustain this view. It is interesting in this connection to note that Thiroloix in considering the results of pancreatic grafting, an ingenious device practised by Minkowski, Hedon and himself (whereby the pancreas in dogs is brought out of the abdominal cavity and grafted into the muscles of the external walls), has modified his former theory, and has adopted Lépine's conclusion "that the pancreas produces the principal glycolytic ferment which destroys glucose in the blood" and thus prevents its reaching the urine.[5]

---

[1] Quoted from Sajous' Annual, 1890.

[2] Giorn. Intern. de Sc. Med., 1889, p. 801; Traité de Médecine, tome iii.

[3] La Semaine Médicale, October 29, 1890; also Sajous' Annual, 1891, vol. i, p. 64, G.

[4] Thèse de Paris, 1892.

De Renzi and Reale in their numerous experiments have caused diabetes in .75 per cent. of the animals on which they produced entire extirpation of the pancreas. They also claim to have caused glycosuria by extirpating the salivary glands (parotid and submaxillary). Minkowski,[6] in reviewing their work, says that diabetes never fails to appear after complete removal of the pancreas if the animals live long enough after the operation. This statement is founded on fifty-five experiments made on dogs. Three times only did the sugar fail to appear in the urine; but the dogs succumbed during the first 24 hours. As to glycosuria after incomplete extirpation, he admits its existence, though in general it is slight; in one case, however, there was serious diabetes, though the fragment of pancreas left was fairly large. He regards glycosuria following extirpation of the salivary glands as only temporary. Lépine, in his communication to the recent Congress, October 29, 1894, defines his glycolytic theory. The "ferment" is taken up by the leucocytes and carried by them to the tissues where it aids glycolysis. His experiments on artificial circulation have demonstrated the influence of a ferment in the blood on the consumption of sugar. An animal (a healthy dog) is bled to death; into one of the hind legs blood is transfused that is poor in glycolytic ferment (being taken from the vessels of a dog whose pancreas has been extirpated). Into the other leg blood rich in glycolytic ferment is transfused, being taken from a healthy animal. It is invariably found that the consumption of sugar is greater in the limb into which is transfused blood containing a normal amount of glycolytic ferment.[6]

Lépine does not believe that the "glycolytic power" is exclusively under the dependence of the pancreas. The glands of the duodenum seem in some cases to have a vicarious action with the pancreas, and this may serve to explain, in a measure, the adverse cases noted by Dominicis, by Reale and Renzi and others.[6]

It will be seen that the whole subject is still involved in much obscurity, yet that there is a form of diabetes that can properly be called pancreatic, seems established.

ANNUAL REPORT OF THE SURGEON-GENERAL.

The Value of the Army Surgeon.

A reduction was made during the last session of Congress in the number of medical officers comprising the medical corps of the United States Army. The original proposition was to reduce the number of assistant surgeons from one hundred and twenty-five to ninety, the reduction to take place as vacancies occurred. The bill when passed directed that the number of assistant surgeons be reduced to one hundred and ten, a loss to the corps of fifteen instead of thirty-five, as at first suggested. The report of the Committee on Military Affairs argued that as the number of military posts was reduced, the number of medical officers could be correspondingly reduced, and that where it might be necessary to employ outside attendance of physicians, efficient services could always be secured at the cost of one-fifth to one-fourth of the average salaries of the officers of the medical corps. At the same time no provision was made by which private physicians can be placed in charge of the medical department at a military post.

The proposed reduction excited much comment at the time it was under discussion; and in the report of the surgeon-general for the fiscal year ending June 30, 1894, just issued, the surgeon-general avails himself of the opportunity to discuss somewhat at length the reduction and the reasons assigned for it. He also quotes letters from the commanding officers of various departments giving their ideas upon the matter. The whole gives so good a view of the value of the military surgeon and of his varied duties that it seems worthy of consideration.

The Committee on Military Affairs would seem, from the extracts from their report, to hold the same idea of the surgeon's duty that was common at the outbreak of the Rebellion, as they give as a reason for reducing the medical force, the fact that recruits are picked men and therefore less in need of medical services than the same number of men taken at random. Even among such picked men the actual amount of acute illness is shown to be considerable, but the chief duty of the medical officer is the prevention of sickness and maintenance of health. Again, an important part of the duty of a medical officer in a garrison is to decide whether enlisted men who report themselves sick are in reality unfit to perform their duties or whether they feign sickness. In fact, his presence, as a member of the garrison, is more important than that of any other officer, for no other officer can perform his duties; whereas any line officer present can perform the duties of quartermaster, commissary of subsistence, adjutant or commanding officer.

The duty of the medical officer goes further than attending the sick and acting as health officer; it is his duty to be ready and to prepare his hospital corps detachment for any emergency and especially for field service. The amount of such service required of our army surgeons is very much greater than one unacquainted with the matter would suppose. Their loyalty to their service was well illustrated during the recent troubles in Chicago, when three medical officers on leave threw up the unexpired portion of their leaves and reported for duty with the troops.

---

[5] See Sajous' Annual, 1893, vol. 1, G. 6.
[6] La Semaine Médicale, October 31, 1894.

The opinions of the general officers of the army as to the value of the medical officers is in a way more important than any opinion coming from the medical officers themselves.

General Howard writes as follows:

"With troops, under the varied conditions of service, a special class of physicians trained in the service is indispensable. The duty of these is to understand, anticipate and meet conditions wholly out of the line of civilian practice; and without them experience has shown that the troops must endure great additional suffering in actual service. Such a class is not to be found in civil life; it is not the creation of a day but the result of careful training and experience, and becomes especially valuable to the government largely through such experience and the knowledge gained in the performance of its duties in the public service."

The testimony of other generals is to the same effect.

In this connection it is instructive to note the pains taken to educate the medical men who enter the army. The operations of the newly established Army Medical School during its first year are reported at some length. Five newly appointed assistant surgeons and four older officers were in attendance. The instruction was given at the Army Medical Museum, and the subjects comprised military surgery, medicine and hygiene, chemistry, pathology, bacteriology, military law and medical jurisprudence, and comparative anatomy, besides hospital-corps drill and instruction in riding. Synopses of the lectures and courses of study are printed, and show the very great care given to the development of the physician and of the soldier.

The interest of the regular army in the militia of the several States is more and more manifest. It suggests itself to a non-military mind that the Army Medical School might very easily be utilized to strengthen the sympathy between the medical corps of the various bodies. For instance, each State might be given the privilege of sending one medical officer to the school each year. It would entail little if any additional expense on the school, as it is not likely that the number of militia officers in the school at any one time would exceed those of the regular army. The value of a single medical officer educated up to army requirements would be great for any State; and the general effect upon the school ought to be good, for no regular would allow himself to be surpassed by a volunteer.

The Journal is now publishing a lecture by Surgeon Hoff on "The Military Medical Officer in Peace and War," which gives an accurate picture of what is required of the army surgeon.

INSTRUCTION IN THERAPEUTICS: PHYSICIANS' PRESCRIPTIONS.

It cannot be denied that in many of our Medical Schools, and even in some where the standard of instruction in other departments is most commendable, the teaching of therapeutics, of prescription making, of the importance of writing legibly — in a word, of theoretical and of applied therapeutics — is not only comparatively but positively neglected.

At the recent meeting of the Mississippi Valley Medical Association, at Hot Springs, November 20th to 23d, Dr. S. Loving, of Columbus, O., under the title of "Physicians' Prescriptions," read some timely remarks on this subject. He takes the extreme ground that in but few of the medical schools of the present day — of this country at least — is the theory and art of prescribing taught or even mentioned. He truly says that hundreds of bright, enthusiastic young men, full of knowledge of other departments of professional learning, and of hope and ambition, are turned out every year without having had even a hint of the difficulties which they must encounter when they essay their first prescription. We seldom read of mishaps from defectively written prescriptions in England, Germany or France, where requirements are larger and more systematically taught. When such occur, the apothecary is usually to blame. The same carelessness and lack of method, notable in regard to the writing of prescriptions, is to be found in the combining of medicines in the various forms. Sufficient attention is not always given to compatibilities, chemical and therapeutic, to solubilities, the influences of light, temperature, the air, and of other circumstances affecting the condition of drugs and chemicals. Many failures in treatment and many accidents, some serious in character, result from carelessness or want of accuracy in the directions given to nurses and patients for the administrations of medicines after they have been brought ready for use. Dr. Loving asks: Why should the medical profession of the United States, in other respects so quick to see their own advantage, so sagacious in diagnosis, so bold in operating and in treatment, neglect so important a branch of knowledge as the theory and art of prescribing? The answer is to be found, he thinks, in carelessness on the part of teachers and pupils.

◆

MEDICAL NOTES.

Diphtheria in St. Louis. — Diphtheria is so prevalent is certain portions of St. Louis as to be considered epidemic. A large number of the earlier cases are said to have been reported by the physicians as "croup" or "laryngitis."

Immunization by the Diphtheria Antitoxin. —Professor Behring has concluded, as the result of his recent investigations, that the dose of antitoxin necessary to produce immunity is one-quarter of that given for the cure of the disease, the *heildosis*. One-tenth of the curative dose has heretofore been considered efficient. This dose may be considered protective for about ten weeks, after which time it is advisable to reinoculate in persons exposed to diphtheria. The dose is the same for children and adults.

After-Effects of Antitoxin.— An exanthem resembling measles has been observed in two cases of diphtheria after the employment of antitoxin in Berlin. The eruption, which occurred chiefly on the extremities, and was accompanied by fever and pain in the joints, was described as an erythema exudativum multiforme, and persisted for eight days.

The Preparation of Diphtheria Antitoxin by Electrolysis.— Smirnow gives, in the *Berliner Klinische Wochenschrift*, No. 30, 1894, an account of experiments which he has made on the preparation of antitoxin by electrolysis, in the hope that this method might supplant the tedious and expensive method of animal immunization. After injecting a dose of pure bouillon culture of diphtheria, which proved fatal in a control experiment, into guinea-pigs, he employed bouillon cultures through which a current of electricity had been passed, as a *heilserum*, with successful results. He is hopeful that the serum prepared by electrolysis may be effective in the human subject.

Honors to Professor Kitasato.— The city of Nagasaki has presented Professor Kitasato with a gold cup, in honor of his discovery of the bacillus of the plague.

Another Fatal Sparring Accident.— George Smith, who was injured by the Australian pugilist, Winters, in a bout at Holborne Hall, London, on December 7th, died three days later.

Manufacture of Vaccine Virus by the State of Illinois. — A committee has been appointed by the Illinois State Board of Health to promote legislation by the next General Assembly for the establishment of a State vaccine farm. It will be remembered that within the last year efforts were made to secure such legislation in Massachusetts. These attempts, unfortunately, were not successful.

A New Medical Quarterly.— *Teratologia* is the name of a quarterly journal devoted to the subject of Antenatal Pathology, edited by Dr. J. W. Ballantyne, of Edinburgh, which has just completed its first volume. The scope of the journal includes all matters relating to antenatal disease and deformity, and the last number contains an interesting article in Italian on "Maternal Erysipelas with Streptococcus Endocarditis in the Fetus." The journal is a novel, and so far interesting and successful experiment in medical journalism.

Naval Surgeons as Non-Combatants. — Although surgeons in the army and navy are generally considered non-combatants, that fact does not, as pointed out by *La Médecine Moderne*, protect them from the enemies' bullets. In the naval engagement on the Yalu River, the Japanese lost one hundred men, among whom were two surgeons. A third surgeon was dangerously wounded.

The Tongue as an Instrument in Ophthalmic Surgery.— In Brittany, according to a writer in the *Lyon Médical*, the tongue is employed in household surgery for the extraction of foreign bodies from the eye. The Chinese at Tonquin are also said to employ the tongue for the application of powdered remedies to the eye. The physicians keep their mouths so clean by frequent washing and chewing the betel-nut, that the tongue is comparatively free from micro-organisms, in fact may be considered a sterile (?) instrument.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, December 12, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 121, scarlet fever 55, measles 58, typhoid fever 7.

A Bequest to the Massachusetts General Hospital.— By the will of the late Thomas E. Proctor, the Massachusetts General Hospital, of which he was a trustee, receives $100,000. This sum is to be held in trust until principal and interest reach the amount of $400,000, when it is to be expended in erecting a building on the new grounds of the McLean Asylum for the Insane at Waverley.

A Serious Complication of Diphtheria.— A death from diphtheria, complicated by Christian science, is reported from Malden, Mass.

Scarlet Fever in Goffstown, N. H.— An epidemic of scarlet fever, is reported as prevalent in Goffstown, N. H. The schools and Sunday-schools have been closed.

The Yale Medical Journal, a medical magazine, which is to be published monthly from November till June by the students of the Yale Medical School, made its first appearance in November. The first number contains articles on general medical topics, a report of a meeting of the New Haven County Medical Society, together with various notes of local interest.

Journal of Medicine and Science. — The first number of the *Journal of Medicine and Science*, the official organ of the Maine Academy of Medicine, is at hand. It contains an article on "Intestinal Anastomosis," by Dr. S. H. Weeks, of Portland, with discussion by Dr. Gordon and others. It is edited by E. E. Holt, M.D., of Portland, in conjunction with fifty or sixty members of the Academy. The Maine Academy of Medicine was organized on October 29, 1894, with a membership of one hundred and seventy-five.

Improvements for the Naval Hospital at Chelsea.— A number of changes are reported as necessary by the officer in charge at the Naval Hospital in Chelsea. A coat of soluble glass and German porcelain paints is needed in order to make the walls of the operating room impermeable to dampness and disease germs; and a system of hot-air and needle baths, to cost about $1,000, is also recommended. Other improvements called for are a small elevator, to cost about $2,000; a disinfecting chamber; an electric-lighting system; and provision for securing better drinking-water.

The Haverhill Hospital Board. — Several changes have been made of late by the board of trustees of the City Hospital at Haverhill. The hospital board as now constituted consists of Drs. M. D. Clarke, J. F. Croeton, F. W. Anthony, C. E. Durant, Hugh Donahue, G. C. Clement and L. J. Young.

Diphtheria at Nashua, N. H. — By order of the board of health, the parochial schools and public library have been closed for the present, and a request has been made that the Sunday-schools be closed and all public entertainments at which children would congregate be discontinued till after the present epidemic. The public schools have been closed until December 17th.

A Tablet to the Memory of Dr. Horace Wells.— On December 10th, at Hartford, Conn., a bronze tablet to Dr. Horace Wells, the discoverer of anesthesia by nitrous oxide gas, was unveiled. The tablet commemorates the fiftieth anniversary of Dr. Wells's discovery, which was made on December 11, 1844, when he had the gas administered to himself for the extraction of a tooth. The tablet, which has been placed on the Corning Building, near the corner of Asylum and Main Streets, contains a medallion portrait of Dr. Wells and the following inscription: "To the memory of Horace Wells, dentist, who upon this spot, Dec. 11, 1844, submitted to a surgical operation, discovered, demonstrated and proclaimed the blessings of anesthesia." Two hundred and fifty dentists in this country contributed to the fund for this tablet, which was designed and executed in plaster by Sculptor Enoch S. Woods. In the evening the Connecticut State Dental Society gave a banquet in honor of the event at which speeches were made by Dr. G. T. Colton, of New York, now eighty-one years old, whose administration of laughing gas in this city December 10, 1844, gave Dr. Wells his idea of applying it to the extraction of teeth.

NEW YORK.

Receipts from Portrait Exhibition.— The exhibition of portraits of women, organized by a number of ladies of society, which has just closed at the Academy of Design, netted about $20,000 for St. John's Guild and the Orthopedic Dispensary.

The Seton Hospital for Consumptives.— The Seton Hospital for Consumptives, under the care of the Sisters of Charity of the House of Nazareth, which has just been completed at Spuyten Duyvil, was dedicated on December 3d by Archbishop Corrigan, assisted by a number of clergymen. The grounds comprise twenty-three acres, and the institution commands a grand view of the Hudson. The frontage of the building is about 200 feet, and its width varies from 100 to 150 feet. Three hundred patients can be accommodated, and the hospital is thoroughly equipped with the most approved appointments. On the fourth floor is an ozone room and on the roof an immense solarium, which has been made attractive by a profusion of plants.

Dr. George A. Peters, until recently one of the most prominent of New York surgeons, died December 6th, of chronic Bright's disease. Dr. Peters was graduated from the College of Physicians and Surgeons in 1846, and his career was a most successful and interesting one. For the last four years he had retired to a large extent from active practice, but at the time of his death he was still consulting surgeon to the New York, St. Luke's, St. Mary's, and the Woman's Hospital.

Memorial to Dr. Paul Hoffman.— Some of the friends of the late Dr. Paul Hoffman, for many years assistant superintendent of the Public Schools, have determined to start a novel and practically useful memorial in his honor in the shape of a fund to be known as the Hoffman Spectacle Fund. From his observations while occupying the position named, Dr. Hoffman became much interested in the subject of defective eyesight among school children, and for several years before his death he devoted the proceeds of certain literary labors to providing glasses for the correction of the deficient vision of such as whose parents either through poverty or ignorance neglected to procure them. The movement has been headed by Dr. Frankel, one of Dr. Hoffman's executors, and it is proposed to raise $200 or $300 a year for carrying on this work by small subscriptions of from twenty-five cents to one dollar.

Death-Rate in Tenement-Houses. — During the past four months the Tenement-House Commission, of which Mr. Richard Watson Gilder, editor of the *Century*, is chairman, and Dr. Cyrus Edson, one of the members, has been working hard in gathering materials for its report to be made to the Legislature on January 1st. For the last month it has been holding public sessions and at one of these, on November 24th, Dr. R. F. Tracy, Deputy Registrar of Vital Statistics, stated that the annual death-rate, where there are front and rear tenement-houses, was 27.66, while the death-rate in single houses was 22.71. Statistics showed that the death-rate was always greater where there were front and rear houses in the same block. He expressed the opinion that the Board of Health should have power to permanently vacate houses unfit for habitation, and that the force of sanitary inspectors should be increased. Instead of 44 police inspectors and 14 sanitary inspectors, he believed that there should be 44 sanitary inspectors and 14 police inspectors.

New Site of the Woman's Hospital. — The new site of the Woman's Hospital, on the west side of Central Park, embraces the entire distance between 92d and 93d Streets, 200 feet, with a depth of 250 feet. The property was negotiated for more than two years ago, but owing to the difficulty of getting permission from the city authorities to dispose of the present site, at Fourth Avenue and 49th Street, no definite steps were taken in the matter until recently. The hospital is now located on ground given to it by the city over thirty years ago on condition that the hospital maintain 24 free beds, the patients for which are to be designated by the city authorities, and that it must not be used for any other than hospital purposes. In 1892 the Board of Managers first appealed to the Board of Aldermen to be allowed to dispose of the property and use the money for the purchase of a new site farther up town, the reason urged being that the increased noise from the railroad trains passing the hospital had seriously interfered with its work. It was only after a long delay, however, that the desired permission was granted. Mr. Charles C. Haight, the architect of the fine buildings of the Cancer Hospital, at Central Park, West and 106th Streets, was commissioned to prepare the plans for the new institution. They show a group of six buildings, connected by broad galleries, three on each street. The total cost of the buildings will be about $1,400,000, but, owing to the lack of funds, it has been decided to erect the structure in sections. Among the largest recent donations to the hospital has been $20,000 from Mrs. William Astor, $70,000 from Mrs. R. L. Stewart, and $200,000 from the estate of the late Daniel B. Fayerweather.

◆

Miscellany.

THE MEDICAL PROFESSION AND TRADITION.

A correspondent of the *Occidental Medical Times*, writing from Berlin, after describing the formality of conferring medical degrees, is moved to say:

"It is indeed strange how obsequious the medical profession is to tradition. Take as instances the presentation of theses by our graduates in medicine and the administration of the Hippocratic oath at commencement exercises. The thesis presented by the German candidate of medicine usually embodies something original, or, at any rate, it serves as a medium for the report of interesting cases. Not so the theses presented in our country. In the main they are adequate exponents of misguided plagiarism. If limited time is urged in extenuation of this countenanced literary piracy, then it is preferable to discontinue this mere formality, rather than to establish such a precedent for medical writing on the very threshold of the physician's career. One original fact, even though it be the enumeration of wrinkles on the face, is worth more than all the cumbersome articles in our medical journals, which are designed for no other purpose than the concealment of thought. The Hippocratic oath is another barbarism which should be relegated to oblivion."

If by this we are to infer that each spring the numerous classes of young men about to graduate in medicine are formally made to subscribe to the oath Hippocratic, then there is reason for the stricture laid upon it. But how many men educated even in our best medical schools ever heard the oath or know its origin? The history and traditions of a noble profession are not to be lightly thrust aside as of no value; and in the midst of the keen pursuit of knowledge, of the new and scientific medicine, and of bio-chemical therapeutics, it is well to remember that the care of the sick and wounded is older than the microscope, that there were devoted physicians before the days of bacteriology, and that from the first the man who studied medicine and undertook the labor of a physician was held to a higher plane of living, both bodily and intellectually, than his fellow citizens. The long tradition of this character is worth recalling; and it is to the honor of the profession that in its long history it has so seldom and in such few numbers forgotten that *noblesse oblige.*

◆

PRESIDENT CLEVELAND RECOMMENDS A NATIONAL BOARD OF HEALTH.

In his annual message to Congress. President Cleveland uses the following language in reference to the establishment of a national board of health:

> I am entirely convinced that we ought not to be longer without a national board of health or national health officer, charged with no other duties than such as pertain to the protection of our country from the invasion of pestilence and disease.
>
> This would involve the establishment by such board or officer of proper quarantine precautions, of the necessary aid and counsel to local authorities on the subject; prompt advice and assistance to local boards of health and health officers in the suppression of contagious disease, and in cases where there are no such local boards or officers, the immediate direction by the national board or officer of measures of suppression; constant and authentic information concerning the health of foreign countries and all parts of our own country as related to contagious diseases, and consideration of regulations to be enforced in foreign ports to prevent the introduction of contagion into our cities and the measures which should be adopted to secure their enforcement.
>
> There seems to be at this time a decided inclination to discuss measures of protection against contagious diseases in international conference with a view of adopting means of mutual assistance. The creation of such a national health establishment would greatly aid our standing in such conferences and improve our opportunities to avail ourselves of their benefits.
>
> I earnestly recommend the inauguration of a national board of health or similar instrumentality, believing the same to be a needed precaution against contagious disease and in the interest of the safety and health of our people.

◆

DEATH OF DR. JOHN MILLS BROWNE.

John Mills Browne, M.D., ex Surgeon General of the United States Navy, died in Washington, D. C., December 7th, aged sixty-three. He was graduated from the Harvard Medical School in 1852, and entered the navy as assistant surgeon in 1853. After seeing service in various ports of both continents, he was commissioned surgeon in 1861, and transferred to the *K[illegible]*, then on duty in European waters, and was on board that vessel during her famous engagement with the *[illegible]*.

In December, 1871, he was commissioned medical inspector, and in 1878 was promoted to the rank of medical director in the United States Navy. In 1888, he was made chief of the Bureau of Medicine and Surgery, with the title of surgeon general. In May, 1893, he was retired on account of age, with the rank of commodore.

Correspondence.

SAFEGUARDS AND GUARANTEES FOR DIPHTHERIA ANTITOXIN.

We have received the following correspondence from the Health Department of the city of New York:

Health Department, New York, Dec. 7, 1894.

Hon. Charles G. Wilson, *President.* Sir: The accompanying report is hereby approved. The grave consequences following fraud in the preparation of this valuable remedial agent necessitate prompt and vigorous action on the part of the Board of Health. Steps should be taken at once to supervise in the most careful manner the sale of diphtheria antitoxin in the city of New York. This can only be accomplished by a systematic inspection and scientific examination of the various preparations of antitoxin offered for sale in this city. In event of fraud in the offering of spurious preparations or preparations of doubtful strength, the Board should institute criminal proceedings against offenders. In order to regulate the sale of diphtheria antitoxin in the city of New York, the following resolution is hereby submitted:

Resolved, That Dr. T. Mitchell Prudden, Consulting Physician to the Health Department in the Division of Pathology, Bacteriology and Disinfection, and Dr. Hermann M. Biggs, Pathologist and Director of the Bacteriological Laboratory of this Department, be requested to prepare and submit some plan for the determination of the strength and purity of the various preparations of antitoxin which are now or may be hereafter offered for sale in the city of New York, so that the public may have some guarantee that only genuine preparations of antitoxin of proper strength are furnished for sale.

Respectfully submitted,
Cyrus Edson, *Chairman Sanitary Committee.*

The above report and resolution were adopted at a meeting held on Wednesday, December 5, 1894.

Health Department, New York, Dec. 5, 1894.

Hon. Charles G. Wilson, *President.* Sir: The great practical importance of the new antitoxin treatment for diphtheria, not only in controlling but in curing the disease, has created a demand for the new remedy so universal and urgent, that the occasional small supplies which can be obtained from the European laboratories are wholly inadequate. It is therefore imperative that without unnecessary delay the preparation of the new remedy should be generally undertaken in this country. It has been already begun by the New York City Health Department in a limited way, and we trust that the requisite means and equipment may soon be furnished to the Department for making the antitoxin in sufficient amount at least for local use.

The preparation of this new remedy requires considerable outlay for laboratories, for the necessary animals and their safe housing and scrupulous care; and above all for the services of competent and experienced bacteriologists or specially trained experts. The efficiency of the remedy, and the security of those to whom it is administered from any possible danger in its use, depends in the most intimate way upon the skill and reliability of those engaged in its manufacture. Careful and delicate tests are required at every stage of its preparation. The strength of each lot of the remedy must, when it is finished, be determined in the most exact way by those in command of the necessary special skill and experience. It is one of the distinguishing characters of this remedial agent, that its greatest efficiency is obtained only when it is administered in the earlier stages of the disease, and then in doses possessing a strength absolutely to be relied upon. Should the material used be for any reason deficient in healing power through error, carelessness or fraud in its preparation, time may be lost, so precious to the patient, that it may involve his life.

The antitoxin serum when ready for use is a yellowish fluid without any especially distinguishing or characterizing appearance; to the eye resembling the clear, yellowish fluid which separates from blood when it clots, from which it can be distinguished only by exact tests of its curative and protective value on animals.

The new remedy will be, at the best, rather costly, on account of the time required for its preparation — always many weeks at least — the cost of material and animals and of expert services.

At present, the market price of the antitoxin is unduly great, and probably will be so for some time to come on account of its scarcity and the great demand for it.

It follows from what has been said that it is of the utmost importance to those who use this remedy that there should be some reliable guarantee for every preparation placed upon the market that it has been prepared by competent persons, and that in every case it possesses the requisite purity and power. The preparations now occasionally furnished in this country in small quantity by the German Pharmaceutical Houses, Schering and the Farbwerke (Hochst-am-Main), have specific guarantees as to strength and purity by bacteriologists of universally recognized skill and experience. Unless some such security is afforded, it would be quite easy for unscrupulous persons willing to commit such a crime, to place on the market small bottles of yellowish fluid labelled "antitoxin," containing an inefficient amount of the healing agent, or even none at all, and for a time at least profit by the extraordinary demand for it, perhaps at the cost of life and at the risk of discrediting a most potent and beneficent remedy.

That this is not a merely fancied menace to the welfare of those stricken with this dreaded disease, and so often the wards of the Department of Health, is shown by the fact that already in the city of New York several different preparations of alleged diphtheria antitoxin, said to have been prepared in this country, and wholly, so far as we can learn, without proper guarantee of efficiency, have been furnished and used for the treatment of diphtheria. One of these preparations has been already subjected to the necessary crucial tests by the Department and found wholly inefficient and inert.

While we suggest its importance, we are not prepared at the moment to recommend in detail a definite form of guarantee of purity and adequate strength in this remedy such as would be practicable and desirable for the protection of the public against carelessness or fraud. But we call your attention to the matter at this early period in the use of diphtheria antitoxin in the hope that at least a warning of the medical profession and the public against spurious and unguaranteed preparations of this remedy, if not more drastic measures, may seem to you wise and useful, and appropriate to the functions of this Department as a guardian of the Public Health. Respectfully submitted,

Hermann M. Biggs, M.D., *Pathologist, and Director of the Bacteriological Laboratory.*

T. Mitchell Prudden, M.D., *Consulting Physician to the Health Department in the Division of Pathology, Bacteriology and Disinfection.*

◆

PHYSIOLOGY OF THE KNOCK-OUT BLOW.

Troy, N. Y., December 4, 1894.

Mr. Editor: — Dr. Walton's explanation of some of the disasters in "sparring" is borne out by a number of facts familiar to most sparrers. When I was first taught to spar, nearly thirty years ago, a blow was taught, and I presume is still, in which after parrying a left-hand straight blow at the face a cut was delivered with the right on the left side of the neck with the inner edge of the outstretched right hand. The object was to land upon the muscles of the neck and avoid bony prominences. The amount of force which could be employed was necessarily very limited, but the execution done when the reply was properly made was so terrific that the blow was barred even with well padded gloves in ordinary sets-to. Many diligently practised it in the routine exercises so as to employ it as a defence in case of assault. I have been hit in about every manner in which a fair blow can be struck — whether straight leads, cross-counters or swinging round arm blows — but the memories of a couple of these cuts received in practising abide with me yet. The pain was awful, and the faintness and sense of dissolution only equalled by an attack of angina pectoris. Any one can easily convince himself of the truth of this by a short, sharp cut with the inner edge of the hand across the middle of the sternomastoid. If the muscles are not very tense, it will require but a slight blow to make the experimenter "see stars." Here, of course, there can be no question of brain concussion. The punishment must be due to direct action on the nerves or to compression of the vessels of the neck. That it is due to the former seems more probable when its effects are compared with straight blows on the "mark" (epigastrium). If one sees a blow coming for the mark and has time to contract the abdominal muscles, the force is distributed laterally by the unbroken arch of the abdominal muscles, and the punishment, in my experience with heavy weights, comparatively slight. If, however, the recipient is taken unawares, and the abdominal muscles are but slightly contracted, the shock from even a weak blow is sickening.

Again, there was formerly taught a "stop" to prevent an opponent clinching, which consisted in a quick, short cut across the larynx with the inner border of the hand. If well and quickly done, this literally "took the starch" out of the rusher. In this latter case there can be no question of concussion, and the time was too brief for suffocation to be an element in producing the resulting weakness. Sparring is a very safe and manly exercise if practised, as it always should be, in a fair and gentlemanly manner. No other exercise of which I know gives such play to all the muscles, such command over the feet and legs and requires such command of one's self. Hard blows may and ought to be struck; but if the hand is not tightly clinched, and proper gloves are worn, no damage will be done. The greenhorn should be early ingrained with the teaching that "knocking out" is no part of the practice of the manly art, and that whilst he should learn how to land very forcibly upon the mark, or on the neck by cross-counter, crossparry or side-step, they should never be sent with power or with the clenched fist, unless he is willing to plead self-defence as an excuse for their results. Very truly yours,

William Wotkyns Seymour.

◆

TESTIMONIAL TO SIR JOSEPH LISTER.

Mr. Editor: — Sir Joseph Lister having recently retired from active hospital and teaching work, the occasion has been thought appropriate for presenting him with a testimonial of the esteem in which he is held by his former colleagues and pupils; and committees have therefore been formed in Glasgow, Edinburgh and London for the purpose of raising the necessary funds.

It is proposed that the testimonial shall take the form of a portrait. Subscriptions have been limited to two guineas, and it is hoped that sufficient funds will be collected to permit of some memento of the occasion being presented to each subscriber of that amount.

As there are probably many surgeons in the United States who may wish to join in the movement, but whose names and exact addresses it has been difficult to ascertain, I should be glad if you would permit me to state that subscriptions may be sent to me at 29 Weymouth Street, Portland Place, London, W., England, or to one or other of the following gentlemen who have kindly consented to act as treasurers, namely, Dr. James Finlayson, 4 Woodside Place, Glasgow; Professor Chiene, 26 Charlotte Square, Edinburgh; Professor William Rose, 17 Harley Street, London, W., England; Dr. Malloch, 124 James Street, South, Hamilton, Ontario, or J. Stewart, M.B., 37 South Street, Halifax, Nova Scotia.

I have the honour to remain, sir, Yours faithfully,

J. Fredk. W. Silk, *Honorary Secretary.*

P. S. – Two guineas are about $10.23.

METEOROLOGICAL RECORD,

For the week ending December 1st, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S ..25	29.76	36	39	34	82	80	81	W.	N.	16	16	N.	O.	.10
M..26	30.20	28	30	25	64	46	55	N.W.	N.	14	5	C.	O.	
T ..27	29.66	38	53	24	60	58	59	S.W.	S.W.	24	8	R.	C.	.01
W..28	30.12	28	33	23	67	40	54	W.	N.W.	19	18	C.	C.	
T ..29	30.63	22	26	18	48	38	43	N.W.	N.W.	22	14	C.	C.	
F..30	30.58	23	31	15	56	95	80	N.E.	S.E.	5	4	N.	O.	.03
S... 1	30.28	30	36	25	89	93	91	N.W.	W.	5	6	N.	C.	.02
☞	30.18		35	23			66							.26

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatning; N., snow. † Indicates trace of rainfall ☞ Mean for week

RECORD OF MORTALITY

For the Week ending Saturday, December 1, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Percentage of deaths from Acute lung diseases.	Percentage of deaths from Typhoid fever.	Percentage of deaths from Diphtheria and croup.	Percentage of deaths from Scarlet fever.
New York	1,956,000	693	226	15.12	46.56	1.26	9.66	1.12
Chicago	1,600,000	—		—	—	—	—	—
Philadelphia	1,139.457	412	129	17.76	10.08	1.92	13.44	.96
Brooklyn	1,013,000	344	116	14.70	15.00	1.50	10.50	.30
St. Louis	540,800	—	—	—	—	—	—	—
Boston	501,107	231	71	24.08	16.34	3.02	18.06	.86
Baltimore	500,000	—	—	—	—	—	—	—
Washington	285,000	92	23	11.88	2.16	2.16	5.40	4.32
Cincinnati	325,000	112	32	15.13	16.02	3.56	8.01	—
Cleveland	325,000	93	34	26.75	7.49	1.07	1.07	18.19
Pittsburg	272,000	—	—	—	—	—	—	—
Milwaukee	265,000	—	—	—	—	—	—	—
Nashville	87,754	23	5	13.05	4.35	4.35	—	—
Charleston	65,165	39	7	7.68	2.56	2.56	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	100,410	32	11	12 52	18.78	3.13	3.13	6.26
Fall River	92,233	27	10	18.50	7.40	14.80	3.70	—
Lowell	90,613	29	16	13.80	27.60	6.90	6 90	—
Cambridge	79,607	17	3	5.88	17.64	—	5.88	—
Lynn	65,123	24	1	12.48	4.16	—	—	12.48
Springfield	50,284	13	4	7.69	30.76	—	—	—
Lawrence	49,900	9	8	—	—	—	—	—
New Bedford	47,741	17	7	—	5.88	—	—	—
Holyoke	43,348	22	10	13.66	27.33	—	—	—
Brockton	33,939	6	—	16.66	—	—	16.66	—
Salem	33,155	7	2	—	—	—	—	—
Haverhill	32,925	6	0	16.66	—	—	—	—
Malden	30,209	5	2	20.00	—	—	20.00	—
Chelsea	29,806	18	1	22.22	16.66	—	22.22	—
Fitchburg	29,383	8	2	25.00	—	12 50	12.50	—
Newton	28,837	5	0	40.00	—	—	40.00	—
Gloucester	27,293	—	—	—	—	—	—	—
Taunton	26,954	9	2	33.33	22.22	11.11	22.22	—
Waltham	22,058	5	2	20.00	20.00	—	20.00	—
Quincy	19,642	13	6	53.83	7.69	7.69	46.14	—
Pittsfield	18,802	—	—	—	—	—	—	—
Everett	16,585	4	0	—	—	—	—	—
Northampton	16,331	2	0	—	—	—	—	—
Newburyport	14,073	2	1	50.00	—	50.00	—	—
Amesbury	10,920	1	0	—	—	—	—	—

Deaths reported 2,415: under five years of age 752; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 401, consumption 313, acute lung diseases 305, diphtheria and croup 250, typhoid fever 50, scarlet fever 37, diarrheal diseases 28, malarial fever 9, whooping-cough and erysipelas 8 each, measles 5, cerebro-spinal meningitis 3, small-pox 2.

From diarrheal diseases New York 7, Cincinnati and Fall River 4 each, Brooklyn 3, Philadelphia, Washington and Lowell 2 each, Boston, Cleveland, Providence and Springfield 1 each. From malarial fever New York 4, Brooklyn 3, Nashville and Charleston 1 each. From whooping-cough New York and Boston 3 each, Philadelphia 2. From erysipelas New York 3, Brooklyn 2, Philadelphia, Cleveland and Haverhill 1 each. From measles Holyoke 3, New York 2. From small-pox New York and Philadelphia 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending November 21st, the death-rate was 17.3. Deaths reported 3,468; acute diseases of the respiratory organs (London) 261, measles 109, diphtheria 75, fever 57, diarrhea 38, whooping-cough 35, scarlet fever 24, small-pox (Birmingham 5, Liverpool 1) 6.

The death-rate ranged from 11.9 in Plymouth to 24.9 in Sunderland; Birmingham 19.3, Bolton 18.1, Croydon 16.8, Hull 18.4, Leeds 21.1, Leicester 20.7, Liverpool 21.1, London 15.9, Manchester 20.6, Newcastle-on-Tyne 16.8, Nottingham 12.6, Portsmouth 17.1, Sheffield 15.3, West Ham 15.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 1, 1894, TO DECEMBER 7, 1894.

Leave of absence for four months, on surgeon's certificate of disability, with permission to leave the Department of Dakota, is granted **First-Lieut. Alexander S. Porter**, assistant surgeon.

Leave of absence for four months, to take effect on or about January 20, 1895, with authority to go beyond the sea, is granted **Captain Walter D. McCaw**, assistant surgeon.

The extension of leave of absence on surgeon's certificate of disability granted **First-Lieut. Henry R. Stiles**, assistant surgeon, is further extended two months on account of sickness.

Leave of absence for one month, to take effect on or about December 10, 1894, is granted **First-Lieut. Charles Lynch**, assistant surgeon, with permission to apply for an extension of one month.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING DECEMBER 8, 1894.

G. A. Bright, medical inspector, ordered to the Navy Yard, New York.

S. H. Dickson, surgeon, detached from the U. S. Receiving-ship "Dale" and wait orders.

Dwight Dickinson, surgeon, detached from the U. S. Receiving-ship "Richmond" and to the U. S. S. "Minneapolis."

M. F. Gates, passed assistant surgeon, detached from the U. S. "Receiving-ship "Richmond" and to the U. S. S. "Minneapolis."

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The next lecture will be given on Thursday evening, December 20th, at 8 o'clock, by Dr. J. H. McCollom. Subject, "Diseases Dangerous to the Public Health." Physicians are cordially invited.

SOCIETY NOTICES.

Boston Society for Medical Improvement. – A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday, December 17, 1894, at eight o'clock, P. M.

Dr. W. J. Otis: "The Clinical Features and Treatment of External Piles." Discussion opened by Dr. S. J. Mixter.

Dr. F. B. Mallory: "A Case of Actinomycosis." Discussion opened by Drs. W. F. Whitney and H. L. Smith.

John T. Bowen, M.D., *Secretary.*

Massachusetts Medical Society, Suffolk District. – The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday evening, December 19th, at 8 o'clock.

Papers: "Report of Three Cases of Brain Tumor with Autopsies," Dr. W. N. Bullard.

"Criticism on the Usual Method of Chest Measurements at Life Insurance Examinations and Stethokyotographical Studies of the Bilateral Dilation of the Chest," Dr. Richard Hogner.

Several gentlemen have been especially invited to take part in the discussion of these papers.

John L. Ames, M.D., *Secretary.*

RECENT DEATHS.

Geo. A. Peters, M.D., of New York, died in New York, December 6th.

Joseph Manning, M.D., M.M.S.S., died in Rockport, December 10, 1894, age seventy years.

George James Townsend, M.D., M.M.S.S., died in South Natick, December 9, 1894, age seventy-one years.

J. Bernard Brinton, M.D., of Philadelphia, died in that city, December 6, age fifty-nine. He was a surgeon in the regular army during the war and was medical purveyor of the Army of the Potomac under General Meade. He was the founder, and for many years the president of the Botanical Club of Philadelphia, and a member of the Philadelphia Academy of Natural Sciences.

BOOKS AND PAMPHLETS RECEIVED.

Proceedings of the American Microscopical Society, Sixteenth Annual Meeting held at Madison, Wis., August 14, 15 and 16, 1893, Vol. XV.

Landmarks in Gynæcology. By Byron Robinson, B.S., M.D., Professor of Gynæcology in the Chicago Post-Graduate School, etc. Two volumes. Detroit: George S. Davis. 1894.

The Hot Springs of Arkansas, An Historical and Legendary Account of the Famous Health and Pleasure Resort. St. Louis: General Passenger Department, Missouri Pacific Railroad. 1894.

China Imperial Maritime Customs. Special series No 2, Medical Reports for the half-year ended March 31, 1891, 41st Issue. Shanghai: Published by order of the Inspector General of Customs. 1894.

Textbook of Nervous Diseases; Being a Compendium for the use of Students and Practitioners of Medicine. By Charles L. Dana, A.M., M.D. Third edition, with 210 illustrations. New York: William Wood & Co. 1894.

A Textbook of Pathology, Systematic and Practical. By D. J. Hamilton, M.B., F.R.C.S.E., F.R.S.E., Professor of Pathology, University of Aberdeen. Copiously illustrated. Vol. II. Parts 1 and 2. London: Macmillan & Co. 1894.

Paraxanthin as a Factor in the Etiology of Certain Obscure Nervous Conditions. Uric Acid Leukomains as Factors in the Etiology of Migraine and Kindred Nervous Diseases. By B. K. Rachford, M.D., of Cincinnati, O. Reprints. 1894.

The Operative Treatment of Fistula in Ano. The Treatment of Anal Fissure or Irritable Ulcer of the Rectum. The Non-Operative Methods of Treating Anal Fissure or Irritable Ulcer of the Rectum. By Lewis H. Adler, Jr., M.D. Reprints. 1892-93-94.

A Manual of the Practice of Medicine, Prepared especially for Students. By A. A. Stevens, A.M., M.D., Lecturer on Terminology and Instructor in Physical Diagnosis in the University of Pennsylvania, etc. Third edition, revised, illustrated. Philadelphia: W. B. Saunders. 1894.

A Case of Chronic Peritonitis, with Intestinal and Abdominal Fistulæ; Enterorrhaphy; Recovery. Cœliototomy for Bilateral Pyosalpinx, followed Four Days Later by Appendicitis; Operation; Recovery. A Case of Bilateral Ovarian Fibro-Sarcoma. By Frederick Holme Wiggin, M.D. Reprints. 1894.

A System of Oral Surgery: Being a Treatise on the Diseases of and Surgery of the Mouth, Jaws, Face and Teeth, and Associate Parts. By Dr. James E. Garretson. Illustrated with numerous wood-cuts and steel plates. Sixth edition, thoroughly revised with additions. Philadelphia: J. B. Lippincott Co. 1895.

Practical Manual of Diseases of Women and Uterine Therapeutics for Students and Practitioners. By H. Macnaughton-Jones, M.D., M.Ch., M.A.O. (Hon. Caus.), Fellow of the Royal Colleges of Surgeons of Ireland and Edinburgh, etc. Sixth edition, revised and enlarged. London: Baillière, Tindall & Cox. 1894.

A Manual of Modern Surgery, General and Operative. By John Chalmers DaCosta, M.D., Demonstrator of Surgery, Jefferson Medical College, Philadelphia, etc. With 188 illustrations in the text and 13 full-page plates in colors and tints, aggregating 276 separate figures. Philadelphia: W. B. Saunders. 1894.

A Treatise on the Diseases of the Ear, Including the Anatomy and Physiology of the Organ, together with the Treatment of the Affections of the Nose and Pharynx which Conduce to Aural Disease. By T. Mack Hovell, F.R.C.S., Edin., M.R.C.S., Eng., Aural Surgeon to the London Hospital, etc. London: J. & A. Churchill. 1894.

Essentials of Diseases of the Skin, Including the Syphilodermata, arranged in the form of Questions and Answers, Prepared especially for Students of Medicine. By Henry W. Stelwagon, M.D., Ph.D., Clinical Professor of Dermatology in the Jefferson Medical College, etc. Third edition, revised and enlarged, with 71 letter-press cuts and 15 half-tone illustrations. Philadelphia: W. B. Saunders. 1894.

Home Treatment for Catarrhs and Colds, a Handy Guide for the Prevention, Care and Treatment of Catarrhal Troubles, Cold in the Head, Sore Throat, Hay Fever, Hoarseness, Ear Affections, etc.; Adapted for Use in the Household and for Vocalists, Clergymen, Lawyers, Actors, Lecturers, etc. By Leonard A. Dresser, M.D., Visiting Laryngologist to St. Mark's Hospital, etc. Illustrated. New York: Home Series Publishing Co. 1894.

Lecture.

THE MILITARY MEDICAL OFFICER IN PEACE AND WAR.[1]

BY JOHN VAN RENSSELAER HOFF,
Major and Surgeon, United States Army.

(Continued from No. 24, p. 575.)

In our own army up to 1861 the work pertaining to the interior economy of military hospitals was, for the most part, done by men detailed on "extra duty" from the line of the army. Their connection with the Medical Department was of the most temporary character, and they no sooner became useful than they were returned to their companies, and others, uninstructed, detailed in their stead.

The logic of the situation forced the organization of the ambulance corps during the War of Secession, in spite, strange to say, of the most determined opposition; and when organized, its work was so well done that medical officers thereafter were not constrained to report, as in the early days of the war, when the surgeon-general wrote, "In no battle yet have the wounded been properly looked after; men under the pretence of carrying them off the field leave the ranks, and seldom return to their proper duties." In a letter written in 1862 he reports that "the frightful state of disorder existing in the arrangements for removing the wounded from the battle-field; the scarcity of ambulances, the want of organization, the drunkenness and the incompetency of the drivers, the total absence of ambulance attendants are now working their legitimate results." Speaking of the second battle of Manassas, in which the actual number of casualties was never known, he says, "Up to this date (September 7, 1862[2]), 600 wounded still remain on the battle-field, in consequence of the insufficiency of ambulances and the want of a proper system for regulating their removal, in the army of Virginia; many have died of starvation, many more will die in consequence of exhaustion, and all have endured torments that might have been avoided."

Dr. Agnew, who devoted so much time to the organization and working of the United States Sanitary Commission, estimated that 500 lives were lost from want of proper transport at the battle-field of Antietam alone.

It must be understood that every effort on the part of the medical authorities was made to meet the demands upon them; but the history of the early days of the War of Secession shows that they were hampered and opposed in all directions by the military authorities, the very class from which the Medical Department expected the greatest assistance.

The want of an efficient ambulance organization, which had been so repeatedly asked for by the surgeon-general, soon so strongly attracted public attention, that the most energetic efforts were made to remedy the defect, and in course of time the ambulance system of our army became thoroughly efficient. With the close of the war, however, the Medical Department was content to return to ante-bellum ways, and the service of the hospitals was again performed by extra-duty details from the line of the army.

The law of 1887 organizing the hospital corps, though defective in detail, builded better than it knew, and was a step of vast importance to the Medical Department. The hospital corps is a body of sanitary soldiers, at this time some 800 in number, whose duties pertain to the care of the sick and wounded. Its members are enlisted from civil life, or transferred from other branches of the service, and pass through a six months' course of training in a company of instruction before being assigned to the various hospital corps detachments serving at every post throughout the country. Their training in the company is of two kinds, military and technical.

The military training is identical with that of other recruits, the chief object of which is discipline. In drill they are taken through the school of the company, in which they are required to be thoroughly proficient; they are taught the manual of arms and use of the rifle, for though they will ordinarily neither carry nor use firearms, it is held that no man can be a soldier who is unfamiliar with their use, and men of the hospital corps must be soldiers. It goes without saying that the company of instruction takes care of itself, cooks its own food, polices its own quarters and grounds, etc.; in fact, performs the numberless minor duties required of all military bodies.

The technical training consists of lectures, recitations, demonstrations, and practical work in simple anatomy, physiology, nursing, cooking and pharmacy; bearer drill with hand litter and ambulance, improvised methods, etc.; first aid and bandaging appliances of the Medical Department in post and field; field work, — pitching, striking, loading and unloading field hospitals, their management, etc.; care of horses, stables, etc.

Of course, this is the merest outline; but it gives some idea of the work required in the forming of a sanitary soldier. When sufficient proficiency has been reached, the men are relieved from the company and assigned to post detachments, where their practical work begins as nurses, cooks, dispensers, clerks, ambulance-drivers, attendants, etc.

It will be observed from the foregoing that the hospital corps of the United States army is really a military training-school for male nurses, in which a very high character of training is given, the tendency of which is to develop the physical, intellectual and moral qualities of its members. Moreover, it equips a man with special knowledge of great usefulness to him should he, at the end of his enlistment, return to civil life, while should he remain in the service, he will be in the line of promotion to the most valuable positions attainable by enlisted men in the United States Army.

In addition to the hospital corps, and supplemental to it, there are detailed in every company in the army four privates, known as company bearers, who are instructed in first aid and bearer work, and are sanitary emergency men. They belong to the combatant force, and are only used when the hospital corps is not sufficiently numerous to meet the demands of an engagement.

The practical training of the non-commissioned officers and men of the hospital corps, must of necessity fall upon the post medical officers. The men who come from the companies of instruction are well informed theoretically, but are without practical experience; hence it becomes an important part of the duty of medical officers to carefully instruct the men of the corps in all matters pertaining to their work and duties. In order to do this there must be laid down a well-considered scheme of hospital organization, with all parts of which the men are gradually made familiar. There can be no specialists in the hospital corps; each man should be equal to the performance of any duty that an emergency might place upon him, and while, of course, it is recognized that no one man can do all things equally well, he must, at least, be able to do his full duty in any position.

---

[1] A lecture read before the Medical School of Harvard University, October 18, 1894.

The battle was fought August 29, 1862.

Army Regulations recognize the necessity for the instruction as above set forth, but it is to be regretted that so much of its character and of the time devoted to instruction should be left to the personal equation of the medical officer himself.

The two paragraphs which treat specially of instruction are 1575 and 1569. The first says, "All available men of the hospital corps shall be instructed, under the supervision of the senior medical officer, for at least four hours in each month . . . in the duties of litter-bearers and the methods of rendering first aid to the sick and wounded." The latter states that, "Members of the hospital corps will be instructed by the senior medical officer of the post, at such times, in addition to those prescribed in paragraph 1575, as he may deem necessary."

The result of this latitude is that while the men of some detachments have forty hours of systematic instruction each month, in other detachments but four hours of instruction are given. It is readily imagined that the officer who devotes the least time to his men has the least efficient detachment. That the regulations, however, do contemplate the giving of very thorough instruction is shown by the requirements for the making and promotion of non-commissioned officers.

(Par. 1568) "Privates who have served one year or more in the hospital corps, and have displayed particular merit, will be recommended to the surgeon-general for promotion, by the senior medical officer of the command; from those thus recommended, acting hospital stewards will be appointed."

(1557) "A candidate for the position of acting hospital steward must pass a satisfactory examination as to his physical condition, moral character, and general aptitude, and in the general principles of arithmetic, including decimal fractions and the rules of proportion, in orthography and penmanship, the Articles of War and regulations affecting enlisted men, pharmacy, care and use of meteorological instruments, and hospital and field appliances furnished by the Medical Department; the methods of rendering first aid to the sick and wounded and the ordinary modes of cooking."

(1556) "Candidates for promotion to the grade of hospital steward (who must have served at least one year as acting hospital stewards) must pass a satisfactory examination in the subjects required of acting hospital stewards, and also in the elementary principles of hygiene, including ventilation, heating and disinfecting, the principles of materia medica, therapeutics and minor surgery, and the administration of anesthetics. They must also possess a thorough knowledge of the regulations of the Medical Department."

Thus it will be seen that if there are to be any non-commissioned officers in the hospital corps, medical officers must bestir themselves to make them. One hour each day for five days weekly, theoretical instruction, is the least that should be given. The subjects have already been outlined in the course in the company of instruction, only in the detachment they are gone into more deeply.

The instruction of the hospital corps adds largely to the labors of the medical officer, but its results pay him many fold in the successful conduct of his department.

From the foregoing *résumé* of the work of the military medical officer in times of peace, it will be seen that the medical schools of our country are doing only a part of their duty in preparing the future medical officers of our active armies; for, it is needless to say, those medical officers are the civil practitioners and students of to-day. We of the regular establishment will be but a very drop in the bucket when the time comes, and it surely will, to martial this great nation in arms. To-day, as you know, throughout our land the rudiments of the art of war are being taught in our schools and colleges by over a hundred officers of the line of the army specially detailed for this important work. Everywhere people are awakening to the desirability of following Boston's excellent example, and are having their children instructed in military drill. It is the first symptom of the epidemic of diseases and injuries which we call war. Perpetual peace is a dream! Think you that the military medical officer, like a poet, is born, not made? Think you that the civil practitioner of to-day can become the medical officer of to-morrow by the mere enactment of a law to that effect? No; a thousand times, No! It takes just as much special education to make the medical man a medical officer, as to make any other civilian a combatant soldier, be he officer or man. Yet how much are we doing to educate our medical men for the part they must play when war comes? And upon whom will rest the moral responsibility when they fail, as fail they must?

As has been said, all the duties performed by the army in peace time, are simply a training for war, a sort of unceasing rehearsal for a great tragedy which sooner or later will be presented.

The duties of the Medical Department in war pertain to the care of almost numberless thousands of sick and wounded under conditions so peculiar that they have no analogue in civil life. In order to the proper performance of these duties a peculiar and highly specialized medico-military organization has been found necessary, the object of which is to free the front of an army from all sick and wounded, and the immediate transfer of all serious cases to hospitals more or less distant from the theatre of war. Thus it will be seen that the great problem is the getting of the patient, in as good condition as possible, off the field, and into his place of permanent treatment as soon as may be. To accomplish this result there are in the several great armies of the world, sanitary organizations, the same in principle but differing in details, depending upon the particular army. In the great Continental armies which are all standing at the "ready" watching every movement of the neighboring nations, with everything — down to the last strap — prepared for instant service, certain of the work of the direct management and instruction of the field sanitary *personnel* is taken off the already overweighted shoulders of the Medical Department, and its duties are more closely confined to strictly professional work. With these the means and method of transportation, including *personnel* and material, are under the direct command of non-medical officers. And the advantages of such an arrangement under existent conditions are certainly many, the chief of which is that medical officers are comparatively few and correspondingly precious, and therefore should be permitted to devote themselves to work that requires special aptitude, training and experience, possessed by only a small number in any community. But such an arrangement is only permissible, or even possible, in an actual organization of the most perfect character. In an army most of which is on paper, as is our own, and the complete working of which will only be shown under conditions of actual service, whatever sanitary organization there is must of necessity be wholly the creature of the Medical Department.

I will venture to draw a crude outline of a war scheme more or less akin to what ours must of necessity become. As previously stated, permanent military hospitals differ in no essential from the great civil hospitals which abound throughout our country, and with the management of which you are all more or less familiar. As, however, the sanitary department of an army is responsible for the ill and injured not only after they have been finally received into the permanent hospitals, but from the moment and place of their fall, wherever that may be, we must consider what is meant by ambulance aid in active service, assuming as a matter of course, that you know what becomes of the patient after he enters the hospital. Ambulance organization, equipment and transport mean the general arrangements by which first aid and proper transport are given to the soldier from the time of his attack until he reaches a permanent hospital of some kind. In the accomplishment of his journey three stations are provided, on and contiguous to the battle-field.

(1) The collecting station, usually established in the rear of each regiment by the medical officers on duty therewith, who are assisted (in our service) by four men, detailed from each company, called company-bearers. This station is established as nearly as practicable in rear of the regimental reserves, and is consequently about one-third of a mile back of the skirmish line.

The company-bearers collect the wounded on the skirmish line and carry them to the collecting station, where they receive the most necessary and temporary assistance. Thence they are transported to the dressing (ambulance) station by a special organization called a bearer company.

The dressing station, a mile to the rear of the fighting line, is really the central sanitary feature of the field; it is here that the ambulance *personnel* and material rendezvous; it is here that the wounded receive their first careful examination and treatment; here urgent operations are performed and permanent dressings applied. Thus it will be seen that upon the selection of a suitable location for the dressing station very much depends.

The third station in the journey is the field hospital. It is located sufficiently far to the rear to be as nearly as possible absolutely free from disturbance, usually three or four miles. It is to this hospital that the wounded are sent, generally by ambulance from the dressing station. Of course, it is understood that the field hospital is mobile, its tentage, furniture, etc., being when *en route*, packed in wagons.

From the field hospital the wounded are transferred to the "stationary" hospitals established on the theatre of war, thence to the "base" hospital at the base of operations, and are finally distributed to the various military general hospitals located throughout the country.

How many of the latter there may be is shown by the fact that on December 17, 1864, the capacity of the military general hospitals of the United States was 118,057 beds, of which number 83,400 were occupied.

All the mighty detail involved in this, of course, can only be alluded to here; but not a word of it, so far as I know, is taught in any medical school in our broad land.

Who of my hearers, unless he be, or has been, a military medical officer, may I ask, knows anything of what has here been outlined?

A distinguished medical officer has said: "With surgery and medicine you are admittedly familiar, their practice in military life does not differ from their practice in civil life, save in the circumstances which surround them. The ever-present necessity with the medical officer is a comprehensive knowledge of military affairs.

"No other officer of the army is required to be individually familiar with the duties of every other military department in addition to his own; and yet this is the task the sanitary officer must master if he wishes to be successful in his duties in the field.

"Imagine, if you please, that we are to-day at war with a foreign nation, and have an army of occupation in the field of a hundred thousand men. This army is necessarily made up of volunteers [for in time of war the regular army is but a nucleus, or color-guard of the fighting force]. Its sanitary department consists of 2,600 officers and men. Under ordinary circumstances 5,000 men are constantly sick or wounded, while after a battle the non-effective list is swelled to 10,000. An accident of date of commission may make any one of you, who has in the mean time entered the service in defence of our country, the senior medical officer of this army.

"What would you do after reporting to the commanding-general and finding yourself face to face with the responsibilities of such a position? There is no time to learn and no one to advise you; each branch of the service has all it can do to look after itself and anyway knows nothing about yours. You are practically alone, with the knowledge that each day of unaccustomed field life will, slowly but surely, add to the non-effective list. You also know that there must quickly be a fight, involving a necessity for the care of an additional ten per cent. of wounded. The efficiency of that army, the care of its sick and wounded, and your own reputation, depend upon your doing the right thing *then* and *there*."

How often has it been said, "We did it before, and we can do it again." True, but at what a cost in blood and treasure!

The medical records of the Union Army in the Civil War account for over six million cases, of which number 93,969 died from wounds and 210,400 from disease. The Medical Department disbursed, between the years 1861 and 1866, nearly fifty million dollars, which, of course, was but a small part of what was actually spent on our sick and wounded.

Do the medical schools owe nothing to the country when all other schools are preparing the youth of the land for its defence? Is military sanitation the common heritage of our profession, known intuitively, and not requiring to be learned? Will not Harvard, always in advance, ponder these important questions?

In Great Britain to-day there are organized in the various medical schools, bearer companies, made up of medical students, through the instrumentality of which the students are at the same time learning the rudiments of military sanitation, and enjoying themselves in their clubs, which these companies really are. The State, appreciating the immense value of these organizations as a means to an end, the dissemination of medico-military knowledge, gives them every possible encouragement; and the healthy emulation between the different organizations is the best evidence of the individual interest taken therein.

It is high time that our own great medical schools should realize the obligation they are under to do their part in preparing for the public defence, and to meet that obligation by establishing efficient courses of instruction in military sanitation, bearing in mind the fact that this specialty includes not alone military medicine and surgery, but everything pertaining to the prevention and cure of disease and injury under the peculiar and varied conditions of military life.

◆

Original Articles.

SOME POINTS IN THE MODERN TREATMENT OF TYPHOID FEVER.[1]

BY FREDERICK C. SHATTUCK, M.D.,
Jackson Professor of Clinical Medicine in Harvard University.

THE subject on which I have the honor of addressing you to-day is one of great and living interest, appealing to almost every physician in active practice. I therefore cheerfully accepted the selection which was made for me, although I cannot flatter myself that I have anything especially new to offer you.

There is perhaps no other of the common acute infectious diseases which has such wide limits of variation as typhoid fever, and at the same time may present so many complications. A due regard for your patience, therefore, seems to make it desirable to dwell upon a few of the more important factors of the treatment of the disease rather than to attempt to cover the whole ground.

The points, then, to which I shall practically confine my remarks are: (1) Diet; (2) Intestinal Antisepsis and the Management of the Bowels; (3) Treatment of the Pyrexia, as for convenience it may be termed, though, as will be seen later, the term is in no way descriptive.

Before we consider these points in turn, let us generalize a little. It is a cardinal maxim in treatment, as applicable to typhoid fever as other diseases, that above all things we should do no harm. Again, we must never forget that typhoid involves two things which may make more or less contradictory therapeutic demands. There is, in the first place, the duration and general character of the disease which brings in its train the almost certainty of tedious convalescence, the danger of death from exhaustion. In the second place there is the constant local lesion, the intestinal ulceration, the extent and depth of which we have no means of estimating or even of inferring. We know, however, that several weeks may be needed for cicatrization after the fever has subsided. The great dangers from the intestinal lesion are, of course, peritonitis and hemorrhage.

Peritonitis from rupture of a mesenteric gland is rare and practically beyond our power to influence in any way. The great importance of early diagnosis must also be mentioned, on account of its bearing on treatment. Undoubtedly one of the causes for the high mortality, especially in urban hospitals, is the late period at which many cases are received. The disease itself, with its gradual and insidious onset and long course, is exhausting enough to the nervous system without a needlessly prolonged struggle to continue the ordinary avocations; and, therefore, if there is even suspicion of the existence of typhoid fever, the patient should be put at absolute rest until such suspicion is removed.

DIET.

This is the division of our subject in regard to which conflict especially arises between the treatment of the patient and that of his intestine. The better his nutrition can be maintained, other things being equal, the more rapid will be his convalescence, the less the danger from exhaustion. But he has ulcers in his intestine which may perforate the wall of the gut or of blood-vessels contained in it. A question which I have been asking myself of late years, and on which I am trying to get light, is whether most of us have not allowed our dietetic treatment to be too much dominated by the local lesions. "Omne ignotum pro magnifico." The pulse, the respiration, the temperature, the abdominal distention, the tenderness, the state of the tongue, the ratio between the resistance of the patient and the demands upon it, all these are more or less open to direct observation or even measurement. Not so the constant intestinal lesion. We know that it is constant, and that in a certain proportion of cases fatal hemorrhage or perforation occurs; but we have absolutely no means of determining whether a particular case is likely to escape or fall a victim to one of these dangers. Peristalsis cannot be arrested for weeks in order to carry out the broad principle of rest for an actively inflamed part. Again, are we quite emancipated from the old doctrine of the lowering treatment of inflammation? We do not bleed, purge, and puke our fever patients nowadays; we do not withdraw water; we do not restrict food as our fathers did; but it is certainly fair to state that the profession, as a whole, considers pyrexia in itself an indication for lowered diet, liquid, often exclusively milk. Is it not possible that we sometimes make a mistake in dieting our patients with reference to their fever, rather than with reference to their digestive power? It is true that self-limitation is not nearly so constant a feature of tuberculosis as it is of typhoid; but we adjust the food of our tubercular patients to their digestive limits, even if we believe them to have intestinal ulceration. We see patients with typhoid whose tongues are clean or nearly clean, and whose digestive power seems to be relatively or absolutely unimpaired. I have in mind several hospital patients who have gone safely through what I afterwards became convinced was typhoid, under extra diet, which I should not, of course, have allowed had I not at the time of the pyrexia thought that typhoid could be excluded. I trust that I shall not be misunderstood. I am neither an advocate nor silent administrator of indiscriminate diet in typhoid fever. I do not give my patient fishballs or beans, even Sunday mornings; nor pie at any time, although I esteem myself fortunate in that I live in the pie-bean-fishball belt. The local lesions preclude such things even if the pyrexia does not. But I cannot see why patients with typhoid fever should not have anything which is easy of digestion and leaves such residue as may reasonably be expected not to excite undue peristalsis, and irritation of their ulcerated Peyer's patches. Reference is to be had to the particular case. Those cases of typhoid fever in which irritability of the stomach is so pronounced that that very unfortunate term "gastric fever" may be applied to them, are to be managed in one way; those patients who are clamorous for food, in another. Milk, precious as it is in most respects, has the disadvantage of leaving a relatively enormous intestinal residue; and yet is not the intestinal lesion one cause of its great popularity and often exclusive use. I now give my typhoid patients who seem able to bear them, eggs (raw and very soft boiled), custards, animal broths, strained gruels, ice-cream, junket, blanc-mange, even scraped or very finely minced meat, in addition to their milk. During the two years I have followed this plan, I have seen no reason to regret it. I hope that it may have tended to obviate the risk of asthenia, and to have shortened the period of convalescence in a measure. The stools, of course, should be watched for the appearance of undigested food.

---

[1] Read before the Vermont Medical Society, at Montpelier, October 11, 1894.

We should remember that there was a time when we attributed a relapse to dietary errors. We have all seen the recrudescence of fever after unsuitable diet, just as we have seen it follow fatigue, emotional excitement or undue fecal retention. But I do not believe a true relapse has ever been caused by food, however unsuitable. In short I plead for individualization in the dietetic management of typhoid fever as well as anywhere else in medicine, and the administration of as much and as wide a range of food as the patient can digest and as will not prove irritating to his ulcerated intestines. Water should be given freely internally to promote the elimination of soluble poisons.

INTESTINAL ANTISEPSIS AND THE MANAGEMENT OF THE BOWELS.

Sepsis and antisepsis are nowadays words to conjure with. We have learned much of late years about the rôle played by organisms and their products in the causation of anatomical change and of perversion of function. We are so impressed by the results which, in surgical affections particularly, have followed this increase of knowledge, that we may be in danger of allowing zeal to outrun common-sense. The pathogenic germ of typhoid fever seems to have been identified. We know its habitat in the body, something of its mode of entrance, and much of what it does; and it naturally occurs to us to try to destroy it *in situ*, or at all events to neutralize its action. Hence the use of intestinal antiseptics so called, agents which are so insoluble that they can reach the intestine and there tend to check putrefactive or fermentative changes. It seems to me there can be no question that we are able to favorably modify faulty intestinal chemistry by means of these agents in many cases of intestinal indigestion; but there are certain facts of which we must not lose sight. In the first place, decomposition is physiological in the intestine. Secondly, its existence depends probably on the presence of organisms, destruction of which, were it in our power, would be a serious detriment to any person, sick or well. Thirdly, whatever the future may have in store for us, we have at present no means of directly interfering with the activity of the Koch-Eberth bacillus without interfering with the activity of the physiological intestinal microbes. Fourthly, the Koch-Eberth bacillus does not limit its residence in typhoid fever to portions of the intestine which can even theoretically be acted on locally. Again, obviously disordered intestinal action is by no means so invariable as the books would make us believe in typhoid fever, unless my experience is very exceptional. Analysis of 233 cases of typhoid fever which have been under my personal care in hospital during the last eight years, shows the state of the bowels to have been as follows:

Diarrhea a prominent symptom in	18½%
Diarrhea a transitory symptom in	18½%
Regular bowels in	14%
Constipation, usually relieved by enemata, in . .	49%

Still further, there is no evidence to show that the disease can be aborted by early purgatives — calomel, for instance — followed by more or less continued intestinal antiseptic treatment; nor have we any reason to believe that relapse is less frequent in cases systematically thus treated. It seems to me to follow inevitably from the above that there is no justification for the routine employment of this class of drugs in typhoid fever, inasmuch as evidence is lacking that they can exert any influence here, other than that which they may exert in any other disease characterized or accompanied by intestinal lesions or disordered function. Their use, in my belief, should therefore, be limited to cases in which diarrhea, very offensive movements, meteorism, or other special indications are present. Thymol, thirty grains or so a day, is highly recommended by F. P. Henry. Napthaline, I cannot commend; it produced stranguary twice, and hematuria once out of seven cases in which I used it, though the doses were larger than would be given to-day. My friend, Dr. Geo. L. Peabody, of New York, used it largely at one time, but he has now entirely abandoned it, and writes me that the cold bath is his only routine treatment. I prefer, myself, small doses of the salicylate or subgallate of bismuth. The former may be combined with beta-naphthol. Of course, the astringent properties of the bismuth compounds are to be remembered. I cannot see any objection to, and often order, a preliminary dose of calomel, especially in cases which come under observation early and without pronounced diarrhea. In cases characterized by constipation I resort to water enemata every second day. Glycerine enemata cause so much peristalsis in some people that they are not advisable in typhoid fever. It is my habit in cases of intestinal hemorrhage to administer morphia to the point of mild narcotism, with the idea of arresting peristalsis as far as may be and thus, perhaps, limiting the amount and duration of the bleeding. Laparotomy does not hold out much hope of rescuing the patient suffering from general peritonitis following perforation. A local peritonitis may get well spontaneously, or any abscess which it may cause can be opened later.

TREATMENT OF THE PYREXIA.

We now come to the most difficult part of our subject, at least so it seems to me. I mean the so-called antipyretic management of the disease. The term is really not applicable, for there can be no question that the fever in itself is not so dangerous as we formerly believed. Cardiac exhaustion is not the result of pyrexia so much as of the absorption of toxines, and in mere reduction of temperature we are not necessarily serving our patient. Even the increased comfort which such reduction may produce can be too dearly bought. I cannot but regard the internal antipyretics thus far in common use as dangerous drugs in typhoid fever. One and all they are cardiac depressants in greater or less degree. Another objection to their use, less vital, though still real, is that they obscure diagnosis. I have repeatedly seen cases in consultation where these agents seriously increased the difficulties in deciding whether a patient had typhoid fever, or if he had typhoid fever, in determining the period of the disease or the presence of relapse. Now and then I see a case in which the discomforts of the pyrexia or headache are such that an occasional dose of an antipyretic seems to me to be justified; but these cases are quite rare. Phenacetine I believe to be the safest of these thus far in common use. My colleague at the Massachusetts Hospital, Dr. E. G. Cutler, has been using this summer lactophenin in fifteen-grain doses every four hours, and expresses himself as so far pleased with its effects. It differs from phenacetine in that lactic takes the place of acetic acid, and it is said to be less depressing. Personally, I do not believe in the principle, and prefer to await further knowledge.

The cold-bath treatment was supposed by Brand and his followers to owe its efficacy to the reduction of temperature which accompanies its use; but the evidence is so strong that it is not the pyrexia that kills, that they have abandoned their first position and attribute the results to the stimulation of the nerve centres, depressed and poisoned by alkaloidal substances. It does not seem to me fair to adduce this change of base, as has been done, as an argument against the employment of the treatment. A fact may stand fast although an explanation of it may be demonstrated to have been false. This method of treatment has been slow of adoption in this country and in England, but I think there can be no doubt that it is now making real headway. Many reasons for our conservatism in this matter may be mentioned; incredulity at first, the published statistics seemed too good; also reluctance to believe that any procedure so obnoxious to the patient could be useful to him; and, further, practical difficulties in the way — the large amount of attendance and consequently increased expense involved, and the short terms of service enjoyed by most American hospital physicians. One of the staff might be willing or anxious to adopt the treatment; but it implies almost a revolution in the medical wards during six or more months in the year, and Anglo-Saxons do not like frequent revolutions, even in hospital wards, as well as do the Central American republics. As the German experience became more extended and the claims of Brand were largely substantiated in all parts of the empire — when the Frenchmen of Lyons, and Hare of the Brisbane Hospital, Australia, proclaimed their conversion — J. C. Wilson and others determed to try the method accurately and conscientiously; for it must be confessed that Brand would hardly have recognized his offspring in the earlier attempts in his treatment in this country. The facts are readily accessible in Baruch's [2] "Uses of Water in Modern Medicine," and Sihler's [3] little book on the "Hydriatic Treatment of Typhoid Fever." The latter is especially interesting in that Sihler's personal experience has been mainly in private practice. Osler tells us that his mortality in 174 bathed cases in the Johns Hopkins [4] is 7.1 per cent., and that he believes this treatment, "harsh and onerous though it be," saves three to four per cent. Since the introduction of trained nursing a marked change has certainly come over the aspect of our typhoid fever patients.

The average typhoidal symptoms are not to-day in my wards what they were when I was interne twenty odd years ago, nor is the mortality nearly as high. I believe that the cold spongings count for much in this gain; but I cannot see any reason why we should not get as good results in our general hospitals as the Germans and French do in theirs. In military hospitals and in private practice the mortality should be lower than in a general urban hospital, which receives patients late in the disease, often with constitutions undermined by drink and privation. But our results are not as good, and the only explanation I can see is our failure to adopt and fully and intelligently carry out Brand's principles. Of 236 cases treated by me expectantly and with cold spongings 23 died, a mortality of nearly 10 per cent. In the summer of 1893 Dr. E. G. Cutler had a bath-tub put in the male ward, and I continued its use when I succeeded him, and am using it now; but in this period my number of bathed cases is too small to enable me to draw any conclusions. Nearly all the patients object to it, some bitterly; but this is far outweighed by statistics from which there seems to be no escape. With the cold bath in private practice, I have no personal experience, mainly because I have not had a case of typhoid fever in my own practice for several years, though I have seen many cases in consultation; but it is my belief that we shall find the objections to its use less formidable than we are now inclined to think them. Sihler's experience speaks in favor of this view. For some years now the cold spongings have been made much more efficient in the Massachusetts Hospital by rolling up the rubber sheet placed immediately under the patient at the sides so as to form a trough. We sometimes use water at 60°, sometimes water with a little ice in it to make up for the heat absorbed from the body. One attendant can use cold water in this way, while two are almost indispensable for the tub-bath, with affusion to the head and friction to the body. The cold wet-pack can also be given by one attendant. Baruch cites Leibermeister's assertion that five wet-packs of ten minutes each are required to abstract as much heat as one full bath for fifteen minutes. Within the last fortnight these three methods of using cold water have been tried by the kind permission of my colleague, Dr. Cutler, successively on several patients in the ward in order to contrast the results. These show no marked or constant difference in the antipyretic value of cold sponging at 60° for twenty minutes, the cold-pack at 60° for fifteen minutes, or the full bath at 70° for ten to fifteen minutes. A full bath at 60° has a much more decided antipyretic effect. A temperature of 102.5° is considered as an indication for cold water.

After all is said, the argument for the strict Brand method is that a mass of statistics from different observers in different parts of the world show better results under its use than those who do not use it can bring forward. A. L. Mason[5] reports that of 676 cases entered on the books of the Boston City Hospital as typhoid fever in 1890 and 1891, treated with spongings and expectantly, the mortality was 10.4 per cent., and he wisely cautions us against drawing conclusions from small numbers of cases. My statistics afford a good illustration of the need of this caution. In the years 1886 to 1888 inclusive, 129 cases of typhoid came under my care in the hospital, with a mortality of 8.5 per cent. My service was then changed from the summer to the winter term, and in the next five years 104 cases came under my care. In these the mortality was nearly 11.5 per cent., practically three per cent. higher, and yet cold sponging was much more efficiently practised in the latter than in the former series. A few cases brought moribund to the hospital, or an accidental series of the graver accidents of the disease makes a great difference in small totals.

---

[2] Physicians' Leisure Hour Series, Second Edition, vol. ii, 1893.
[3] Cleveland, 1891.
[4] Johns Hopkins Hospital Reports, vol. iv, No. 1.

The use of alcoholic stimulants calls for the exercise of more or less judgment. In a considerable proportion of cases they are never required unless the tub-bath is used, reaction from the temporary depression so often following this method of the application of cold water being hastened by small quantities of spirits and water.

In conclusion, it only remains for me to express the pleasure which I have in meeting the Fellows of this Society, and to thank you for your courteous attention.

◆

A FEW CASES OF DIPHTHERIA TREATED WITH ANTITOXIN.

BY FRANCIS H. WILLIAMS, M.D., BOSTON.

Antitoxin has been used in Germany and France for a considerable period, and for many hundreds of patients with remarkably successful results by men who have had experience in treating diphtheria, and the drawbacks of the treatment are slight in the face of so serious a disease. I have employed antitoxin recently at the Boston City Hospital and in private practice, and am asked so frequently about its use that I think the following cases may be of interest. My experience with it thus far has been small (about twenty cases) but it is already evident to me that in suitable cases the results wrought by this remedy are wonderfully prompt and good. It is likewise evident to me that in its use certain precautions should be taken.

There are three European makes of antitoxin — Roux's, Aronson's and Behring's. It is also now being made in New York. It is essential to use a trustworthy preparation. The first make has not reached this country, so far as I am aware. Behring's has three strengths. No. 1 is the weakest, and is used for immunization, one-quarter of a bottle being the dose; the duration of this immunity is uncertain; it continues probably only two or three weeks; the dose may then be repeated; or No. 1 may be used for treatment if injected in the earliest stage of the disease. Nos. 2 and 3 are used for treating the disease; No. 3 being two and one-half times stronger than No. 1 and correspondingly expensive.

For injecting the solution I use ordinary syringes with a glass barrel, one of which holds 5 c. c. and the other about 10 c. c.; each has the fine needle of a small hypodermic syringe. The syringes should be carefully cleansed first with alcohol and then with a 1 to 20 solution of carbolic acid immediately after use. The injection should be made *subcutaneously* into the side of the thorax or the thigh. The skin should be carefully cleansed with antiseptic solution at the point chosen for injection.

As a preventive I have used antitoxin in five individuals, all adults, the dose given being 2 c. c. of Aronson's solution; these persons did not develop diphtheria; there was no action from the antitoxin so far as I saw. If the individual who has been given a small dose develops diphtheria soon after, it is said that he has it in a milder form.

For treating the disease a much larger amount is required; and, as already indicated, the solutions should generally be stronger. I will first consider the use of antitoxin in a desperate case.

Case I. A. B., two years old, had been ill five days when I saw him, at which time the false membrane had evidently extended into the smaller bronchi. It seemed an entirely hopeless case; still at the earnest desire of a physician and friend I injected 10 c. c. of antitoxin. There was no change. The child died in twelve hours.

Every day's delay in administering the antitoxin lessens its usefulness. It should be given if possible before the third day. From reports thus far published it is far less serviceable in the late stages of the disease, and much larger doses are required at this time than at the beginning. Further, it may be added here, that the remedy is chiefly serviceable against the bacillus of diphtheria; if streptococci with the complications to which they may give rise are also present, it is far less efficacious.

Case II. T. M., five years old, well developed and in excellent condition. I was told that her brother had died of diphtheria three weeks before; she had complained of her throat for two or three days before entering the hospital. When first seen by my house-officer both tonsils were moderately congested and somewhat edematous. On the left tonsil there was a patch of false membrane about an eighth of an inch in diameter; the right tonsil and the posterior wall of the pharynx were covered with false membrane. By the following morning there was much more swelling and edema, especially of the uvula, and the false membrane had extended over the right anterior pillar and on to the left anterior pillar. The swelling of the glands in the neck on the right side was very marked, and the general condition of the patient and the throat were worse than at entrance, twelve hours before. She took food only fairly well, as swallowing was difficult. Bacilli of diphtheria were found in culture. At this time, when I first saw her, I injected 10 c. c. of Behring's No. 2 solution subcutaneously into the thigh. All other treatment was omitted. In the afternoon thereafter the patient was rather sleepy. On the morning of the third day, that is, twenty-four hours after the injection of the antitoxin, the patient's general condition had improved; in the afternoon the area of false membrane was smaller, and it was loosening and coming off. I took away with the forceps a piece of false membrane, one-half by three-quarters of an inch, which was hanging by a thread in front of the uvula, as I feared that it might be drawn into the trachea and choke the child. Twelve ounces of milk and two eggs were taken on this day. The urine was small in amount, and passed only an ounce at a time. Two loose dejections in the afternoon. The general and local improvement during these twenty-four hours was marked, and more rapid than usual in patients in her condition. On the fourth day the patient eat and slept well. There was less false membrane; a little remained on the right anterior pillar and there was a small spot about an eighth of an inch in diameter on the left tonsil. Less congestion and swelling. On the fifth day the throat was nearly clear of membrane; only a small area remained on the right tonsil. Patient in excellent condition. I did not see her again, as my service was at an end; but by Dr. Withington's permission I give a further record of the case. On the eighth day the throat was clear of false membrane, and she was doing well. On the ninth day a rash of scarlet fever appeared on her chest, and spread all over the body. She vomited several times. On the eleveth day the respirations were from 50 to 60 a minute; but careful examination of the lungs and heart did not reveal anything else abnormal. On the fourteenth day there were bacilli still in the throat. When I last heard from her she was still desquamating and doing well.

---

[5] Boston Medical and Surgical Journal.

Case III. S. E., a well developed child four and one-half years old, whom I saw in consultation with Dr. H. W. Broughton of Jamaica Plain. There had been diphtheria in the neighborhood. Six days before I saw the child she had been ailing, and five days before she had vomited. On what I will call the second day of the disease, although probably the disease had begun some days earlier, Dr. Broughton was called, and found false membrane on both tonsils and on the posterior pharyngeal wall. On the next day, when I first saw her, the temperature was 102°, pulse 120. The local symptoms were severe; there was much congestion and swelling; both tonsils, the uvula, both sides and the posterior wall of the pharynx, were covered with a thick, false membrane; and there was complete aphonia and croupy breathing. I injected 15 c. c. of Behring's solution of antitoxin, No. 3 (the strongest) — 5 c. c. in each of three places on the outside of the thigh. On the third day of the disease, twenty-four hours after the injection of the antitoxin, the false membrane had begun to loosen and looked moister. During the day the throat was sprayed twice with a twenty-five-volume solution of hydrogen dioxide, which assisted in removing the false membrane from the pharynx. The improvement by the afternoon of this day was unquestionable; barring accidents the patient seemed likely to recover, although thirty-six hours before her recovery seemed very doubtful. At 9.15 p. m. of this same day Dr. Broughton sent for me again, as the child had difficulty in breathing, and there was marked retraction. It seemed as if tracheotomy might become necessary directly. Dr. Broughton gave the child a teaspoonful of ipecac as an emetic; and three or four minutes later she got up a piece of false membrane one-quarter by one inch and a half long, and the breathing improved immediately. About half an hour later a small amount of mucus was vomited. Evidently the false membrane was separating in the larynx as it had done in the pharynx. It seemed to me now that tracheotomy might be avoided. This early loosening of the false membrane in the pharynx (as seen in Case II), by which this membrane may get into the windpipe and choke the patient, and the rapid loosening of the false membrane in the trachea, is a danger about which one must be on one's guard in using antitoxin. Dr. Broughton remained at hand during the night, and every preparation was made for tracheotomy in case it should become necessary, but fortunately it did not. On the third day the temperature was normal, pulse 104, respiration 24. The patient took nourishment well, but spoke in a hoarse whisper. Pharynx almost clear of false membrane. On the tenth day she is reported as doing well except that she has a whispering voice; up and dressed; bacilli still in culture.

Case IV. S. J., twenty months old. General condition excellent. Seen in consultation with Dr. M. A. Morris, of Charlestown, when the patient had been ill only one day. Glands in the neck enlarged; tonsils and pharynx covered with false membrane; very irritable. At 1.30 p. m. pulse 136, temperature 101.8°, respiration 32. I injected 10 c. c. of antitoxin, choosing Behring's No. 2 solution. (The following day the bacterial examination showed the presence of the bacilli of diphtheria.)

	Pulse.	Temp.	Resp.
5 p. m.	134	101	32
8 p. m.	136	99.2°	32
11 p. m.	132	101°	32
2 a. m.	130	99.8	30
5.30 a. m.	120	99°	26
12 m.	124	99°	28
3 p. m.	120	99°	32
8 p. m.	120	98.6°	30
10 p. m.	114	98.6°	28

On the third day of the disease he took nourishment well and was playful. The swelling of the glands seemed to be less, and membrane growing softer. On the fifth day pulse 102, temperature normal, respiration 28. Swelling and membrane much diminished. Child seemed perfectly well.

The advantages of this method of treatment especially in young children are evident. Local applications to the throat of this child would have been impracticable. Without antitoxin it would have been wisest to let the disease run its course, unless it became laryngeal, when the chances of recovery would have been small.

Case V. J. M., ten years old. Seen in consultation with Dr. W. O. Hunt, of Newtonville. Bacilli of diphtheria were found in culture. Septic case, with nasal discharge; false membrane covering the tonsils and pharyngeal wall. Aronson's solution was injected subcutaneously on the second day of the disease, when I first saw the patient. A two-volume solution of hydrogen dioxide was applied in spray to the nose and later I increased the strength to five volumes, as this was well borne. In the throat I used a twenty-five-volume solution. The bacilli were not found in the throat on the seventh day of the disease. The recovery was rapid.

Case VI. T. P., three years old. Ailing the evening before I saw her. In the morning I found the tonsils much swollen, and covered with false membrane. The false membrane also covered the walls of the pharynx. The glands on both sides of the neck were noticeably enlarged and tender. The child was restless and disinclined to take its food. Bacilli of diphtheria found in culture. I injected 10 c. c. of Behring's No. 2 solution of antitoxin at 10 a. m., and the throat was sprayed with a twenty-five-volume solution of hydrogen dioxide every three hours. In the evening the child was no worse than in the morning. Drowsy during the afternoon. The next morning, twenty-four hours after the injection of the antitoxin, the child was better. More than two-thirds of the false membrane had disappeared from the throat. There was less congestion and swelling than in the evening before. The glands were still enlarged, but not so sensitive as the day previous. She swallowed more easily, and had taken three pints of milk in the past twenty-four hours. Played with small toys, but too continuous playing was forbidden lest it should tire her. On the fifth day the throat was clear except a small spot of membrane one-eighth of an inch in diameter on the right tonsil. The twenty-five-volume hydrogen-dioxide solution in spray was continued every four hours. On the sixth day of the disease the throat was clear and nearly normal in color, and bacilli of diphtheria were absent. The child seemed perfectly well.

Cases V and VI, in which the bacilli disappeared promptly, had strong dioxide solution locally.

I will not lengthen this sketch by outlining more of the cases in which I have used antitoxin. If there is no improvement within twenty-four hours, and if the pulse and temperature remain high, a second injection should be made. That many of the cases lose their serious aspect within one or two days after the antitoxin has been used is noteworthy. As soon as a case of diphtheria occurs in a family a preventive dose of antitoxin may be given to all of the children.

In Europe local treatment is recommended to be used with antitoxin. In some of my patients I have used antitoxin alone, and in others I have combined with it local treatment with a twenty-five-volume acid solution of hydrogen dioxide in the throat (made from the U. S. Pharmacopœia ten-volume solution of the Oakland Chemical Company); and in nasal diphtheria I have used in the nose a dilute (two-volume) solution. These solutions may be used every three hours in spray. The loosening and softening action of the antitoxin, together with the disintegrating action of the hydrogen-dioxide solution remove the membrane rapidly, and the hydrogen-dioxide solution lessens, if it does not obviate the danger of pieces of false membrane getting into the trachea from the pharynx.

In treating diphtheria, I now, as a rule, inject antitoxin, and apply a spray of a twenty-five-volume acid solution of hydrogen dioxide locally in the throat, and a two-volume solution in the nose once in three or four hours, and use no additional treatment. Good food, absolute rest, protection from draught or from a temperature that might give the patient a cold, are to be insisted upon. In some cases a little stimulation may be desirable.

◆

CASES FROM THE UTERINE WARD OF THE CITY HOSPITAL.[1]

BY JOHN G. BLAKE, M.D.

During the summer just passed, among the mass of uterine cases in my service, the following appeared of sufficient interest to report. They are: a case of imperforate hymen with retained menses — operation, recovery; a case of what might easily pass for hysterical paraplegia in a girl fourteen years of age menstruating for the first or second time — recovery; a ruptured tubal pregnancy with specimen — operation, recovery; a peculiar vesico-vaginal fistula — operation, recovery; and a case where the round ligaments were absent as the result of a previous laparotomy — a surgical curiosity. A peculiar coincidence in Cases I and II was, that I was first called to relieve retention of urine in each case. As both subjects were girls, quite young, it seems a little singular, although nothing more than might be expected from the diseases. The detailed histories are from the hospital records, which I have tried to make complete as far as I could under the difficulties attaching to an ignorance of our language in Cases I and II.

Case I. A girl, eighteen years of age, who worked regularly in a confectionery store, was reasonably well and not conscious of any functional irregularity, was thrown into a state of hysterical grief by the sudden death of her father. After several hours' suffering she began to complain of pain in the lower abdomen, and I was sent for. I found a swelling which resembled pregnancy at four months. As that was out of the question, and the surroundings and circumstances did not admit of much inquiry, I fortunately thought of a distended bladder, and solved the difficulty by passing a catheter and drawing off nearly two quarts of urine. This relieved the girl for a time. After the funeral, I examined into the case more fully, and found that the pain, which now became of a bearing-down character and constant, was independent of the bladder. An examination revealed an imperforate hymen, and elicited the fact that the girl, although between seventeen and eighteen, had never visibly menstruated.

An aspirating-needle of large size was passed, and about a pint and a half of fairly thick dark blood was evacuated, perfectly inoffensive. After a few days the patient was etherized and the hymen freely incised. The cavity was thoroughly washed out with a weak corrosive solution, and then packed with iodoform gauze. The after-treatment was not different from that pursued in similar cases. The strictest antiseptic precautions were observed throughout all stages of the case, and the recovery was uneventful and complete. Twenty-eight days after the operation patient menstruated normally, and has been perfectly well since. It was found that the opening showed an inclination to contract so that patient was furnished with a large-sized bougie, which was to be passed occasionally.

In a similar case I should act differently in regard to the hymen, excising it completely rather than incising it. The tendency to contraction in operations about the vagina, such as atresia, and for bands as well as for imperforate hymen, is, we all know, very marked. I should not be surprised if in the future, particularly if patient contemplates matrimony, excision would be required.

This case illustrates perhaps as well as any, the great value of antisepsis. In old times the fear of peritonitis was a bugbear about operations which every surgeon had to reckon with, while now the thought of it does not enter seriously into his consideration of the case. Whether the fluid distends the uterus and Fallopian tubes or simply the vagina, has never to my knowledge been demonstrated. Very likely the tubes are filled and stretched, and on this account may have rendered the cases more subject to peritonitis.

Case II. Acute myelitis following hemorrhage.

Marie, fourteen years of age, recently arrived from Italy, a strong, healthy-looking girl, developed physically much beyond the average American or

---

[1] Read before the Obstetrical Society of Boston, October 13, 1894.

Irish girl at the same age, was seized with retention of urine quite suddenly, accompanied with loss of power and feeling in her lower limbs. As far as I could ascertain, symptoms came on during menstruation, which had appeared for the first or second time, and was present at the time of my visit. The condition of paraplegia was absolute, complete. There had not been incontinence of feces, and in fact there was constipation for the two or three days preceding the attack. As the case began like one of hysterical paralysis, it was watched for two or three days, in the hope that amelioration might attend treatment, but without result. Patient was then sent to the City Hospital and seen by Dr. Bullard. By special request she was allowed to continue in the uterine ward under my supervision, and the treatment recommended by Dr. Bullard followed. The result has been very gratifying. She is steadily but slowly recovering the use of her limbs, has very good sensation, wheels herself about, and promises to eventually do very well.

The rapid recovery and absence of certain symptoms usually found in this disease clouds the diagnosis not a little. The hospital record is as follows:

M. O., age fourteen, single, native of Italy. As patient does not speak English, history was not obtained. Patient's mother had hemiplegia.

Patient entered hospital June 29, 1894, with a history of paraplegia of the lower extremities coming on during one night, about a week previous to entrance. Examination found motion and sensation above waist normal; from the fourth lumbar vertebra on the right to the second on the left, sensation and motion absent; no reflexes detected; paralysis of bladder and rectum, with incontinence of urine and feces. There was slight discoloration, with slight abrasion of the skin over both buttocks, which are impending bed-sores. Urine negative.

July 5th. Dr. Bullard saw the case, and made a diagnosis of acute transverse myelitis in the lumbar region. Integument over buttock not improved under treatment of zinc ointment.

July 7th. Sensation over lower extremities normal. No motor power, however. Treatment confined to laxatives. No change in condition of sphincters.

July 12th. Bed-sores almost well. Patient continues to have no pain. Some control of the bladder. Incontinence of feces continues.

July 16th. Some motion noticeable.

July 26th. General condition excellent. Patient sitting up in a chair. Defecation still involuntary. Motor power rapidly improving.

August 4th. Patient has been having some lancinating pains in thighs accompanied by prickling sensations in feet and legs.

August 8th. Patient has complete control of sphincter ani, and fair control of vesical sphincter. Nux vomica has been given during past five days, but as it seems to cause pain was stopped.

August 22d. Complete control of sphincters. Faradism to lower extremities commenced.

September 5th. Patient gaining some strength in lower extremities. Some tendency to bed-sores over buttocks. Sits up several hours a day. Appetite good; general condition excellent. Sphincters and sensation normal. Not yet able to walk.

October 13th. Able to get out of bed without assistance, and to stand but not walk. Has perfect control of sphincters. [Walking about from ward to ward on crutches as this goes to press.]

CASE III. Vesico-utero-vaginal fistula.

J. O'N., age twenty-eight, married, native of Ireland, entered hospital July 21, 1894. Has had five children born at full term, and two miscarriages. The last child was born on the 30th of June, 1894, being delivered by instruments without ether. Duration of labor not over seven hours.

July 21st. Entered with temperature of 102°, pulse 140, complaining of pain in back and bladder. Examination found vagina very much inflamed, sensitive, and bleeding to touch. Buttocks covered by an erythema caused by the action of the urine. Just anterior to the cervix, laceration about an inch in length extending into the bladder, somewhat transverse, and involving the wall of the cervix, through which the urine dribbled constantly. Profuse muco-sanguineous discharge from cervix. It was deemed best to first heal the inflamed vagina before repairing laceration. The insertion of dry packing twice a day with iodoform accomplished nothing in four days. Oleate of zinc was then applied, dusted over the vaginal walls; and in the course of four or five days inflammation had entirely disappeared. Tenderness of vagina almost gone. Urine negative. During this time the temperature ranged from 101° to 103°, and there was considerable gastric disturbance.

July 31st. Operation under ether by Dr. Blake. Cervix repaired in the usual manner. Silver-wire sutures were used. Vaginal lacerations were then denuded, and edges approximated. Soft-rubber catheter introduced into the bladder. Patient was kept in the ventral position for fourteen days. Bowels were kept closed for fourteen days by the use of morphia. During the first five days following the operation the temperature remained at about 102°. Paroxysms of pain occurred several times a day, and were very severe, lasting, however, only a few minutes, and were referred to the uterus. Some leakage into the vagina at this time.

August 12th. Silver-wire sutures removed. Patient to be kept in the ventral position a few days longer. During the past week temperature has been normal. Slight dribbling of urine still present. This continued until patient's discharge to Convalescent Home, August 25th. At this time she was feeling perfectly well and her general condition was good. There was no pain or urinary discharge, only an increased mucus, inodorous discharge from vagina.

After her return from the Convalescent Home, the patient called on Dr. Blake at his office, September 10th, and stated that she was entirely free from discharge of any kind from the vagina, and was on her way home, perfectly well, to resume housekeeping and family cares.

The point of interest in the case and the difficulty in operating was how to close the uterine tear through which the urine passed so freely into the cavity and out through the cervix. Very great pains in the preparation for, and introduction of sutures through uterine parieties was needed before taking up the vaginal laceration. Ten fine, silver-wire sutures in all were required. The laceration seemed T-shaped, tearing transversely outside of cervix and longitudinally along uterine canal.

The modus operandi for the production of an injury of this shape and extent seemed to require that one blade of the forceps should be outside the cervical canal and the other within. It is hard to realize, however, that in these days such a condition of carelessness and ignorance should exist. Evidently, however, the injury was a laceration and not a slough; and this, no doubt, aided the cure. The insistence upon the ventral position for fourteen days, keeping the bowels unmoved during the entire period and the bladder constantly empty, were all considered absolutely essential. The complete cure by a single operation was more than could be hoped for without taking advantage of every possible aid.

[Since reading this article, the attending physician states most positively that the fistula resulted from a rupture of the uterus followed by cessation of pains and that the forceps were applied in the usual manner to complete the labor. After a month at home patient began leaking slightly again. She re entered the hospital where Dr. C. M Green, surgeon on duty, successfully operated by splitting up the cervix freely on each side and closing the opening. Up to date she has continued well. The cervix will be repaired later on.]

It seems out of place to spend so much time on such a simple thing as a vesico-vaginal fistula, which Dodo-like is almost extinct, but the time may not be wasted if members are reminded that close attention to the petty details of after-treatment are absolutely essential to success.

Case IV. Extra-uterine pregnancy.

G. M., age twenty-three, married, born in Gloucester, entered hospital July 19, 1894. Menstrual history negative; last appearance June 15th. Had one child about two years ago. About one month ago, without known cause, except perhaps catching cold, the patient was suddenly seized with severe acute pain in right hypogastric region, lasting about two hours. Two days later she had a similar attack, losing consciousness for about one and one-half hours. During the next two weeks she had an attack every day, in the first two of which she lost consciousness. After two weeks it settled down into a dull, steady ache which has remained ever since, night and day, but not sufficient to prevent sleep.

Five or six days ago she noticed a swelling in the right hypogastric region, about the size of a hen's egg, not very tender, which she could pick up in her fingers. The next day it had grown to be about one-third larger, and she could not pick it up. Since then it has not changed. She has had no sharp attacks of pain in this lump, but there has been a steady dull pain, with a sensation of tightness. She has been confined to bed from the beginning. About ten days after going to bed she began to flow, the blood at first being clotted. This was about two days after her usual time for being unwell. There has been dribbling of blood ever since. An exacerbation of about three or four days, July 13th. She uses three or four slightly soiled napkins every day.

At time of entrance pulse was 100, temperature 100.4°. Patient complained of pain in the hypogastrium, running into right thigh. Urine showed a trace of albumen and considerable pus; no casts seen.

Examination finds in right ovarian region a globular mass, very tender to pressure, but without distinct fluctuation. Bulging and fluctuation in Douglas's sac. More or less clotted sanguineous discharge from uterus. Case was believed to be either one of abscess or hematocele.

July 20th. Patient etherized. Needle introduced into swelling in Douglas's pouch, just behind cervix. Grumous blood was discharged through canula. After half an ounce was allowed to escape canula was withdrawn. Case evidently one of ruptured extra-uterine pregnancy. Was recommended for laparotomy.

August 14th. Operation by Dr. Gavin, assisted by Dr. Munro. Incision made over the tumor down into the peritoneal cavity; length of incision, four and one-half inches. Between the layers of the right broad ligament was a tumor the size of a baseball. Incision into this tumor evacuated a considerable number of large, dark clots. Tumor apparently a cystic growth. Ovary attached to the outer side of mass, but apparently normal. Ovary and tube were so incorporated into tumor that it was impossible to remove tumor without removing ovary. During the excision of tumor a number of clots escaped into the abdominal cavity and were washed out with distilled water. There were a good many adhesions around the tumor, which were separated with difficulty. Ligature passed through the broad ligament, next to the uterus, and tied, including the tube. Right appendages of broad ligament with tumor attached were excised. Abdomen douched with distilled water. Glass drainage-tube placed in wound, down to the bottom of right iliac fossa. Abdominal wound sutured through entire wall. Two iodoform gauze wicks. Baked dressing covered over by rubber dam, which was covered by a second layer of baked gauze.

The pathologist reported that the ovary contained two small dilated Graafian follicles and a corpus luteum with firm, undulating, yellowish periphery on section. There was red-brown fluid within the Fallopian tube, showed uterine end undilated, about four inches long. A fine probe passed into the lumen entered a sac the size of a large hen's egg. On one side of the wall of the sac was an area three inches in diameter and four millimetres thick, of a yellowish-red color. A small piece tossed in salt solution from area showed chorionic villi, with vessels and fatty degenerated cells. Sac, and on one side end of fimbriated extremity of tube. Sac containing 100 c. c. of dark clotted blood, and wall of sac formed by undilated proximal end of tube.

Convalescence from operation was marked by a sudden hemorrhage of about one pint when gauze was removed from wound one week after operation, and by another smaller hemorrhage from a similar cause two days later. Patient is now convalescent, and wound healed excepting a small granulating area.

Case V. An attempt to perform an Alexander operation in a case in which the round ligament had been removed in a previous laparotomy.

K. W., age twenty-nine, single, born in Ireland, school-teacher, entered hospital May 22, 1894. Menstruation normal with the exception of some associated pain, before, during and after. This pain was severe enough at times to confine her to bed. There was a history of laparotomy in January, 1893, the object and nature of which the patient knew nothing. The symptoms for which patient entered hospital were severe backache which incapacited her for earning her living. Vaginal examination found uterus retroverted and retroflexed. No evidence of uterine disease. Was readily replaced and pessary inserted.

June 2d. Vagina has proved itself to be intolerant to a pessary, and Alexander's operation is recommended.

June 5th. Operation under ether by Dr. Blake. After a search of two hours without finding the round ligaments, the incisions were sewed up. It is probable that the round ligaments were removed in the laparotomy above referred to.

Patient made a normal convalescence, and was discharged to Convalescent Home, with recommendation that a ventro-fixation be done.

◆

TREATMENT OF URETHRAL CHANCROIDS.

BY F. C. CLARK, M.D., PROVIDENCE, R. I.

No more obstinate and trying case presents itself to the surgeon, perhaps, than the chancroid of the male urethra. A chancroid is ordinarily a matter of so little moment, and the proper remedy so ready in every physician's office, that the cure of this disease seems almost child's play. But in the case of the urethral ulcer the destruction of the virus of the local sore is only a tithe of the work to be done; for it is then, and then only, that the real difficulty in the cure begins.

The authoritative works on the subject are so pessimistic in their views, or else so chary of giving advice which is generally ***not well known***, that we can gain little or nothing from them. After consulting ten or a dozen reputable works on venereal diseases without finding hardly a hint of the proper course to be followed in all such cases, the writer was left to his own resources; and he fell on a plan which gave him surprising and gratifying results.

It is not our intention to enter into any discussion relative to the possibility or the impossibility of a soft chancre appearing in any and every part of the male urethra. Suffice it to say that it must at least be seen to be diagnosticated. In one of the two cases under examination the ulcers appeared wholly within the urethra; in the other, an ulcer first appeared near the inner edge of the meatus, and then others within the urethra, due to reinoculation — none were visible beyond an inch from the meatus. The age of each patient is of no interest to us; neither is his condition nor color. They were strong, healthy males. Both, part of the time, were under treatment together. The second case had the advantage of the first, so that the two were pronounced well within a few hours of each other. The extension of the disease in the second case undoubtedly delayed his cure; for as many as fifteen or twenty new ulcers appeared during treatment, due to reinoculation, which had to be retouched with caustic.

In the treatment of this particular local sore, as in others, two axioms, we might say, should be followed: one the absolute destruction of the virus; the other the healing of the sore.

A few words only will detain us on the first point. The only difficulty experienced here will be in getting at the sore. When the chancroid is situated from a half to a full inch from the meatus, this is not so easy a matter. The urethra must, therefore, be distended to that point. A Toynbee's ear speculum will do it, or any ear speculum; or a pair of dressing-forceps, well oiled and insinuated into the urethra and then the blades carefully spread apart as far as may be necessary, is as good as the best meatoscope. In a person of a sensitive organization the instrument used may be rubbed with an ointment of cocaine (four per cent.). In this way one may be enabled to touch each sore thoroughly, and destroy the virus on one application. Don't tamper with the disease. Use strong nitric acid. A small pointed strip of asbestos, or a piece of lint or cotton fixed on the end of a silver probe, or a pointed sliver of wood (like a match), dipped in the acid and applied to every part, will answer.

Now, having destroyed the poison, every encouragement must be given to the healing process, to prevent reinoculations, and thus spare the patient additional, and oftentimes, unnecessary pain. The disease must now be treated like any ulcer of the urethra, not venereal. It is now a matter of pure surgery; and it lies wholly within the power of a surgeon to relieve the trouble or to stumble along in the dark to his own disgust and the patient's disappearance.

In any operation within the male urethra it is the desire and aim of the surgeon to keep the wounded or cut surfaces of the canal apart — for two reasons, namely, to favor healing and to prevent narrowing of this canal. The same is true in cases of urethral chancroid. The diseased surfaces in the latter case, for like reasons, are kept apart, and also for the purpose of preventing future reinoculation, should any virus be left or any sore at first escape notice. Otherwise, by continual reinoculations the cure will be greatly retarded.

A hundred methods may be employed to keep the diseased surfaces well separated. Whatever is used the principle remains the same. The writer employed pledgets of absorbent cotton (lint or any other soft and pliant material may be used) smeared with petroleum jelly. When a stimulating ointment was desired, a mild ointment of red oxide of mercury was used, in the proportion of one part of the officinal ointment to seven of lard or of simple cerate. When the patient wished to pass his water, the cotton was withdrawn and a short piece of a gum catheter (say No. 8 or No. 10 Eng.), long enough to reach beyond the diseased portion of the urethra, and well smoothed at the cut end and well oiled, was introduced. In this way the tender surface would not be torn by the passage of the urine. After every urination a fresh piece of cotton, treated as before, was introduced. In every case the temporary catheter must be well cleansed, and disinfected if possible. Strict cleanliness of person, instruments and appliances was enjoined. All old dressings (if any are used) should be burned up.

Instead of this alternate use of the pledget of cotton and of the catheter, perhaps some advantage in the treatment of such cases might be gained by leaving a short catheter in the urethra until a cure is effected. In this case the catheter should be removed and another introduced, or if only one is employed the urethra protected while the patient cleanses the instrument before its reintroduction. Catheters of light weight are to be preferred, especially if to be retained in the urethra during treatment. After the disease disappears, the gum catheter should be burned. As the writer had but two cases, the permanent use of the catheter could not be tried. Should he have another case, he might try it.

The best topical application besides the stimulating ointment of mercury is one of a liquid character, and which can be used by means of a syringe. Their number is almost legion. The writer employed both the black and yellow washes (lotio nigra and lotio flava); but they did not seem to have any advantage over the red oxide of mercury. Such washes may be applied two or three times a day, and diluted to suit each case. Zinc, lead and copper salts may do good.

However, whatever treatment is followed, that which is simplest, neatest, and gives the most comfort to the patient — is most in accordance with common-sense — is the ideal one, and should be selected in preference to putting into practice any pet theory by which nothing additional is gained.

NOTE ON THE BROMIDE OF ETHYL.[1]

BY CHARLES GREENE CUMSTON, B.M.S., M.D.

Bromide of ethyl or hydro-bromic ether, was discovered in 1828 by Serullas, the formula being $C^2 H^5$ Br. It is most important not to employ the bromide of ethylene, a very toxic substance, only slightly volatile and a bad anesthetic. Bromide of ethyl is a very volatile liquid, its boiling-point being 40.7° C. It burns with difficulty. Its density is 1.40.

When fit for administration the liquid should have the following properties: (1) It must be extremely volatile; when poured on the hand, it should evaporate completely and rapidly without leaving any deposit. (2) It must be colorless; if it is yellowish, this signifies that it is decomposed and that a little bromine is set free, which would irritate the respiratory system. (3) Its odor must be sweet and ethereal.

The purity of the drug depends (1) on the manner of its preparation, and (2) on the manner of preservation. The only correct manner of preparing it is by decomposing alcohol of wine by sulphuric acid in presence of bromide of potassium, and afterwards rectifying it by distillation on oil of sweet almonds. Light, dampness, contact of air decompose it. It should be kept in tubes hermetically closed by a flame.

PHYSIOLOGICAL ACTION.

The studies of Dastre have proven that bromide of ethyl is adapted for use in the human subject. Narcosis by this drug is similar to that of chloroform. Both act on the brain, then on the medulla, and lastly on the bulb. Chloroform chemically irritates each centre before it paralyses them; bromide of ethyl acts directly, there being consequently no excitement and no laryngeal reflex to be feared. Still more, it is a vaso-dilator; it produces congestion of the head, and thus no syncope is to be feared; at the same time, this permits of the sitting posture of the patient, so necessary in certain operations on the throat.

MODE OF ADMINISTRATION.

The dose of bromide of ethyl varies according to the age of the patient. In children from two to ten years, I employ from 12 to 15 grammes; for children over twelve and adults, from 15 to 25 grammes is to be given, according to the constitution of the subject. The patient should be instructed emphatically to take nothing to eat, not even a glass of milk on the morning of the operation. The mask should cover the mouth and nose perfectly, and no air be allowed to enter; and on this point I insist. The entire dose should be given at once. Twenty to thirty seconds is sufficient to obtain sleep, and the operator should be in readiness to commence as soon as narcosis is complete. The insensibility lasts from two to three minutes, sometimes a little longer. When narcosis is complete, the mask is removed; and under no consideration should it be again applied. Patients coming out of the narcosis are usually calm. They slowly open their eyes and speak coherently, remembering nothing of what passed. The patients are up on their feet in a few minutes perfectly well.

I have given or have had bromide of ethyl given under my supervision some two hundred times. At the Boston Dispensary I employed it in the surgical service of Dr. E. O. Otis in some ten cases, and have given it in private practice at my office three times since my return to Boston. Some deaths have been reported; but if my methods of administration are followed, I feel sure that no accident can occur.

USES OF THE BROMIDE OF ETHYL.

It may be said at once, that all short minor operations can be done during narcosis with this drug. I have several times dilated the sphincter ani for fissure, with complete success. Superficial tubercular glands can be removed, abscesses opened, etc. In a case of mammary abscess of considerable extent, that I operated on a year ago, I was not only able to make a deep incision, but used the curette freely, the patient being entirely unconscious of the painful operation. Narcosis with this drug is particularly good when examination of the pelvic organs is to be made or a pessary introduced, for there is complete relaxation of the abdominal muscles, thus permitting an easy palpation. I could enumerate many other cases in which I have employed the bromide of ethyl but I think the above will suffice to show what may be accomplished with it.

In closing, let me add that no disagreeable odor remains in the room, and the patient is able to enjoy his breakfast without nausea or headache. I would formulate the following rules as to the administration of this useful anesthetic:

(1) Bromide of ethyl should be carefully distinguished from the bromide of ethylene.

(2) Only employ a pure, and, if possible, a freshly prepared bromide of ethyl.

(3) Only give the drug *en masse*, as some patients have died by giving small and continued doses.

(4) Do not prolong the administration over *one minute.*

(5) Once the mask is removed and the operation begun, do not apply it again.

(6) The contra-indications are dangerous lesions of the heart and lungs, as well as of the kidneys.

Clinical Department.

A REVIEW OF A SUMMER'S WORK IN THE GYNECOLOGICAL SERVICE OF THE BOSTON CITY HOSPITAL.

BY E. P. STARBIRD.

This paper is written as an adjunct to the cases reported by Dr. Blake. It is not intended to discuss any special lines of cases at length, my object being merely to outline in a very general way the material which has presented itself for treatment. Special cases of interest will be briefly mentioned.

Owing to the limited number of beds, and the demands made upon the service, comparatively few cases of simple lacerations were admitted. Of these, two cases only are worthy of special mention. One is the case already reported by Dr. Blake. In the other complete rupture of the perineum had taken place, through the sphincter ani, extending one and a half inches up the bowel. The patient's condition at entrance was one of profound anemia, and the temperature was somewhat elevated. After two weeks of general tonic treatment the rupture was repaired, using fine silver wire and three catgut sutures. Owing to the extremely fragile condition of the perineal tissues the operation was quite difficult. Convalescence was normal. The bowels moved on the fourth day without disturbing stitches. On the tenth the stitches were removed, and excellent union found to have taken place. Nine days later the patient was discharged with complete control of sphincter.

---

[1] Read, by invitation, before the Obstetrical Society of Boston, October 13, 1894.

In a general way the indications for repairing a lacerated cervix were considered to be eversion and erosion of the endocervical membrane with cystic degeneration, to an extent sufficient to cause symptoms demanding relief. No cases were operated on which showed the presence of inflammation of the appendages.

Alexander's operation was performed nine times during the summer. In all but one case (that reported by Dr. Blake) the operation was successful, completely relieving the symptoms which called for its performance, and restoring the uterus to its normal position. The ligaments were found without special difficulty. In one case the operation was preceded by dilating and curetting for endometritis and retroflexion, in another case by plastic operations on the cervix and perineum. A case entered the hospital this week on whom Dr. Blake performed an Alexander fourteen months ago. The uterus was found in normal position, and showed no tendency to prolapse when the patient was asked to bear down.

The indications for the performance of the operation were considered to be, briefly, retroversion of a freely movable uterus, without pelvic inflammation, where the cervix and perineum were practically intact, and where the symptoms were of sufficient severity to demand relief. The uterus was always replaced before the operation, and a pessary introduced. This was allowed to remain for two or three months. Curetting was considered one step of the operation in cases associated with endometritis.

As regards the operation of curetting there is little to be said. It has served an extremely useful purpose in the various conditions calling for its performance, such as endometritis, salpingitis, incomplete abortions and miscarriages, septicemia, flexions of the uterus, subinvolution, etc., in which conditions it has been repeatedly performed.

This operation was performed in one case where there was a large fibroid in the anterior wall of the uterus accompanied by slight antiflexion. Menstruation was irregular, and accompanied by extremely severe pain which had succeeded in producing a condition of marked neurasthenia. There was no menorrhagia or metrorrhagia. The uterus was dilated, curetted, and packed with gauze, in the hope that drainage might relieve the dysmenorrhea. The patient was kept under observation during her next period and suffered little or no pain.

Forty-five cases of pelvic inflammation were admitted. The great majority of these cases recovered under rest and local palliative treatment, and left the hospital symptomatically, if not anatomically, well. In two cases pus was evacuated by vaginal incision and drainage, and recovery took place by granulation. Four cases only finally came to laparotomy. In one pus was evacuated by abdominal incision, and the wound healed by granulation. In three cases which were transferred to the surgical side the inflamed tubes and ovaries were removed. One case recovered. Two died; one on the fifth day after the operation, without obvious cause; the other of peritonitis and acute congestion of the lungs. In the latter case, which was a large tubo ovarian abscess firmly adherent in the pelvis, rupture of the abscess took place in removal.

A symptom which seemed to be of value in distinguishing tubal from other forms of pelvic inflammation was, that in the latter the pain complained of was of a griping character, recurring several times a day, and lasting from ten to fifteen minutes, with intervals comparatively free from pain.

Four cases of malignant disease of the uterus were admitted for treatment. In one case the only local symptom was pain, in another hemorrhage, in a third foul discharge, while in the fourth these three symptoms were all present. In no case was a radical operation possible, as the disease had already extended beyond the limits of complete removal. One case left the ward without being treated. The other cases were treated by first curetting away the diseased portions as far as possible, and then applying cotton squeezed out of a fifty-per-cent. solution of chloride of zinc. The surrounding healthy tissue was protected by means of bicarbonate of soda and dry cotton. The sloughs thus produced were from one-eighth to one-sixth of an inch in thickness. These applications were repeated until healthy granulations appeared, and the cavity began to assume a healthy appearance. This treatment proved itself very efficient as a means of palliation, helping very materially in alleviating the three distressing symptoms, pain, hemorrhage and foul discharge.

A series of sixteen abortion and miscarriage cases would seem to show that, previous to two and a half months, the retention of a portion of the ovum with sepsis or hemorrhage was comparatively uncommon. It would seem from the curetting of certain cases that hemorrhage after abortions was not always dependent on retained material, but upon an endometritis. In the case of one patient, who had just had her ninth criminal abortion, who seemed capable of judging, and who declared that the ovum came away intact, a hemorrhage was started up two weeks later by a debauch. This hemorrhage was so severe that the patient was unable to sit up without being dizzy, and she became very pallid. Under rest in bed the hemorrhage ceased and did not reappear. In nearly all of these cases the operation of curettage was necessary.

In nearly all the abortion and miscarriage cases, septicemia was present to a greater or lesser extent, especially when the induction of labor was due to the passage of instruments into the uterus. By means of curettage, corrosive intrauterine douches, and iodoform pencils introduced into the uterus an immediate reduction of the temperature and other symptoms was obtained in nearly all the cases, and in comparatively few was it necessary to enter the uterus a second time. One case only resulted fatally. It was a case of criminal abortion, and was profoundly septic at entrance.

Of the cases not included in the above groupings, there are two which I have selected to report more in detail.

Case I. Acute intestinal obstruction, the result of adhesions produced by chronic pelvic inflammation.

Admitted July 1st. Age twenty-six years, married, native of Ireland. Six months previous to entrance she gave birth to her first and only child, being delivered by means of instruments. Convalescence was prolonged. Never had any miscarriages. For about a month previous to entrance she had been feeling poorly, and was troubled with constipation at intervals. On entrance she complained of pain in the back and abdomen, painful micturition and defecation. Her temperature was normal, pulse 114. Vaginal examination, made the following day, showed the uterus to be fixed, and a mass in the posterior *cul-de-sac*, but nothing was found to account for the patient's acute symptoms.

Every effort was made during the next three days to open the bowels, but without success. The patient's condition grew steadily worse; she was unable to retain anything on her stomach, and flatulence became so intense that the intestinal coils could be plainly seen on the abdomen. A marked condition of shock. The vomitus was not intestinal.

Dr. Abner Post saw the case in consultation on the 3d of July, two days after entrance, and a diagnosis of intestinal obstruction was made. On the following day the patient was transferred to the surgical side in a semi-moribund condition, and Dr. Post performed a celiotomy.

An incision was made in the median line from the umbilicus to the symphysis, and a large quantity of sero-sanguineous fluid was evacuated. The small intestine was found dilated to about four times its normal size, and was purplish in color. The patient was then placed in the Trendelenburg position, and the uterus was seen to be enlarged but in normal position. The left tube was normal. The right was somewhat tortuous, running upward and backward in a curved line from the fundus of the uterus. Extending from the fundus of the uterus to the small intestine was a rather broad and firm adhesion. A similar but firmer adhesion extended from the right tube to the small intestine, drawing the latter into a decided knuckle. The large intestine was collapsed. Both extremities of these adhesions were ligated and the adhesions severed. When this was done the small intestine began to lose its purplish color, and the collapsed large intestine began to inflate. The small intestine apparently took on peristaltic action. The abdominal cavity was douched out with distilled water, the abdominal wound was sutured and a baked dressing applied.

On the day following the operation the patient passed some gas from the bowels, but no feces. On the 10th of July, no movement of the bowels having taken place, a high rectal tube was passed, and brought away a large amount of soft fecal matter. From this time to the 2d of August, the bowels were moved by enemata. Subsequently they were moved regularly by means of castor oil. On the 22d of August, the wound having healed the patient was discharged.

Case II. Premature senility. This patient was twenty-seven years and eight months of age, married, no occupation. The family history was excellent. She had typhoid fever nine years ago. Menstruation first appeared when the patient was between fourteen and fifteen years of age. Before menstruation commenced she suffered from leucorrhea, and subsequently each period was preceded and accompanied by some leucorrhea. Menstruation appeared about once in three weeks, lasted about ten days, and was associated with much headache, bearing-down pains, and drowsiness, but no sharp pains. The discharge was thick, clotted and almost black in color.

When she was eighteen years old she had an attack of typhoid fever, and was confined to bed for about six weeks, making a slow convalescence. During the four months preceding the attack of typhoid fever menstruation became irregular, diminished noticably in amount, but would start up on the slightest exertion. She became very thin, much exhausted and would faint on the slightest provocation.

During the early part of her typhoid she menstruated, and since then has never seen a drop of blood. From that time until she was married five years later, about once a month she would feel as if she was about to be unwell, but nothing would appear. Since her marriage, which is now about five years, she has never been pregnant, and has suffered from painful coitus, which, however, is not accompanied by any disagreeable sensations.

On examination there was found a senile uterus and vagina, with a moderate retroversion, the same atrophic conditions as are found in elderly women who have passed the menopause. The ovaries were not felt. Her general development was excellent, and there was no impairment of the intellect.

◆

Medical Progress.

REPORT ON THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D.

(Concluded from No. 24, p. 583.)

LOCAL TREATMENT OF DIPHTHERIA.

At the same Congress mentioned previously, Löffler[2] states that he does not wish to undervalue in any way the serum treatment, still he thinks it proper to give his experience in the local treatment of diphtheria. He found that a solution of sesquichloride of iron in equal parts (or 1 to 2), as well as other preparations of iron, killed the diphtheria bacillus in ten seconds.

He also observed that such substances as benzol and toluol hindered the growth of this bacillus. He studied the action of these substances first on animals and later on man. In treating man he used a solution composed of alcohol 64, toluol 36, creoline or metacresol 1 to 2. As this solution produced a strong burning sensation in children, he added to it ten per cent. of menthol. The solution is prepared in the following way: 10 grammes of menthol are put into a graduated cylinder; then toluol is added until the contents reach the level of 36 c.c. (the menthol dissolves rapidly in the toluol); then 2 c.c. of creoline, or 1.5 c.c of metacresol, or 4 c.c. of sesquichloride of iron, is added; and lastly alcohol enough to obtain a volume of 100 c.c.

The solution is applied twice in succession, for ten seconds, on a cotton swab; and this application is repeated every three hours until all the local symptoms have completely disappeared. This takes place ordinarily at the end of four or five days. While the disease is still local its progress may be stopped by means of this treatment. In 96 cases thus treated, three-quarters of which were shown by bacteriological examination to be diphtheria, there was not a single death.

---

[2] La Semaine Médicale.

THE ANTITOXIN OF BACTERIAL FEVER.

Dr. E. Centanni and Dr. A. Bruschettini, have been carrying on investigations in Professor Tizzoni's laboratory in Bologna; and in an article in the *Deutsche Medicinische Wochenshrift*, 1894, No. 12, they state that Centanni has shown that fever is caused by a certain poison (pyrotoxina bacterica), which is the same in all kinds of bacteria; from this fact he drew the conclusion that the specific agent which would neutralize this poison must be as general in its action. Bruschettini observed while studying influenza that vaccinated animals very soon ceased to be affected by strong doses of the vaccine, and that the immunizing serum obtained from them not only prevented infection, but also very quickly produced a significant fall in the temperature.

The writers knowing from former experiments that the fever-producing poison of the bacillus of influenza was like that of other bacteria, were inclined to believe that the immunizing serum for this disease would have the same effect against fevers produced by other bacteria, as far as its antipyretic action was concerned. They made three classes of experiment, which the authors state proved the correctness of this conclusion: first, with fever produced by an injection of pyrotoxin alone without the bacteria; second, with fever caused by an injection of cultures from bacteria of non-septic but of local action; and third, with fever produced by an injection of cultures from bacteria that produces septicemia in rabbits. The experiments had the twofold purpose of showing that this serum was preventive as well as curative. The serum used was obtained from sheep rendered immune against the bacillus of influenza, 1 to 4.000,000 being used in the immunization. The animals used were rabbits and guinea-pigs; and in the first series of experiments poison from the spirillus of cholera or the vibrio of Metschnikoff or the bacillus of tuberculosis or from other bacteria was injected; in the second and third series of experiment cultures of the vibrio avicida, or of the spirillus of cholera or of the pneumococcus or of still other bacteria were injected.

The following experiments in which pyrotoxin from the bacterium of coli communis was used, illustrate the manner in which the work was done.

Rabbit No. 1. Serum used for Prevention.

July 27, 1893.		
9½ A. M.,	temperature	39.8°C.
Injection of 5 c. c. of serum.		
11 A. M.,	temperature	39.4°
Injection of pyrotoxin.		
1½ P. M.,	temperature	40°
2	"	39.8°
3	"	39.8°
3½	"	39.6°
4½	"	39.6°
5	"	39.7°
5½	"	39.2°
(28th) 9½ A. M.,	"	39.8°
11½	"	39.6°
5 P. M.,	"	39.8°

The rabbit remained without fever.

Rabbit No. 2. Serum used for Cure.

July 27, 1893.		
11 A. M.,	temperature	39.2°
Injection of pyrotoxin.		
1½ P. M.,	temperature	40.9°
Injection of 5 c. c. of serum.		
2 P. M.,	temperature	39.0°
3	"	39.3°
3½	"	39.0°
4½	"	39.1°
5	"	39.2°
5½	"	39.0°
(28th) 9½ A. M.,	"	39.5°
11½	"	39.5°
5 P. M.,	"	39.3°

The rabbit remained without fever.

Rabbit No. 3. Control Experiment.

July 27, 1893.		
11 A. M.,	temperature	39.7°
Injection of pyrotoxin.		
1½ P. M.,	temperature	40.9°
2	"	40.9°
3	"	40.7°
3½	"	40.8°
4½	"	40.9°
5	"	40.5°
5½	"	40.8°
(28th) 9½ A. M.,	"	41.0°
11½	"	41.1°
5	"	41.2°

Slow return to apyrexia (July 31st).

The writers take up one more point, namely, the continuance of the apyretic effect of the serum, and under this head relate the following experiment: An animal in which the poisoning from vibrio avicida had been neutralized by means of the serum was infected four days later with 5 c. c. of a culture from the cholera bacillus of Massana. In spite of this the animal remained well, not only as far as the temperature was concerned, but all other symptoms also; while the animal used in the control experiment died in fifty-three hours with very striking pyrotoxic symptoms.

The writers draw the following conclusions from the various experiments made:

(1) The serum of an animal which has been rendered immune against the fever produced by a certain bacillus (bacillus of influenza), has an antitoxic effect also on the fever produced by the most diverse bacilli and against their pyrotoxin.

(2) This effect is constant, strong and lasting, and extends not only to the temperature, but also to the secondary toxic symptoms, and is a means of prevention as well as of cure. In the first case it prevents the development, and in the second it stops the course of the fever.

(3) The effect of this serum extends still further, inasmuch as it renders animals immune for a certain time to later injections of bacteria and their pyrogenic product.

(4) The idea, already published by Centanni, namely, that the fever-producing poison of different kinds of bacteria is one and the same and common to all bacteria, likewise that the substance which counteracts the group of symptoms, is one and the same and common to all bacteria, is still further strengthened.

These results form the beginning of studies which the writers intend to carry on further, in order to choose the most efficient vaccine from all the bacteria and invest the animals used for immunization with the highest degree of immunity.

SEWER SANITATION. — By a system of windmills and paddle-wheels, the City of Mexico proposes to quicken the current in its sewers to one metre a second.

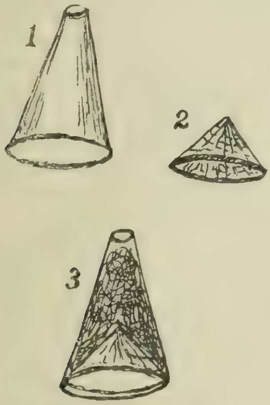
New Instruments.

A CONVENIENT FORM OF ETHER CONE.[1]

BY J. B. BLAKE, M.D.

This cone is not intended to be a perfected inhaler, nor is it free from all the objections that may be urged against almost all existing forms of etherizers. It is intended as a substitute for the towel and sponge on one hand, and for the clumsier and larger forms of more complicated inhalers on the other. It has been found to give satisfactory results, better than those obtained by other forms.

It consists of a hollow truncated cone of tin, five or six inches high, tapering from a long diameter of four inches at the base to about three-fourths of an inch at the top. The cone is flattened laterally, and its apertures are ovoidal. Into this fits a shorter cone of wire, which is edged with tin at its base.



1. Outer cone.
2. Inner wire cone.
3. Cotton waste, supported by inner wire cone.

The ether-bearing medium is clean waste cotton, which does not shrink as it becomes wet. The cotton is piled loosely on the wire cone, and thrust into the tin cone, where it is held by the pressure of the wire against the inner edge of the outer cone.

An ordinary rubber mouth-piece fits over the base of the cone, making a comfortable and air-tight joint around the mouth.

The cotton waste is made so loose, that the patient breathes through the cone with perfect ease — taking long, sudden breaths without any sensation of lack of air. The ether may be poured on from either end of the cone.

The advantages which this form of cone possesses are safety and comfort to the patient; cleanliness, lightness and readiness of construction to the physician. It is economical in its consumption of ether, and is itself inexpensive. All the air that enters the patient's lungs passes through the ether-laden waste; and no ether is evaporated from the sides of the cone, as is the case with the towel or sponge. The writer has etherized a patient, and continued complete anesthesia for two hours with less than two hundred grammes of ether; and, as a rule, anesthesia is produced easily in from six to nine minutes. The cone can be made by any tinsmith, and costs from seventy-five cents to one dollar and a quarter.

Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Regular Meeting, October 13, 1894, the President, Dr. Charles M. Green, in the chair.

Dr. J. G. Blake showed a child with congenital amputation of both arms, that he had exhibited before the Society six years ago.

Dr. F. W. Draper showed the uterus and appendages from a colored woman of thirty-four years, who had died of aneurism. The specimen showed multiple fibroid tumors, areolar hyperplasia, ovaritis and double salpingitis as well as cystitis.

Dr. J. G. Blake reported

CASES FROM THE UTERINE WARD OF THE CITY HOSPITAL.[1]

Dr. M. F. Gavin in commenting on the case of extra-uterine pregnancy operated on by him, said that there was very free oozing at the time of the operation which could not be controlled, and on this account he put in a drainage-tube. On removing the drainage-tube there was a smart hemorrhage which, however, was controlled by pressure. The wound was entirely healed before she left the hospital and she has done well since.

Dr. J. G. Blake thought that this was one of the cases that would have recovered without operation and in former times would have passed as hematocele. He would not, however, have dared risk the case without operation.

Dr. Gavin said the patient was continually losing blood, was in constant pain and an operation was, he believed, demanded.

Dr. Edw. Reynolds said that when he first saw the case he advised waiting as her condition was so poor. The majority of cases with limited hemorrhage get well of themselves. He believed it a mistake to insert an aspirator in these cases, as there is little to be gained, and it involves an added danger of sepsis or in some cases of mechanical injury. In pelvic surgery the less the aspirator is used the better.

Dr. G. Haven would agree with Dr. Reynolds as to the dangers of the aspirator. Ruptured tubal pregnancies within the folds of the broad ligament take care of themselves. Those that rupture outside are the dangerous ones. In the last two years he has seen but one case of vesico-vaginal fistula and that only a minute hole which would admit only a probe.

Dr. D. W. Cheever said that about twenty-five years ago Dr. Hodges collected and published forty cases of vesico-vaginal fistula that he had operated on. This illustrates the difference in frequency of the affection then and now. He thought that the good success in Dr. Blake's case was partly due to the position required of the patient, lying on the face. This is a very painful one when long continued, as he had found in treating a man with an extensive burn of the back.

In a case of imperforate vagina he had treated some years ago he incised the hymen and let out a cupful of grumous fluid. To avoid contraction constant stretching by a glass speculum was needed. The patient afterwards married and gave birth to a living child. There is one place where an aspirator never does any harm, that is in tapping the bladder.

---

[1] Read, by invitation, before the Obstetric Society of Boston, October 13, 1894.

[1] See page 609 of the Journal.

Dr. Wm. R. Stokes showed the specimen from the case of tubal pregnancy. A corpus luteum of pregnancy was present; the Fallopian tube was dilated, and the chorionic villi were shown under the microscope.

Dr. J. B. Blake showed an ether inhaler of his own devising.[2]

Dr. J. G. Blake said he preferred the old-fashioned towel cone to any inhaler ever devised.

Dr. M. F. Gavin referred to an inhaler largely used in Dublin, namely, the Ormoudsly inhaler.

Dr. C. G. Cumston had used this inhaler in some twenty-five cases. It saves ether no doubt, but it is rather difficult to manage, as the ether is apt to trickle down on the patient's face.

Dr. Cumston also read

A NOTE ON THE BROMIDE OF ETHYL.[3]

Dr. A. D. Sinclair referred to Dr. Worcester's remarks at a previous meeting on the use of this anesthetic.

Mr. E. P. Starbird read

A REVIEW OF A SUMMER'S WORK IN THE GYNECOLOGICAL SERVICE OF THE BOSTON CITY HOSPITAL.[4]

◆

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Seventh Annual Meeting, Charleston, S. C., November 13, 14 and 15, 1894.

FIRST DAY. — MORNING SESSION.

The Association met in Artillery Hall, and was called to order by the President, Dr. C. **Kollock**, of Cheraw, S. C.

An Address of Welcome was delivered by the Mayor of Charleston.

Dr. Brodie, of Charleston, followed with an Address of Welcome on behalf of the local profession, and **President Kollock** responded in behalf of the Association.

Dr. Wm. E. Parker, of New Orleans, read a

MEMORIAL ADDRESS ON DR. WARREN STONE,

which was prepared by the late Dr. A. B. Miles, of New Orleans.

As Professor of Surgery in the University of Louisiana for thirty-five years, as surgeon to the Charity Hospital for thirty-eight, and as general practitioner from 1832 to 1872, whose experience covered eighteen epidemics of yellow fever and cholera in New Orleans, the name of Warren Stone is impressed indelibly upon the local history of a remarkable period. In his surgical clinics he taught the advanced surgery of the old school. He taught the principles of drainage in suppurative arthritis, in hepatic abscesses and in pyothorax. He advocated resection of the rib to facilitate the drainage in suppurative pleuritis. Whether in operative work or in the liberation of pus he made free incisions. He was among the first in the cure of aneurism of the vertebral artery. In the surgery of the arteries he was an expert. During fourteen years of his work at the Charity Hospital, he operated without an anesthetic. Realizing the difficulties under which he labored, he was ready to welcome the new era in surgery then about to dawn. The lives of many men are mirrored in their books and published papers, but the writings of Dr. Stone give but meagre knowledge of his work, or his position as an authority on surgery in the South. No man in the profession of Louisiana was ever so universally beloved as Dr. Stone. In his relations with other physicians he was gentle and considerate, never intrusive or aggressive. Many of the physicians in Louisiana to-day who knew him in life, speak of him affectionately as "Old Stone," and always with some expression of endearment and respect. His position in New Orleans may be compared with that of Physick in Philadelphia, Mott in New York, Lister in London and Velpeau in Paris.

Dr. J. B. S. Holmes, of Atlanta, read a paper on

GONORRHEA IN WOMEN.

He said there was no disease that affected women that should engage the serious and thoughtful consideration of the physician more than gonorrhea. The author then, after quoting Tait and Sinclair on gonorrhea, said he had no doubt but that many of the chronic diseases of the ovaries and tubes that came under the observation of gynecologists were due to this disease. In the majority of cases the poor woman was ignorant of the fact that she had had or has any specific disease. Indeed, her husband might tell the physician that months or even years before his marriage he was a subject of gonorrhea, which was cured and had since shown no evidence of a return.

The writer could conceive of nothing more dangerous than curetting the uterus in the presence of immense pus tubes with pelvic adhesion. The drawing down of the organ necessary for curettage may break up pelvic adhesion and pour out the contents of pus sacs into the peritoneal cavity, which would result in the majority of cases in death to the woman. If her life is saved at all, it will only be done by a prompt abdominal section, with thorough irrigation and drainage of the abdomen. Then why not, in the first instance, when pus is detected, promptly remove it by surgical interference. We then treat the women rationally and give her the very best and only chance of relief and restoration to health.

Dr. George J. Engelmann, of St. Louis, called attention to the importance of differentiating between latent or chronic gonorrhea and the acute form of the disease. He does not look upon acute gonorrhea as a dangerous disease in women, but he does the latent or chronic form. He has not seen serious results from the acute form, but it is the infection which is not observed, from a supposedly cured gonorrhea in the male, which produces the suffering in women.

Dr. Bedford Brown, of Alexandria, took exception to the statement made by Dr. Engelmann in regard to non-danger of acute gonorrhea in females, and cited the case of a female in which the acute gonorrhea ran its course, terminating finally in fatal nephritis. In this case there was first urethritis, then cystitis, urethritis, pyelitis, and acute nephritis.

Dr. Richard Douglas, of Nashville, thought Dr. Engelmann had sounded the keynote in that there is quite a difference in the infection from acute gonorrhea and the latent form of the disease. Infection from the latter was a mixed infection, not only with the gonococcus, but with the streptococcus and staphylococcus also, and that accounts somewhat for the virulence of the trouble. That gonorrhea is the cause of uterine fibroids, he could scarcely accept, although he thought Dr. Price was the author of that idea.

---

[2] See page 617 of the Journal.

[3] See page 613 of the Journal.

[4] See page 613 of the Journal.

Dr. Joseph Taber Johnson, of Washington, D.C., said in the treatment of pus tubes the result of gonorrheal infection, the very radical suggestion of Dr. Holmes was correct, namely, to resort to abdominal section, as he was satisfied that gonorrheal pus tubes were incurable by conservative measures. In addition to the removal of pus tubes, if present on both sides, the uterus should be removed also, because it is through the infected mucous membrane of the uterus that the tubes themselves have become infected.

Dr. William P. Nicholson, of Atlanta, said the general surgeon was concerned in the treatment of gonorrhea as well as the specialist. We are told that a urethra has been inflamed and subsequently restored to its normal condition, and yet years afterwards the man transmits gonorrhea to his wife. It is hard for him to accept such a doctrine. If a man goes for months and years with a gonorrhea absolutely producing no effect whatever, if he is not well, how are we to tell him that he is not? We are told by the writer that gonorrhea is contracted by the female when there is absolutely no evidence whatever of disturbance in the urethra of the male, or that there is no trouble by which he can propagate disease.

Dr. A. M. Cartledge, of Louisville, thought the essayist failed to differentiate between cases of subacute and chronic salpingitis and the cases of acute infection from gonorrhea. He threw out the suggestion that physicians were not fully conscious of the great prevalence of artificial abortions in young married women of the better as well as lower class, and he believes that in these cases of secondary infection from pathogenic organisms we have a more fertile source for the development of the tubular and ovarian disease than from gonorrhea.

Dr. W. E. B. Davis, of Birmingham, Ala., considered the disease a dangerous one. The views of Tait, however, in regard to gonorrhea were extreme. We had a frequent cause of tubal disease in the puerperal state, in delivery at term or in premature deliveries, frequently in artificial abortions brought about by mechanical means. More or less infection occurred after all cases of abortion; but if the patient was in good condition at the time, she would not be materially affected. If we had a soil that was favorable for the development of septic germs, we would get a severe inflammation — a mixed infection.

Dr. W. D. Haggard, of Nashville, desired to place himself on record as opposed to the removal of the uterus and tubes for pyosalpinx as the result of gonorrhea, believing that by dilatation and judicious curetting patients can be relieved of an endometritis produced by gonorrhea.

Dr. John D. S. Davis, of Birmingham, Ala., emphasized the importance of using the microscope in connection with gonorrhea and carefully examining the pus. Experience had demonstrated that the latent effects of gonorrhea were not always directly due to the gonococcus *per se*, but to a mixed infection; that is, we had an inflammation as a result of the gonococcus, which was fired up by another infection from the streptococcus. When we had a mixed infection, we had as a result pus tubes, suppurative peritonitis, and finally death to the patient if surgical interference was not resorted to.

Dr. Hunter McGuire, of Richmond, entered a protest against the doctrine that a man can have gonorrhea and not get well. As for the idea that a man who has had gonorrhea should not get married, it was preposterous. He had seen thousands of cases get well and remain so.

Dr. Holmes, in closing, said he was aware that many cases of acute gonorrhea resulted in no secondary trouble, because they were recognized early and cured by judicious treatment. He did not wish to be understood as endorsing the views of Mr. Tait, that gonorrhea in the male was never cured; but he insisted that general practitioners were often too careless in advising patients who had been the subjects of gonorrhea to get married.

SOME CASES OF ACUTE INTESTINAL OBSTRUCTION, WITH DEDUCTIONS,

was the title of a paper read by **Dr. A. Morgan Cartledge**, of Louisville, in which he reported six cases, three of which terminated fatally. The author said that the limited number of operated cases reported in his paper, together with an individual observation of probably as many more not subjected to operation, conformed to the accepted belief of the hopeless nature of acute intestinal obstruction unless treated by early laparotomy.

In the afternoon, the members of the Association were taken on a special train to Professor Shephard's tea plantation and to the Forest Inn.

SECOND DAY.— MORNING SESSION.

Dr. F. W. McRae, of Atlanta, Ga., read a paper entitled

HERNIA OF THE DIAPHRAGM, WITH REPORT OF A CASE.

Dr. Louis McLane Tiffany, of Baltimore, Md., read a paper on

GUNSHOT WOUND OF THE SPLEEN AND KIDNEY; ABDOMINAL SECTION; HEMOSTASIS BY DEEP SUTURE; RECOVERY.

The patient was a male negro, twenty years of age. Two hours previous to entering the Maryland University Hospital, March 21, 1894, he had been shot with a small calibre rifle from a distance of twenty feet, the weapon being directly behind him, and he being erect. His urine was slightly albuminous; the pulse, temperature and respiration normal. There was a bullet wound three inches to the left of the spine, just below the last rib, from which blood oozed. After properly cleansing the wound it was enlarged; and it was found that the kidney had been injured and that a bullet had passed onward, presumptively into the peritoneal cavity. The wound was filled lightly with gauze by the resident physician, and Dr. Tiffany was notified. External examination of the abdomen by touch and palpation revealed nothing, not even painfulness.

The patient was anesthetized, laid on the belly, and the wound, after being enlarged, was examined. The upper portion of the left kidney was perforated, and dark blood flowed from the peritoneal cavity beyond. This large wound was filled with gauze, the patient turned on the back, and the abdomen freely opened along the left semilunar line. A moderate amount of blood was free in the peritoneal cavity; no wound of the intestine could be discovered, but the spleen was found perforated, blood flowing freely from the wound of entrance, as well as from the wound of exit; the latter wound, in the concavity of the organ, was slightly the larger of the two. The perforation through the spleen was about three inches from the free lower border. Unwilling to subject the patient to splenectomy, the essayist attempted to arrest the bleeding in the following manner: a long needle threaded with silk was passed entirely through the spleen, central to and parallel with the bullet track; the long ligature was then tied over the free border of the organ so as to press the surfaces of the wound together tightly enough to arrest bleeding, yet not to tear through the splenic tissue; the ends of the ligature were cut short, the peritoneal cavity cleaned by copious irrigation with hot water, and the abdominal wound closed. The kidney was tamponed with gauze through the dorsal wound. Convalescence was uneventful. The anterior wound healed by primary union. Urine flowed from the dorsal wound for two days only, union by granulation taking place. The patient left the hospital well, April 22d.

In this case, the wound being small, hemorrhage was not profuse, and no abdominal organ save the spleen was wounded.

DR. WILLIAM PERRIN NICOLSON, of Atlanta, Ga., next presented a paper upon the report of a

A SEVERE CASE OF NEVUS, WHICH WAS ONLY CURED BY THE USE OF GALVANO-PUNCTURE.

The case was one of a large growth occupying the groove from the angle of the jaw up to and covering a portion of the ear, and extending out upon the cheek, the entire tumor being almost the size of a hen's egg.

After detailing the method employed, the writer stated that he thought several elements entered into attaining the result, of which the coagulum of the blood was one, and perhaps the least. The two remaining elements were the subsequent contraction of the small eschar produced in radiating lines from the tumor, and the effect of the current upon the vasomotor-nerve supply. He felt sure that a thorough trial of this method as to the settling of the various points considered, would result in its adoption in the treatment of perhaps a large majority of these cases where we have a large elevated blood tumor with which to deal. He also believed that perhaps pricking the surface with the needle attached to a positive pole of the battery, might result in a series of small scars, which would end in removing the ugly port-wine marks so common in this trouble.

OPERATION FOR COMPLETE PERINEAL LACERATION.

This paper was read by DR. JOSEPH PRICE, of Philadelphia, in which he said that there are many men who, essaying to be authorities on the surgical diseases of the major order, have no conception whatever of injuries of the perineum and cervix, so far as their intelligent repair is concerned. Indeed, there are many with a large obstetrical practice, who labor under the delusion that they have never ruptured a perineum, and that all their patients have entirely normal perinea. This misconception is due to improper teaching more than to any other cause. Perineal lacerations, unless extending through the skin to or through the sphincter, may escape detection unless by thorough digital examination.

All these tears should be approached as distinct surgical lesions to be repaired in the line of their anatomical destruction, and not as cosmetic operations, whose object is to obtain superficial appearances without regard to perfection and utility. Heaping up of tissue outside the lines of resistance and tension, or mere thickening of mucous membrane and skin does not make a true perineum, neither does a set of outside sutures, however much they may draw the parts together, afford any anatomical counterpart of a perineum. From this basis all the so-called outside flap-splitting operations for perineal tears are only puckering operations, bringing parts within the sutures that have never been severed, and in many cases taking them out of their proper relations. Big sutures, heavy ligatures, clumsy instruments have no more place here than in other surgery. The ordinary short, strong sewing-needle fills the bill exactly in most cases, though the Emmet fine short needle for general use is to be preferred. Silkworm-gut or silver wire is the preferable suture. The Emmet operation, as originally suggested and afterwards modified by its distinguished deviser, is the foundation for all successful operations on the lacerated perineum, either with or without sphincter tear. Dr. Price, in closing, said the tears of perinea are often unavoidable, but their restoration is always possible, and their neglect is criminal.

After the reading of Dr. Price's paper, DR. ENGELMANN took the chair, and PRESIDENT KOLLOCK delivered his

ANNUAL ADDRESS.

He first thanked the Association for the honor conferred upon him in electing him as President. He then alluded to the death of Drs. William T. Briggs, of Nashville, and A. B. Miles, of New Orleans. Dr. Briggs's life had been one of usefulness. He had done excellent and remarkably brilliant work, and had achieved an enviable reputation. Dr. Miles, who had been made Professor of Surgery in Tulane University, was a man full of youthful activity and manly vigor, who by patient study and diligent research, aided by a brilliant intellect, had won for himself a high position in the profession and in the estimation of his fellowmen. To know him was to admire and love him. "His life was gentle, and the elements so mixed in him, that Nature might stand up and say to all the world, 'This was a man.'"

While in all branches of gynecology good progress has been made, he noted with pleasure that surgery had had its triumphs. Many reports of cases show enlarged experience and continual improvement in the treatment of appendicitis, hernia, intestinal obstruction, and many other ills that flesh is heir to.

OBSERVATIONS ON THE ACTION OF CHLOROFORM ON THE FUNCTIONS OF THE HUMAN BRAIN AND SPINAL CORD, AS WITNESSED IN EXTENSIVE INJURIES OF THE CRANIUM AND BRAIN.

DR. BEDFORD BROWN, of Alexandria, Va., read a paper on this subject.

Dr. Brown cited the history of two cases of extensive compound comminuted fracture of the os frontis and serious injury and destruction of a portion of the frontal lobes of the brain, as the basis of his paper. One of these cases of injury was caused by a kick of a newly-shod horse, the other by a spent grape-shot in battle. The subjects of both of these injuries retained perfectly their powers of consciousness and sensation.

The history of the first case was published in the October number of the *American Journal of Medical Sciences*, 1860, and occurred in the summer of that year. The fracture in that case involved a large portion of the os frontis. The fractured bones were driven back into the substance of the brain quite an inch in depth lacerating the frontal lobes extensively. There was a loss of about two tablespoonfuls of brain. During the operation, which lasted more than an hour, the patient was placed under a compound of chloroform three parts, ether one part, four different times. Through this large opening in the skull the brain could be seen perfectly, and its varying changes of action under chloroform could be observed perfectly. The invariable action of the anesthetic was to suppress hemorrhage, to quiet cerebral pulsation and to positively reduce circulation in the brain and arterial tension. These peculiar effects were observed as many as three or four different times. When the patient was threatened with collapse from chloroform, stimulants injected in the rectum produced increased circulation and arterial tension in the brain promptly. Any struggling, mental excitement, or resistance while inhaling chloroform caused marked increase in cerebral circulation and pulsation with increase of hemorrhage.

The second case was that of a Confederate soldier, who in battle received a spent grape-shot in his forehead, causing an extensive compound comminuted fracture of the os frontis, driving the fractured bones back more than an inch into the frontal lobes. The wound in the skull was quite two inches in diameter, and more than an inch in depth. This patient was subjected to chloroform three times during the operation, which lasted an hour. The action of chloroform on the functions of the brain in this was similar to that in the first. When under full anesthesia each time the cerebral hemorrhage ceased, the cerebral pulsations diminished to a mere tremor, and the arterial circulation was markedly reduced. This occurred three different times during the operation. The action of alcoholic stimulants resorted to in this case to prevent collapse from chloroform increased the cerebral pulsations and circulation in a positive manner.

Dr. Joseph Taber Johnson, of Washington, D.C., described a case of

HYDRO-PYONEPHROSIS; SUCCESSFUL REMOVAL OF A FORTY-POUND TUMOR OF THE KIDNEY.

The patient was sixty-three years of age, and had inherited and possessed, until five years ago, a remarkably good constitution. At this time a lump appeared in his right side in the region of the liver, and it was supposed up to the date of the operation to be caused by enlargement and abscess of that organ. This lump gradually increased in size, and the patient had gradually lost flesh and strength until the date of the removal of the lump, when he could not have weighed more than eighty pounds. At no time did he suffer from pain, and only a few weeks with fever.

There were several points of interest in this case. A number of good men failed to make a diagnosis, though the patient was under observation for nearly five years. Repeated examinations of the urine failed to detect the slightest evidence of disease of the kidney; the only explanation the writer suggests is that the disease at the time of analysis and subsequently had so destroyed the function of the kidney as to prevent the escape of any urine at all, and that the specimen examined came from the other organ, which fortunately was healthy. Other points were the failure of such large quantities of foul-smelling pus to produce more sepsis; the absence, all through the history, of pain or fever; the median line incision; the separate ligation of the renal vessels; and the ligation and dropping of the ureter.

The writer is aware that the lumbar incision is preferred by nearly all nephrectomists, and that they often bring out the cut end of the ureter and fasten it to the abdomen. While the lumbar incision may be best in small tumors and otherwise disease of kidneys, it certainly could not have succeeded, the author believes, in a case of the magnitude of the one here reported, not only on account of the tumor's great size, but also because of its being so extensively adherent to the omentum and abdominal wall. The colon had to be carefully separated from anterior surface of tumor.

(*To be continued.*)

Recent Literature.

Essentials of Chemistry and Toxicology, for the Use of Students in Medicine. By R. A. Witthaus, A.M., M.D. Twelfth edition. New York: William Wood & Co. 1894.

This volume contains 1,129 questions with answers, adapted from the author's excellent "Manual of Chemistry." It is the best of the numerous small volumes which have been prepared for the use of medical students, and can be recommended to students, who need a small book of this kind, as a safe guide for them in their studies.

A System of Oral Surgery. Being a Treatise on the Diseases and Surgery of the Mouth, Jaws, Face, Teeth, and Associate Parts. By Dr. James E. Garretson. Sixth edition, thoroughly revised, with additions. Philadelphia: J. B. Lippincott Co.

Dr. Garretson's system of oral surgery has for many years had an important place amongst the text-books for the dental student and practitioner. In one volume it is not only a treatise upon the teeth and their diseases, but also a treatise upon the affections of all surrounding parts. It is a condensed medical and surgical reference book for the area which it professes to cover.

The present edition is much larger than the last, and printed in a more attractive form. Of the chapters of special interest might be mentioned the one on anesthesia and anesthetics. While due consideration is given to ether, nitrous-oxide gas, and chloroform, something is said about all the more modern anesthetic agents. Of the latter class cocaine holds an important place; and its uses about the mouth and face, both in local and systemic application, are carefully described.

The surgical engine naturally claims the author's notice. Probably no one has had a larger experience than Dr. Garretson with this instrument in operations connected with the maxillary bones, and his testimony as to its helpfulness is very decided.

The book is of especial value in showing, at great detail, the relation which exists between abnormal conditions of the teeth and their alveoli, and abnormal conditions of adjacent and remote parts.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, DECEMBER 20, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 WASHINGTON STREET, BOSTON, MASS.

TREPHINING FOR TUBERCULOUS MENINGITIS.

This disease has long been the despair of the general practitioner who is often called upon to treat cases of chronic hydrocephalus, and recognizes the utter hopelessness of all the classical modes of treatment. It is known that children often die of tuberculous meningitis in consequence of the inflammatory process and the presence and pressure of the exudation, long before the tuberculous deposit has undergone any considerable development.

So dominant a symptom is the intracranial pressure that practitioners have recognized a leading indication to lessen the pressure by medical or surgical means, and calomel in frequent doses has been prescribed with this end in view; blisters and leeches to the temples, shaved scalp and nucha have been counselled; iodide of potassium has been given to promote absorption of the exudate, and other means equally as inefficacious have been resorted to.

Ziemssen and Quincke, in Germany, and Veyrat, in France, have proposed, in order to diminish the intracranial pressure, to puncture the spinal canal in the lumbar region and to insert a tube, to be left there, in order to give escape to the cerebro-spinal fluid.[1] According to Hirschberg, who has written an able treatise on this subject,[2] this method is irrational, for the conditions of communication between the spinal and intracranial liquid in the physiological state cannot be the the same as in tuberculous meningitis, . . . and the puncture of the rachidian canal cannot efficaciously remedy the increase of intracranial pressure. He believes, in fact, that "with the swelling of the cerebral substance (the bony tissue not yielding under the pressure), a real strangulation takes place at the level of the occipital foramen." The only rational method to diminish this pressure is to make an opening in the cranium itself, that is, to trephine the skull with consecutive drainage. Trephining, according to Hirschberg, apart from relieving pressure, fulfils still another indication. We may, to a certain extent, liken tuberculous meningitis to tuberculous peritonitis. Now we know that the simple opening of the peritoneal cavity with drainage of the fluid, sometimes brings about the cure of peritonitis. Why may not drainage of the arachnoid spaces produce the same good result (in some way we cannot yet explain) in tuberculous meningitis?

Many years ago, Henoch, in a clinical lecture on tuberculous meningitis, anticipated the possibility by opportune trephining of arresting the commencing inflammation of the pia mater, and preventing a more extensive exudation which might affect the cortical substance of the brain.

It is true that there is as yet little to offer in favor of this procedure except theoretical considerations. The case of Ord and Waterhouse is, however, of the deepest interest in this connection, and can but stimulate to further efforts in the same direction, seeing that all other modes of treatment in this formidable disease are of so little benefit. The little patient whose case these writers report in the London *Lancet*, March 10, 1894, seems indeed to have been afflicted with tuberculous meningitis with effusion and recovered after tapping the membranes, but the fortunate result made it impossible to state absolutely that the meningitis was tuberculous, and not of pneumococcus or some other microbian nature. The principal points in the case are as follows:

A little girl, five years of age, was admitted to the Victoria Hospital, Chelsea, October 23, 1893. About the middle of September she began to have severe pain in her head; had occasional vomiting, was fretful, her appetite was bad, bowels constipated. There was no history of tuberculosis in the family; the child had never had fits or otorrhea. She lay with her head bent forward and her legs drawn up, uttering shrill screams now and then. Temperature 101.6° F, pulse 104, respiration regular. *Tache cérébrale* was well marked. There was commencing optic neuritis in both eyes, especially in the left. During the first night she was very restless, constantly screaming. The optic neuritis became more marked. Patient kept getting worse; pulse came down to 70 per minute with intermissions. The child became lethargic and apathetic, only uttering the typical hydrocephalic cry; had the appearance of one rapidly passing into a state of coma. Abdomen was retracted, face pale. Temperature 101° F. Pupils, contracted on admission, had become dilated, but there was no ptosis or strabismus, no opisthotonus.

The surgeons attending and the entire medical staff diagnosticated the case as tubercular meningitis, of which there were distinct signs, as evidenced by the great pain and optic neuritis; there was plainly increased intracranial pressure, and a stage bordering on coma; in fact, there was a probability of death taking place in a few hours from compression. From these considerations it was agreed that an operation for the relief of the pressure was both justifiable and advisable. It was decided to open the sub-arachnoid space and to drain this space for a few days.

At five o'clock, P. M., October 26th, the child was placed under chloroform and a curved incision about two and one-half inches in length was made over the left cerebellar fossa of the occipital bone, commencing below and behind the mastoid process, passing with its convexity upwards and ending externally to the external occipital crest. The occipital artery bled freely and was tied, and the pericranium was raised in a flap corresponding to the scalp flap. A trephine three-quarters of an inch in diameter was then applied midway between the external occipital crest and the mastoid process. The disc of bone removed was placed in a warm boric solution. The dura mater, which bulged into the trephine opening, was then incised and some thirty drops of a slightly greenish serous fluid escaped. The cerebellum then bulged into the foramen in the skull, fitting it tightly, like a cork in a bottle. A silver probe, the terminal half-inch of which was bent to a right angle with the rest of the instrument, was then inserted between the cerebellum and the arachnoid inwards towards the falx cerebelli. As soon as the latter was felt, the probe was rotated, so that the end projected forward into the large sub-arachnoid space between the cerebellum and the medulla. Some drachms of serous fluid at once escaped. A drainage-tube was then passed along the probe and left in position; it was found that fluid passed slowly along it. The dura mater was then sutured, and the disc of bone having been cut up into small fragments with bone forceps, these were packed carefully in a mosaic, after the manner of MacEwen, so as to fill the foramen, leaving only room for the drainage-tube in the centre. The latter was then brought out through a hole made in the centre of the flap; the flap was readjusted with horse-hair sutures and the wound was dressed with cyanide dressings. The child bore the operation well, and the pulse rose from 80 to 120 after removal of the fluid.

---

[1] Bull. gén. de Thér., 1894, p. 412.

[2] Deut. Arch. f. klin. Med., t. xli, and Thèse de Heidelberg, 1886.

The sequel of the operation was favorable in every respect. The temperature and pulse became normal, after fitful exacerbations and remissions. The dressings on the second day were soaked with blood-stained serous discharge. The coma passed off; the child became sensible; was free from pain; slept naturally. The optic neuritis still existed. On the 30th, "the dressings were soaked with a colorless discharge, evidently cerebro-spinal fluid." The following days the discharge was profuse. From November 6th to 20th, "the wound suggested strongly a tuberculous infection, with its gelatinous-looking granulations and thin, watery discharges." The tube was removed on the 13th. The temperature during this period varied from subnormal to 103°, rising and falling fitfully; the swelling of the optic discs was lessened. The following week there was still more marked improvement. On November 30th the child was apparently quite well. About the middle of December she had an attack of measles, from which she recovered without a bad symptom.

It is to be regretted that in this case none of the hospital staff took the pains to examine for Koch's bacillus the liquid which escaped through the trephine opening. The attending surgeons, however, regarded it as a clear case of tuberculous meningitis; and to the argument "that it could not have been a case of tuberculous meningitis because the patient recovered," they reply that this same objection would have been used twenty years ago in a case of tuberculous peritonitis, and it is now known that there is a spontaneous cure in a certain number of cases of this disease and that cures sometimes follow laparotomy. They believe that the case which they have reported belongs to the well-known type in which the tubercles are few and the fluid effusion large in quantity. In favor of the tuberculous nature of the affection from which their patient suffered, they refer with considerable emphasis to the prominent symptoms: the hectic temperature, the occasional vomiting, and the persistence of the double optic neuritis.

It is noteworthy in this connection that Parkin, of Hull, has related four cases in which he performed an operation of the same nature, with complete recovery of one child who suffered from chronic hydrocephalus.[8] The operation as performed by him was in the same part of the cranium as that of Ord and Waterhouse recorded above.

---

[8] Lancet, July 1 and November 18, 1893.

AFTER-EFFECTS OF ANTITOXIN.

Dr. Cnyrim,[1] gives a careful clinical history of two cases of an urticaria-like eruption, attended with fever, pain in the muscles and joints, and enlargement of the inguinal glands. Both the cases occurred in assistant physicians of the Hospital Zum Heiligen Geist at Frankfort.

In the first case, the antitoxin had been administered for a mild attack of diphtheria, in which the Klebs-Löffler bacilli were found. The temperature fell to normal in three days, and the throat cleared up; but the patient in the next few days suffered from marked prostration. Five days after the temperature became normal, the eruption appeared (beginning at the site of the injection), the muscular and joint pains were severe, the temperature high, and two weeks elapsed before the patient was able to go home.

In the second case, the antitoxin was injected as a matter of precaution, although bacteriological examination of the throat failed to show Klebs-Löffler bacilli, and the case was considered one of slight catarrhal angina. Two days after the injection, there was loss of appetite, sleeplessness, weakness and malaise, soon followed by fever and general glandular swelling, and on the eighth day by an urticarial eruption. The patient was unable to go home for three weeks.

The coincidence in time, and exact similarity between these two cases leads Dr. Cnyrim to conclude that they are without doubt after-effects of the antitoxin. It is noteworthy that both these cases were rather serious, the temperature reaching 39.5° and 39.6 C. respectively, both patients affirming that they would much rather go through a mild attack of diphtheria than the disease from which they were suffering. Dr. Cnyrim also thinks that such an attack would be a most serious complication in a child already weakened by diphtheria. It will be remembered that in our last issue the occurrence of two cases in Berlin, similar to those just described, was noted. Although all four of the cases recovered, they were serious enough to show that diphtheria antitoxin may produce some unpleasant results. In the Frankfort cases the Behring antitoxin was employed, and the injections were made under most careful antiseptic precautions.

◆

THE NEED OF A REGISTRATION LAW IN MAINE.

This is the subject of an editorial in the new *Journal of Medicine and Science* — an almost pathetic appeal for the protection of the Maine public against quacks and imposters. Flagrant instances are cited of the damage done by travelling "oculists," one of whom fitted no less than twelve patients in one day, with the same sort of prismatic lenses, all with the bases turned out. Another case cited is that of an "oculist" claiming residence in New York, who operated for double cataract, collected his fee and departed promptly.

---

[1] Deutsche Med. Woch., No. 18.

There was no recovery of vision of either eye. According to the journal, the registration laws which have been passed in other States have driven into Maine, crowds of medical tramps, who go there for a place of refuge and a chance to swindle.

The editorial further says: "When merchants of good standing in other States come to Maine they have to pay a license like common peddlers! Ought not foreign doctors to do the same? Have not tax-paying physicians some rights to the same protection that is given to buyers and sellers of merchandise? But better still, to leave aside the mercantile aspect of the case, the health and the sight of the people of our State would be better off by having better physicians; and to get better ones all the time, and to keep out the bad ones, we need a registration law of some sort to be fought after with united efforts till success is gained."

We hope the good fight may result in at least as much of a registration law for Maine as that wrung from its legislature for the State of Massachusetts. In the meantime Massachusetts can spare to Maine or any other State some of her registered practitioners.

◆

MEDICAL NOTES.

Small-Pox in Chicago.— The number of cases in the small-pox hospital during the last four months has fluctuated between forty-two and eighty.

The Antitoxin Treatment of Diphtheria. — Börger reports in the *Deutsche Med. Wochenschrift*, November 29th, the results of 30 cases of diphtheria treated with Behring's antitoxin at Greifswald. Of the 30 cases, 28, or 93 per cent. recovered. In five of the cases tracheotomy was done, with four recoveries, or 80 per cent. According to Börger, the disease at Greifswald is usually comparatively mild during the autumn season. These cases were under treatment in August, September and October. Kuntz, in the same journal for December 6th, reports 25 cases treated at the Hospital in Oschersleben, with 22 recoveries, or 88 per cent. In two of these tracheotomy was done, and both recovered.

Antitoxin Legislation in France.— The Paris correspondent of the *Medical Press* writes (November 28th), that, in view of the danger to the public likely to arise from the uncontrolled manufacture and sale of curative serums and antitoxin, the French Government is invited to incorporate in the bill Regulating the Practice of Pharmacy, a section specially dealing with this class of remedies. In order to ensure that the horses employed in the preparation of serum are perfectly healthy, and generally to provide for the requisite skill and care being brought to bear, the following clauses are proposed: That attenuated virus, therapeutical serum, modified toxines, and similar products intended to be used in the prophylaxis or treatment of contagious diseases, can neither be sold nor distributed gratuitously without a personal permit to be accorded by the Government on the advice of the Council of Public Health and the Academy of Medicine, such permit to be temporary, and its maintenance to be subject to the result of periodical inspections by a special commission. The products in question are to be sold exclusively by duly qualified pharmacists and each phial is to bear the source and date of the preparation. Provided always (as the lawyers say) that these regulations will not be held to apply to Jennerian vaccine, whether human or animal.

A Third Fatal Knock-out.—From New Orleans comes the report of the death of a pugilist from the effects of a blow received on the point of the jaw during a sparring contest. The victim did not regain consciousness, and died about ten hours after the accident. As the result of an autopsy the coroner's verdict was that death occurred from concussion, probably due to the head striking the hard floor. This is the third fatal sparring accident reported within four weeks.

Dangers of Golf. — A physician reports a case of rupture of muscular fibres in the thigh of a powerful athletic man whilst playing golf. All sports are dangerous, and some are brutal.

Why was Dr. Judson Daland dropped from the Board of the Philadelphia Hospital? — The Philadelphia Board of Charities and Correction has appointed Dr. Hobart A. Hare a member of the staff of physicians at the Philadelphia Hospital, in place of Dr. Judson Daland, who has been dropped. The reason given for this action on the part of the board is, that Dr. Daland is alleged to have allowed certain patients suffering from malaria to go untreated for a certain length of time in order that he might study the development of the peculiar organism which produces malaria. To a board capable of such action for such reasons it probably makes very little difference what criticisms may be made upon its action, but we think it likely that the medical profession and the medical press will not rest content without knowing more and saying something about such a policy.

Royal Commission on Tuberculosis.—An announcement is made in the *Gazette* of the names of Her Majesty's Commissioners of Inquiry into Tuberculosis. The appointments are, Sir George Buchanan, Mr. George T. Brown, C.B., Dr. Payne, Dr. Burdon Sanderson; while Mr. C. E. S. B. Hudson, F.R.C.S., is to act as Secretary to the Commission. The exact object of the board is "to inquire and report what is the effect, if any, on human health of food derived from tuberculous animals; and, if prejudicial, what are the circumstances and conditions with regard to tuberculosis in the animal which produces that effect upon man." The usual powers are vested in the commission to summon and examine such witnesses as it may think proper, and to call for any books, papers and documents necessary for the purposes of this inquiry, and to inspect such places as it may deem expedient. The commission previously appointed by royal warrant of July 21, 1890, is revoked and determined in favor of the present inquiry.

The Disinfection of Medical Fees.— Professor Demosthenes, of Bucharest, according to the *Bulletin Médical*, calls attention to the danger of the transmission of contagion by fees received from patients suffering from contagious diseases. He contends that such money ought to be kept in a pocketbook of metal or impermeable cloth, which can be sterilized by the flame or by boiling, and that the physician ought to disinfect his hands before leaving the sickroom. This last rule is certainly one which ought to be followed, whether the physician receives money or not. During the present hard times, there is little danger, at least in this country, from the transmission of contagious diseases by physicians' fees, as these fees are not paid in most instances till months after the patient has recovered. The danger would appear to be far greater to the butcher, grocer, etc., who are paid much more promptly than the physician.

A Death under Chloroform Anesthesia.— The *Lancet* for December 1, 1894, gives an account of a death under chloroform anesthesia in dental practice. No disease of the heart was found at autopsy, but as there was no evidence of suffocation, the cause of death was thought to be heart-failure.

The Sanitary Condition of Paris.— During the three months ending October first the weekly mortality of Paris was less than usual by fully one hundred deaths. Cases of typhoid, scarlatina, smallpox, measles, in fact, of all infectious diseases except diphtheria, were of very rare occurrence. The same low mortality is said to have obtained in London and throughout the whole southeastern part of England. The mean mortality for the three months, ending October 1st, in England and Northern France, fell to 14.2 per 1,000, the average for this time of year being 20.2 per 1,000. The mortality from infectious diseases was 1.92, in place of 2.96 per 1,000.

A Remarkable Tumor of the Sciatic Nerve. — In the *Medical and Surgical Reporter* for November, 1894, Morton reports a cure of sarcoma of the sciatic nerve, occurring in a woman forty-two years old, which he was able to remove without severing the continuity of the nerve or causing loss of power in the leg. Three months after the operation the patient remained quite well. Although the tumor was a large one, measuring four inches in length, and seven in circumference, and had been developing about a year, it had caused little or no discomfort, and no history of sensory or motor disturbance of the distribution of the sciatic could be obtained. To pressure and palpation the growth was almost insensitive.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, December 19, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 120, scarlet fever 74, measles 40, typhoid fever 17.

Preparations for Supplying Diphtheria Antitoxin. — The Massachusetts State Board of Health has several horses already under inoculation with the diphtheria toxin, and expects ultimately to be in a position to supply considerable quantities of the antitoxin. Suitable horses can be obtained for a very small price. The Boston Board of Health is also getting ready to furnish a supply to the public institutions of the City.

Protests against the Slaughter of Tuberculous Cattle.— The farmers in Worcester and Bristol Counties, are vigorously protesting against the action of the Massachusetts Cattle Commissioners in enforcing the law with regard to the tuberculin test. The farmers maintain that the tuberculin test is not reliable, and also that they ought to receive as compensation for the loss of a tubercular animal the full value of a healthy one. The cattle commissioners are in a better position to judge of the value of tuberculin than the farmers, and as to the second point of contention, it is human nature to try to get as much as possible, but commissioners may well ask why they should be obliged to pay the full value of a healthy cow in order to save themselves from drinking the milk (paid for at regular rates) from a diseased one.

The Oyster Epidemic of Typhoid Fever at Wesleyan University. — H. W. Conn, M.D., Professor of Biology in Wesleyan University publishes in the *Medical Record* an account of a careful and thorough investigation of the epidemic of typhoid fever at Wesleyan University. The facts ascertained by Dr. Conn prove conclusively that infected oysters were the cause of the outbreak.

The Vermont Medical Monthly.— A new medical journal will be published under this name at Burlington, Vt.

The Maine Academy of Medicine. — This new organization held its first meeting November 12th. The object of the Academy is stated to be "The promotion of the science and art of medicine; the public health and the maintenance of a medical library." Its range of Fellowship is to be as wide as that of the American Public Health Association which includes physicians, dentists, apothecaries, lawyers, ministers, civil and sanitary engineers, architects, health officers, teachers, plumbers, merchants, etc. The officers are: President, S. C. Gordon, M.D.; Vice-Presidents and Presidents of Sections, S. H. Weeks, M.D., C. A. Ring, M.D., L. W. Pendleton, M.D., A. K. P. Meserve, M.D., E. E. Holt, M.D., E. C. Jordan, C.E., B. B. Foster, M.D.

NEW YORK.

New York City Taxed for State Insane. — It is announced from Albany that the Attorney General's suit to compel the city to pay its share of the State tax for the care of the insane has been success ful, and that a peremptory mandamus has been issued requiring the Comptroller to pay $714,000, the amount of accumulated taxes. The city has repeatedly fought against paying this tax, on the ground that, as the State Care for the Insane Act permitted it to retain charge of its own insane, it was unconstitutional that it should be required to pay its *pro rata* share of the cost of maintaining the State insane.

◆

Miscellany.

THE INDEX MEDICUS NEEDS SUPPORT.

THE *Index Medicus*, it is stated, will cease to be published with the February number, owing to lack of support and the fact that a large number of its subscribers are delinquent, unless an effort is made to continue it. Each year has shown a deficit.

The value of this publication to those who do any work at all in connection with medical literature is very great, and it is particularly necessary that the *Index Medicus* should be continued now, owing to the fact that after the completion of the supplementary volume of "The Index Catalogue of the Surgeon General's Library" there will be no record of contemporary medical literature, and he who desires to keep pace with it, or who wishes to study a particular subject will have to resort to the laborious task of seeking in various journals that which he desires if the publication of the *Index Medicus* ceases.

It will be possible to continue the *Index Medicus* if five hundred new subscribers are obtained. The subscription price is ten dollars per annum, which should be sent to Mr. George S. Davis, publisher of the *Index Medicus*, Box 470, Detroit, Mich.

◆

THE ANTITOXIN TREATMENT AT STUTTGART.

SIGEL,[1] of Stuttgart, gives an account of the treatment of twelve cases of diphtheria in children by antitoxin at the Olga Hospital. Seven of the cases were severe, and three in a condition which would heretofore have been considered incapable of cure. Nine of the twelve cases required tracheotomy; and from these cases Sigel concludes that the course of the disease after tracheotomy is much more favorable with the antitoxin treatment. One child sat up in bed playing on the day after tracheotomy had been performed.

The results noted after the antitoxin injections were (1) rapid improvement in the general condition, (2) a more rapid detachment of the membrane, (3) the possibility of an early removal of the tube (in one child on the third day). No influence on the temperature was observed.

It is interesting to know that all twelve children had albuminuria, but that in six of them this did not appear till after the antitoxin injections. Although on the seventeenth day after the treatment was begun all the children were doing well, Sigel is unwilling to pronounce an opinion on the value of the treatment, as he considers the present epidemic to be of a mild character.

---

[1] Deutsche Med. Woch., November 29, 1894.

Correspondence.

REMINISCENCES OF THE HARVARD MEDICAL SCHOOL IN THE YEAR 1846.

BOSTON, December 3, 1894.

MR. EDITOR: — In my letter of October 18th, referring to the Harvard Medical School in 1846, I intended to allude to each professor, giving only first impressions made by them on the student; but finding that the letter would be too long, mention of some were omitted.

Your correspondent "C" (October 30th) refers to Dr. Channing's female pelvis and rag baby. I remember, too, with what facility and rapidity it would be "born again"; how the baby would "wind about and in and out" five times in as many minutes; but, bless your heart, Dr. C., didn't you have a manikin? I suppose not, as your pupilage was three whole years before mine. Ours was faithfully used, but I was surprised that we learned so little from it; all I could see was the "final dive."

Anesthetics had just begun their career, and the question arose whether they could or should be used to relieve the pains of parturition. Many objections were brought up against their use; but the most perplexing one was, that the act would be sacrilegious and an attempt to set at naught a decree of the Almighty, who had declared to Eve that "in sorrow should she bring forth children." The pros and cons were earnestly and conscientiously discussed, and the conclusion was on the whole that the use of ether was permissible. The outcome of this discussion was a gilt-top, two-dollar-and-a-half book by Dr. Channing.

Dr. H. J. Bigelow began his career as instructor in the Tremont-Street Medical School. He was rather tall, very slim, erect, of graceful figure, and wore a drab-colored coat. His lectures were highly practical and free from romance. He had the air of one who had a firm footing and (like the street-cars) "the right of way." As an operator he was somewhat ostentatious. He would take his knife as you would hold a pen, raise it to a level with his forehead, then bring it down to the selected spot. The same manœuvre (similar to that of an expert pianist) would be gone through with when he changed his instrument.

Dr. D. H. Storer was one of the most genial, cheerful and unselfish men that I ever knew — always glad to do a favor. He was teacher of obstetrics in the Tremont-Street School at this time, and went over to the Harvard School when that school absorbed the former. The Tremont-Street School was much the better of the two.

To change the subject; the two most important epochs in medicine in the last half century were the establishment of anesthesia and Listerism; and any minor details of their early history now have more or less interest. In the summer of 1872 it was my privilege to witness the practice of Mr. Lister at the Edinburgh Infirmary. He is a tall, stout but well-proportioned man, with a physique and countenance indicative of great physical and mental vigor. He had full confidence in the importance and final success of his discovery, but this confidence seemed to be shared by no one else. None of the other surgeons used his treatment. Mr. Spence and the rest tabooed it wholly, and were then using the cotton-batting dressing. The trustees of the Infirmary were opposed to it, and contemplated its abolition on the ground that patients were kept too long in the house for the sake of experiment. Lister treated all wounds antiseptically, with only partial success. He had a case of caries of the spine that had been under treatment six months with poor success. A case of lacerated wound of the knee-joint was brought in and treated antiseptically. The patient died in three days of septicemia. But such cases did not dampen the ardor of Lister. He did not claim that perfection had been attained. He said that carbolic acid was the best antiseptic known then; but it was an irritant, and objectionable on that account, and probably would be displaced in the future for something better. Boracic acid was better for surface wounds, but not being volatile could not penetrate deeply. The greatest honor that can be conferred upon a Scotch surgeon is an appointment in one of the great London hospitals and this came in due time to Lister. He was invited to St. George's, where he still is.

After leaving Edinburgh I visited the London and Paris hospitals, but not a whiff of carbolic acid did I smell. They were using the cotton-batting dressing with very good success. Yours respectfully,

Isaac F. Galloupe, M.D.

AN OLD-TIME BOOK OF AN OLD-TIME DOCTOR.

Roxbury, December 1, 1894.

Mr. Editor: — Through the kindness of a patient who has lately come into possession of some family documents I have before me a curious old book, covered with parchment and tied with leather thongs. It contains about two hundred pages, which are pretty closely written in different hands and at different periods — the same owners having shown a markedly thrifty disposition toward the using up of blank paper.

The first owner seems to have been a farmer; and the earlier pages, in a faint ink, bears date about 1720, and contain charges mostly for farm work and produce against various individuals. These entries have been in part written over, after the manner of the ancient palimpsests, by subsequent owners.

The next series of entries was apparently by Joseph Wales, about 1750 to 1758, and refer to horse-shoeing and other work.

A strong and very legible chirography is that of "Wm. Holden, one of His Majesty's Justices of the Peace for the County of Suffolk," who writing from the opposite end of the book, fills a number of pages with records of the cases tried before him in the decade before the Revolution. Besides these reports of law-suits, I find minutes of sundry civil marriages performed by this magistrate. A not infrequent species of entry is the following, from which I suppress the names:

> Suffolk, ss. Dorchester, July 28, 1768. Then personally appeared Susannah ——, of said Dorchester, Spinster. Being first Strictly charged to declare the Truth, she, the said Susannah, solemnly swore that she was then with child (or pregnant) by one —— ——, of Newtown, and that the child she was then pregnant with was begotten on the sixth day (at Night) of November, one thousand seven hundred and sixty-seven, by the afores'd —— ——, and that he and no other person was the father of the same, etc.

Another such child was sworn to have been begotten on June 3, 1771, "being the day of Artillery Election at Boston." In many of these cases the statement employed by the affirmant was that "when the child should be born it was likely to be born a Bastard," which, while no doubt a regular legal formula, strikes one as a delightfully circumspect and guarded statement of the probabilities.

The final writer in this book was Dr. Phineas Holden, of Dorchester (probably a descendant of the magistrate), who used it for his professional accounts, between the years 1799 and 1808, and mixed freely with these all sorts of other memoranda. Dr. Holden's contributions to the volume are my excuse for the present communication.

The chief use to which the doctor put this book was as a ledger. Successive pages have at the top the names of more or less prominent citizens of old Dorchester. The commonest entry is under a given date "To one visit," and the member of the family on whom the visit was made is always carefully specified. The amount charged, however, is rarely set down. Once, for medicine, the charge of 1*s*. 6*d*. appears. Rarely, at the bottom of the page, is the entry "Paid in full" (the amount not specified), oftener we read "Not paid"; and oftenest of all there is no record as to payment, which may mean either that the doctor was a poor collector or a poor book-keeper.

Obstetric attendance is generally expressed by the formula, "To laying his wife"; more rarely by "To putting his wife to bed." The next commonest service seems to have been pulling teeth. In one family the entry "To pulling a tooth for Hannah," and "To pulling a nother tooth for Hannah" appears so often that one counts to see if that one young woman could have furnished the wherewithal for so many extractions. But it is all right.

Among other items showing the nature of his practice I transcribe a few:

> To one visit to His negro.
> To one visit to william kickt by a horse.
> All night to laying his wife.
> To all night with his wife.
> Colick to 2 visits Oct 21.
> To seting Mr. Bird's Arm.
> To attending his Son with a Sore on his face.
> To dressing his sore finger.
> To cutting his child's tung.
> To 1 visit to him with his knee.
> To 1 visit to his girl with a nut in her throat.
> A Lady at ben Jacobs, to 1 visit to her negro woman.
> To one visit to Charlot in fits.

In the somewhat long list of the children born by his minister's wife appears the entry,

> 1807. She made a misgo this February.

The only therapeutic note I find is the following:

> Cure for fellons. Wormwood steeped in Rum put in powdered Rozen then pull it as Wax then spread it on Leather and put it on, they Say it is Certain.

A side light on the life of a country doctor of that day is afforded by charges mixed in with those for professional attendance — for "half bushel Carrots," "To quarts cyder he has had" (with a tally-score following), "To gitting his salt hay," etc.

Interspersed with these professional and extra-professional charges are memoranda more or less trivial, as to the date when the cherry-trees "were blone," when was the first snow and the latest, when he killed his pigs, when he made "sope," and how much ashes he used therefor, when "the Tin wair men came," etc. Again, we have glimpses of mild festivity. Of a wedding in 1803 he says:

> He and his Lady Rode to Church in a coch, thair was mats Laid from the coach into the Church then flanel for them to walk on.
>
> 1802. The Doct and his wife went to see the Sain Drawn June 14.

A similar outing occurred in 1806 — "To see the Sain put out & drawn in."

Probably the doctor was a militia surgeon. At all events he went to the trainings:

> 1800. The Bregade turned out at Dorchester Sep. 25.
> 1801. Grate training at Brantry (Braintree) Sep. 17.
> 1802. The Bregade turned out at Jamaica plane Sep. 20.

Perhaps the doctor was at one time a valetudinarian, or was obliged to take his exercise indoors, otherwise what would be the point of the note, "160 times a cross our Long Entry is a mile."

The book contains some items of general historical value; for instance:

> 1799. A fier in Boston opeset the White Horse, May 11.
>
> 1800. Went to Mr. Ballard's for the first time. Governor Gill Buried the Same Day.
>
> 1801. Doct Rans Son killed in a Duel June 14 on Dorchester Neck and he heard of another Son's Death in half anour after in the Westinges.

I fear the good doctor was a little close with his servants (for his accounts with them are in the book and show an occasional debit for the pulling of a tooth and the like); but he was a pious man, and many is the hymn which finds its way into the pages of his book. I will not weary you with them, but will in closing transcribe one stanza which apparently appealed to the doctor as descriptive of the successive stages of human life. It is hardly equal to Shakespeare's Seven Ages, but here it is:

At ten a child, at twenty wild,
At thirty Strong if Ever,
At forty wise, at Fifty Rich,
At sixty Good or Never.

Yours truly,

Chas. F. Withington, M.D.

METEOROLOGICAL RECORD,

For the week ending December 8th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S .. 2	29.95	31	34	28	80	95	88	N.	N.W.	3	6	O.	N.	.44
M .. 3	30.14	32	37	26	77	66	71	N.W.	W.	15	8	C.	C.	.02
T .. 4	30.06	30	38	22	76	72	74	S.W.	W.	9	6	F.	C.	
W .. 5	30.12	34	43	2[illegible]	76	73	74	N.W.	S.W.	9	9	C.	C.	
T .. 6	30.07	8	46	29	68	72	70	W.	W.	14	11	C.	C.	
F .. 7	30.18	36	41	30	53	66	60	N.W.	S.	9	7	C.	O.	
S ... 8	30.14	34	38	31	66	94	80	S.	N.E.	3	5	O.	N.	.03
☞														.49

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week

RECORD OF MORTALITY

For the Week ending Saturday, December 8, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Acute lung diseases.	Typhoid fever.	Diphtheria and croup.	Scarlet fever.
New York	1,956,000	680	226	12.90	17.85	1.20	6.00	.90
Chicago	1,600,000	—	—	—	—	—	—	—
Philadelphia	1,139,457	398	127	16.00	—	1.50	12.00	.50
Brooklyn	1,043,000	358	121	17.64	17.08	.56	13.16	1.40
St. Louis	540,800	—	—	—	—	—	—	—
Boston	501,107	244	86	25.01	12.30	2.05	17.63	1.64
Baltimore	500,000	—	—	—	—	—	—	—
Washington	285,000	89	21	17.22	17.22	4.92	4.92	1.23
Cincinnati	325,000	137	40	10.95	8.03	2.92	4.38	—
Cleveland	325,000	100	39	18.00	12.00	2.00	1.00	12.00
Pittsburg	272,000	97	48	19.57	21.63	1.03	8.24	2.06
Milwaukee	265,000	—	—	—	—	—	—	—
Nashville	87,754	34	3	5.88	20.58	—	2.94	2.94
Charleston	65,165	30	12	3.33	3.33	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	100,410	13	4	7.69	24.07	—	—	—
Fall River	92,233	33	10	18.18	21.21	9.09	—	—
Lowell	90,613	32	16	9.39	28.17	—	6.26	—
Cambridge	79,607	14	4	21.42	21.42	—	14.28	—
Lynn	65,123	—	—	—	—	—	—	—
Springfield	50,284	8	0	—	—	—	—	—
Lawrence	49,900	17	7	5.88	23.52	—	—	5.88
New Bedford	47,741	20	7	20.00	5.00	—	10.00	—
Holyoke	43,348	11	0	—	9.09	—	—	—
Brockton	33,939	8	3	—	—	—	—	—
Salem	33,155	9	6	—	11.11	—	—	—
Haverhill	32,925	5	0	—	—	—	—	—
Malden	30,209	6	2	50.00	—	16.66	16.66	—
Chelsea	29,806	6	4	16.66	—	—	16.66	—
Fitchburg	29,383	7	4	—	14.28	—	—	—
Newton	28,837	7	4	57.12	—	—	57.12	—
Gloucester	27,293	—	—	—	—	—	—	—
Taunton	26,954	18	5	22.22	—	—	16.66	—
Waltham	22,058	3	0	—	—	—	—	—
Quincy	19,642	10	3	30.00	10.00	—	30.00	—
Pittsfield	18,802	—	—	—	—	—	—	—
Everett	16,585	4	2	50.00	50.00	—	25.00	—
Northampton	16,331	4	0	—	—	—	—	—
Newburyport	14,073	7	0	—	14.28	—	—	—
Amesbury	10,920	3	0	—	33.33	—	—	—

Deaths reported 2,476; under five years of age 818; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 384, acute lung diseases 320, consumption 315, diphtheria and croup 218, scarlet fever 39, typhoid fever 35, diarrheal diseases 32, whooping-cough 20, measles 12, erysipelas 10, malarial fever 10, cerebro-spinal meningitis 6, small-pox 2.

From diarrheal diseases New York 8, Philadelphia and Pittsburgh 4 each, Cleveland 3, Boston, Cincinnati, Fall River and New Bedford 2 each, Brooklyn, Washington, Charleston, Cambridge and Malden 1 each. From whooping-cough New York and Brooklyn 5 each, Boston 4, Washington, Worcester, Fall River, Lowell, Taunton and Pittsfield 1 each. From measles New York 8, Philadelphia and Pittsburgh 1 each. From erysipelas Cincinnati, Cleveland and Pittsburgh 2 each, New York, Philadelphia and Brooklyn 1 each. From malarial fever New York 5, Brooklyn and Washington 2 each, Philadelphia 1. From cerebro-spinal meningitis New York 3, Boston, Washington and Cincinnati 1 each. From small-pox New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending December 1st, the death-rate was 17.8. Deaths reported 3,570; acute diseases of the respiratory organs (London) 263, measles 132, diphtheria 89, whooping-cough 57, diarrhea 55, fever 53, scarlet fever 42, small-pox (Birmingham 3) 3.

The death-rate ranged from 13.8 in Huddersfield to 25.1 in Swansea; Birmingham 17.2, Bradford 16.8, Cardiff 17.2, Croydon 14.4, Leeds 21.6, Leicester 18.2, Liverpool 20.8, London 16.1, Manchester 17.2, Newcastle-on-Tyne 19.4, Nottingham 14.2, Portsmouth 21.0, Salford 20.5, Sheffield 17.9, Sunderland 22.6.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 8, 1894, TO DECEMBER 14, 1894.

The leave of absence granted **Captain Eugene L. Swift**, assistant surgeon, is further extended two months.

First-Lieut. Charles E. B. Flagg, assistant surgeon, now on duty at Angel Island, California, will report in person at Fort Townsend, Washington, for temporary duty at that post.

Captain Euclid B. Frick, assistant surgeon, is granted leave of absence for four months.

First-Lieut. Madison M. Brewer, assistant surgeon, upon the expiration of his present leave of absence will be relieved from duty at Fort Riley, Kansas, and will report for duty at Fort Keogh, Montana.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING DECEMBER 15, 1894.

M. R. Pigott, passed assistant surgeon, from Chelsea Hospital and to Mare Island Hospital.

S. G. Evans, passed assistant surgeon, from Mare Island Hospital and to the U. S. S. "Pinta."

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The next lecture will be given on Thursday evening, December 27th, at 8 o'clock, by Dr. J. H. McCollom. Subject, "Diseases Dangerous to the Public Health." Physicians are cordially invited.

RECENT DEATHS.

George Jewett, M.D., M.M.S.S., of Fitchburg, died in that city December 16th, age sixty-nine years. During the war he was surgeon in the Union Army under Generals McClellan and Meade. He was at one time president of the Worcester North Medical Society, and vice-president of the Massachusetts Medical Society. He was a trustee of the Fitchburg Public Library and of the Burbank Hospital, and also a member of the consulting staff of that hospital.

Charles Pinckney Gage, M.D., of Concord, N. H., died in that city on November 26th, aged eighty-three. He was a graduate of the Dartmouth Medical School and of the Cincinnati Medical College, and practised for a time in Cincinnati, but soon returned to Concord, where he practised for many years. He was one of the original members of the American Medical Association and had been president of the New Hampshire Medical Society.

BOOKS AND PAMPHLETS RECEIVED.

Bladder Gymnastics and Auto-Irrigation. By Byron H. Daggett, M.D., Buffalo, N. Y. Reprint. 1894.

The Hygienic and Dietetic Management of Phthisis. By L. P. Barbour, M.D., Thomasville, Ga. Reprint. 1894.

Retinoscopy as a Crucial Test in Measuring Errors of Refraction. By B. Alex. Randall, M.A., M.D. Reprint. 1894.

Lumbar Puncture for the Removal of Cerebro-Spinal Fluid. By William Browning, M.D., Brooklyn, N. Y. Reprint. 1894.

A New Apparatus for Administering Anesthetics in Face and Mouth Operations. By Edmond Souchon, M.D. Reprint. 1894.

The Treatment of Empyema, with Selected Cases. By J. William White, M.D., and Alfred C. Wood, M.D. Reprint. 1894.

Four Cases of Chronic Pulmonary Involvement, with Features of Special Interest. By E. R. Axtell, M.D., Denver, Col. Reprint. 1894.

Original Articles.

A CASE OF MENTAL SHOCK.[1]

BY GEORGE F. JELLY, M.D.

In January, 1891, I was asked to see in consultation Mr. G. W. H., aged thirty, married, who had been employed for several years by the Old Colony Railroad as superintendent of trains, his duty being to make up trains and send them to the depot. He was born in Massachusetts, of healthy parents without any marked heredity to disease, was a man of good habits and character, had never used liquor or tobacco, and had never had venereal disease. He was nervous and excitable in temperament, but had always been in good health.

A few days before I saw him, while walking across the railroad track, he caught his foot in an electric wire which was being laid for the use of the road, and fell directly across the track, striking upon his hands. He knew that an express train was approaching, realized that there was not time to rise and move away, but managed to throw or roll himself from the roadbed to the side of the track, and lay there while the train passed with great rapidity, within a few inches of his head and body. He was entirely uninjured, so far as could be seen, except that he had a slight wound upon one hand, which he received in falling, having put out his hands to break his fall, and which was of no consequence. He rose after the cars had passed, somewhat shaken up, but apparently not very much disturbed, and went home. He told his wife of his fall and narrow escape, seemed nervous and restless, and had little appetite for food. He slept but little in the early part of that night, and before morning seemed startled and frightened, and it was found that he could not speak. This state of things continued till the time I saw him. I found him in bed, looking tired and worn, with marked tremor of lips, tongue and hands; and on having him taken out of bed, he was very unsteady on his legs, which were also very tremulous, and he was unable to walk without assistance. A careful examination revealed no trouble with his heart, lungs, liver, stomach or intestines, and a subsequent examination of the urine showed no disease of the kidneys. His reflexes were normal, and there was no paralysis of sensation or motion, and no hyperesthesia so far as could be ascertained. His pupils were of equal size, and contracted and expanded properly. There was no ophthalmoscopic examination. Any noise disturbed him very much; and the sound of railway trains, which passed frequently near his house, excited him and made him tremble as if afraid. He could not talk, and while apparently understanding what was said to him, answered only by signs. Some of his signs were original, but had already become familiar to his wife — for instance, passing the palm of one hand over the palm of the other, meant a slice of bread spread with butter; the closed hand raised to the mouth, and that organ being opened as if to bite something round, meant that he wanted an apple. His temperature was normal, his pulse rapid and tense. He had taken food fairly, but had slept only under the influence of bromide. The presence of many people disturbed and confused him; and a strange face like mine threw him at first into a violent tremor, which became less when he became accustomed to my presence. He could point out familiar objects in the room, like the family pictures, when asked to do so, and their names were mentioned to him. He did not seem to lack intelligence when quiet and not frightened, but simply the ability to talk.

I saw him a few days after my first visit, and found him much the same except that he was more quiet and less disturbed by persons and things about him and by noise. When I next saw him, after three weeks, he could talk some, but very slowly, and he stammered badly. His mind acted very sluggishly, and he would be two or three minutes in replying to a question requiring a very few words. If hurried he became utterly confused. I did not visit him again for several weeks, but heard from him through his family physician. He gained gradually in strength and in ability to talk, and his gait became more steady. At one time, for a week, he was excited and irritable; but that condition soon passed, and he was generally pleasant, easily directed, and easily cared for.

During this period, which covered several weeks from the time of the accident, he apparently understood all that was said to him. Noises of the city, and especially those of the cars and locomotives, disturbed him so much that in the summer of 1891 he was taken to a farm in New Hampshire, where he remained several months. He made the journey by carriage, and was not especially troubled by it. He improved slowly during the summer, and in the autumn, instead of returning to Boston, he went to his father's in a very quiet part of Middlesex Fells. I then saw him more frequently, as he passed directly under my care. I found that he had made decided progress, that he was less easily made nervous, that he talked better (but still very slowly), and that there was a good deal of tremor of the lips, tongue, hands and legs. He was able to take a good amount of exercise and to assist his father about the house and garden. He still found himself unable to go near the cars without increasing the trembling and creating a strong impulse to run away, which it was difficult to resist. He could, however, recollect almost nothing of the daily occurrence of his life without assistance from his wife.

During the autumn of 1891 and the winter of 1892 there was the same gradual gain, which became more decided and more marked in the spring.

In June, 1892, there was a rather rapid clearing up. To my surprise I then found that he had no recollection of anything which had occurred from the time of his accident in January, 1891, a period of seventeen months, and that while he had apparently understood what was said, and had seemed to know what he was doing, none of these things had made any impression upon his mind, and his acts had been largely automatic. As a marked instance of this, might be mentioned that, several months before, he had turned the full stream of a garden hose which he was using into the mouth of a man who swore at him in passing, saying that he would wash out his mouth. Of this transaction he remembered nothing. He did not recollect distinctly having seen me; and his changes of residence were equally indistinct. His memory of things now increased, one day at a time, till he could look back one week, then two, then three weeks, then a month, till now he can recollect many important things for six months, and with a little help can go back still further; but he still cannot recall many smaller matters.

---

[1] Read before the Boston Society for Medical Observation, November 5, 1894.

In the summer of 1892 he brought a suit against the Old Colony Railroad, claiming that the wire which caused his fall should not have been where it was without protection. He was examined on the witness stand. He trembled excessively all over, especially in his hands, legs and face. He became much confused; and a condition of nervous excitement was produced, and followed, which continued nearly a week, impaired his appetite, and prevented him from sleeping for several nights. The lawyers of the railroad, both in private and in court, admitted that he had been a faithful employé, that his injuries were real, and that he was entirely honest, and made a proposition to compromise and settle before the trial. They, however, claimed that the road was not liable, and wished a ruling in the lower court on which they could go to the Supreme Court on that question. The judge of the Superior Court took the case, for that reason, from the jury before the conclusion of the testimony, and heard arguments on the question of liability. He took occasion, in the absence of the jury, to say that if the case went to them, then there was no doubt from the course of the trial, and especially from the condition of the plaintiff, that the verdict would be in his favor; and in that opinion the counsel of the railroad seemed to concur. After more than a year's waiting the Supreme Court gave an opinion that the railroad was not liable, on the ground that while the plaintiff as an employé of the road had a right to be where he was at the time, he had not used due care and caution.

Since this suit, which was brought two years ago, the patient has come to my office at intervals of two or three weeks, and I have had an opportunity to watch his progress, which has in general been continuous, but subject to variation arising from any unusual occurrence. The death of his father, which occurred somewhat suddenly after a short illness, upset him completely. He was thrown from the back of a horse, and did not recover from the shock for several weeks. He attended a family gathering at Thanksgiving, and in consequence, did not sleep well for three weeks.

While there has been the constant improvement which I have mentioned, it was not till the present summer that he could trust himself to riding in the steam-cars or the "electrics," as the approach of either still startled and frightened him, and brought on severe trembling. He persevered, and endeavored to overcome this by going to the railway station and by accustoming himself to meet the electrics. In August last he was nauseated and vomited after riding in an electric-car; but since the early part of September all this has passed, and he now comes to my office in the steam-cars and electrics without apprehension or special inconvenience of any kind.

I have never discovered any loss of sensation or any hyperesthesia. Sometimes there has been a slight exaggeration of the knee-jerk, but almost always it has been normal, as it was at the time of my first examination. The most marked symptoms from the first have been the general tremor and the mental weakness which I have described. He has led and is still leading a very quiet life, in a secluded place, and is in excellent general health. He has of late gained flesh, and now has rather more than his usual weight. He is naturally a slight man, but at one time was very thin. He has worked about the house and garden, and can do manual labor which is not severe. He helps a grocer who lives near him; but to attempt to do anything which requires any real responsibility, was for a long time followed by mental confusion and trembling. He has still to be very careful; but the more marked and decided recent gain has encouraged him to attempt to run a wagon for the sale of butter, cheese and eggs in his neighborhood, an occupation which will keep him much in the open air, and will require little outlay and not much responsibility. He is still not well, but there seems to be absolutely no evidence that he does not do all in his power to help himself. He certainly is very anxious to go to work, and he is so situated that it is very necessary that he should do so.

I gave at first an entirely favorable prognosis, and expressed the opinion that in a few months he would be well. I was always inclined to be hopeful about his future in the absence of more grave symptoms. But the long continuance of the tremor, which was very great under slight provocation, and of the other symptoms of physical and mental enfeeblement; the many months in which his acts seem to have been in a great measure automatic, and to have made no impression upon his memory, which is still impaired; and the fact that nearly four years have now elapsed since the accident, make me less confident than I was of his entire recovery. The history of the case, and the absence of symptoms of organic disease, indicate that the patient was and is still suffering from functional or hysterical disease of a neurasthenic type. He now trembles very little; an excessive irritability, which is unnatural to him, has almost disappeared; and while his mind is still weak and can act only slowly, and in rather narrow limits, he is far advanced in convalescence.

I have called this "a case of mental shock" because there was an entire absence of any physical injury which could have originated the symptoms from which the patient has suffered. It is a singular fact that several times during the years in which he had been in the service of the railroad he had been in positions of great danger from which he barely escaped with his life, and never before had suffered any serious injury or been especially disturbed.

The fright and shock in this instance seem to have acted upon him very much as they sometimes do in children in the production of chorea and epilepsy. While it is difficult to prove, it is probable that such cases depend on nutritive disturbances in the brain caused indirectly by the violent action of psychical emotions upon the vaso-motor centres, and directly by the anomalous action upon the vascular currents of the brain which proceed from those centres.

The treatment of the case has been very simple. He took bromide at first to quiet nervous excitement, and occasionally at intervals when he has been unable to sleep. He has taken strychnia, arsenic, and ol. morrhuæ; but the chief reliance has been upon a quiet retired life, out-of-door exercise and an abundance of good nourishing food. For a time the faradic current was used, but without apparent effect. I have not looked up fully the literature of similar cases, but they are less frequent than those following more marked physical injuries.

Under the head of "Traumatic Neuroses," Osler gives this definition : "A morbid condition following shock, which presents the symptoms of neurasthenia or hysteria, or of both. The condition follows an accident, often in a railway train, in which injury has been sustained, or succeeds a shock or concussion from which the patient may apparently not have suffered in his body. A man may appear perfectly well for several days, or even a week or more, and then develop symptoms of the neurosis. Bodily shock or concussion is not necessary. The affection may follow a profound mental impression; thus an engine-driver ran over a child, and received thereby a very severe shock, subsequent to which the most pronounced symptoms of neurasthenia developed. Severe mental strain combined with bodily exposure may cause it [as in the case of a naval officer who was wrecked in a violent storm, and exposed for more than a day in the rigging before he was rescued]. A slight blow, a fall from a carriage or on the stairs, may suffice."

Osler divides these cases into three groups: "Simple neurasthenia, cases with marked hysterical manifestations, and cases with severe symptoms indicating or simulating organic disease.

"In simple traumatic neurasthenia the first symptoms usually develop a few weeks after the accident, which may or may not have been associated with an actual trauma. The patient complains of headache and tired feelings. He is sleepless, and finds himself unable to concentrate his attention properly upon his work. A condition of nervous irritability may develop, which may have a host of trivial manifestations, and the entire mental attitude of the person may for a time be changed. [He dwells continually upon his condition, gets very despondent and low-spirited, and in extreme cases, melancholia may develop.] The bodily functions may be well performed, though such patients usually have for a time, at least, disturbed digestion and loss in weight. The physical examination may be entirely negative.

"Second, cases with marked hysterical features. Following an injury of any sort, neurasthenic symptoms like those described above may develop, and, in addition, symptoms regarded as characteristic of hysteria. The emotional element is prominent, and there is but slight control over the feelings. A violent tremor may be present, and indeed constitutes the most striking feature of the case. [I have recently seen an engineer who developed subsequent to an accident a series of nervous phenomena, but the most marked feature was an excessive tremor of the entire body, which was specially manifest during emotional excitement.] The most pronounced hysterical symptoms are the sensory disturbances. [It will be recollected that in my case they were uniformly absent.] As noted by Drs. Putnam and Walton, hemi-anesthesia may occur as a sequence of traumatism.

"Third, cases in which the symptoms suggest organic disease of the brain and cord. As a result of spinal concussion without fracture or external injury, there may subsequently develop symptoms suggestive of organic disease. The cases in this group, about which there is so much discussion, are those which display marked sensory and motor changes. In rare cases following trauma and succeeding to symptoms which may have been regarded as neurasthenic or hysterical, there are organic changes which may be fatal. That this sequence occurs is demonstrated clearly by recent post-mortem examinations. The features upon which the greatest reliance can be placed in indicating definite organic change are optic atrophy, bladder symptoms, particularly in combination with tremor, paresis, and exaggerated reflexes.

"The anatomical changes in this condition have not been very definite. When death follows spinal concussion, there may be no apparent lesion; but in some instances the brain or cord has shown punctiform hemorrhages. Edes has reported four cases in which a gradual degeneration in the pyramidal tracts followed concussion or injury of the spine; but in all these cases, there was marked tremor, and the spinal symptoms developed early, or followed immediately upon the accident. Post-mortems upon cases in which organic lesions have supervened upon a traumatic neurosis are extremely rare."

Page defines shock as, "The sudden depression of organic, vital and nervous power produced by injury, either to mind or body. It has long been recognized that fright may be a cause of serious disturbance of health; and the phenomena of shock, produced by it, like as they are in all respects to those which ensue upon severe physical injury, give evidence of a grave effect upon the nervous system.

"The siege of Strasbourg and the siege of Paris during the last Franco-German War, were both productive of many examples of grave nervous disturbance which clearly had their origin in the terrible circumstances to which the sufferers had been exposed, to wit, the constant bursting of shells, the ever-present sense of danger. To a railroad accident there is the added element of fright; and collapse from fright is met with in various degrees of severity; and we may leave out of the account cases in which there has been some physical injury inevitably associated with and giving rise to shock. There may be immediate collapse, or collapse the symptoms of which may be delayed by the excitement of the scene, warded off but not prevented, rather increased, by the delay; for the excitement is in itself a cause of nervous prostration. It is not uncommon for a man who has merely felt a little dazed and sick at the time of the accident to break down completely after he reaches home, and then to present the symptoms of ordinary collapse. From this period may date the beginning of more obvious mental and cerebral disturbance. Extreme bodily weakness is the result; and this general condition of feebleness and prostration, to which nowadays the term neurasthenia is often applied cannot act otherwise than injuriously upon the parts of the sensorium which have to do with moral control; and both the hysterical attacks and the accompanying despondency are prone to be increased thereby. A vicious circle has obviously been established, and it is no ground for surprise that as an occasional outcome of these combined conditions, the despondency should deepen into real melancholia.

"In a state which seems in itself to indicate complete annihilation of the higher faculties of the sensorium, a man may nevertheless be able to perform acts which are apparently under perfect cerebral volition and control. He may take himself home, and have no subsequent recollection of how he got there; or may give an erroneous account, both of what happened to himself, at the time of the accident, and how he conducted himself afterwards. The view is now commonly held that the dazed condition which has been described is very closely allied to, if not identical with, the purposive experimental hypnosis."

The diagnosis in these cases may be difficult. To quote again from Osler: "A condition of fright and excitement following an accident may persist for days or even weeks, and then gradually pass away. The symptoms of neurasthenia or hysteria which subsequently develop present nothing peculiar, and are identical with those which occur under other circumstances. It may require a careful study of the case to determine whether the individual is honestly suffering from the symptoms of which he complains." A still more important question is, Has the patient organic disease? The symptoms given under the first two groups of cases (those with simple neurasthenia and those with marked hysterical symptoms), may exist in a marked degree, and may persist for several years without the slightest evidence of organic disease.

"In regard to prognosis, it may be said that a majority of patients with traumatic hysteria recover. Patients have recovered after the persistence of the most aggravated symptoms, with complete disability of several years' duration. In extremely rare cases organic diseases may develop."

While we call these cases hysterical or functional for want of better terms, they are often very serious in the impairment which they cause, and very intractable when there is no suspicion whatever of malingering or intentional exaggeration.

◆

ON THE OCCURRENCE OF LEAD IN CITY DRINKING-WATERS.[1]

BY WILLIAM B. HILLS, M.D.,
Associate Professor of Chemistry, Harvard Medical School.

IN October, 1889, Dr. E. M. Greene read a paper before the Boston Society for Medical Observation, in which he presented the results of an investigation which had recently been made by him relative to the occurrence of lead in Boston drinking-water. Sixteen examinations were made of water taken from different parts of the city and coming from Lake Cochituate. The service pipes were in all cases of lead. Fourteen of the specimens examined contained lead. In three of the fourteen cases the water had stood in the pipes for various intervals, namely, fifteen minutes, thirty minutes, and two days; in the latter case, practically for several weeks. The remaining eleven specimens were taken after the water had been allowed to run from two to thirty minutes.[2]

Dr. Greene was not, however, the first to investigate this subject. The presence of lead in the water supplied to Boston through lead pipes had already been pointed out, several years before, by the late Prof. Wm. Ripley Nichols, who states that such water always contains traces of lead in solution. The amount of lead taken up by the water of Lake Cochituate in passing through some 150 feet of pipe, which had been in use for some years, was found to be only 0.03 part in 100,000, or less than 0.02 grain in the U. S. gallon. Water which is allowed to remain in the pipe for some time, or is drawn from the hot water faucets, may, however, contain as much as 0.1 or even 0.2 part in 100,000, or 0.06 to 0.12 grain in the gallon.

As a result of his investigations, Professor Nichols came to the conclusion that the use of lead pipes for house distribution in connection with a public supply, is, as a rule, unattended with danger. The pipes soon become covered with a coating of lead compounds which is practically insoluble. After the formation of this coating, the action on the lead practically ceases, provided the pipes are kept constantly filled so as to prevent exposure to the alternate action of air and water. He expressed the opinion, however, that it probably never ceases absolutely.[3]

While, therefore, Dr. Greene's results were not new from a qualitative point of view, quantitatively they were important, in that they directed attention to dangers the existence of which had hitherto appeared improbable. One of the specimens examined by him, taken after running two minutes, contained nearly one grain of lead to the gallon; a second specimen, drawn after running five minutes, contained nearly one-half a grain to the gallon. These figures are far above those obtained by Nichols, and exceed any which have been suggested as an outside limit of safety. In point of fact, Dr. Greene's investigations were suggested by the occurrence of several cases of lead poisoning in the families occupying the houses from which these samples came.

It is not stated whether the specimens examined were filtered or unfiltered. It is hardly conceivable, however, that water taken under the conditions given by Dr. Greene could have contained such an amount of lead *in solution*. Presumably the lead was present, in large part, in the form of insoluble compounds held in suspension. One obvious source of such compounds is the insoluble coating which may be presumed to exist on the interior of the lead pipe. There is, however, one other possible source which was brought to my notice in the course of an investigation of this subject which was undertaken in 1890, and carried on in a desultory manner till about a year ago. During this period I examined nine specimens of city waters for lead — three taken from a house in Boston, six from my own house in Cambridge. Two of the Cambridge samples had stood in the pipe over night; the remaining four samples were taken after the water had been allowed to run from two to five minutes. The Boston samples came from a house on Commonwealth Avenue. The occupant, a physician, died soon after the analyses were made, and before I had an opportunity to inquire concerning the conditions under which the samples were taken. Lead was present in all the samples examined. The water examined was in all cases unfiltered; the analyses were qualitative. While the number of analyses is small, the results, so far as they go, confirm those previously obtained by others, and in connection with the latter justify the statement that lead in minute quantity is a common constituent of the drinking-water as supplied in cities.

It has been my intention to make quantitative estimations in filtered and unfiltered specimens of water; but this work has been prevented thus far by other duties. In the meanwhile my attention has been directed to the occurrence, at times, in water drawn through a galvanized-iron pipe in my laboratory at the Medical School, of solid particles which were found upon analysis to be red lead. A single analysis of filtered water drawn through the same pipe showed the presence of a trace of lead in solution. Upon inquiry I have learned the following facts, the presentation of which is the main object of this paper:

---

[1] Read before the Cambridge Society for Medical Improvement.

[2] Boston Med. and Surg. Jour., cxxi, page 533.

[3] Report of the Massachusetts State Board of Health, 1871, page 32, and Water-Supply, pages 212-214.

Red lead is used very generally by plumbers, steam-fitters, and gas-fitters in coupling iron and brass pipes. In the process of coupling, the lead is usually applied to the thread upon the inside of the couple. When the pipe is fitted to the couple, the surplus lead, comprising in fact the greater part of that applied to the thread, is forced forward and into the pipe through which the water, steam or gas flows. Wherever there is a couple, therefore, the water is usually in direct contact with the red lead, as the exhibits show. I have seen pipes which were almost closed by an overhanging curtain of red lead; and I know of one instance in which the flow of gas was prevented by a similar curtain.

The number of couples in a house that is fitted with galvanized iron or brass pipes for the conduction of water depends upon the length of the pipe, the number of faucets, and the number of bends in the pipe. Galvanized iron and brass pipes cannot be bent as lead pipes are; changes in direction are therefore effected by the use of couples technically called "L's" and "T's." It is not customary to employ iron or brass pipes throughout the house. Brass pipes are used, however, for the conduction of hot water; and there is a practice in vogue in some cities of using galvanized-iron pipes in part in the place of lead pipe for the conduction of cold water. In such cases the water is conducted from the street into the cellar of the house through galvanized-iron pipes and the lead pipe is connected in the cellar. The water drawn on the first floor of the house flows, therefore, through but a few feet of lead pipe. This practice has been followed to some extent certainly in this city.

Probably the facts I have presented afford a partial explanation of the presence in city waters of such large quantities of lead as were detected by Dr. Greene. For red lead, although a so-called insoluble compound, is probably not absolutely insoluble. Moreover, it frequently contains more or less lead monoxide, which is more soluble than the red lead. The friability of red lead furnishes an additional opportunity for contamination with minute particles worn off by the water as it passes through the pipe. It is in fact preferred to white lead by plumbers on account of its friability; for white lead sets to a comparatively firm mass which offers considerable opposition to the separation of the pipes when repairs are necessary. For this reason white lead, if properly applied, is perhaps preferable to red lead from a sanitary point of view. Asphalt is preferable to either.

The possibility of lead-poisoning as a result of coupling pipes with red lead and white lead was long ago pointed out. I am not aware that the method of applying the lead compounds has received any attention. I have therefore ventured to call attention to it, since the particular method of application which is in vogue must certainly increase the opportunities for the contamination of our water-supplies, and for the absorption of lead into the system. It is possible that our city waters are more frequent sources of chronic lead-poisoning than we have suspected.

Much of the danger attendant upon the use of lead compounds for coupling pipes may be avoided by applying the lead compound to the thread on the outside of the pipe instead of to the thread of the couple. Then, when the coupling is effected, the surplus lead compound is forced backward on to the outside of the pipe instead of forward into the interior. The process may with a little care be so conducted that little or no lead is exposed to the action of the water. I am informed, however, by an engineer to whom I am indebted for the facts herein presented relative to the coupling of pipes, that, so far as his observations extend, probably ninety per cent. of all plumbers, steam-fitters and gas-fitters apply the lead compound in the manner first described, that is, to the thread of the couple.

DISCUSSION.

Dr. **Driver** had occasion to examine a lead pipe, used to conduct drinking-water from a well, which opened into the well over a large stone. Near the opening the pipe was bent at a sharp angle, and inspection showed the pipe at this point was worn as thin as paper by the continued friction and impact of the water and substances held in suspension. He thought it would be well to inspect all curves in lead water-pipe for the purpose of determining what is the general effect of the water current in wearing down the pipe, and how far this may be a source of lead in the water-supply.

Dr. A. P. Clarke asked if galvanized-iron pipe was objectionable for conducting water supplies.

Dr. Hills said the only objection was that of its rusting. As long as the zinc coating remains intact this will not occur; but as soon as the water gains access to the iron then rusting goes on rapidly.

Dr. H. Marion asked if it would not be advisable to notify the plumbers' association of the facts brought out by the paper of the evening.

Dr. Hills said that when the engineer of the Harvard Medical School informed some plumbers who were busy doing a job of iron piping of the dangers involved in the method they were employing for fitting the joints, he was cursed and told to mind his own business.

Dr. Marcy asked about the process of japanning and its application to water-pipe, and the value of block-tin pipe.

Dr. Hills thought the base material used in japanning was asphalt. Block tin is used somewhat for water-pipes, and it is the best material; but there is danger of getting a lead pipe lined with tin, in which case, if the coating is imperfect, the lead is easily acted on by the water. A similar combination was found in Dr. Bowditch's house where the pipe, supposed to be tin, was found on analysis, to be an alloy of tin and lead. Lead and tin may be united in all proportions.

◆

A FEW CASES ILLUSTRATIVE OF THE DIAGNOSTIC VALUE OF AN EXAMINATION OF THE BLOOD.[1]

BY HENRY JACKSON, M.D.,
Physician to Out-Patients, Boston City Hospital.

I wish to report here to-night a few cases which demonstrate typically several important points which may be brought out by a careful examination of the blood.

Careful work of investigators throughout the world has shown the association of the ameboid plasmodia discovered by Larnan with malarial fever. That these organisms are the cause of the disease is rendered extremely probable as:

---

[1] Read before the Boston Society for Medical Observation, November 6, 1894.

(1) Careful and competent observers declare they are always present in malaria.

(2) They are found in the blood just before a chill and increase in number up to the acme of the chill.

(3) They disappear with the subsidence of the chill.

(4) They disappear from the blood in the course of a few days after the administration of quinine in doses sufficient to stop the chills.

(5) They are not found in the blood of cases not malarial.

The first cases to which I wish to draw your attention are malaria, two perfectly typical cases of the tertian type in which the examination of the blood served only to make the physical examination complete in every detail, though the diagnosis was perfectly clear without this method of examination. The other two malarial cases which I have to present are atypical, of a form rarely seen here, cases in which the examination of the blood rendered certain the diagnosis of malaria which otherwise would at best have been only problematical.

CASE I. A man seen at the Boston Dispensary in November, 1892. His family history and previous history negative. Two months before he was seen he went to work at Saugus. He had been well until the last week or ten days, during which time he had had chills followed by fever and sweating coming every second day. He came to the dispensary two hours after a chill. His skin was hot and moist; face flushed; temperature 103°; area of splenic dulness increased. An examination of the blood showed a large number of the plasmodia malariæ. They were all in the red blood-corpuscles, contained numerous pigment granules and some were so large that they almost filled the corpuscles.

CASE. II. A boy seventeen years of age. He entered the Boston City Hospital September 7, 1894. Family history negative. Five years ago he had typhoid fever. His health was good until six days before entrance to the hospital. During the last week he had complained of lassitude, headache, loss of appetite, malaise. He had vomited twice at the beginning of the attack. His bowels had been constipated, there having been no movement for four days; no abdominal tenderness, but a little colic. On the day of entrance, and about a week after the beginning of his sickness, he had a chill followed by sweating, and was brought to the hospital.

On entrance he had a temperature of 103° and a pulse of 100; tongue dry, with a brownish coat. Thoracic examination was negative, except for a few râles heard in both backs. The area of splenic dulness was increased. The abdomen was tense, tympanitic, without tenderness or rose spots.

Examination of the blood during the second chill on September 11th showed the presence of several full-grown intra-cellular malarial organisms; two small extra-cellular organisms were found. The chills did not recur after quinine was given, and he was discharged well on September 20th.

Interest attached to this case in that careful personal inquiry failed to show that he had lived or worked in any of the regions about Boston in which malaria is prevalent. He came from Prince Edwards Island seven years ago, and since that time has lived continuously in Boston; during the last eighteen months he has lived on Northampton Street, near Washington Street. The diagnosis was perfectly clear after the observation of the recurrent chills in the hospital; but the history of general malaise for a week previous to the first chill, and the appearance of the lad strongly suggested typhoid fever, and he was referred to the hospital as a probable case of typhoid fever. The case is interesting to us in Boston as demonstrating the gradual march of malarial fever into the heart of the city; this lad lived not far from Muddy Brook, a water-course along whose banks Townsend found a good many cases in a collective examination of out-patient cases made two years ago.

CASE III. A Swede, twenty-two years of age, entered the Boston City Hospital September 10, 1894. His family history was negative. Eight years ago he had yellow fever in South America. He did not use alcohol or tobacco in excess. He was a sailor on a vessel which had been moored for several weeks in the Potomac and had arrived in Boston, September 6th, five days before he was admitted to the hospital. He was taken sick the day after his arrival in Boston, with a feeling of pain all over the body, backache, headache, and complete loss of appetite; there was no history of chill. Examination showed a man of powerful physique; his mental condition was extremely apathetic, and in response to questions his replies were slow and dull. His face was flushed, and the skin and conjunctivæ were somewhat yellow. His tongue was covered with a dirty, gray coat, thick and very dry. The areas of the liver and splenic dulness were somewhat increased. The abdomen was lax, without tenderness, and no rose spots were seen.

On September 11th the jaundice was more marked. His lips were dry, cracked and bleeding. There was marked stupor. Bile was found in the urine, but the stools were not clay colored.

On September 13th he responded a little more readily to questions. The tongue was dry, cracked and bleeding. Sordes on the teeth. Pulse dicrotic. He had to-day, all over the body, an eruption of urticaria which presented rather an anomalous appearance, the central portion being yellow, surrounded by a red edge. His blood was examined twice by Dr. Stokes; and on the second examination a few small, non-pigmented organisms were found in the red blood-corpuscles. Dr. Stokes was not willing to make an absolute diagnosis of malaria, as he did not find ameboid movements in the intra-cellular forms.

Quinine was given on the 17th; and from that time there was rapid improvement until he was discharged well a week later. The jaundice had practically disappeared before his discharge.

The appearance of this patient was that of a very sick man, the extreme apathy and the condition of the tongue and lips being strongly suggestive of a serious condition. There was no chill during the whole of his sickness; the temperature fell to normal every other day with the exception of his second day in the hospital, and on the alternate days rose rapidly to about 103°. During the first few days of his stay in the hospital there was nothing to suggest the diagnosis of malaria, and his general condition certainly was strongly suggestive of typhoid fever.

CASE IV. A Swede, twenty-four years of age, entered the hospital September 10, 1894, the same day as the preceding case. His family and previous history were negative. Habits temperate. He was a shipmate of the preceding case. The day after he arrived in Boston he had a severe headache, and was faint so that he was obliged to lie down.

On entrance, examination showed a man of powerful physique; face somewhat flushed; skin very hot and dry; tongue dry, with a thin white coat. His mental condition was somewhat apathetic, and he made no complaint of pain or other uncomfortable sensations. The area of the splenic dulness was increased, but the edge was not felt. Abdomen lax, and showed no rose spots. On the 13th his mental condition was better. His tongue was dry, with a thin, white coat. He had a large patch of herpes on the lips — a symptom rare in typhoid, and spoken of by Dr. Osler as very common in malaria.

The blood was examined by Dr. Stokes on September 13th; and he reported several rather small intracellular, hyaline, malarial plasmodia. These bodies, when carefully watched, were seen to assume various shapes, to push out pseudopodia. No pigment found. Diagnosis malaria.

Quinine was given on the 15th, and a gradual improvement followed, the man being discharged well September 24th.

In this case, again, there were no chills. The rise of temperature was less rapid than in Case III, and the time of fever very irregular. The rise of temperature was so slow and the duration so long that the ordinary night and morning chart does not mark as strongly the tertian characteristics of the case as the four hourly chart does. Though this man was at no time sick enough to cause any alarm, yet his constitutional condition on the days of comparative apyrexia was much less good than we see here in the North in common cases of tertian fever.

In both these cases the prodromata prolonged and rather severe, the marked mental disturbance, and in the first case the severe constitutional disturbance with jaundice are suggestive of the remittent type of malarial fever. Also the absence of chills and the failure of the temperature to fall absolutely to normal on the days intervening between the days of the height of the fever are characteristic of remittent, rather than intermittent fever. In remittent fever the temperature is usually higher and the remission less marked than in these two cases cited. These two cases are to me most interesting, as I have not seen malarial fever of the tertian type, severe in character, without the occurrence of rigors. The blood examination showed organisms of the type usually found in the ordinary forms of intermittent fever. In remittent fever the parasites have not been as carefully studied as in intermittent; but several observers simply make the statement that crescentic forms are found in this type of fever, the same organisms found in severe forms of malarial cachexia. Crescentic organisms were found in a fatal case of remittent fever, which Dr. Cutler reported to the Section for Clinical Medicine, Pathology and Hygiene last spring.

In the two last cases reported no pigment was found in the parasites; in such cases it is of much importance to examine the blood fresh, as the observation of ameboid motion in the parasites excludes all possibility of mistaking the organism for vacuoles or changes in the refraction of the corpuscles dependent upon drying or other artificial conditions. The value of the microscopic examination of the blood in malaria is demonstrated by the following quotation from Dr. Councilman's article on the malarial parasites:[2] "In an examination of one hundred and fifty cases we have not a single negative case to report. We have, however, excluded all cases that had received quinine. We have not hesitated to exclude malaria in all cases where no quinine had been given, in which two examinations failed to find the parasites, and further observation of the patient has in each instance confirmed the justice of this diagnosis."

Continued observation has not as yet determined whether the various forms of parasites observed represent distinct species, or simply different stages of development of one and the same species. In tertian fever careful research has traced the development of the small hyaline inter-corpuscular form seen before the chill through its mature form with pigment to its final breaking up with the formation of so-called "spores."

Mannaley, in a recent monograph on the malaria parasites, considers that the different forms seen represent not different shapes of one and the same organism, but real species which do not tend to pass one into the other. As he claims this theoretical consideration is borne out by the clinical observation that one type of fever does not, as a rule, pass into another.

On the other hand, Babes, writing contemporaneously and with equal facilities for observation, considers that no proof has been established of the existence of different species.

Apparently at the present time we can only say, that in the intermittent forms we find intra-corpuscular, hyaline and more or less pigmented forms, while the half-moon forms are found in malarial cachexia and other atypical forms.

Case V. An Italian, thirty-six years of age, single, hodcarrier. The father died of consumption, the mother of dropsy. Patient had malaria six years ago in Springfield while working on a sewer, and was sick for four months. Twelve years ago he had gonorrhea, and at the same time an ulcer on the penis on account of which he received internal treatment in Bellevue Hospital. He denied all knowledge of secondary symptoms, and took no medicine after leaving the hospital.

He entered the Boston City Hospital August 21st. He was well up to July 1st, since which time he had complained of pain in the head, most marked in the left temporal and frontal region. The pain came on in the evening, was worse at midnight, and gradually disappeared towards morning. He had worked as a hodcarrier until just before entering the hospital, though latterly suffering somewhat from shortness of breath.

Physical examination showed a man of good development. No emaciation; marked pallor; tongue clean, pale. Thoracic examination negative. Liver, spleen and abdomen negative. Glands in the neck, axillæ and groins slightly enlarged. Breath offensive.

August 25th he complained of sore throat. On the left anterior pillar of the fauces a gray patch about half an inch long was seen; there was a red areola surrounding it, and the posterior cervical glands on the same side were swollen. A bacteriological examination made from a swab showed no Klebs-Löffler bacilli.

---

[2] Fortschritte d. Medicin, Nos. 12 and 13, Juli, 1888.

On August 29th his throat was better, and he was up and dressed.

I first saw him September 2d. He was then confined to the bed. His color was extremely pale, with a slight yellowish tinge. Mental condition rather apathetic. All movements slow; and even turning in bed was apparently a great exertion. Breath foul.

September 5th. Several small submucoid hemorrhages along the gums.

September 7th. Gradual loss of strength. Report of blood examination by Dr. Stokes:

Red	2,209,375
White	75,000
Hemoglobin	25%
Proportion white to red	1 to 28

Differential Count.

Small mononuclear	60%
Large mononuclear	37.2%
Neutrophiles	3.2%
Myelocytes	0.2%
Eosinophiles	0

In counting over leucocytes, two nucleated red blood-corpuscles of normal size were seen. No poikilocytosis present. The red cells are of fairly average size. The gross blood-count is typical of leukemia; the increased percentage of small mononuclear leucocytes, as shown by the differential count, enables us to make in connection with the symptoms a fairly positive diagnosis of lymphatic leukemia. The presence of nucleated red blood-corpuscles, of myelocytes and the increased percentage of large mononuclear leucocytes make it probable that there is some involvement of the bones and spleen, although the process is mainly one of a lymphatic disease. Pathological diagnosis, lymphatic leukemia.

September 11th. Gradual loss of strength. Slight bleeding from the gums. Breath foul. No enlargement of spleen.

September 13th. Pulse small but regular. Small blood-clots on the lips and gums, which the patient appeared too weak to care to remove. On the breast and forehead a few small petechial spots seen. Blood examination by Dr. Stokes:

Differential Count.

Small mononuclear	94%
Large mononuclear	3.8%
Neutrophiles	2.2%
Eosinophiles	0

In counting five hundred leucocytes, five nucleated red blood-globules were seen, but no myelocytes. No poikilocytosis. During the day he appeared very weak, and in the afternoon he sank rapidly and died.

I report this case as a type of the value of the differential blood-count of the leucocytes. The absence of splenic tumor and the small size of the lymphatic glands, as none of them were larger than a good-sized almond, suggested the diagnosis of anemia as the essential factor. The man's general condition on entrance did not even warrant the diagnosis of pernicious anemia. The differential count showed that the increase in the white cells was dependent upon a part increase in the small mononuclear elements, there showing in the first count 60 per cent. and in the second 94 per cent. of the total number of leucocytes, instead of the normal proportion of 20 per cent. On the other hand, the eosinophiles were absent in both counts, showing that their presence is of no importance in leukemia, as was considered when diseases of the blood were first studied by color reagents a few years ago.

Pernicious anemia was ruled out by the relatively small percentage of hemoglobin and the absence of blood-corpuscles of abnormal shape and size, the so-called poikilocytosis.

Recently attention has been called to the association of ulcerations in the mouth and along the intestinal tract with leukemia of acute course. Askanazy has published in the 137th volume of *Virchow's Archiv* a careful microscopical examination of these ulcerations in a case of acute lymphatic leukemia. According to Askanazy the ulcerations are dependent upon a growth of lymphoid elements which mechanically interfere with the circulation, and thereby causes a necrosis of the mucous membrane. In our case the only symptom suggestive of ulceration in the intestines was the presence of loose dejections; the abdomen was not tender. But the ulceration in the throat was not diphtheria, and it was not accompanied by the fever and constitutional symptoms usually found in ulcerative tonsillitis. I think, on the whole, it is fair to assume that the ulceration in the throat was dependent upon the leukemia. The symptom is certainly of sufficient importance to draw one's attention to its prognostic value when observed.

I am indebted to Dr. Buckingham for permission to report these cases, which entered his service while I was acting as a substitute for him.

◆

SOME OBSERVATIONS ON TUBERCULAR MENINGITIS.

BY A. E. AUSTIN, M.D., DORCHESTER, MASS.

In these days of medical discoveries, when cancer, phthisis, and other diseases formerly considered necessarily fatal, are so carefully studied and so successfully assailed, it seems strange, that another of the so-called fatal diseases, tubercular meningitis, has received so little attention; and, while the unfortunate outcome of all the following cases shows that I am far from reaching a solution of the difficulty, I hope that their report may increase, if in ever so slight a degree, our knowledge of its peculiarities.

Case I. A boy, two years of age, with no tubercular family history, father and mother both living and in excellent health, had been well from birth, was breast fed, and had the usual number of teeth. When first seen he had been vomiting for four days, and was cross and peevish; the vomiting had no connection with taking of food. The child flushed and turned pale alternately, had a retracted abdomen, constipation and thirst. On the fifth day he was vomiting at intervals; the pupils were dilated, but reacted to light; pulse was 120; temperature 101°. There was no cry, no twitching of muscles, no convulsions; but the child was inclined to sleep, though readily aroused and intelligent looking. There was evidently no headache, as the hands were not carried to the head. There were sordes on the lips. On the ninth day, the respirations were irregular in rhythm, the child was more somnolent and refused food utterly; the temperature was 100° and pulse 100. On the tenth day the temperature was 99° and pulse 92; the child was comatose and could not be aroused; the pupils were unequal, and there was excessive oscillation of the eyes. The eyes were partially closed; there was extreme conjunctivitis; and the respirations consisted of three barely noticeable ones, followed by three deep ones, followed by another series; there were involuntary movements of the limbs of a clonic nature, and he cried out at intervals. On the eleventh day there was ptosis of the right eye and paralysis of limbs on that side. On the twelfth day the pulse was 160, temperature 104°; and there were convulsive movements on the left side. Child died on the thirteenth day.

CASE II. A young man, seventeen years of age, always healthy, parents living. After two weeks at the seashore, where he indulged largely in sea-bathing, was suddenly taken with severe pain over the left parietal and frontal bones, which was increased by movement; movements were also painful. There was occasional vomiting, without reference to the taking of food, anorexia, constipation, and some photophobia. There was no discharge from the ear, nor had there ever been. Patient complains of feeling sleepy. When first seen on the fourth day of the disease, the skin was hot, dry and of a tawny color; the pupils were contracted and oscillating; the conjunctivæ were yellow. There was an expression of pain on the face, increased at times; the tongue was coated with a white fur, dry, pasty, but not tremulous. The abdomen was flattened; there was no gurgling and no pain. The pulse was 80, full and tense; but there was no temperature. The speech was thick, and required considerable effort. The urine was normal, with the exception of bile. Lungs and heart were negative. On the sixth day there was some delirium, sharp cries at intervals, and for the first time a mild convulsion. On the seventh day patient was only partially conscious, and was aroused with difficulty; vomiting had ceased; the right hand was moved awkwardly; and there was some loss of motion and sensation. The hand lay as if something were in its grasp. Temperature was now 101°, pulse 60, and there was still slight photophobia. On the eleventh day pupils were moderately dilated, equal, and still reacted sluggishly to the light. Motion in right leg and arm was impaired. There was deep stupor. Urine was passed involuntarily; and introduction of catheter showed no accumulation in the bladder. On the twelfth day there was internal strabismus of both eyes, and both pupils widely dilated, irresponsive to light, with the left longer than the right. The mouth was drawn to the right and the saliva dribbled from it, while the feces were passed involuntarily. There was ptosis of the right eyelid; and the right foot was in position of talipes varus. Pulse varied from 80 to 100, very erratic. From this on the condition remained about the same, with pulse increasing in frequency and diminishing in strength. The respiration became very irregular, varying from 40 to 60 in the minute; and he died quietly on the seventeenth day.

CASE III. A man, twenty-six years old, of Irish parentage, father and mother living; one and one-half years ago had a cough, and returned to Ireland. In the early winter, six months ago, he began to grow emaciated, lost appetite, and the cough returned. Present illness began five days ago, with vomiting and headache. Vomiting is continuous, and has no connection with taking of food. Upon inspection there is found a spare man, very much emaciated, with large scars of ulcerated glands in neck and groin. The pupils are contracted and sluggish, alternately contracting and dilating. There is dulness at right apex, râles, increased voice-sounds, and bronchial respirations. On the sixth day, patient is in a state of semi-stupor, with Cheyne-Stokes respirations well-marked, very restless and constantly putting hands to head or genitals. He also has chewed up the greater part of the sheet, wrinkles his forehead, and has marked photophobia. The urine is not passed, and the introduction of the catheter shows a full bladder. On the eighth day there is conjunctivitis; the pulse is irregular, varying from 80 to 120 under the finger; the eyes are in constant motion, with pupils widely dilated and insensible to light. There are short intervals of consciousness; and the abdomen is flattened and concave. On the ninth day the stupor is complete; the pulse imperceptible; the lips dry and covered with sordes, but there is no paralysis nor convulsions. The patient died at midnight of this day.

CASE IV. H. H., girl twelve years old, of good family history, father and mother both living, with no history of tuberculosis in ancestors. Has had the usual children's diseases, but has been free from disease, until the present illness, for several years. Just before Christmas of 1893, she was taken with an attack of influenza, accompanied by otitis media, with some discharge from the right ear. She never fully recovered her general health from this attack, but the discharge from the ear lasted only two or three days. From this date until February 23, 1894, when I first saw her, she complained of feeling tired, of having no appetite, and of a moderate amount of headache; and her parents said that she frequently aroused them at night by crying out in her sleep, and, when asked the cause, said it was due to sharp stabbing pains darting through her head. On the afternoon of February 21st, she was obliged to leave her school, and after coming home vomited three or four times. On February 22d she vomited twice, slept badly at night. When seen on February 23d, there was considerable emaciation; the eyes were hollow, with dark rings about them; the eyeballs were in constant activity; the pupils were dilated, sluggish to light, constantly dilating and contracting; the left cheek was flushed, the right pale; the tongue was brown, deeply coated, and tremulous on protrusion; the pulse was 100; temperature 102°, and respirations 30. She complained of a severe headache; her carotids were throbbing; and she had vomited twice, without reference to the taking of food. February 24th, the child passed a very restless night; slept but little; moaned, tossed about, and cried out in her sleep with a loud piercing cry; and during the night had one mild convulsive attack. Her bowels were confined, and her abdomen was flat and retracted. The *tache cérébrale* was well marked, and no vomiting had occurred since yesterday. This condition continued with greater and greater periods of sleep and gradually diminishing excitability until the 27th, when an ophthalmoscopic examination of the eyes showed no evidence of tubercle. To-day, for the first time, there appeared some irregularity of the pulse, which became alternately slow and rapid; the breathing also had a suspicion of irregularity about it, and photophobia was well marked. There had been no cough, and the temperature was of an irregular type running from 100° in the morning to 102° in the evening.

On March 4th, the child lay in a moderately deep coma, but when aroused answered questions in a semi-intelligent manner. Her pupils remained widely dilated, and her lips and teeth were covered with sordes, and there was slight paresis of the left eyelid, which remained partially open when the child was asleep, while the right one was completely closed; there was some conjunctivitis of the right eye, while the pulse was quite irregular, beating at one moment 60 to the minute then running up rapidly to 80. She lay upon her side, with her knees drawn up and her hands between her thighs; but twice she has had involuntary micturition. March 5th, the pulse was 120, very restless; hydrocephalic cry well marked; semi-intelligent, with less coma; internal strabismus; temperature 101.5°; arms folded across the chest. March 8th, pulse 160, respiration 60, temperature 101.5°; abdomen distended; thrill upon impulse; dull in the flanks; emaciation very marked; occasional grunt; no paralysis. March 11th, pulse 160; conjunctivitis of left eye, which was covered with a gelatinous viscid substance causing agglutination of the lids; Cheyne-Stokes respirations well marked; semi-conscious; involuntary passage of urine and feces. March 12th, child absolutely unconscious; respirations slow and spasmodic; eyes half closed and eye-balls rolled up; pulseless; cannot swallow; ashen gray pallor of face; arms lying motionless at side. Patient died at 1 o'clock, March 13th. No autopsy allowed.

Case V. A girl, five years of age. Her father and mother are both living and in good health; also two brothers and one sister all under ten years of age and in excellent health. This child was bottle fed and healthy until three years of age when she had, so the mother states, an attack of inflammation of the brain, lasting 21 days and leaving her totally blind. For the next two years she was healthy and intelligent but never learned to walk. When the child was first seen, she was found vomiting with hands to her head, eyes wide open and staring, pupils dilated and fixed. The abdomen was flat; there was constipation and the child was tossing incessantly from side to side. The mother told me the child had been sleeping badly and crying out in her sleep for some time. For three days she remained in this condition, after which the vomiting ceased, but the child became more somnolent, the pulse increased in rapidity to 120 and was notably irregular, running from 100 to 120 under the finger. After an interval of ten days the child became utterly comatose; respirations would at one moment be almost entirely absent, and then increase in intensity to an almost sighing respiration; the left arm became helpless; the urine was passed unconsciously; and after three days of utter coma, from which the child could not be at all aroused, she died on the fifteenth day of the disease.

In the above cases our attention is first called to their causation, and a prolific field of inquiry is at once opened up, which is still on the borderland of speculation. Cases I and V can only be explained by heredity; and while no history of tuberculosis can be discovered in the immediate family, it is, we well know, not unusual for diseases hereditary in their nature to skip one or two generations and then appear in full vigor, as if intensified by their long suppression. Whether this predisposition means that bacilli are in the meninges at birth and only require favorable conditions for their multiplication; or whether the soil is favorable at birth and the bacilli enter afterwards, I think no one knows. Suffice it to say, however, if we could state with any assurance at birth, "This child will become tuberculous," we should have made a great advance in its treatment by putting the child under especially hygienic conditions. In Case II, in the efforts to guide a catheter into the bladder with a finger in the rectum, there were found some enlarged vesiculæ seminales, which were probably tuberculous and formed the nidus from which the bacilli escaped. The source of infection in Case III was, of course, in the tuberculous lungs; but again we are in the region of speculation when we try to explain why so few of the many sufferers from phthisis have meningeal complications. In Case IV, on account of the age, we are led to wonder whether we may not have a case of primary tuberculous infection of the envelopes of the brain through the nose. We know how readily erysipelas and diphtheria, or rather its toxines, may be absorbed through the Schneiderian membrane, then why may not tuberculous infection of the brain take place through the nose, either directly or by means of those ugly ulcers caused by crusts, which children have and which may be tuberculous while the child is supposed to have catarrh? Since we are becoming more and more convinced of the infectiousness of phthisis, why is it not possible to have primary cerebral infection?

An analysis of the symptoms shows that vomiting was constant, more of regurgitation than true emesis, and was unaccompanied by the foul tongue so characteristic of vomiting of gastric origin. The pupils presented, next to the former, the most constant symptoms, being dilated from the first in three cases and contracted in two, but all possessing that peculiar rapid alternation of contraction and dilatation of limited degree. Retraction of the abdomen was also noticed in all, frequently of such a degree that it seemed as if water could be retained in the shallow basin formed by the depressed abdominal walls. The peculiar cry was present in four cases and absent in one; while in one case it consisted of series of three crys, gradually increasing in intensity to a climax and then ceasing. The pulse at first was simply hard and full, not unduly increased in frequency; but as soon as pressure on the brain begins, the pulse became extremely erratic. This irregularity was of the nature of a dicrotic pulse in some cases; in others, of a great variation in frequency, which occurred rapidly while one's finger was at the wrist; while in still others a pulse of great frequency in the forenoon would be followed by a slow one in the afternoon. The paralyses were chiefly ptosis of one or both lids, strabismus (always internal), loss of motion of arm or leg of one side, and loss of control over sphincters. The breathing at first was simply hurried, with an occasional sigh; but soon there became established a typical Cheyne-Stokes respiration or a modification of it which consisted of three long-drawn breaths, followed by complete cessation of respiration, or at least so slight as to be imperceptible. The duration possesses some interest for us; and we find these cases lasted respectively, 13, 17, 9, 18, and 15 days, or an average of 14⅖ days, starting from the period of the first marked symptom, which was usually vomiting.

As to the possibility of recovery, while it is true they all died, yet nature seems to have made a great effort to throw of the disease — in Case V with partial success, since the blindness could have come only from a previous attack, which, if not cured, underwent a remission of two years; and this brings us to the final consideration, that of treatment. It certainly seems that if chronic hydrocephalus can be so greatly benefited by opening the brain and draining, under almost analagous circumstances, meningitis, when it reaches the stage of exudation, could be largely benefited by the same means. It is very evident, after watching a few cases, that the ultimate cause of death is not the studding of the meninges with tubercles, but the pressure on the brain resulting from the fluid induced by these, and if it were possible to relieve this pressure, there might be some chance for recovery. It is, moreover, the apparent hopelessness of this disease which has dissuaded surgeons from this procedure, a thing which they would very quickly do if the meningitis were simple and due to middle-ear infection.

◆

Clinical Department.

A CASE OF SYMPHYSEOTOMY.

BY LEONARD WHEELER, M.D., WORCESTER, MASS.,
Obstetrician to the City Hospital; Visiting Physician to the Memorial Hospital.

THE operation of symphyseotomy was first done in America, March 12, 1892. It came with the best of credentials from Italy, where it was well known, and had for patron in this country Dr. Harris, of Philadelphia, who read papers on the subject in January, 1883, and January, 1892.

In the year 1892 there were in America eight cases. In the year from March, 1893, to March, 1894, approximately there were 31 cases. Dr. Harris estimated in January of this year that the world's record of cases in 1893 would reach 200. All of which goes to show the rapid growth in popularity of the modern operation.

It drives the operation of craniotomy on the living child quite out of the field, much reduces the territory of the successful modern operation of Cæsarean section, and greatly curtails the realm of induced labor.

As to safety, its mortality in proper cases done at the proper time is almost nothing. In cases done of necessity at an improper time, its mortality will be less than that of its competitors under the same circumstances. Six weeks ago I had occasion to do the operation.

The patient had entered the maternity ward of the Worcester City Hospital, September 13, 1894, for the purpose of consultation. This was during my vacation, and I did not see her at that time. She was seen by Drs. Greene, Ward, Delahanty and Gilman, who decided to elect symphyseotomy rather than to induce labor at about that time, thirty-five weeks after her last menstruation. She was advised to return the first of October. I saw her first October 3d.

The patient (Mrs. D.) was twenty-eight years old, Irish, well developed and well nourished, pregnant for the seventh time. She had miscarried once. Her first confinement was in July, 1887. She was in labor thirty-six hours, and was delivered by forceps of a living child. The child was small, asphyxiated, and resuscitated with difficulty. The second confinement was in October, 1888. Labor twenty hours. Tarnier forceps. Prolapse of cord. Child of medium size, still-born. The third confinement was in October, 1890. Labor seven hours. Tarnier forceps. Living child, which was small. The fourth confinement was in 1892. Labor twelve hours. Tarnier forceps. Child, dead, weight nine pounds. In the fifth confinement the labor lasted forty-eight hours. Version. Still-birth. Child of medium or large size. Her last menstruation had ceased January 15th. She was now within three weeks of term. The pelvic measurements were:

Spines	22 cm.	8¾ in.
Crests	26.5 cm.	10½ in.
Ext. cong.	19.5 cm.	7¾ in.
Cong. vera estimated . . .	8 cm.	3¼ in. scant.
Width of symphysis . . .		2 in.

If I had had the alternative of induced labor, I should have seriously considered it. As it was, there was no alternative, and labor at term must be awaited. At that time I would be guided by the nature of the child's head in deciding whether to make a trial of forceps before resorting to symphyseotomy. Version in a pelvis of this shape would be out of the question.

October 23d, at 7.30 A.M., labor began. Presentation O. L. A. Head of good size and firm structure. At 2 P. M., dilatation was complete, the membranes unruptured, and head free above brim. The membranes were ruptured between pains, an assistant making firm pressure on the head from above in order to prevent, as far as possible, the descent of the cord. At 4.15 the head was not engaged though the pains had been good. Patient was etherized and Tarnier forceps applied. Traction was made for fifteen minutes with no effect. Symphyseotomy was then done. The patient was lying across the delivery bed. She had been previously prepared: genitals shaved and parts internally and externally sterilized with soap and water, followed by bichloride solution. The vagina was again thoroughly cleansed with suds, rinsed and washed out with gauze wet in bichloride solution.

An incision was made from an inch above the upper edge of the symphysis, nearly to its lower edge. In order to introduce the finger behind the symphysis with comfort it was necessary to separate the attachments of the recti a little on each side. The tissues were then easily separated from the posterior surface of the bone. The urethra was drawn to the right by an assistant. The Galbiati knife was hooked under the lower edge. The lower angle of the wound was pulled down until the probe point of the knife was felt. The two inches of pubis was easily cut through, and the bones sprang a finger's breadth apart.

This was followed by free venous hemorrhage from the torn vessels of the richly supplied tissues under the arch — checked without difficulty by pressure with a wad of gauze. The forceps was again applied, and the head delivered in fifteen to twenty minutes. The cord was twice about the neck, tightly drawn, and so short that it could not be loosened. It was tied and cut, and the child immediately extracted. It was considerably asphyxiated, but was soon resuscitated by an assistant. It was a male — weight, eight pounds and ten ounces, length, twenty and one-half inches. The placenta was extracted by external pressure — weight two pounds, length of cord twenty-six inches. The passage of the head through the pelvis forced the bones two and one-fourth inches apart, and the venous hemorrhage was again free. During this time the sides of the pelvis were firmly supported by the assistants who were holding the legs. The soft parts bulged into the wound and rolled out of the vulva a good deal more than in a common forceps delivery. There was no laceration demanding suture. The intrauterine douche of bichloride (1–5,000), followed by plain water, was given. The wound was sutured with deep stitches of silkworm-gut and superficial silk. No attempt was made to unite the bones, and no drain was used. The urethra was again held aside while the knees and trochanter were pressed together and three two-inch plaster straps bound about the pelvis. The patient was then turned into bed and a binder put on.

The only event of the puerperium, beyond a troublesome constipation, was a slight phlebitis causing some swelling and pain in the left leg. I think I was over-careful in keeping the patient on her back three weeks. In half that time it is safe to allow turning upon the side. At the end of three weeks a swathe with buckles took the place of the adhesive strips. At the end of the fourth week she walked, and a week later went home. I examined the joint at the end of three weeks, as the patient lay in bed. I could feel no intervening space. By flexing and abducting the legs I could feel a little motion. At the end of the fourth week, examining the patient standing and swaying from one foot to the other, I could feel perhaps one-third of an inch of motion.

The measurements of the child's head taken soon after the birth were:

		Normal.
Biparietal	4	3½
Sub. occipito bregmatic	4	3½
Occipito frontal	4¾	4
Occipito mental	5¾	5

A head above normal in all diameters.

A few words as to what can be gained by separating the pubic symphysis. Experiments made on the cadaver of pregnant women, as well as actual experience, have shown that the limit of safety in the separation of the bones is two and three-quarters inches. The increase of conjugate thus obtained is rather more than half an inch. It is estimated that a quarter of an inch of the biparietal diameters of the head bulges into the opening; also that it is compressed one quarter of an inch. These three factors together make up a full inch, so that with a normal head with a biparietal of four inches, we might expect easy delivery by symphyseotomy in a pelvis with a conjugate of three inches. If the head is small this could be reduced to two and three-quarters. This is regarded as the lowest narrowing adapted to the operation. A greater narrowing is better met by Cæsarean section. The upper limit is three and one-half inches (Morisani), or if the pelvis is generally contracted four inches (Garrigues).

Mortality of the Operation.— Among foreign operators, Zweifel of Leipsig nearly a year ago had had 23 cases with no death. Pinard's first death was his twentieth case. In Italy, from 1886 to 1893, there were 48 operations, with two deaths. "Up to date, there have been 60 operations in the United States, and four in Canada. There were 31 in 1893 in the United States, and there have been 18 this year. No death of a woman in the last 20, one death in the last 30, 2 deaths in the last 41. Six children lost in the last 41. No death of child or mother in the Canada cases." [These American statistics have been kindly furnished me by Dr. R. P. Harris, under date of December 3, 1894.] The deaths for the most part have taken place in women, very long in labor, and often septic at the time. When the operation is done under such conditions as I had, there should, of course, be no mortality. As to the ultimate results, statistics are not so complete. Very few poor results are as yet published, and it seems assured that very few are to be anticipated.

◆

FAIRLY EXTENSIVE CAUSES OF UPPER-LIP EXCISION; FREEDOM FROM RECURRENCE AT END OF THREE YEARS.

BY CHARLES A. POWERS, M.D., DENVER, COLO.

In September, 1891, Dr. Alex. O. Snowdon, of Peekskill, N. Y., referred to me Mr. H., a man of fifty years, who gave a history of having first noticed a small nodule at the middle of the right half of the upper lip one year previously. The growth had been slow and painless, and there had been no ulceration.

Examination revealed a hard swelling which occupied the right half of the upper lip, limited above by the ala nasi, extending a little beyond the median line to the opposite side and somewhat beyond the angle of the lip upon the cheek. The skin was thickened, but normal in color. The mucous membrane seemed normal. A small piece was removed, and examined by Dr. Farquhar Ferguson, who pronounced it epithelioma.

An operation was performed under ether. The entire mass was cut away, the incision including about half an inch of tissue outside the induration limit in all directions. This included the margin of the right ala nasi. A short incision was made out on the cheek, and the cheek tissues loosened. The remainder of the lip was loosened, and the flaps approximated and held in place by silver and silk sutures. There was prompt union throughout. Microscopic examination of the part removed showed a fine margin of healthy tissue in all directions.

The patient has since been seen at intervals of three months. There has been no evidence of recurrence. In November, 1894, Dr. Snowdon writes: "I saw Mr. H. to-day. There is no sign of recurrence."

The foregoing case is not exceptional. While cancer of the lip more frequently affects the lower, it is occasionally seen in the upper. The prognosis in the upper lip is better than in the lower, because of the lesser lymphatic connection. The case serves, however, to illustrate the advantage of wide excision. So far as we know to-day, excision offers the best prospect of cure in carcinoma. The key-note may be stated as: Early diagnosis, prompt and wide excision, and careful surveillance of the patient afterward. This is trite; but that it is not sufficiently understood is proven by the large number of cases subjected to palliative treatment which reach the surgeon too late to permit the thought of cure.

So in a recent report by the writer of cases admitted to his service at the New York Cancer Hospital,[1] it was shown that in 81 per cent. of these cases the disease had so far progressed that operative procedure would be purely palliative. In this article the proposition was made to classify cases of operable cancers as follows:

(1) Those in which the disease is so limited that it is thought reasonably probable that it is entirely excised and that the patient has a fair prospect of cure.

(2) Those cases in which the surgeon is doubtful, after removal, whether he has gone beyond the limits of invaded tissue.

---

[1] See New York Medical Journal, April 14, 1894.

(3) Cases frankly incurable, in which a palliative operation affords a fair prospect of adding to the life and comfort of the patient.[2]

It is obviously irrational to place in the same class a small epitheliomatous ulcer of the lip and a case which has so far progressed that operation must be purely palliative. Under the foregoing classification the case of Mr. H. would come under the second heading.

◆

Medical Progress.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D., OF BOSTON.

MICRO-ORGANISMS IN THE CONJUNCTIVAL SAC.

BACH[1] found in apparently healthy conjunctival sacs twenty-seven micro-organisms; of these, ten were pathological. Each of these were planted upon an abraded surface on a disinfected rabbit's cornea with the following results:

(1) Micrococcus albus liquefaciens of Besser. This produced a slight gray infiltration about the point of infection which disappeared in four days. Some pericorneal injection. No iritis.

(2) Micrococcus pyogenes aureus, an extremely distinctive pathogenic organism.

(3) Micrococcus pyogenes albus. This is also a very active and destructive organism.

(4) Micrococcus flavus liquefaciens, which is said by Flügge to exist in air and water. This produced corneal ulcers and muco-purulent secretion.

(5) Diplococcus citreus conglomeratus. This organism is found in blennorrhagic discharges and in aërial dust. This produced after twenty-four hours a well-defined gray infiltration which disappeared in three days. Pericorneal injection. No iritis or hypopion.

(6) Micrococcus aurantiacus, which produced a gray infiltration about point of infection which soon disappeared.

(7) Staphylococcus cereus flavus, which gave rise to corneal ulcer in twenty-four hours after inoculation, with iritis and sometimes hypopion.

(8) Micrococcus coryzal, infiltration about infected point with pericorneal injection and iritis, but no hypopion.

(9) Streptococcus pyogenes, which set up a rapidly-spreading ulcer with iritis and hypopion.

(10) One unknown bacterium resembles the micrococcus caudidus of Cohn, which our author frequently found in the sero-pus of acute conjunctivitis and which he names micrococcus conjunctivitidis minutissimus.

To determine what importance the presence of these micro-organisms played in the question of antisepsis in ocular surgery, Bach introduced into the conjunctival sac certain organisms which were known not to be present either in the conjunctival sac or the nose and as a result of his experiments concludes that the infection is carried from the conjunctival sac into the nose and never in the opposite direction as long as there was no obstruction of the lacrymal canal, even in the presence of a purulent dacrocystitis, this was true as long as there was partial drainage into the nose.

Thirty-seven experiments were made to determine whether the tears possess any germicidal quality or simply weaken the morbid action by washing away the colonies. In sixteen of these experiments the pathogenic bacteria were exposed for an hour to tears warmed to 58°–70° Celsius, and in ten instances the colonies were greatly decreased; in six there was less marked diminution. In nineteen experiments in which the tears were kept at ordinary temperature only four showed an increase of the colonies. Further experiments showed that the aqueous taken from the human eye had no germicidal action, and that the staphylococcus flourished upon a soil of vitreous humor. Our author believes in the mechanical removal of the germs by the washing out of the conjunctival sac and the edges of the lids with damp cotton, instead of the application of antiseptics for their germicidal effect; and he advocates the use of the physiological salt solution in this cleansing process. He thinks that the salt solution should be used in any event whether antiseptics are used or not.

Our author, however, thoroughly believes in the disinfecting action of eye salves and after many bacteriological observations concludes that pure American vaseline is in itself a valuable germicide and should be employed as a vehicle for the medicaments used. Experiments showed that sublimate salves 1–3000 and nitrate of silver, two per cent., killed bacteria in a few minutes. He made a number of experiments with the surface layers of the boxes of ointment in daily use in Würzburg Eye Klinik, taking the ointments before mentioned and one of one-half per cent. of the acetate of lead and did not discover in a single instance that any bacteria were present.

TUBERCLE OF THE IRIS.

Sandford[2] reports three cases of tubercle of the iris, one of which, on account of its subsequent history is of especial interest. It was a case of primary iritic tuberculosis, the ciliary region, suspensory ligament, and apparently the lens itself, being infiltrated with the tuberculous elements. The case occurred in a child aged five years, of tuberculous parentage on both sides, whose only brother died of tuberculous meningitis. There was no evidence of tuberculous mischief in any other organ. The globe was therefore excised and sections made. The tuberculous mass half filled the anterior chamber. The patient improved greatly in health and has been under observation ever since (eight years). At present she is a fragile, delicate-looking girl, but free from any especial ailment.

KERATO-MYCOSIS ASPERGILLINA.

Fuchs[3] reports the case of a man, fifty-three years of age, who had an inflammation in one eye attended by fever; the fever disappeared in a few days but the inflammation of the eye continued. When first seen, nearly a month after the onset of the disease, the conjunctiva of the lid was red and covered with a trachomatous-looking papillary growth. The retro-tarsal fold was free. The central portion of the cornea had an intense gray opacity seven millimetres in diameter, separated by a sharply-curved furrow from the surrounding cornea. This portion of the cornea was dry, yellow and crumbling. There was hypopion and some posterior senechiæ. This central portion was easily removed with forceps, but was reproduced in a

---

[1] Von Graefe's Archiv. f. Ophthalmoscople. Band xl, theil. 3, p. 131.

---

[2] It is needless to say that no sharp lines can be drawn in such division. One estimates an individual case as best he can.

[2] Ophthalmic Review, May, 1894, p. 178.

[3] Wiener klin. Woch., No. 17, 1894

few days. As a result of this the entire growth was dissected off with a knife leaving the cornea clear, but thinned. The disease reappeared in two places, the spots were removed and then the patient was lost sight of. The removed portion was examined bacteriologically and cultivated by Professor Gruber and found to be aspergillus fumigatus. The patient had had no injury to his eye. He was by occupation a miller.

DESCEMETITIS.

Snellen[4] reports two cases of Descemetitis in which a micro-organism was found in the clots of material formed upon Descemet's membrane.

The first case, a lady twenty-eight years of age, had a very marked Descemetitis. The lower third of the cornea was dotted with specks of different sizes. After dilatation of the pupil circumscribed opacities were observed in the lens, which our author thinks were of the same character. After some days an increase of tension appeared, and as it persisted and was accompanied by haziness of the cornea and diminished vision a sclerotomy was performed. With the aqueous tumor one of the clots came out, which upon examination was found to consist, not of a cluster of cells, but a collection of microbes. As soon as possible they were transmitted to agar-agar, where they grew but very slowly. Closer examination, after staining with carbolfuchsine, showed that they were very short bacilli.

The second case was a young man who came with a Descemetitis of three months' standing. As in this case also a paracentesis had to be performed, great care was taken to secure one of the clots; this was accomplished with considerable difficulty, as the clot proved to be very adherent to the cornea. In this instance the microscopic examination showed the cells as described in the text-books, but between them were microbes similar to those in the first case. Snellen did not succeed in cultivating them, and supposes that this clot was an older one than the other, as it was more adherent to the cornea, that it had attached cells and that the microbes were already dying off.

Subsequently the first case returned, complaining of irritation in the other eye. By focal illumination, very small, hazy spots were to be seen on the posterior surface of the cornea; they became denser, and soon assumed the ordinary appearance of Descemetitis. In this case it was not true that the clots were situated in a triangular arrangement on the lower third of the cornea; and our author is inclined to think that they may originate anywhere, and subsequently become loose and fall down, and stick again to the cornea in its lower part. Snellen concludes that Descemetitis is really a disease *sui generis*, and therefore it is appropriate to take up the old name instead of calling it serous iritis or cyclitis; and secondly, that it is due to microbes growing in the anterior chamber, which by producing toxines cause an irritation of the uveal tract. The clots are at first situated on the cornea, afterwards on the iris and lens, and may be also in the ciliary body. They contain in their early stages only microbes, but later are intermingled with leucocytes.

REPORT OF THE VALUE OF OBJECTIVE TESTS FOR THE DETERMINATION OF AMETROPIA; OPHTHALMOSCOPY, OPHTHALMOMETRY AND SCIASCOPY.[5]

A report on the above subject by a special committee appointed by the Ophthalmic Section of the American Medical Society may be abbreviated as follows: The committee consisted of Edward Jackson, M.D. (Chairman), S. M. Burnett, H. V. Weirdemann and J. A. Thompson.

Ophthalmoscopy.— The measurement of refraction with the ophthalmoscope enables us to immediately assign an approximately just share to the influence of ametropia in causing imperfect vision. The lens required to give a clear view of the fundus, informing the observer of the hypermetropia or myopia present, and the distinctness of the view indicates the presence, degree and regularity of astigmatism. And all this is accomplished in perhaps the fraction of a minute. Of the ability of the ophthalmoscopic examination to reveal latent hypermetropia, there must always be some doubt, for in a certain proportion of cases it fails to accomplish it. Of the exactness of the determination made with it, the committee accept the statement of Loring, that it will measure hypermetropia or myopia to within 0.50 D. or recognize the presence of 0.75 D. astigmatism, and the direction of its principal meridians. It must be clearly understood, however, that this accuracy cannot be attained by all observers, or by any observer at all times or in all cases. The most serious hindrances, however, are those dependent upon the eye of the patient. If the patient's pupil is unduly small, the accuracy obtainable by this method is correspondingly diminished by the diminution of the circles of diffusion upon the observer's retina. On the other hand, if the pupil dilate moderately, as it does in a majority of cases in a thoroughly darkened room, portions of the dioptric media will be exposed at the margin of the pupil that differ materially in their refractive power from the visual zone, and thus the refraction which may really be obtained by the refraction ophthalmoscope will differ essentially from the refraction of the visual zone which is sought.

Ophthalmometry, which would be more appropriately named keratometry, by measurement of the curvature in different meridians, the existence and amount of corneal astigmatism is determined to within 0.25 D., or less if the patient be steady, the other conditions favorable, and the observer's vision is not impaired by irradiation. The directions of the principal meridians of the corneal astigmatism are also determined with an accuracy dependent somewhat upon the amount of the astigmatism, but even for low degrees with practical exactness. But the ophthalmometer being simply a keratometer, gives no information as to the degree of hypermetropia or myopia present, and only indicates what may be the total astigmatism, if that conforms to the corneal astigmatism; of the conformity of the corneal to the total astigmatism, statistics now before the profession enable us to judge. From them the committee draw this conclusion, that the chances of conformity between the corneal and total astigmatism are not sufficient to justify reliance upon the ophthalmometer as a means of showing the cylindrical correction required in the individual case.

Sciascopy or Retinoscopy is upon the whole the most accurate and reliable objective method of estimating ametropia. It measures the total refraction of the eye, whether this be the static refraction or the refraction modified by accommodation. Applied in the direction of the macula, it measures in the visual zone exactly the refraction that is measured by the subjective method, and at the same time it measures the refraction outside of the visual zone, as it is possible to measure it in no other way. For eyes having a distinct and sufficiently extended visual zone, it is accurate to within one-eighth of one dioptre. When, however, the visual zone is too small to study at a convenient distance, or the refraction passes by imperceptible gradations into entirely different refractive conditions surrounding it, the difficulty of applying the test is greatly increased, and the accuracy and certainty of its results diminished.

---

[4] Ophthalmic Review, August, 1894, p. 259.
[5] Journal of the American Medical Association.

The eyes in which the visual zone can be isolated and studied are the rule, those in which this is not possible the rather rare exception. In nearly all eyes the result of a careful sciascopic correction will give the best or very nearly the best obtainable vision.

In conclusion, the committee urge that the accurate determination of ametropia is best accomplished by the use of all these objective methods in each case, and usually in the following order. The ophthalmoscopic examination, measurement of the cornea with the ophthalmometer, sciascopy; these to be followed by the subjective determination, and if this last does not agree with the previous measurements, its findings should be submitted to a re-trial by sciascopy. Even when this plan is followed, the accuracy of results obtained will depend on the experience, habitual accuracy of observation, physical health, mental alertness and conscientious care of the observer.

(To be continued.)

◆

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

J. G. MUMFORD, M.D., SECRETARY.

REGULAR Meeting, Monday, November 5, 1894, DR. FREDERICK I. KNIGHT in the chair.

DR. HENRY JACKSON read a paper on

A FEW CASES ILLUSTRATIVE OF THE DIAGNOSTIC VALUE OF AN EXAMINATION OF THE BLOOD.[1]

DR. MORSE: I wish to emphasize the importance of examination of the blood in all suspected cases of malaria. It seems to me that in this way and in this way only can a positive diagnosis be made in many doubtful cases; and even in many cases that seem perfectly certain clinically, it is a satisfaction to have your diagnosis confirmed. The examination is not difficult, taking but little time and not a great deal of experience. An oil immersion-lens is indispensable. I prefer the examination of a fresh specimen to any method of staining. A drop of blood is taken from the lobe of the ear and placed on a cover-glass. The specimen may be preserved some time by using vaseline. It is better to cut off parts of your light in looking for the plasmodium. The appearance of the plasmodium varies a good deal with the time that the blood is taken. If the blood is taken soon after a chill it appears as a hyaline body, more or less rounded, about the size of a red corpuscle, may or may not have ameboid movement, and may be inside or outside the cell. As the plasmodium increases in size it takes up pigment. The red corpuscles which have been invaded are larger than normal, have lost their normal contour, and are very much paler from the loss of pigment. Just before and during the chill the pigment is seen in the centre of the plasmodium, which is broken up into pear-shaped bodies. The cresentic forms I have not seen in cases originating in this vicinity. In examining a fresh specimen it is quite important not to mistake a simple vacuolation of the red corpuscles for the hyaline form of plasmodium. A little pigment underneath the specimen will show through the vacuoles and not show through the other. Another point sometimes useful in examining a fresh specimen is to put on the full light and look for dark spots, not paying attention to individual corpuscles. When you see a dark spot, cut the light off, and you almost always find it is the pigment inside a plasmodium. The plasmodia are most abundant just before and during a chill although I think they can be demonstrated at any time. The administration of quinine renders it difficult to find them, although I have frequently demonstrated them after the quinine had been taken for a long time and in large doses.

The best method of staining is the double stain with eosine and methyl-blue, though I do not think any stain compares with the examination of the fresh specimen. During my out-patient service at the City Hospital the examination of the blood was made in all suspicious cases and found in nine. In one case the plasmodium was demonstrated in considerable numbers where the history was very indefinite; the examination was undertaken simply because no explanation of the symptoms could be made. In another case with a typical clinical history careful examination of the blood failed to reveal plasmodia, but the administration of quinine cured the case promptly.

It has been known a long while that there must be a great destruction of the blood corpuscles during malaria on account of the anemia which ordinarily follows the blood pigment in the organs and the melanemia in fatal cases. One observer estimates that one-fifth of the red corpuscles are destroyed during the febrile attack. There is some difference of opinion as to the white corpuscles in malaria. The general opinion seems to be that there is certainly no increase in their number but, if any change, a hypoleucocytosis. The alkalescence of the blood has never been investigated, but it is probably diminished as in other acute febrile diseases.

DR. JACKSON, in answer to a question, said that about five hundred leucocytes were counted as a basis for estimating the percentages.

DR. G. F. Jelly read a paper on

A CASE OF MENTAL SHOCK.[2]

DR. P. C. KNAPP: The case which Dr. Jelly has reported to-night seems to be one of peculiar interest. In many of the features — especially in the tremor and the very marked loss of memory — it recalls some of the stigmata of hysteria which have recently been so vividly described by Janet in his two admirable little monographs.[3] Janet showed that, beside the ordinary stigmata of anesthesia, hyperesthesia, contracted visual fields, etc., the loss of will, loss of memory, the complete limitations of the sphere of consciousness are among the most striking features — notably the limitations and occasionally duplications of the sphere of consciousness. It seems to me also that in this case the symptoms are due almost wholly to the auto-suggestion of the accident, as Charcot has shown in many of his cases. Of course, in the majority of cases there is a combination of the psychical and the physical shock; and it has seemed to me in many cases that the influence of the psychical shock has been rather exaggerated. In this case the physical shock is almost wholly eliminated. There is a very curious feature, too, about these hysterical cases which Janet has so clearly demonstrated and which render them still more difficult in their medico-legal considerations. This feature is the fact that a very large number of these symptoms are distinctly psychical or as many people might call them, imaginary; in other words, that by hypnotism we can find that the memory, the sensibility, the motor power even when apparently lost, persist in the field of sub-consciousness. Janet cites one of Charcot's patients at the Salpêtrière which shows this loss of memory in a most striking degree. A woman who had always been in perfect health was told very suddenly that her husband had met with a fatal accident and that they were bringing his body home. The news was not true, but she was thrown into profound hysteria. For many months she had absolutely no memory, especially the period subsequent to the accident, also for some time previous to the accident. By hypnotizing her it was found that there was this unconscious memory both of the period before the news was brought to her, of the fact that she had learned that her husband had been killed and of everything that happened at the Salpêtrière after that. Of course, if such a fact should be brought up in a medico-legal case, I suppose there is no jury which would not say that such a patient is simulating the whole business, but the question of simulation can be thrown out of the account entirely.

---

[1] See page 633 of the Journal.

[2] See page [illegible] of the Journal.

[3] Etat mental des hystériques. Les stigmates mentaux, les accidents mentaux.

The case, furthermore, is one of interest as proving a point on which it seems to me the evidence is increasing — that these cases, although the physical accident is slight, are often serious; that the prognosis is not determined by the award of damages or by the cessation of litigation; and that where the symptoms are of such severity, we may consider that it will be a long time before the patient is restored to health and usefulness.

◆

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Seventh Annual Meeting, Charleston, S. C., November 13, 14 and 15, 1894.

(Concluded from No. 25, p. 621.)

Dr. W. L. Robinson, of Danville, Va., reported two cases of

GUNSHOT WOUNDS OF THE ABDOMEN, LACERATING THE LIVER AND BOWEL.

In neither case were the symptoms commensurate with the injury; neither shock, hemorrhage, nor pulse portrayed the necessity for operation. Yet in view of the 92 per cent. mortality from gunshot wounds of the abdomen without operation, he did not hesitate. The first case came near dying on the table; and his light being imperfect at 12 to 1 o'clock at night, he only found the liver wound, failing to find the hole in the posterior border of the hepatic flexure of the colon. The patient died in three days. His second case was operated on promptly, and the injury in the transverse and descending colon was promptly repaired with the Murphy button. The man was on a spree, and had had no action from the bowels for three days. He pressed out much fecal matter, but should have taken more time and emptied the bowel as far as practicable. For two days no unfavorable symptoms presented themselves, but on the night of the second day distress from tympanites and pain began. He suggested to his associates the propriety of reopening the abdomen, but enemata and grain doses of calomel were tried. This the author considered was his fatal mistake, for the waiting of ten hours had lost him the chance of a life-saving operation. He reopened, and with a medium trocar emptied the bowel of gas, but exudative lymph was manifest on bowels, and obstruction of button by feces existed. The button held its tissue firmly, and no leakage had occurred. He washed out the cavity, but patient died in ten hours of shock.

MOVABLE KIDNEY.

This paper was read by Dr. Geo. Ben Johnston, of Richmond, Va. At the outset the author emphasized three propositions: (1) Movable kidney is extremely common; (2) it is capable of producing very distressing symptoms, and in many instances is a menace to life; (3) it is curable by a simple and safe operation.

The author's own experience with movable kidney from a surgical standpoint extended back a little more than three years. Prior to the first nephrorrhaphy, which he performed in May, 1891, those cases he had met with were given little or no thought. Since the date mentioned, he has looked with more interest on his cases, and has come to marvel at the frequency of the malady. He has examined a limited number of persons likely to be the subjects of movable kidney since his first operation for its relief, and in a comparatively small number of subjects he has encountered twenty-seven cases. Edebohls, who has studied five hundred cases, fixes the rate at one for every five or six women examined. Linder gives about the same rate. Osler makes no statistics, but mentions it as a common occurrence in his hospital wards. The records of these observers and Dr. Johnston's cases justify the assertion that it is a common malady.

It occurs more often in women. He had never seen one in a male subject. Age is a factor in its production. His own cases have been in subjects varying in age from twenty to thirty-five years. In only one instance has he seen it in a woman over forty. Both kidneys may be movable at the same time. The right is the one that is affected in the majority of the observed cases. This is accounted for by the relation of the kidney to the liver on this side.

Two anatomical facts help to explain the preponderance of the right over left kidney displacement: (1) the greater length of the right renal artery, and (2) the firmer attachments of the left kidney. The author has twice seen a movable kidney follow obstruction of the ureter. It happened that both of these cases were on the left side. The increased weight of the kidney due to accumulated urine and congestion must have played an important part in the etiology of the dislocation in these two cases.

In many cases of movable kidney, there are no symptoms. In others, the symptoms are extremely distressing, producing great mental disquietude, as well as intense physical suffering. In a proportion of cases the symptoms are grave. Torsion of the ureter is common. Partial occlusion by bending is not uncommon, inducing a distention of the pelvis by dammed-up urine. Hydronephrosis may follow. Calculus is thus invited by reason of poor drainage.

Apart from tumors of the kidney itself, the condition most likely to be mistaken for movable kidney is distended gall-bladder.

Nephrorrhaphy is not indicated in every case of dislocated kidney, but only in such cases as manifest distressing or dangerous symptoms. When gastro-intestinal disturbance impairs the general health, when nervous symptoms are severe, when the dragging abdominal pains are constant, when disease of other organs is simulated, when hydronephrosis is threatened, when one or more attacks of torsion have occurred, the operation is imperative.

The author then outlined his method of operating on movable kidney, and closed his paper with a report of seventeen cases.

Dr. Richard Douglas, of Nashville, followed with a paper on

ACUTE PERITONITIS.

Appreciating the condition under which the colon bacillus will escape from its natural habitat and become actively pathogenic, and knowing the supply is unlimited, the dose being governed alone by the integrity of the bowel, naturally we accord to this bacillus the first place in the causation of peritonitis. In obedience to the teachings of experimental work, the surgeon must accept the classification of Pawlowski of two forms of peritonitis: first, that produced by chemical agents with which we are not concerned; second, that produced by infection. The latter is more tangible. It is fully in accord with our idea of the genesis of the disease. It harmonizes with clinical work. It is an indisputable fact that the type and virulence of the inflammation are largely dependent upon the origin. There may be infection from without or infection from within, and each may be divided into immediate and mediate.

The author then reported a few illustrative cases. One case was reported of general purulent peritonitis. The patient recovered, and the author considers that it was due entirely to free incisions, thorough irrigation and ample drainage.

THIRD DAY.— MORNING SESSION.

HISTORY OF VAGINAL EXTIRPATION OF THE UTERUS.

Dr. Geo. J. Engelmann, of St. Louis, read a paper on this subject, in which he stated that at the New Orleans meeting of the Association he was deeply interested in vaginal hysterectomy, which he presumed was a comparatively new operation with very recent modifications; but Dr. Lewis, of that city, called his attention to an old French pamphlet, showing that the operation had been done in the '20's. Since then he has found it was done still earlier precisely as it is done to-day, the operation having developed step by step.

Dr. Lewis, of New Orleans, in the discussion, stated that the first vaginal hysterectomy was performed by Dr. Dabourg in the little town of Autell, France.

Dr. Edmond Souchon, of New Orleans, read a paper entitled

REMINISCENCES OF DR. J. MARION SIMS IN PARIS.

In 1860 Dr. Souchon had just entered upon the study of medicine in Paris, and was attached to the service of Professor Velpeau. In the spring of the following year he by accident met Dr. Sims, who had come to Paris with a letter to Velpeau from Valentine Mott, of New York. At this time Dr. Sims knew nobody in Paris and could not speak a word of French, so that the meeting of young Souchon was a very great help to him in his intercourse with Velpeau and the other surgeons of the French capital. Sims's great object was to get a case on which to demonstrate the success of his operation for vesico-vaginal fistula. Velpeau procured a case upon which Sims operated successfully before a large audience of students, doctors and professors in the operating theatre of the old Charité.

The ovation Dr. Sims received was very great, and gave him the start that made him the cosmopolitan surgeon we all know him to have been. Wherever Dr. Sims travelled and located he had more calls than he could attend to. The doctor's success, however, was not without hard moments, for twice he met cases that came very near terminating disastrously from the effects of chloroform. But their final recovery only increased the admiration of all for Sims's fine qualities as a surgeon.

Dr. Geo. H. Noble, of Atlanta, Ga., read a paper on

A CASE OF CARCINOMA OF THE PARTURIENT UTERUS, REMOVED THREE DAYS AFTER CONFINEMENT; RECOVERY.

The specimen he presented was one of carcinoma of the parturient uterus, removed by vaginal hysterectomy three days after labor. The woman had previously been confined, sustaining a laceration of the cervix uteri, which perhaps was a factor in the cause of the disease. In the first few months of the last pregnancy the patient was treated locally by her family physician, and there was nothing to cause a suspicion of malignancy. Almost the entire vaginal portion of the cervix was destroyed, less than one-fourth of its circumference remaining intact. The induration extended deep into the uterine tissue, but could not be felt beyond the limits of that organ. The roughened, ulcerated surface was easily traced for a considerable distance within the cervix, the os being dilated to about five centimetres in diameter. Her condition was unpromising, and surgical interference was clearly interdicted, so the os and vagina were cleansed thoroughly and lightly dressed with gauze. She was then placed profoundly under the influence of morphia sulphate, with a view of arresting labor, securing rest and recuperation sufficient to permit evacuation of the uterus, which occurred spontaneously twelve hours later. The child was poorly nourished, and lived only a few weeks, finally dying of inanition.

What is the advantage of hysterectomy over Porro's operation? and if hysterectomy is preferable, should the vaginal or abdominal method be given the precedence?

To the first question the author answered that hysterectomy undoubtedly promises more to the mother than a Porro operation in cases where the disease is confined to the uterus, and he asserts that when the cancerous mass can be succesfully removed it is the duty of the surgeon to do it, as Porro's method merely bridges the women over the puerperal state and leaves her to her fate. In radical removal there is a promise of cure.

In answer to the second question, the author said it is evident that the method of operating must depend largely upon the character of each individual case. Thus the vaginal operation may be done when it is desirable to take advantage of the diminished liability of shock, even though the large size of the uterus may render the operation more tedious.

The main point in the paper was to show the feasibility of hysterectomy in the puerperal state for cancer of the uterus, as the case reported clearly demonstrated, even though it is too early to claim immunity from the return of the disease.

LIGATION OF ARTERIES,

by DR. JOHN A. WYETH, of New York.

The author said that in August, 1894, in an operation for the removal of a malignant neoplasm of the left upper jaw which involved the spheno-maxillary fissure and part of the orbital cavity, it became necessary as a preliminary operation to ligate the external artery. In cutting down upon this vessel by the usual incision — the point of bifurcation of the common carotid artery being, as demonstrated by him in a study of 121 subjects, opposite the upper border of the thyroid cartilage — he found quite a network of veins crossing from the median line of the neck to the internal jugular immediately over the point of ligation, and spreading from half an inch above down to the bifurcation of the common carotid. As it would have taken some time to apply a double ligature to each one of those veins, and as the author, on account of the bad general condition of the patient, desired to expedite matters as much as possible, he resorted to this expedient: by catching hold of the sheath of the common carotid and at the same time making gentle traction upon the lowermost of these veins with a blunt hook in an upward direction, he found that with his aneurism needle, armed with a good-sized catgut ligature, he could slip this instrument around the artery just in the crotch of bifurcation of the common into the external and internal carotids. Having every confidence in the healing power of arteries ligated under aseptic conditions, especially those tied with animal ligatures — in preference, catgut — the ligature was applied at this point, and immediately tightened. It was so close to the common trunk that it also occluded the superior thyroid branch, which is given off as a rule just at this point, and which he saw within the grasp of the ligature as he tightened it. The wound was immediately closed without drainage, and sealed by iodoformized-collodion dressing. The operation on the jaw was completed with an insignificant loss of blood, and on the fifteenth day after the operation the patient left his private infirmary in New York City for his home in the western part of the State. There was no hemorrhage following this deligation.

About five years ago, in a similar operation, a ligature was applied at this point with equal success. The speaker did not relate these two cases for any bearing they may have upon the safety of ligation of the external carotid artery, since that question has been long settled. But the reason for narrating these two cases was to bring before the Association a consideration of the inflammatory changes which occur in arteries which have been ligated, and to discuss at length the best methods to pursue in these operations to secure the greatest safety to the patient.

In tying arteries, an important point to consider is the selection of a ligature. It seems to the author that in the animal ligatures, and especially in well-prepared and properly asepticized catgut is found the best ligature material. For the last ten years he had used catgut almost without exception, only once or twice using silk, and then in the ligation of the large venous trunk close to the root of the neck, in which he was fearful that the animal ligature might slip from the blood-pressure in the act of vomiting as the patients came out from under the influence of the anæsthetic.

Porta, in four hundred experiments, found that in from one to two years, seventy per cent. of catgut ligature had been absorbed; thirty-six per cent. of silk, sixty-six per cent. of hemp and flax, and twenty per cent. of horse-hair. Order of rapidity; catgut, hemp, silk, horse-hair.

SIMULTANEOUS APPEARANCE OF CANCER IN BREAST AND UTERUS.

This paper was read by DR. JAMES EVANS, of Florence, S. C. The subject of this interesting manifestation of the disease was a lady fifty-three years of age, married and the mother of six children. A striking peculiarity in the history of the case was, that when the disease was most active and destructive in the breast, it rather checked and retarded its tendency in this direction in the uterus.

Excision of the cervix and removal of the breast were proposed, but declined.

The author closed by saying that although there is a very general concensus of opinion among surgeons that the most successful treatment of cancer affecting the breast and uterus is early and radical removal by the knife, yet it is doubtful in the opinion of the author, if the operation is advisable when the disease appears in multiple form and in distant organs. When the disease is confined solely to the uterus and recognized at an early stage of its invasion, the prompt removal of the organ is usually followed by permanent recovery; in fact, recurrence less often takes place than removal from any other organ or part of the body.

DR. W. E. PARKER, of New Orleans, reported

SEVEN CASES OF VARICOCELE TREATED BY INCISION, LIGATION AND SHORTENING OF THE SCROTUM.

An incision, varying in length according to the size of the varicocele is made and the scrotum shortened by converting the wound from a longitudinal into a transverse one. All cases recovered with union by first intention are still doing well, the period since the first operation being seven months. The milder form of varicocele should be treated with a supensory bandage with proper attention to diet, exercise and bowels. A varicocele should be operated upon: (1) if it is of large size; (2) if it is painful; (3) if marked nervous symptoms are present; (4) if the testicle is atrophying; (5) if the varicocele is increasing rapidly; (6) if it is an obstacle to entering a public service; (7) if, on account of a patient's occupation a suspensory is troublesome, and he desires an operation.

DR. RUFUS B. HALL, of Cincinnati, Ohio, read a paper on

FIBROID TUMOR OF THE UTERUS WITH SUPPURATING OVARY DISCHARGING PER RECTUM.

As a preface to his report, Dr. Hall said the subject of operative treatment for fibroid tumor of the uterus, was one in which the keenest interest was manifested by men engaged in abdominal surgery. The main points in the technique of the operation had been practically settled, but certain minor details in operative procedure were capable of improvement. Complications especially arose, which taxed to the utmost the skill of the operator.

The following case was reported in detail as illustrating a number of these complications. The patient, aged forty-four, was known to have a fibroid tumor for five years. She had suffered from sepsis for five weeks previous to the operation. In addition to the fibroid tumor was a large suppurating ovary holding about two pints of pus, which was discharged per rectum every eight or ten days. The suppurating ovary was densely adherent, and after its removal disclosed a large opening in the rectum. The operation included total extirpation of the fibroid uterus with the suppurating ovary, and the repair of the intestinal rent. There was no leakage of the injured bowel after the operation. The patient recovered.

The writer drew the following conclusions: The question of operation during sepsis is one that will admit of discussion both *pro* and *con*, but in the end it must be decided by the merits of the individual cases and not by rule. As to technique, total extirpation was given the preference as it gives the ideal condition both theoretically and practically for after-treatment. The Baer method was condemned as it does not give thorough drainage — a thing absolutely necessary where there are extensive raw surfaces which have been bathed in pus, and no peritoneum to close off the general peritoneal cavity. The strengthening of the suture line with a tag of adventitious tissue was advised. The packing of the pelvis with gauze to protect the cavity from intestinal leakage, should any occur, and to prevent intestinal adhesions, was recommended. The gauze is usually removed on the fourth day, and peroxide of hydrogen used as a wash for the cavity several times daily.

Again, forcible dilatation of the sphincter ani muscle to cause incontinence, thus relieving the intra-intestinal pressure from accumulating gases, the writer thinks, adds greatly to the chances of recovery. He first employed it for this purpose on February 6, 1893, in an operation for extra-uterine pregnancy with extensive bowel injury, the patient recovering. He is, as far as he knows, the first to practice forcible dilatation for this purpose.

Dr. J. G. Earnest, of Atlanta, Ga., contributed a short paper in which he reported

SOME COMPLICATED CASES OF PELVIC SURGERY.

Dr. Herbert M. Nash, of Norfork, Va., read a short paper on

THE REMOVAL OF AN INTRA-UTERINE FIBROID TUMOR BY MORCELLEMENT WITHOUT HEMORRHAGE.

In September, 1892, he saw in consultation Mrs. A., aged about forty-two years, the subject of intractable hemorrhages from the uterus, lasting from two to three weeks of each month, and which had been habitual for several years. The uterus could be plainly felt above the pubes, and by the conjoined method, sound, etc., the diagnosis of intra-uterine fibroid was made. Not wishing at that time any radical procedure, she continued under the care of her physician, whose best efforts to control the hemorrhage proved fruitless. On the 11th of July, 1893, she entered the hospital for surgical treatment. On the 26th of August, the writer operated under ether. It was found quite impossible to dilate the os to the extent desired; but there was room enough for the manipulation without dividing the cervix, and no difficulty was found in seizing the presenting mass — the attachment of which to the uterine walls had been made out to be sessile — with a strong vulsellum. Upon making traction with some force, in order to determine the best method of procedure, the tissue gave way, and the withdrawn part of the detached mass was quite large, but no bleeding followed. This fact decided the doctor to proceed by morcellement, and with the forceps, scissors, and the instrument he exhibited, the whole growth was removed piecemeal, and with only a slightly colored serous discharge. The previous packing had been so effectual that the growth itself, and indeed the uterine walls, appeared to have been exsanguinated. The fragments removed, when under strong compression, presented a mass of fibroid tissue nearly as large as an ordinary cocoanut. When the patient left the hospital, the uterus had contracted firmly and measured a fraction over three and one-half inches in depth, occupied its proper position in the pelvis, and the patient is to-day entirely well, with perfectly normal functions.

The following officers were elected: President, Dr. Louis McLane Tiffany, of Baltimore, Md.; First Vice-President, Dr. Ernest S. Lewis, of New Orleans, La.; Second Vice-President, Dr. Manning Simons, of Charleston, S. C.; Treasurer, Dr. Richard Douglas, of Nashville, Tenn.; Secretary, Dr. W. E. C. Davis, of Birmingham, Ala.

After introducing and adopting resolutions of thanks, the Association adjourned to meet in the City of Washington, D. C., the second Tuesday in November, 1895.

Recent Literature.

The Soldier's First Aid Handbook. Comprising a Series of Lectures to Members of the Hospital Corps and Company Bearers. By William D. Dietz, Captain and Assistant Surgeon, U. S. Army. Pp. 93. New York: John Wiley & Sons. 1893.

This little pocket book forms one of a series that is being published on military medicine and allied subjects. It is conveniently arranged, and is divided into the Organization and Duties of the Hospital Corps and Company Bearers, the Human Body, First Aid on the Battle-Field, and Management by the Bearer of Ordinary Accidents and Emergencies. It is interleaved, so that special notes may be made by the soldiers receiving instruction.

The instructions given in the text and the advice suggested to the men are thoroughly sensible. It will undoubtedly be a work of some value to the hospital corps and company bearers for whom it is intended. A few illustrations or diagrams could be added to another edition, and would be of great assistance in recalling to the reader the instructions which have been given him. It has a good index.

The mortality from tuberculosis in the United States is said to be 450 per day.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, DECEMBER 27, 1894.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

SUBSCRIPTION TERMS: $5.00 *per year, in advance, postage paid, for the United States, Canada and Mexico;* $6.56 *per year for all foreign countries belonging to the Postal Union.*

All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal 283 *Washington Street, Boston.*

All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal should be addressed to the undersigned.

Remittances should be made by money-order, draft or registered letter, payable to

DAMRELL & UPHAM,
283 WASHINGTON STREET, BOSTON, MASS

ANNUS MEDICUS MDCCCXCIV.

THE year 1894 has been especially distinguished by great activity and profound interest on the part of the medical profession, in serum therapy, particularly as applied to diphtheria. If, as its sponsors, men of honorable reputation and the highest authority in medical service, believe, a method for the cure of this disease, and for certain protection against its attacks has been found, the year 1894 may mark the beginning of a new era in medicine, that of the practical application of serum therapeutics. Whether the results so far reported will be sustained by further experience, the future will show. In the meantime, whilst there is every reason to encourage hopeful expectancy, judgment must be suspended, and the faithful trial of the treatment be continued.

The year has been marked by a gratifying advance in preventive medicine, namely, the check on cholera during the Meccan pilgrimage, and by an important discovery in bacteriology, that of the bacillus of bubonic plague by Kitasato.

The medical profession has sustained irreparable loss in the deaths of Holmes and von Helmholtz. The former closed, at the ripe age of eighty-five, a career which has left its mark both upon medicine and literature. The latter died at the age of seventy-three, having spent nearly his whole life in the fore-front of scientific thought, and solved the problem of the illumination of the interior of the eye, an achievement which of itself is enough of a monument to his memory.

EPIDEMICS.

CHOLERA. — The success of the precautionary measures taken by European countries after the severe cholera epidemic of 1892 was more pronounced during the past year even than in 1893.

During 1893 it will be remembered, that, although there was a serious outbreak in Mecca at the time of the annual pilgrimage, the quarantine at El Tor for returning pilgrims prevented its entry from this source into Europe, and even into Egypt. In 1894 the thorough preventive measures adopted at the International Sanitary Conference in February were so faithfully carried out, that even during the annual pilgrimage to Mecca, which closed early in July, not a single case of cholera occurred in the Hedjaz; 49,600 pilgrims having disembarked in good sanitary condition. The success of the measures adopted by the conference for the care of such a large body of people marks an era in sanitary legislation. The precautions adopted and enforced, often under the most unfavorable circumstances, over enormous areas, were successful even beyond the most sanguine expectation, and prove beyond a doubt the effectiveness of sanitary measures thoroughly carried out, in the prevention of cholera epidemics.

The success of these measures removes the chief danger to Europe and the world from the invasion of cholera from the crowded cities and fairs of India, where the disease is constantly smouldering. These measures included, in brief: (1) The disinfection and medical inspection of pilgrims before embarking from Indian ports, and their sanitary care during the voyage — the space to be allotted to each on board ship, the presence of physicians on board, etc.; (2) the reorganization of the Turkish lazarettos in the Red Sea, according to the principles laid down at the Venice and Dresden conferences with regard to doctors' space, medical officers, disinfecting stores, etc.; (3) the organization of a complete lazaretto at El Tor, through which the pilgrims from Tunis, Algeria and Bosnia must pass on their return from Mecca.

To this chief source of infection the attention of the International Conference was directed, and, as above described, with entirely successful results. Another source of danger — Russia — from which, except for the greatest care and vigilance on the part of Germany, Austria, England, and other European nations, the disease would have been epidemic in Europe, occupied the attention of Europe and America during 1894. In the cities of the Russian Empire, crowded with a population of uncleanly habits, and in the poorest sanitary condition, cholera was more or less prevalent all through the winter. During January and February the deaths from cholera in St. Petersburg averaged from 20 to 40 a week. It was prevalent in many Russian governments, and in Warsaw, Plock and Radom in Russian Poland. By March it had disappeared in St. Petersburg, but was still present in various parts of Russia and Russian Poland. During April it held its own in Warsaw and Russian Poland, and in May began to spread rapidly in Warsaw, Klovno, Poltz, Radom, Podolia and Kieff. In May the disease entered Prussian Silesia along the Russian frontier. The rivers along the frontier became infected, in particular the Vistula; raftsmen and boatmen who drank the river water were the first to come down with the disease. During May the disease also spread into Austria-Hungary and Galicia, where it increased gradually, until in July it was declared epidemic.

During the spring months a mild epidemic appeared in Constantinople, which diminished until in May the city was nearly free from the disease. This outbreak was followed, however, in June by a severe epidemic in the city of Sivas, which out of a population of 30,000 lost 600 from the disease between the 15th and the 26th of May. The disease was also rather prevalent in Tokat, Samsoun and other provinces.

During the spring an epidemic of diarrheal disease prevailed at Lisbon; there were, however, but few fatal cases. The disease was at one time reported to be true Asiatic cholera, but the Portuguese health authorities stoutly claimed, as a result of bacteriological investigation, that such was not the case. In the end their assertions proved to be true, and at no time was there any restriction of trade with Portugal.

In Belgium as well as Russia, cholera was more or less prevalent during the winter; particularly at St. Trond — an old town, whose water-supply is derived from wells dug in soil contaminated for centuries, and where "prehistoric drains empty into a brook which traverses the town," — there was quite a severe epidemic. There were from 12 to 20 cases at Liége and Namur.

During May there were a few scattered cases along the Belgian frontier of France, at Finisterre and Morbihan. Up to the end of June, however, the epidemic was practically confined to Austria-Hungary and Russia.

Early in July, the disease began to spread rapidly in Russia, and reappeared in St. Petersburg. There the epidemic became very severe, and about 200 cases were reported each week. Several cases were reported in Prussian Silesia, mostly occurring in raftsmen along the Vistula, from the point of its entry into Germany to its mouth at Danzig. Isolated cases imported from St. Petersburg were reported from Berlin and Bremen. In Sweden cases of cholera occurred in July at the quarantine station at Fejan amongst persons on board a ship from St. Petersburg.

In August the epidemic at St. Petersburg, which had somewhat diminished during the middle of July, became very serious and menacing. The new cases numbered over 200 every day, while there were from 50 to 80 deaths. There were 500 cases in the hospital at one time. Many cases occurred at Cronstadt and at Warsaw, while the provinces each reported a few cases, but no especial increase in the outbreak. The scattered cases in Belgium, the Hague and Brittany were not followed by any epidemic. Four cases occurred on the ship *Balmore*, from St. Petersburg for London, which was detained off Gravesend on August 17th. Ten districts in Eastern Galicia, in the basins of the Dneister and Pruth, were declared infected. It will be remembered that this district formed the cholera centre of last year.

Germany, which was at this time in constant danger from the infected Vistula, now was threatened from the opposite direction, two cases occurring at Cologne. These cases, however, occurred in sailors who came up the Rhine from Holland, and were promptly isolated and disinfected, so that no spread of the disease resulted.

During August the disease at St. Petersburg declined somewhat, but steadily increased in the provinces outside St. Petersburg; so that, in consequence, the Russian army manœuvres were prevented. It gained also in Prussian Silesia. Two hundred cases daily were reported from Galicia with a mortality exceeding 50 per cent. Sixty cases appeared during one week in Nijni-Novgorod.

In Germany several cases occurred along the basin of the Vistula, but prompt sanitary measures taken by the government prevented the spread of the disease; travellers were allowed to cross the frontier only at certain points, and after a careful medical examination.

In Holland a slight spread of the disease was noted, several cases daily being reported, and a severe outbreak occurred at Liége, Belgium.

In France, Marseilles was under suspicion, though the existence of the disease was strenuously denied by the authorities.

In September a recrudescence took place in Galicia, Northeast Germany and Holland, which was greater than could have been expected,, and in excess of that which obtained last year. In Austria-Hungary in the week August 27th to September 3d, there were 801 deaths from cholera in Galicia and Bukowina. Since it became epidemic there had been 6,958 cases of cholera, and 3,000 deaths in those provinces. During this month the disease ceased to spread in East Prussia, owing no doubt to the vigilance of the German sanitary authorities. In Germany also there was a slight outbreak among squalid laborers at Bürgeln, a small village near Marburg. Isolation and disinfection were promptly carried out under the direction of Professor Fränkel, of Marburg, resulting in the immediate suppression of the outbreak. In the Russian provinces the disease was at its height. In one week there were 8,815 cases, with 4,329 deaths.

In October the epidemic slowly decreased in St. Petersburg, and very few cases were reported in Germany, but the disease still raged in Galicia and Bukowina. An outbreak occurred in Broussa in Asia Minor, and a few cases were reported from Constantinople and various Turkish provinces. In the Netherlands the disease markedly declined.

During November the disease was still moderately prevalent in Russia, Turkey and Asia Minor; and there is no reason to expect that it will not, as in former years, be more or less prevalent through the winter.

In India the disease prevailed more or less during the summer, but there has been no extensive epidemic.

England profited by the severe lesson taught by the epidemic at Hull and Grimsby during the previous year, and by constant watchfulness cholera was kept out of the United Kingdom.

The sanitary regulations enforced by our own government during the previous year, and the work of our sanitary inspectors at European ports, was so effective that not a single case reached quarantine on this side of the Atlantic. This fact, and the successful manner in which the German and English authorities dealt with the disease, is an additional demonstration of the immense value of modern scientific preventive medicine, and at the same time a demonstration of the fact that constant watchfulness is the price of immunity.

SMALL-POX, which at the close of last year was prevalent and widespread in this country, has continued through the year to a greater or less extent; a diminution along the Atlantic seaboard in the spring was attended by a marked increase in various Western and Southern States during the year, notably a considerable epidemic in Chicago, and later in Milwaukee. At the beginning of the year there were 89 cases reported in New York City, between the 1st and 29th of January, and 128 cases in Chicago. During February, March and April the disease steadily increased in Chicago. During April there were 544 cases there. The authorities were ultimately active in combating the disease, but were forced to employ the assistance of the police in ferreting out cases concealed in tenement-houses by an ignorant population, hostile to vaccination. Although regular inspections of the vessels in the harbor were made in order to prevent the spread of the disease to the ports along the great lakes, it was carried to Green Bay, Marquette, and other places in Michigan and Wisconsin, and spread rather widely through these States.

In New York the disease diminished somewhat during the winter, but increased in Brooklyn, although in April it began to show the effect of general vaccination by diminishing in intensity. Through the winter it was prevalent through Pennsylvania.

A small-pox centre developed in Nashville, Tenn., and in April another in Texarcana, Ark. In May the epidemic in Chicago reached its height, 164 cases being reported during the first week. During the spring the disease was reported in every State east of the Mississippi, and in Connecticut, Rhode Island and Maine. In Boston small-pox died out during May, its decrease no doubt being due to the measures instituted by the board of health of free vaccination, and examination of all suspicious cases by the officers of the board. Sporadic cases were reported from various towns in Massachusetts all winter.

During the summer small-pox broke out in Milwaukee, and rapidly increased, owing to the resistance of the populace to compulsory vaccination and isolation of patients. Mobs were at one time temporarily successful in preventing the conveyance of patients to the small-pox hospitals. Up to September 29th there had been 318 cases and 24 deaths in Milwaukee. In October it nearly died out in Chicago, but in November began to increase again in both cities and spread by the railways to contiguous towns. In October there was a slight outbreak in Washington, D. C.

The disease has been unusually prevalent in London during the year, and in fact throughout England and southern Scotland, particularly Edinburgh, Leith, and Glasgow. During July there was an epidemic in St. John's Wood, London, 135 cases being reported; and in September there were from 129 to 179 cases under treatment in London.

On the Continent it has been nowhere epidemic, though sporadic cases have occurred in many large cities. On this side of the Atlantic there have been epidemics in Rio Janeiro, Havana, and Mexico.

THE PLAGUE IN CHINA.— An epidemic of bubonic plague appeared in April at Canton, and spread with frightful rapidity among the poorer classes, until the deaths numbered many thousands. In May it spread to Hong Kong, where it raged for two or three months, the port being officially declared free from the disease on September 30th.

It is recorded that in the fourteenth century the plague raged both in Europe and Asia. Since then it has prevailed in various parts to a limited extent, with gradually decreasing virulence, notably in Asiatic Turkey and on the borders of the Caspian, but during all this time it was endemic in China, and made its appearance on a limited scale year after year in the southern part of the country. In the epidemic at Hong Kong seventy-five to eighty per cent. of those infected died. The principal symptoms were as follows: After an incubation period varying from three to five days, and in some cases even to eight days, high fever appears, with swelling of the lymphatic glands, generally first in the femoral lymphatics, and subsequently spreading to those of the groin, armpits and neck. The tongue becomes covered with a whitish-gray or blackish fur, and the patient suffers, also, from severe headache, accompanied by delirium, and, in severe cases, vomiting and diarrhea. The third and fourth days are the most fatal. In cases which recover, the temperature drops gradually after about a week. The glands suppurate often persistently. The disease affects young and old of both sexes. With few exceptions the patients were Chinese, especially those living in the more filthy quarters.

The unspeakable filth of the poorer quarters of the Chinese cities had been much increased by the long drouth. For nearly seven months there had been no rain to speak of, but only a few light showers. The long time without serious epidemic had made the supervision of sanitary conditions lax, and the uncleanliness of the poorer quarters polluted the air for considerable distances. A general cleaning out was at once ordered at Hong Kong, but the water-supply was too scanty to allow of thorough cleansing.

Some idea of what a cleaning up in a Chinese city means may be had from the Report of the Sanitary Board concerning the first general cleaning out some years ago. This report says, that during the eight days on which special facilities were offered for the work, no less than 2,400 tons of rubbish were removed in excess of the normal quantity, which was stated to be 100 tons a day. Of late years there has been no such accumulation; but the drainage is still notoriously defective, and the amount of surface and concealed filth is sufficiently large.

The cleaning and disinfecting at Hong Kong was begun too late, however, for the plague had already appeared, and some twenty cases were at that time in the Tung Wah Hospital. The early deaths were reported as due to fever; and it was only when several had occurred in quick succession that the true nature of the disease at Hong Kong was realized. At first, it was hoped to keep the disease down; but the upturning of dirt appeared to favor its spread, until even the better portions of the city and the foreign inhabitants were attacked. The mortality in Canton at first was 80 per cent., falling for a while to 30 per cent., but soon rising to 55 or 60 per cent., where it remained until the end of May.

This epidemic furnished the opportunity to Professor Kitasato, who was employed by the Japanese Government to investigate the disease, to make the brilliant discovery of the cause of the plague, namely, the specific bacillus of the plague, a discovery of much scientific importance.

Diphtheria.— Throughout the year diphtheria has been unusually prevalent in this country and in England. In the State of New York, for instance, from January 1st to the 24th there were 767 cases, as against 382 in the same period in 1893. In the City of New York the deaths from diphtheria during the winter and spring averaged from 40 to 50 a week, falling during the summer to between 25 and 30, but rising again in the autumn to about 40. In London the weekly deaths during the winter were between 70 and 80, falling to about 50 in the summer, and rising to between 80 and 90 during the autumn.

In Boston the number of cases reported each week during the winter months varied from 25 to 50 cases, falling during the summer to from 20 to 40, but rising rapidly during November, until in the week ending November 22d, 147 cases were reported. Since then there has been a slight decrease.

December reports from all parts of the country, except the South Atlantic area, indicate a wider diffusion of diphtheria than has ever been recorded in the United States. The mortality does not seem to be unusual, with occasional exceptions, and, in the absence of any general system of compulsory notification of the contagious diseases, the number of cases can only be inferred from the death returns, from the indications of popular alarm in the closing of schools, the enforcement of quarantine, etc., and from the overcrowded condition of the isolation hospitals. In Boston all through the autumn the diphtheria wards at the City Hospital have been overcrowded, and many cases have been refused admission. In London during the same period the hospitals of the Metropolitan Asylums Board have been taxed to the utmost, and many patients have been refused.

Yellow Fever. — During the early months of the year yellow fever was epidemic at Rio de Janiero. The number of cases and deaths steadily increased from January to March; the largest number of deaths in any one day were 102 on March 2d. During the week ending March 10th, there were 589 deaths from the disease. Many cases occurred among the crews of the merchant marine in the harbor, and several masters of American vessels died of the disease. The civil war, with the long-continued blockade of the harbor by the rebel fleet, and the numerous bombardments, made the disinfection of vessels departing for American ports impracticable. The condition of the port was stated in the bills of health, and it was recommended that especial care be taken in inspection and disinfection at American quarantine stations. No case of yellow fever escaped quarantine at South Atlantic Ports, although vessels arrived from Havana and Rio at Baltimore, Key West and Cape Charles quarantine stations with cases on board. The moderate epidemic at Cuba during the summer was fully as great a source of danger to this country as the more severe epidemic at Rio. Between April 29th and May 5th yellow fever was reported at Rio, Cuba, Ecuador, Honduras, Vera Cruz, Antigua, Puerto Rico and Yucatan.

Typhus Fever was reported from Russia, Poland, Austria, Germany and other European countries. The only serious epidemic occurred at Prague, where the disease broke out in January, and did not subside until May. At Cairo and Alexandria, there were numerous cases in June. New York City escaped this year, although on May 4th three cases occurred in Philadelphia, which were said to have been imported from New York.

Influenza.— There has been no pandemic of influenza this year. The disease prevailed to a moderate extent during the winter in Germany, England and Italy. Early in the year it was epidemic in Copenhagen and Moscow. In this country influenza was prevalent throughout New York State during the winter, and scattered visitations were reported from different cities in New England.

Dengue. — An epidemic of "dengue fever" occurred at Key West during July. The troops in garrison there were first affected, and about eighty men suffered out of a total troop of one hundred and fifteen. There were also many cases among the residents of the city, a total of over seventy-five cases being reported to the Board of Health. There were no deaths, and the disease was of a mild type.

QUARANTINE.

The work of the sanitary inspectors of our government who were stationed in foreign ports was so effective during the year, that, as before noted, not a single case of cholera reached quarantine on this side of the water. The quarantine stations, especially in the

South Atlantic, were, however, effective in keeping out yellow fever and small-pox coming from Brazil and Havana, where, owing to lack of proper facilities, proper inspection and disinfection were impossible.

MEDICAL LEGISLATION.

Medical Legislation will be considered as a separate topic in a subsequent issue.

MISCELLANY.

Serum Therapy in Diphtheria. — The year just passed has been marked by the extended application of serum therapy to the treatment of that most widespread, deadly and treacherous disease, diphtheria. This step in the development of therapeutics, — the practical application of our knowledge of immunity to this disease — is due to modern bacteriology. Jenner's application of the principle of immunity must not be forgotten in this connection, as it marks the starting-point and suggestion of serum therapeutics. Pasteur's work on anthrax and chicken cholera, marks the first step in preventive therapeutics on the basis of immunity in animals by inoculation with serum from other animals rendered immune by passing through the disease. Koch's treatment of tuberculosis was an attempt to produce an immunity by the action of the toxines resulting from the growth of tubercle bacilli. Pasteur's inoculation with attenuated virus for the production of immunity against rabies, was another important step forward in the application of a principle closely allied to the serum therapeusis.

Kitasato, Behring and their fellow workers showed that inoculation of serum from an immunized animal was capable, not only of producing immunity from the same infection in other animals, but of aborting an attack already in progress. In 1890 this principle was proved by Behring and Kitasato to hold true in tetanus. Löffler first rendered an animal immune to the virus of dipththeria. Behring, Fränkel, Ehrlich, Brieger and Kitasato, have been for years steadily at work, studying all possible methods of cultivation of the diphtheria bacillus, with a view to the therapeutic application in man of the principle of immunity in this disease, and early in the present year had attained a sufficiently definite knowledge of the action of the diphtheria antitoxin produced by the bacillus in the blood serum of animals, to justify its trial in the human subject.

Roux and his assistants, Martin and Challon, had been at work upon the application of Behring's great principle at the Pasteur Institute at Paris, and at about the same time began the treatment of diphtheria with antitoxin at the Hôpital des Enfants Malades in Paris. Early in the autumn the reports on the antitoxin treatment of diphtheria began to attract widespread attention. The duty of the medical profession to carefully test any remedy offering even the slightest promise of lessening the mortality of the disease began to receive recognition. The trial of the treatment has been only limited by the supply of the serum, which even in Germany and France has been entirely unequal to the demand. The profession in this country and the boards of health have been conservative in committing themselves. Of late the preparation of the serum has been begun by the boards of health in Boston, New York and other large cities, but a supply sufficient for general use will not be ready for some months to come.

A brief *résumé* of the statistics published during the year upon the use of the remedy may be of interest. Katz has reported from the Friedreich's Hospital, Berlin, 128 cases, with a mortality of 13.2 per cent. For the three years, 1890 to 1893 inclusive, there were treated at the same hospital 1,081 cases, with a mortality of 38.9 per cent. Behring and Kossel report 30 cases, with a mortality of twenty per cent.; Ehrlich, Kossel and Wasserman 67 cases with tracheotomy, mortality 44.9 per cent., and 153 cases without tracheotomy, mortality 23.6 per cent.; Aronson 192 cases, mortality 13 per cent.; Roux 448 cases, mortality, 24.33 per cent.; Weilger 63 cases, mortality 28 per cent. In the *British Medical Journal* there have been reported 39 cases treated by various practitioners, mortality 7.6 per cent. Bokai, of Budapest, reports 35 cases, mortality 14.33 per cent., the average mortality for the last three years being 53.8 per cent. Börger has lately reported from Greifswald 30 cases, mortality 7 per cent. Kuntz reports 25 cases from Oschersleben, mortality 12 per cent.

In this country Welch has reported 4 cases treated at the Municipal Hospital, Philadelphia, with 1 death, mortality 25 per cent.; White, of New York, 20 cases, mortality, 25 per cent.; Williams, of Boston, 6 cases, mortality 17 per cent; Körte, from the Hospital in Urban, reports 121 cases, mortality 33 per cent.; 106 cases were treated without antitoxin during the same period, mortality 45 per cent.; 37 mild or moderately severe cases, where the treatment was begun before the third day, gave a mortality of 3.3 per cent.

The sum of the cases quoted above is a total of 1,369 cases, with an average mortality of about 25 per cent. This average includes cases treated in various European countries and in America, under the most varying conditions. In addition to the above, 231 cases have just been reported which were treated at the Trousseau Hospital in Paris during October and November, with a mortality of 14.71 per cent.

A study of the reports, both from hospital and private practice, show the importance of beginning treatment early, before septic or other complications have arisen; and both private and hospital statistics are marred by the fact that many of the cases are admitted at late stages of disease. The marked variations in the severity of diphtheria epidemics makes it necessary for the present to suspend final judgment; but enough has been accomplished to make it the imperative duty of the profession to give the serum a fair trial.

If the statement of Behring be true, a specific treatment of diphtheria and tetanus has been found. He even expresses the hope that in a short time tuberculosis and pneumonia may be added to the list. The possibility of extending serum therapeutics to other forms of acute, or even chronic disease, offers a field for enthusiastic work of almost boundless extent; and if the hopes of its advocates be realized, for the actual accomplishment by scientific medicine of almost inestimable benefits to humanity.

The Bacillus of Plague. — In June of the past year the Japanese Government sent a commission to study the bacteriological, clinical and pathological features of the plague. Kitasato, who had charge of the bacteriological department, found numerous bacilli in the swollen glands, and also in the blood of the various organs. This bacillus was not found in any other infectious disease, was susceptible of pure culture, and in animals produced the same symptoms which the plague produced in human beings. From this evidence it was concluded that the bacillus discovered by Kitasato was the cause of the bubonic plague, and that the plague was an infectious disease produced by a specific bacillus.

Haffkine has further prosecuted his work in India upon the inoculation against cholera. The results, particularly in a recent trial during an epidemic in the Gaya jail, are more favorable than any he had hitherto been able to reach; 1,200 cases, including 500 British soldiers, were inoculated at Lucknow, and over 1,200 in Calcutta. Some striking observations of the escape of inoculated persons in families where the non-inoculated fell ill with the disease are reported.

The work of the International Cholera Conference held in Paris in February, has been briefly outlined in the account of the cholera epidemic of the year. Great Britain, France, India, Austria-Hungary, Italy, Greece, Portugal, Sweden, Norway, Turkey, Persia, Egypt, the Netherlands and the United States were represented.

The year has not been free from disasters, the most severe of which were the extensive floods in Persia in the spring, and in British Columbia in June. The area under water about Vancouver was estimated at between 150,000 and 200,000 acres, and the loss of life was great. In April, Greece was visited by severe earthquakes, by which 250 people were killed and thousands rendered homeless.

The Eighth International Congress for Hygiene and Demography met at Budapest from September 1st to September 9th. It was largely attended, there being about 600 in the section for hygiene, and about 200 in the section for demography. Among the number were many English and Americans. Of special interest in the general discussion was the question of the sanitary condition of the great cities of the world and a comparison of mortality-rates. In Budapest, in 1893, the mortality-rate per 1,000 was but 14.459; whereas, in 1874, it was 40 per 1,000.

The Congress was opened on the 1st by the Archduke Karl Ludwig, the representative of the emperor; then followed immediately an act of world-wide interest, the formal homage to one of the greatest sanitarians, Ignatius Phillipus Semmelweis. The whole Congress in a body assisted at the unveiling of a monument over his grave, and Dr. Ferdinand Hüppe delivered an oration on the life of Semmelweis, and his efforts to establish the fact that puerperal fever was caused by lack of attention to cleanliness and antisepsis on the part of the attendants.

During the Congress an enormous amount of ground in public hygiene, epidemeiology and demography was gone over. The most important communication to the Congress was Dr. Roux's report on the serum therapy of diphtheria. The Congress closed in a vain and somewhat ludicrous attempt to pass a set of resolutions, which, owing to the polyglot nature of the assemblage, the majority of the members could not understand. Madrid was selected as the place of meeting for the next Congress.

MEDICAL CONGRESSES AND MEETINGS.

The Eleventh International Medical Congress was formally opened at Rome on Thursday, March 29th, in the presence of the King and Queen of Italy and the officers of the Court, and came to a close April 5th. Professor Baccelli delivered his inaugural address in Latin to an audience of six thousand persons. Prince Ruspoli, the Syndic of Rome, extended to the members the welcome and hospitality of the city. The work of the Congress, which was divided into six sections, was somewhat hampered by the difficulty of properly organizing so enormous a body of men — there were between 6,000 and 7,000 members — and enjoyment of the receptions and fêtes was somewhat marred by the same circumstance. As to the sections, the number was enormous, and the organization of some of them so defective that it has been impossible to publish a full account of their proceedings. Addresses were made by Babes, Bizzozero, Bouchard, Danilewski, Michael Foster, Abram Jacobi, Laache, Nothnagel, Stokvis and Virchow. The next meeting of the Congress will be held in St. Petersburg, in 1896.

The Third Triennial Congress of American Physicians and Surgeons was held in Washington, May 29th to June 1st, and at the same date and place the following other societies, making up the Congress, met: Association of American Physicians, American Ophthalmological Society, American Otological Society, American Neurological Association, American Gynecological Society, American Dermatological Association, American Laryngological Association, American Surgical Association, American Climatological Association, American Association of Genito-Urinary Surgeons, American Orthopedic Association, American Physiological Society, Association of American Anatomists, American Pediatric Society.

The Association of Military Surgeons of the United States met in Washington, D. C., May 1st; the American Medico-Psychological Association, in Philadelphia, May 17th; the Twenty-first National Conference of Charities and Correction, in Nashville, Tenn., May 23d; the Forty-fifth Annual Meeting of the American Medical Association was held in San Francisco June 7th to 11th; the Massachusetts Medical Society, in Boston, June 13th; the American Academy of Medicine, in Jefferson, N. H., August 29th; the American Public Health Association, in Montreal, Canada, September 25th; the American Association of Obstetricians and Gynecologists, in Toronto, Ontario, September 19th; the Southern Surgical and Gynecological Association in Charleston, S. C., November 13th; the first meeting of the American Academy of Railway Surgeons was held in Chicago, Ill., November 9th; the American Electro-Therapeutic Association held its fourth annual meeting in New York, September 25th.

The sixty-second annual meeting of the British Medical Association was held in Bristol, July 31st; the twenty-third Congress of the Association of German Surgeons was held in Berlin, April 12th; the French Congress of Otology and Laryngology was held in Paris, April 30th; the fifth Congress of French Alienists and Neurologists in Clermont Ferrand, August 6th; the International Congress of Ophthalmology in Edinburgh in August. The eighth French Surgical Congress met in Lyons, October 9th; the first French Congress of Internal Medicine met in the same city, October 25th; the Association of German Naturalists and Physicians met at Vienna, September 24th; the German Society for Public Health met at Magdeburg in September; the first Indian Medical Congress in Calcutta, December 24th.

LECTURES.

In connection with established lectureships in the United States and Great Britain, the following lectures and orations were delivered:

The Cartwright Lectures, at the New York Academy of Medicine, "On Digestive Proteolysis; or, New Facts in the Chemistry of Digestion," by Russell H. Chittenden, Ph.D.; the Shattuck Lecture before the Massachusetts Medical Society, by Thomas Dwight, M.D., LL.D., on "The Range and the Significance of Variations in the Human Skeleton." In Great Britain, the Croonian Lectures, on "A New Departure in Diabetes," by F. W. Pavy, M.D., F.R.S., F.R.C.P.; the Lettsomian Lectures on "Peritonitis," by Frederick Treves, F.R.C.S.; the Morton Lectures on "Cancer and Cancerous Diseases," by Samuel G. Shattock, F.R.C.S.; the Harveian Oration, on "Modern Developments of Harvey's Work," by T. Lauder Brunton, M.D., D.Sc., Edin., LL.D., Hon., Aberdeen, F.R.S., F.R.C.P.; the Bradshaw Lectures, on "Infantile Scurvy, and its Relation to Rickets," by Thomas Barlow, M.D., F.R.C.P.; the Arris and Gale Lecture, on "The Physiology of Lymph Formation," by E. H. Starling, M.D., M.R.C.P.; the Hunterian Lecture on "Rational Therapeutics," by Philip H. Pye-Smith, M.D., F.R.C.P., F.R.S.; the Milroy Lectures on "Darwinism, and Race Progress," by John B. Haycraft, M.D., F.R.S.E.; the Lumleian Lectures, on "Heart Inflammation in Children," by Octavius Sturges, M.D., Cantab., F.R.C.P.; the Goulstonian Lectures, on "The Physics of the Circulation," by Paul M. Chapman, M.D., Lond., F.R.C.P.; the Ingleby Lectures, on "The Common Forms of Dyspepsia in Women," by Robert Saundby, M.D., Ed., F.R.C.P., Lond.; the Hunterian Oration, on "Aspects of Medical Life: John Hunter — Andrew Clark," by J. Dundas Grant, M.D.; the Morrison Lectures, on "Insanity," by J. Batty Tuke, M.D., F.R.C.P., Ed.; the Cavendish Lecture, on "Some Points in the Treatment of Typhoid Fever," by Sir William Broadbent, Bart., M.D., F.R.C.P.

NECROLOGY.— FOREIGN.

Jules Arnold, M.D., professor of hygiene in the Faculty of Medicine at Lille, died in April, aged sixty-three.

Pierre J. Van Beneden, M.D., D.Sc., LL.D., professor in the Faculty of Sciences at Louvain, died in Louvain, November 9, 1893, aged eighty-four.

Theodor Billroth, M.D., professor of surgery in the University of Vienna, died at Abbazia, February 6, aged sixty-four.

Giuseppe Dagna, M.D., dean emeritus of the Medical Faculty of the University of Pavia, died February 3.

Paul Diday, M.D., one of the leading surgeons of France and a founder of the *Lyon Médicale*, died in Lyons, January 8, aged sixty-three.

George Edward Fenwick, M.D., of Montreal, professor emeritus of surgery in McGill University and surgeon to the Montreal General Hospital, died June 26, aged sixty-nine.

Prof. Oscar Fræntzel, M.D., of Berlin, author of well-known works on diseases of the heart and lungs, died in Berlin, May 18, aged fifty-six.

Dr. S. Guttmann, of Berlin, the editor of *Deutsche Medicinische Wochenschrift*, died December 22.

Adolph Hannover, M.D., at one time professor of medicine at the University of Copenhagen, died July 7, aged eighty.

Herman Louis Ferdinand Helmholtz, M.D., professor of physiology in Berlin, died in Berlin, September 8, aged seventy-three.

Surgeon-Colonel Archibald Hamilton Hilson, M.D., C.I.E., late Inspector-General of Civil Hospitals, Bengal, and a hero of the Sepoy Revolt of 1857, died January 4, aged fifty-nine.

August Hirsch, M.D., professor of special pathology and therapeutics and of the history of medicine in the University of Berlin, died January 28, aged seventy-seven.

Joseph Hyrtl, professor of anatomy in the University of Vienna, died in Vienna, July 19, aged eighty-three.

Ernest Henry Jacob, M.D., professor of pathology in Yorkshire College, died in Leeds, February 28, aged forty-four.

Professor Lemcke, M.D., director of the Polyclinic for Diseases of the Nose and Throat at Rostock, died September 13, aged eighty-four.

William J. Little, M.D., F.R.C.P. (Lond.), M.R.C.S. (Eng.), founder of the Royal Orthopedic Hospital of London, died in West Malling, Kent, England, July 7, aged eighty-three.

Albert Lücke, M.D., professor of surgery in the University of Strasburg, died February 28.

Auguste Ollivier, M.D., physician to the Enfants Malades, and other hospitals of Paris, died in March, aged sixty-one.

Beaven Nevie Rake, M.D., Lond., L.R.C.P., M.R.C.S., superintendent of the Trinidad Leper Asylum, died at Port of Spain, Trinidad, August 24, aged thirty-six.

Dr. Rollett, professor of hygiene at Lyons, died August 2, aged sixty-nine.

Geo. J. Romanes, M.D., professor of physiology in the Royal Institution of London, died in London, May 23, aged thirty-six.

Francisco Alonzo Rubio, M.D., professor of obstetric medicine in the University of Madrid, died in February.

Gustav Schenthauer, M.D., professor of pathological anatomy in University of Pesth, died January 28.

Carl Schmidt, M.D., professor of chemistry in the University at Dorpat, died February 27, aged seventy-two.

Octavius Sturges, M.D., F.R.C.P., senior physician to Westminster Hospital, London, died November 3, aged sixty-one.

Leon Warnots, M.D., professor of operative surgery in the University of Brussels, died in September, aged thirty-eight.

Joseph Workman, M.D., for a quarter of a century superintendent of the Toronto Asylum for the Insane, and the first president of the Ontario Medical Council, died on April 15 in Toronto, Ont., aged eighty-nine.

NECROLOGY — UNITED STATES.

Judson B. Andrews, M.D., superintendent of the State Hospital for the Insane at Buffalo, N. Y., died August 3, aged sixty years.

William G. Austin, M.D., at one time superintendent of the Charity Hospital in New Orleans, died in New Orleans, June 12, aged eighty.

Reuben D. Clarke, M.D., State chemist of the State of New York, died August 11, aged forty-seven.

William C. Dabney, professor of obstetrics and medicine at the University of Virginia, died at Charlotteville, August 20, aged forty-five.

Elijah S. Elder, M.D., president-elect of the Indiana State Medical Society, and Dean of the Medical College of Indiana, died in Indianapolis, May 19, aged fifty-three.

William Goodell, M.D., professor emeritus of the diseases of women and children in the University of Pennsylvania, died in Philadelphia, October 27, aged sixty-five.

Charles Pinckney Gage, M.D., at one time president of the New Hampshire Medical Society, died in Concord N. H., November 26, aged eighty-three.

Arthur Hill Hassall M.D., originator of the Ventnor system for the hospital control of phthisis, died in San Remo, April 10, aged seventy-seven.

B. F. Helper, M.D., at one time president of the Kansas State Medical Society, and editor of the Kansas Medical Journal, died at Fort Scott, Kansas, November 22.

Hampton E. Hill, M.D., at one time demonstrator of anatomy in the Bowdoin Medical School, died at Saco, Me., January 9, aged forty-three.

William V. Keating, M.D., at one time professor of obstetrics in Jefferson Medical College, and medical director of several hospitals, died in Philadelphia, April 18, aged seventy-one.

James Kitchen, M.D., for many years a prominent physician in Philadelphia, died August 19, aged ninety-four.

Philip Lansdale, M.D., medical inspector of the United States Navy, died in Philadelphia, August 21, aged seventy-seven.

Theodore Metcalf, one of the founders of the American Pharmaceutical Association, died in Boston, April 26, aged eighty-two.

A. B. Miles, M.D., professor of surgery in Tulane University, New Orleans, died August 5, aged forty-one.

Joseph Pagani, M.D., member of the Academy of Medicine of Paris, and the Societa Medicale di Roma, died in Boston, July 15, aged fifty-eight.

John H. Rauch, M.D., president and secretary of the State Board of Health of Illinois, from its organization to 1891, and during the war assistant medical director of the Army of the Potomac, and medical director of the Gulf Department of the Nineteenth Army Corps, died March 24.

Hanbury Smith, M.D., of New York, who was for some time superintendent of the Ohio State Lunatic Asylum, died in New York, September 13, aged eighty-four.

William W. Reese, M.D., at one time president of the Kings County Medical Society, died in Brooklyn, N. Y., October 20, aged eighty-two.

NECROLOGY. — MASSACHUSETTS MEDICAL SOCIETY.

Frank Marcellus Blodgett, M.D., of New York, N. Y., died September 26, aged fifty-eight.

Gerritt James Bradt, M.D., of Lowell, died July 1, aged forty-five.

Benjamin Storer Codman, M.D., died February 22, aged seventy-eight.

Albert Day, M.D., of Melrose Highlands, died April 26, aged seventy-four.

Samuel Magner Donovan, M.D., of Quincy, died February 19, aged forty-two.

George Washington Davis, M.D., of Holyoke, died September 18, aged forty-seven.

Urbane Hallock Flagg, M.D., of Mittineague, died November 28.

William Gordon Fogg, M.D., of Boston, died February 27, aged forty-three.

Francis Flint Forsaith, M.D., of Providence, R. I., formerly of Weymouth, died March 10, aged sixty-nine.

George Torrey Grierson, M.D., of Lowell, died January 28, aged twenty-five.

Albinus Otis Hamilton, M.D., of Dorchester, died October 4, aged sixty-two.

Maurice King Hartnett, M.D., of Boston, died May 14, aged seventy.

Alexander Reed Holmes, M.D., of Canton, died November 11, aged sixty-eight.

Oliver Wendell Holmes, M.D., of Boston, died October 7, aged eighty-five.

David Thompson Huckins, M.D., of Watertown, died July 21, aged seventy-four.

George Jewett, M.D., of Fitchburg, died December 16, aged sixty-nine.

Joseph Manning, M.D., of Rockport, died December 10, aged seventy.

John H. Patterson, M.D., of Harwich, died April 29, aged eighty-two.

Charles Colby Pike, M.D., of Peabody, died January 27, aged forty-nine.

Joel Seaverns, M.D., of Roxbury, died March 1, aged sixty-five.

Henry S. B. Smith, M.D., died in Middleboro, October 30, aged fifty-five.

George James Townsend, M.D., of South Natick, died December 9, aged seventy-one.

James Edwin Walker, M.D., of Brookline, died June 15, aged sixty-two.

Barion Crowell Watson, M.D., of Scituate, died October 30, aged seventy.

Frank Stowell Whittemore, M.D., of Boston, died in New York City, November 24, aged thirty.

Oliver Augustus Willard, M.D., of Lowell, died January 7, aged thirty-eight.

Since the last report twenty-six members of the Society have died, thirteen less than in the preceding year. The average age was sixty and one-tenth, that of last year being sixty and four-tenths. Two had reached the age of eighty years. Seven were seventy years or over. There were only three deaths under forty.

SOCIETY NOTICES.

NORFOLK DISTRICT MEDICAL SOCIETY. The next meeting will be held at the house of Dr. Wm P. Bolles, 456 Warren Street, Roxbury, on Friday, December 28th, at 8 P. M.

Communications: "Dental Topics of Interest to the Physician," H. W. Adams, M.D., D.D.S.

"Observations on Oral Surgery," W. P. Bolles, M.D.

"A Case of Aneurism of the Aorta, with Specimen," S. M. Crawford, M.D.

J. C. D. PIGEON, M.D., *Secretary.*

THE SUFFOLK DISTRICT MEDICAL SOCIETY, SURGICAL SECTION. The Surgical Section of the Suffolk District Medical

Society will meet on Wednesday evening, January 2, 1895, at 8 o'clock, at 19 Boylston Place.

Dr. M. H. Richardson will report, "A Case of Gastrostomy by Witzel's Method." "A Case of Gangrenous Dermoid Cyst of the Ovary Necessitating Complete Resection and Suture of the Bowel; Recovery."

Dr. J. B. Blake: "Surgical Clinics in New York and Vienna."

Dr. J. S. Phelps: "Multilocular Cyst of the Ovary; Double Ovariotomy; Recovery.

C. L. Scudder, M.D., *Secretary*, 1 Marlboro Street.

METEOROLOGICAL RECORD,

For the week ending December 15th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S .. 9	30.02	28	35	21	84	100	92	E.	N.	21	16	T.	N.	.43
M .. 10	30.44	24	30	19	81	76	78	N.W.	N.	10	8	F.	O.	.04
T .. 11	30.43	28	39	18	80	96	88	E.	E.	10	13	O.	R.	.10
W .. 12	29.92	44	49	38	100	98	99	N.	W.	7	11	G.	O.	.69
T .. 13	29.69	43	46	40	84	88	86	W.	W.	19	18	O.	F.	
F .. 14	29.93	42	44	40	75	86	80	N.W.	S.W.	10	14	C.	O.	
S ... 15	30.02	46	55	36	62	56	59	W.	W.	13	10	C.	C.	
☞	30.07		43	30			83							1.26

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week

RECORD OF MORTALITY

For the Week ending Saturday, December 15, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,956,000	672	239	15.39	18.00	1.35	.45	7.50
Chicago	1,600,000	—	—	—	—	—	—	—
Philadelphia	1,139.457	420	137	15.12	15.12	—	1.68	12.00
Brooklyn	1,043,000	327	120	15.60	17.10	.90	.90	11.70
St. Louis	540,800	—	—	—	—	—	—	—
Boston	501,107	222	62	19.35	14.85	.45	1.35	13.50
Baltimore	500,000	—	—	—	—	—	—	—
Washington	285,000	97	31	12.36	4.12	—	4.12	6.18
Cincinnati	325,000	123	35	15.39	10.53	3.24	8.91	3.24
Cleveland	325,000	—	—	—	—	—	—	—
Pittsburg	272,000	91	27	13.08	13.08	7.63	2.18	—
Milwaukee	265,000	—	—	—	—	—	—	—
Nashville	87,754	34	10	2.94	20.58	—	2.94	—
Charleston	65,165	22	10	18.20	4.55	—	4.55	13.65
Portland	40,000	—	—	—	—	—	—	—
Worcester	100,410	22	8	13.65	18.20	4.55	—	—
Fall River	92,233	22	8	13.65	18.20	9.10	4.55	—
Lowell	90,613	32	10	—	—	—	—	—
Cambridge	79,607	22	7	13.65	13.65	9.10	—	4.55
Lynn	65,123	14	—	7.14	7.14	—	—	—
Springfield	50,284	8	3	12.50	25.00	12.50	—	—
Lawrence	49,900	24	13	16.64	12.48	—	—	4.16
New Bedford	47,741	22	10	18.20	4.55	—	4.55	13.65
Holyoke	43,348	16	8	18.75	18.75	—	—	—
Brockton	33,939	9	1	22.22	—	—	—	—
Salem	33,155	8	5	12.50	37.50	—	—	12.50
Haverhill	32,925	6	2	—	16.66	—	—	—
Malden	30,209	10	2	30.00	—	—	—	30.00
Chelsea	29,806	14	2	—	14.28	—	—	—
Fitchburg	29,383	4	0	—	—	—	—	—
Newton	28,837	4	0	—	—	—	—	—
Gloucester	27,293	—	—	—	—	—	—	—
Taunton	26,954	5	1	—	20.00	—	—	—
Waltham	22,058	5	2	—	20.00	—	—	—
Quincy	19,642	—	—	—	—	—	—	—
Pittsfield	18,802	3	0	—	—	—	—	—
Everett	16,585	11	3	18.18	—	—	—	—
Northampton	16,331	3	1	—	—	—	—	—
Newburyport	14,073	7	0	14.28	—	—	—	—
Amesbury	10,920	4	0	25.00	25.00	—	25.00	—

Deaths reported 2,353: under five years of age 778; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 333, acute lung diseases 352, consumption 289, diphtheria and croup 191, typhoid fever 43, diarrheal diseases 27, scarlet fever 2 cerebro-spinal meningitis 14, whooping-cough 13, erysipelas 7, malarial fever 6, measles 5, small-pox (Brooklyn) 1.

From scarlet fever New York 10, Boston 5, Providence, Lawrence, Brockton and Woburn 2 each, Brooklyn, Pittsburgh and Medford 1 each. From cerebro-spinal meningitis New York 6, Holyoke 3, Everett 2, Worcester, Lynn and Newburyport 1 each. From whooping-cough Philadelphia 3, New York, Brooklyn, Boston and Washington 2 each, Worcester and Lawrence 1 each. From erysipelas New York 3, Boston 2, Philadelphia and Pittsburgh 1 each. From malarial fever New York, Philadelphia and Brookline 1 each. From measles New York 2, Brooklyn, Pittsburgh and Providence 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending December 8th, the death-rate was 20.2. Deaths reported 4,057; acute diseases of the respiratory organs (London) 338, measles 155, diphtheria 95, whooping-cough 74, fever 55, diarrhea 46, scarlet fever 39, small-pox (Birmingham 3, Hull 1) 4.

The death-rate ranged from 14.6 in Burnley to 29.1 in Norwich; Birmingham 20.9, Bolton 19.8, Croydon 20.0, Hull 21.1, Leeds 22.3, Leicester 16.5, Liverpool 23.3, London 19.4, Manchester 22.9, Newcastle-on-Tyne 22.7, Nottingham 15.4, Portsmouth 20.4, Sheffield 21.9, Swansea 19.1, West Ham 19.1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 15, 1894, TO DECEMBER 21, 1894.

Captain Edward R. Morris, assistant surgeon, on the arrival of **Captain Paul Clendenin**, assistant surgeon, at Fort Warren, Mass., will be relieved from duty at that post and will report for duty at Fort Spokane, Washington.

PROMOTIONS.

To be assistant surgeons with the rank of Captain, after five years' service, in conformity with Act of June 23, 1874:

First-Lieut. Charles Willcox, October 29, 1894.
First-Lieut. Harlan E. McVay, October 29, 1894.
First-Lieut. Euclid B. Frick, October 29, 1894.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIFTEEN DAYS ENDING DECEMBER 15, 1894.

Stoner, G. W., surgeon. Granted leave of absence for twenty-two days. December 10, 1894.

Rosenau, M. J., passed assistant surgeon. To report at Bureau for special temporary duty. December 10, 1894.

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The next lecture will be given on Thursday evening, January 3d, at 8 o'clock, by Prof. J. C. White. Subject, "The Cutaneous Features of Tuberculosis, Syphilis and Leprosy." Physicians are cordially invited.

APPOINTMENT.

Dr. Edwin W. Dwight has recently been appointed surgeon to out-patients at the Boston City Hospital.

BOOKS AND PAMPHLETS RECEIVED.

The Harvard University Catalogue, 1894–95. Cambridge. 1894.

Report of the Surgeon-General of the Army to the Secretary of War for the Fiscal Year Ending June 30, 1894. Washington. 1894.

A Review of the Relations between the State and the Medical Profession in New York. By Frank Whitehill Hinkel, A.M., M.D. Reprint. 1894.

Yellow Fever the American Plague; Thorough Drainage and Municipal Cleanliness the Only Means of Insuring its Extinction. By J. C. LeHardy, M.D., Savannah, Ga. Reprint. 1894.

Some Remarks on the Address Delivered to the American Medico-Psychological Association, by S. Weir Mitchell, M D., May 16, 1894. By Walter Channing, M.D. Reprint. 1894.

A Clinical Manual of Diseases of the Eye, Including a Sketch of its Anatomy. By D. B. St. John Roosa, M.D., LL.D., Professor of Diseases of the Eye and Ear in the New York Post-Graduate Medical School and Hospital; Surgeon to the Manhattan Eye and Ear Hospital, etc. Illustrated by 178 engravings and two chromo-lithographic plates. New York: William Wood & Co. 1894.

R
11
N57
v.130-131
cop.2

Biological
& Medical
Serials

The New England journal of
medicine
v.130-131

PLEASE DO NOT REMOVE
CARDS OR SLIPS FROM THIS POCKET

UNIVERSITY OF TORONTO LIBRARY